# GOODELL: PRATT COMPANY

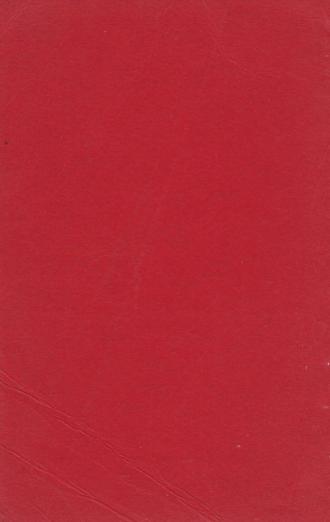
GREENFIELD, MASS.U.S.A

NUMBER

15 COMPLETE CATALOG

Toolsmiths,

ONDO





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# COMPLETE CATALOG

NUMBER

# 15

The List Prices shown in this book are those that were in effect on July 1, 1922 and are subject to change without notice

# GREENFIELD, MASSACHUSETTS, U.S.A.

CABLE ADDRESS "PRATTGOOD" GREENFIELD

NEW YORK

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# Special Notice

The list prices in this Catalog are those that were in effect on July 1, 1922; many of them have since been changed. For latest prices apply to your hardware or supply dealer.

This edition of our Catalog shows more than 50 new tools not contained in previous issues. These new tools will be found on the following pages:

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So much interest has been shown in small motors to drive Goodell-Pratt light shop equipment such as lathes, milling machines, polishing and grinding heads, etc., that we have published a booklet giving a wealth of information on this subject. It will be a pleasure to send you a copy of this booklet if you are interested.

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# Important Information

#### CATALOG No. 15

This new edition of our catalog shows every article that we manufacture, and cancels all previous issues. Please destroy all old catalogs.

#### LIST PRICES

The list prices printed in this catalog are those that were effective on July 1, 1922. All of our list prices are subject to change without notice as our costs make it necessary. We are continuing the Simplified Price System that we put into effect several years ago, and while market conditions continue unstable we will issue changes in our list prices from time to time.

#### CODE WORDS

The code words in this catalog have all been changed from previous editions. We have adopted five letter code words that can be used in any telegram, or in connection with any cable code without confusion. The use of these code words wherever applicable will save you money when telegraphing or cabling.

#### CABLE CODES

We use the following cable codes: A B C Fifth Edition; A B C Fifth Improved; Western Union; Bentley's; and Liebers.

#### SHIPPING INSTRUCTIONS

In ordering, please be sure to give full and explicit directions for shipment, and they will be carefully followed. If no shipping instructions are given, we will use our own best judgment in forwarding shipments. All goods are sent at the risk of the purchaser after we have delivered the articles in good order to the forwarders. We cannot hold ourselves responsible for articles lost in transit.

#### WARRANTY

Every tool of our manufacture is warranted free from imperfections of material or defects in workmanship and, when so defective, will be repaired or replaced without charge; but under no circumstances will we assume the responsibility for breakage where flaws do not appear, nor will we replace tools which have suffered from abusive treatment or have been stamped with the owner's name, changed, or otherwise experimented upon. No dealer is authorized to make replacements for us. Articles claimed defective must be returned direct; charges paid, for inspection.

#### CHANGES

We are often asked to make slight changes in the design, finish or mechanism of some particular tool. It is absolutely impossible for us to do this. Changes, however slight, necessitate special work under constant supervision, which increases the cost of the tool several hundred per cent.

#### REPAIRS

We can furnish repairs for any tool of our manufacture, if our customers will make it plain to us what new parts are wanted; and where the owner of the tool is sufficiently mechanical to enable him to make repairs himself after; receiving the new part, it is quite practical and profitable for him to do it, but it seldom pays to return by express or otherwise tools of small value, as the transportation charges and the cost of repairs are oftentimes more than the cost of a new tool.

A net price list of repair parts for our Drills and Screw-Drivers will be sent upon request.

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#### Goodell-Pratt Tools

MANUFACTURE

Every tool shown in this catalog is made directly from the raw material in one of our own factories. We are in every sense of the word manufacturers, not merely assemblers or selling agents. The workmen that we employ are experienced; our equipment is up to date in every respect; and our buildings are light and clean.

DESIGN AND MATERIALS

These tools are designed to be as simple and efficient as possible. They are made for men who know and appreciate good tools. The mechanical principles are correct and the materials are selected that give the longest service.

INSPECTION

Every part put through our factories is inspected at various stages of its manufacture and every completed tool is carefully tested out before being packed. The tool is then wrapped and placed in its box. Great care is used in packing shipments and éach one is checked several times before being sent out. All of our goods are shipped in strong new cases and will arrive in good condition.

FINISH

Goodell-Pratt tools have always been finished attractively. This makes them easier to sell, and less liable to become shopworn or rusty.

All enamel used is the best obtainable, and is baked on, whenever practical to do so, giving a smooth and handsome finish. The "Goodell-Pratt Red" which is used in the finish of many of our tools is famous the world over.

EXPORT SHIPMENTS

All of our shipments are packed in strong new cases, well constructed of good lumber. Wherever necessary cases are lined with waterproof paper, and tightly banded. Particular attention is paid to the packing and marking of export shipments.

POCKET CATALOGS

For many years we have distributed a pocket edition of our catalog among mechanics and others who are interested in good tools. These catalogs have been studied with great interest, and it is impossible to estimate how many tools they have sold. A supply of these catalogs will be furnished to any dealer who desires to distribute them among his customers.

We also have many different kinds of attractive circulars and several strik-

ing signs and display cards that we will send to any dealer.

ELECTROTYPES

The free use of our electrotypes for advertising purposes is extended to all of our customers. We have electrotypes of our tools in three sizes; the size used in our large catalog; the size used in our pocket catalog; and a small size for use in a 2½ inch column. We cannot attempt to make up any other special sizes.

QUALITY

The rapid growth of this company and the ever increasing demand for GOODELL-PRATT TOOLS are due entirely to their quality, of which it is surely proof enough.

There is good old-fashioned honesty in every one of these good tools.

COODELL-PRATT COMPANY.

GREENFIELD, MASSACHUSETTS, U. S. A. January 1, 1923.

President

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# Automatic Drill

No. 185

Patented December 28, 1915

Registered U. S. Patent Office as

# Mr. Punch

This Automatic Drill embodies all the special features that twenty-five years of experience in the manufacture of these tools has shown to be necessary or desirable.

Eight Drill Points are contained within the Magazine Handle, each in a separate numbered compartment, from which they are released, one at a time, through a hole in the rotating cap. A Drill Point Gauge shows the exact size of each Drill Point, a patented feature that is not found in any other similar tool.

The Center Nut, which is the most important part of any spiral-driven tool, is made of a very hard grade of brass and will give lasting service. The front portion of the tool is made of hollow brass tubes.

All exposed metal parts are polished, nickel plated and buffed, giving a bright and lasting finish.

The Chuck has two hardened steel jaws for holding Fluted Shank Drill Points securely. It has an extra long shell, which is held in place by a spring so that it cannot be completely unscrewed and lost.

Eight Fluted Drill Points,  $\frac{1}{16}$  to  $\frac{1}{64}$  inch in diameter, are furnished with each tool.

The tool is 10 inches long and weighs 8 ounces net.

Price, each..... (YEKIJ) \$2.60

Packed one in a pasteboard box, 10<sup>1</sup>/<sub>4</sub> x 1<sup>1</sup>/<sub>2</sub> x 1<sup>1</sup>/<sub>4</sub> inches.

Weight, 9 ounces.

Dumfratt

# Automatic Drill

No. 108



This Automatic Drill has a patented Magazine Handle, holding eight Drill Points, each in a separate numbered compartment, from which they are removed through a hole in the rotating cap. The Handle is knurled its entire length, giving a firm grip. The Center Nut, which is the most insportant part of any spiral-driven tool, is made of a very hard grade of brass and will give lasting service. The front portion of the tool is made of hollow brass tubes. All exposed metal parts are polished, nickel plated, and buffed, giving a bright and lasting finish.

The Chuck has two hardened steel Jaws for holding Fluted Shank Drill Points securely. It has an extra long Shell, which is held in place by a spring so that it cannot be completely unscrewed and lost.

Eight Fluted Drill Points,  $\frac{1}{10}$  to  $\frac{11}{64}$  inch in diameter, are furnished with

each tool.

The tool is 10 inches long, and weighs 8 ounces net.

Price, each......(YAYPA) \$2.30

Packed one in a pasteboard box,  $10\frac{1}{4} \times 1\frac{1}{2} \times 1\frac{1}{4}$  inches. Weight, 9 ounces.

#### Automatic Drill

No. 35

Capacity 0 to 1/4 inch



This Automatic Drill is designed to use small Twist-Drills instead of the Straight Fluted Drill Points. The Handle is made of Rosewood, handsomely polished. The Center Nut, which is the most important part of any spiral-driven tool, is made of a very hard grade of brass and will give lasting service. The front portion of the tool is made of hollow brass tubes. All exposed metal parts are polished, nickel plated, and buffed, giving a bright and lasting finish.

The Chuck has three hardened steel Jaws, which will hold Round Shank Drills of all sizes up to ½ inch.

The tool is 114 inches long and weighs 9 ounces net.

No Drills are furnished with this tool.

Price, each (YACSA) \$2.70

Packed one in a pasteboard box, 111 x 13 x 13 inches. Weight, 12 ounces.

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# Automatic Drill

No. 3

Patented September 30, 1890; November 17, 1891



This Automatic Drill has a patented Magazine Handle, holding eight Drill Points, each in a separate numbered compartment, from which they are removed through a hole in the rotating cap. The Center Nut is made of a very hard grade of brass and will give lasting service. The front portion of the tool is made of hollow brass tubes. All exposed metal parts are polished, nickel plated, and buffed, giving a bright and lasting finish.

The Chuck has two hardened steel Jaws, for holding Fluted Shank Drill

Points firmly.

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Eight Fluted Drill Points, 1 to 11 inch in diameter, are furnished with each tool.

The tool is 9½ inches long, and weighs 7 ounces net.

## Automatic Drill

No. 31/2

Patented September 30, 1890; November 17, 1891



This Automatic Drill has a polished Hard-wood Handle with a nickelplated Flange and Cap. It has a patented Drill Point Magazine, holding eight Drill Points, each in a separate numbered compartment, from which they are released through a hole in the rotating cap. The Center Nut is made of a very hard grade of brass and will give lasting service. The front portion of the tool is made of hollow brass tubes. All exposed metal parts are polished, nickel plated, and buffed, giving a bright and lasting finish.

poinshed, maket plated, and buried, giving a bright and lasting missi.

The Chuck has two hardened steel Jaws, for holding Fluted Shank Drill Points firmly.

Eight Fluted Drill Points, 1s to \$\frac{14}{4}\$ inch in diameter, are furnished with each tool.

The tool is 10 inches long, and weighs 7 ounces net.

Packed one in a pasteboard box, 101 x 11 x 11 inches. Weight, 9 ounces.

#### Antomatic Drill No. 1



This Automatic Drill has a hollow brass Handle with longitudinal corrugations to give a firm grip. The Drill Points are not contained in the Handle, which, although less convenient, does not detract from the efficient operation of the tool. The Center Nut is made of a hard grade of brass and will give long service. The front portion of the tool is made of hollow brass tubes. All exposed metal parts are polished, nickel plated, and buffed, giving a bright and lasting finish. The Chuck has two hardened steel Jaws, for holding Fluted Shank Drill

Points firmly. Eight Fluted Drill Points, 15 to 11 inch in diameter, are furnished with

each tool.

The tool is 91 inches long, and weighs 5 ounces net.

Price, each . . . . . (WYAXY) \$1.90

Packed one in a pasteboard box, 10 x 11 x 11 inches. Weight, 7 ounces.

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# Automatic Drill

No. 2



This Automatic Drill has a polished Rosewood Handle, which will be appreciated by any one desiring a wooden instead of a metal Handle. The Center Nut is made of a hard grade of brass and will give long service. The front portion of the tool is made of hollow brass tubes. All exposed metal parts are polished, nickel plated, and buffed, giving a bright and lasting finish.

The Chuck has two hardened steel Jaws, for holding Fluted Shank Drill Points firmly.

Eight Fluted Drill Points, 1/4 to 1/2 inch in diameter, are furnished with this tool.

The tool is 93 inches long, and weighs 5 ounces net.

\$2.00 Price, each.. (WYCAC)

Packed one in a pasteboard box, 10 x 11/2 x 11/2 inches. Weight, 8 ounces.

# Automatic Drill



This Automatic Drill is different in construction from our other styles and, although its cost is very low, it is a thoroughly practical tool. The Handle is made of hard wood, nicely polished, and properly shaped to give a firm and comfortable grip. This Spiral is steel, driven by a hard brass Center Nut, which will give long service. All metal parts, except the Spiral, are nickel plated.

The Chuck has two hardened steel Jaws, for holding Fluted Shank Drill Points firmly.

Eight Fluted Drill Points, 16 to 11 inch in diameter, are furnished with each tool.

The tool is 13 inches long, and weighs 8 ounces net.

# Automatic Punch

For Paper, Cloth or Leather



This tool is the same in construction as our Automatic Drills but is supplied with four small Punches instead of Drill Points. It will quickly punch smooth round holes in paper; cloth or leather. The Handle is polished Rosewood. The Center Nut is made of a hard grade of brass and will give long service. The front portion of the tool is made of hollow brass tubes. All exposed metal parts are polished, nickel plated, and buffed, giving a bright and lasting finish.

The Chuck has two hardened tool steel Jaws, for holding the hollow Punches furnished with this tool. It will also hold Fluted Shank Drill Points.

Four hollow steel Punches,  $\frac{9}{64}$ ,  $\frac{11}{64}$ ,  $\frac{3}{16}$ , and  $\frac{13}{64}$  inch, are furnished with each tool.

The tool is 93 inches long, and weighs 5 ounces net.

Packed one in a pasteboard box,  $10\frac{1}{2} \times 1\frac{3}{4} \times 1\frac{1}{2}$  inches. Weight, 8 ounces.

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## Automatic Drills

With Dull Nickel Finish

These tools are exactly the same in mechanical construction as our more expensive styles, but are not polished. This dull nickel finish affords a considerable saving in the cost without detracting in any way from the efficiency of the tool.

Each of these Drills is furnished with eight hardened tool steel Drill Points ranging in size from  $\frac{1}{16}$  to  $\frac{1}{16}$  inch.



No. 01. Corrugated Brass Handle; Dull Nickel Finish.

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No. 02. Polished Hard-Wood Handle; Dull Nickel Finish.

Price, each: ..... (WYBOF) \$1.50

Packed one in a box, 10 x 1½ x 1½ inches. Weight, 8 ounces.



No. 03. Patented Magazine Handle holding Drill Points; Dull Nickel Finish.

Price, each (WYDFE) \$1.80

Packed one 'n a box, 10 x 1\frac{1}{4} x 1\frac{1}{4} inches. Weight, 9 ounces.

# Reciprocating Drill

No. 0

Capacity 0 to ¼ inch Chuck Patented August 13, 1895



This tool is designed for rapid drilling in iron, brass, or wood; as well as for use in places where a Bit Brace or Breast Drill cannot be used.

The polished hard-wood traveling handle contains the flanges and hard bronze nuts which constitute the simple and durable driving mechanism, which causes the Chuck to revolve continuously to the right when the traveling handle is moved either forward or backward.

The polished hard-wood head has a heavy steel quill running on ball bearings. The polished steel spiral, 12½ inches long, is accurately

cut to a 20° slant, giving ample power.

The Chuck is all steel with three hardened jaws, holding round shank drills 0 to \( \frac{1}{4} \) inch.

The tool is 161 inches long and weighs 15 ounces net.

No Drills furnished with this tool.

Packed one in a pasteboard box,  $16\frac{3}{4}$  x  $2\frac{1}{2}$  x  $2\frac{1}{2}$  inches, Weight,  $1\frac{1}{4}$  pounds.

# Reciprocating Drill

Capacity 0 to 1/4 inch Chuck Patented August 13, 1895



The finish and appearance of this tool is up to our usual standard and we do not hesitate to say that it surpasses in every way any other tool of this character.

The traveling handle is shaped to give a firm and comfortable grip and can be grasped with the whole hand without danger of the fingers being torn by the spiral. All other parts of this tool are exactly the same as the one described above.

The Chuck is all steel with three hardened jaws, holding round

shank drills 0 to 1 inch.

The tool is 16½ inches long and weighs 1 pound net. No Drills furn shed with this tool.

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# Reciprocating Drill

No. 102

Capacity 0 to 5 inch Patented September 30, 1890; November 17, 1891; August 13, 1895



This tool will be found valuable wherever a hand tool is required for rapidly drilling small holes. The nickel plated handle, which runs on ball bearings, contains a magazine holding the drill points.

The hard-wood traveling handle contains the flanges and hard bronze nuts which constitute the driving mechanism. The accu-

rately cut steel spiral is 63 inches long. The Chuck is all steel with three hardened jaws for holding

round shank drills 0 to 5 inch.

Eight round shank Drill Points, 16 to 11 inch in diameter, are contained in the handle.

The tool is 124 inches long and weighs 12 ounces net.

Price, each.....(YAYAP) \$3.00

PAGE

Packed one in a pasteboard box,  $13\frac{1}{2} \times 1\frac{3}{4} \times 1\frac{3}{4}$  inches. Weight, 1 lb.



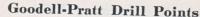
runs on ball bearings. The enabling the operator to apply both hands to the work. The  $12\frac{1}{2}$  inch steel spiral is accurately cut to a 20° slant and is capable of generating all necessary power.

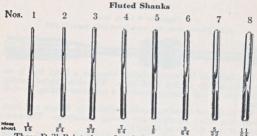
The Chuck is all steel with three hardened jaws for holding round shank drills 0 to 4 inch in diameter.

Length,  $16\frac{1}{2}$  inches. Net weight,  $1\frac{1}{2}$  pounds. No Drills furnished with this tool.

... (YAYGD) \$3.50

Packed one in a pasteboard box, 17 x 51/2 x 21/2 inches. Weight, 2 pounds.





These Drill Points have fluted shanks for use in the two-jawed chucks of Automatic Drills. They are manufactured from the finest grade of tool steel, are very carefully hardened and oil tempered.

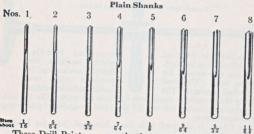
The straight flutes are very desirable for drilling wood or soft metals.

24 Length over all, about 2 inches.

PACE

These Drill Points can be furnished in sets of eight if desired.

# Goodell-Pratt Drill Points



These Drill Points are exactly the same as those shown above, except that they have straight shanks that can be held in any three-jawed chuck.

Price, per dozen...(zotub) \$0.50

These Drill Points can be furnished in sets of eight when desired.

# Surgeon's Drill

This is a light, smooth running, rapid, and sanitary Bone Drill for surgeon's use. It can be readily taken apart and sterilized. It is small and compact, yet there is sufficient room between the Handle and Crank, and the Crank and of Chuck

Handle.—Hollow Brass, handsomely polished and nickel plated.

CRANK.—All Metal, nickel plated and polished.

Gears.—White nickeled all over. Edge of large Gear is polished. All teeth are machine cut.

Frame.—Steel, polished and nickel plated.

CHUCK.—Special Chuck, with knurled-head set screw; holds Drill Points firmly.

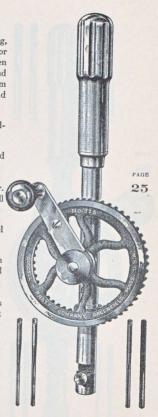
Size.—10 inches long; 2¼ inches from Gear to end of Chuck. Net weight, 12 ounces.

Equipment.—Each tool is furnished with four special Drill Points, one each  $\frac{1}{16}$ ,  $\frac{5}{64}$ ,  $\frac{3}{32}$ , and  $\frac{7}{64}$  inch in diameter.

Price, each ..... (YIKME) \$5.00

PACKING.—One in a pasteboard box, 8 x 3½ x 2 inches.

WEIGHT .- 1 pound.





# Hand Drill

No. 110

For Fluted Drill Points

This tool is a low priced Hand Drill for use with Fluted Shank Drill Points, the same as those furnished with our Automatic Drills.

The Handle is Hollow Brass, white nickeled. It can be quickly removed and used to hold Drills. The Frame is Malleable Iron, black enameled.

The Gears are nickel plated to prevent rusting. All teeth are machine cut. Gears are held together by a steel Guard which prevents slipping.

Two-jawed Chuck holds Drill Points with fluted shanks only.

Length, 10<sup>1</sup>/<sub>4</sub> inches. Net weight, 13 ounces.

Eight Fluted Drill Points,  $\frac{1}{16}$  to  $\frac{11}{64}$  inch, furnished with each tool.

Price, each .... (YAYUT) \$2.20

Packed one in a pasteboard box,  $8 \times 3\frac{1}{2} \times 2$  inches.

Weight, 1 pound.

#### Hand Drill

No. 49

Capacity 0 to 5 inch
Chuck Patented August 13, 1895

This is a small Drill of very good quality at an extremely moderate price.

The Handle is hollow brass, white nickeled. It can be quickly removed and used for holding Drills. Frame is malleable iron, black enameled.

Gears are nickel plated to prevent rusting. All teeth are machine cut. The Gears are held together by a steel Guard which prevents slipping.

All-steel Chuck, with three hardened jaws, holds Round Shank Drills 0 to  $\frac{5}{32}$  inch in diameter.

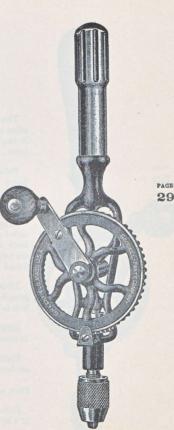
Length,  $10\frac{1}{4}$  inches. Net weight, 14 ounces.

No Drill Points furnished with this tool.

Price, each...(YAFAY) \$2.00

Packed one in a pasteboard box,  $8 \times 3\frac{1}{2} \times 2$  inches.

Weight, 1 pound.





## Hand Drill

No. 41/2

Capacity 0 to 5 inch

Chuck Patented August 13, 1895

This Drill is exactly the same as our other small Hand Drills, except that it has a Handle of wood instead of brass.

Polished Rosewood Handle, with Screw Cap, can be used for holding Drills. The Frame is malleable iron, black enameled.

Large Gear and Steel Pinion are nickel plated to prevent rusting. All teeth are machine cut. The Gears are held together by a hardened steel Guard which prevents slipping.

All-steel Chuck, with three hardened jaws, holds Round Shank Drills 0 to  $\frac{5}{32}$  inch in diameter.

Length,  $10\frac{1}{2}$  inches. Net weight, 14 ounces.

Eight Drill Points,  $\frac{1}{16}$  to  $\frac{11}{64}$  inch, are furnished with each tool.

Price, each....(WYFEG) \$2.80

Packed one in a pasteboard box,  $11 \times 3\frac{1}{4} \times 2\frac{1}{4}$  inches.

Weight, 11 pounds.

## Hand Drill

No. 4

Capacity 0 to 5 inch

Patented September 30, 1890; November 17, 1891; August 13, 1895

This very handsome little Hand Drill is extremely well made.

The Handle is hollow brass, polished and nickel plated. It contains a magazine, holding the eight Drill Points, each in a separate compartment, from which they can be removed through a hole in the rotating cap.

The Malleable Iron Frame is black enameled. Both the large Gear and the Steel Pinion are nickel plated to prevent rusting. Large Gear is finished in red

enamel. All teeth are machine cut. The Gears are held together by a hardened steel Guard which prevents slipping.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills 0 to  $\frac{5}{32}$  inch in diameter.

Length, 10<sup>1</sup>/<sub>4</sub> inches. Net weight, 15 ounces.

Eight Drill Points,  $\frac{1}{16}$  to  $\frac{11}{64}$  inch, furnished with each tool.

Price, each.....(WYFAF) \$3.00

Packed one in a pasteboard box, 11 x  $3\frac{1}{4}$  x  $2\frac{1}{4}$  inches.

Weight, 11 pounds.

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No. 05

Capacity 0 to 1/4 inch

Chuck Patented August 13, 1895

This is a very strong, well made Hand Drill of  $\frac{1}{4}$ -inch capacity.

Both the End Handle and the Side Handle are polished hard wood. The Frame is malleable iron, black enameled.

> All gear teeth are machine cut. Gear and Steel Pinion are nickel plated.

Large Gear is finished in red enamel. Gears are held together by a hardened steel Guard that prevents slipping.

All Steel Chuck, with three hardened jaws, holds Round Shank Drills 0 to 4 inch.

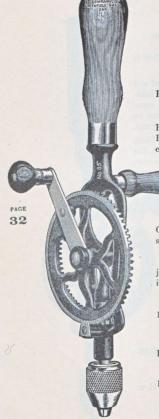
Length, 12½ inches. Net weight, 1¼ pounds.

No Drills furnished with this tool.

Price, each . . . . . . . (wyfjo) \$3.10

Packed one in a pasteboard box.  $12\frac{3}{4} \times 3\frac{3}{4} \times 2\frac{1}{2}$  inches.

Weight, 15 pounds.



## Hand Drill

No. 379

Capacity 0 to 1/4 inch

Chuck Patented August 13, 1895

This tool is sold at a very moderate price for a Drill with \( \frac{1}{4} \)-inch capacity,

Polished Rosewood Handle has a screw cap containing eight tool steel Drills. A large knob Side Handle of polished hard wood is provided

The Frame is Malleable Iron, black enameled.

All teeth are machine cut. Gear and Steel Pinion are white nickeled. The Gears are held together by a hardened steel Guard that prevents slipping.

The all-steel Chuck has three hardened jaws; holds Round Shank Drills 0 to  $\frac{1}{4}$  inch.

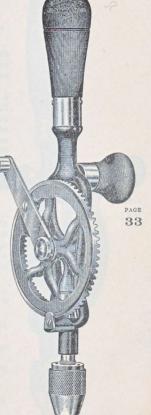
Length,  $11\frac{1}{2}$  inches. Net weight,  $1\frac{1}{4}$  pounds.

Eight Drill Points,  $\frac{1}{16}$  to  $\frac{11}{64}$  inch, furnished with each tool.

Price, each ..... (YOCJA) \$3.50

Packed one in a pasteboard box,  $12 \times 3\frac{3}{8} \times 2\frac{3}{8}$  inches.

Weight, 11 pounds.



# Hand Drill

Capacity 0 to 1/4 inch

Patented Sept. 30, 1890; Nov. 17, 1891; Aug. 13, 1895

These Drills are very similar in construction to those previously described, but being of greater capacity, they are necessarily larger and heavier.

The polished Hard-wood Handle has a patented magazine for holding eight Drill Points, each in a separate numbered compartment, from which they can be released through a hole in the rotating cap. A polished hard-wood Side Handle  $3\frac{1}{4}$  inches long is provided; it can be

quickly removed

The Frame is malleable iron, black enameled.

The large Gear and steel Pinion are nickel plated, and the large Gear is finished with red enamel. All teeth are machine cut. Gears are held together by a hardened steel Guard that prevents slipping.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills 0 to ¼ inch in diameter.

Length, 12 inches. Net weight, 13 pounds.

Eight Drill Points,  $\frac{1}{16}$  to  $\frac{11}{64}$  inch, are contained in the handle.

Price, each.....(wyfoj) \$3.80

Packed one in a pasteboard box,  $12\frac{3}{4}$  x  $4\frac{3}{4}$  x  $2\frac{1}{2}$  inches.

Weight, 13 pounds.



# Hand and Breast Drill

No. 1616

Capacity 0 to 3/8 inch

Chuck Patented August 13, 1895

This Hand and Breast Drill is of unique design and construction, embodying features that make it an unusually good general purpose drill.

The polished Hard-wood Handle in mahogany finish has a large head upon which pressure can be exerted comfortably when using large drills. A large knob Side Handle is also provided.

The Frame of this drill is aluminum alloy of great strength but light weight. It incloses the pinion and is so shaped that it can be used as a grip instead of the side handle if desired.

The Large Gear is solid, finished in red enamel. Pinion is steel. All gear teeth are machine cut. The gears are held together by a hardened steel Guard that prevents slipping without causing undue friction.

The accurately turned Spindle runs in ball bearings which take up all end thrust.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills of all sizes from 0 to  $\frac{3}{8}$  inch.

Length, 14½ inches. Net weight, 2 pounds.

No Drills furnished with this tool

Price, each ...... \$4.50

Packed one in a pasteboard box,  $15\frac{1}{4}$  x  $4\frac{3}{4}$  x  $3\frac{1}{4}$  inches.

Weight, 21 pounds.





Capacity 0 to 3% inch Chuck Patented August 13, 1895

This Hand Drill is modern in design and construction and has many features that have made it very popular with all classes of mechanics.

The polished Rosewood Handle has a Screw Cap containing eight tool steel Drills. A large knob Side, Handle of polished hard wood is provided.

The Frame of this tool is aluminum, which gives as great strength as iron, but is much lighter in weight. The Frame is so shaped that it can be readily gripped, instead of the Side Handle, if desired. It is finished in ebony enamel.

All gear teeth are machine cut. Pinion is steel. Large Gear is finished in red enamel. Gears are held together by a hardened steel Guard that prevents slipping without causing undue friction.

The accurately turned steel Spindle runs in ball bearings, which take up all end thrust.

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The all-steel Chuck has three hardened jaws for holding Round Shank Drills of all sizes from 0 to 3 inch.

Length, 141 inches. Net weight, 17 pounds.

Eight Drill Points, 16 to 11 inch, furnished with each tool.

Price, each ..... (ZOAST) \$4.80

Packed one in a pasteboard box, 151 x 4½ x 3½ inches.

Weight, 23 pounds.

## Hand Drill

No. 51/2

Capacity 0 to 3% inch
Patented August 13, 1895; March 31, 1896.

This Hand Drill is provided with two speeds which enable it to be used on all classes of work up to its extreme capacity. The two speeds are changed by turning the Shifter Knob marked "Fast" and "Slow." The recently improved clutch makes shifting mechanism stronger and easier to operate.

The polished Rosewood Handle has a Screw Cap that can be removed when Handle is used for holding Drills. A large knob Side Handle is also

provided.

The Frame is malleable iron,

All gear teeth are accurately cut by automatic machinery. Pinions are steel. Large Gear is finished with red enamel

The accurately turned steel Spindle runs in Ball Bearings. It has a hardened end that runs in a hardened steel Cone Bearing.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills 0 to  $\frac{3}{8}$  inch.

Length,  $14\frac{1}{2}$  inches. Net weight,  $2\frac{1}{4}$ 

pounds

No Drills furnished with this tool

Price, each ..... (WYFUK) \$5.50

Packed one in a pasteboard box,  $15\frac{1}{4}$  x  $4\frac{1}{2}$  x  $3\frac{1}{4}$  inches.

Weight, 23 pounds

PAGE



## Hand and Breast Drill

No. 51/2 B

Capacity 0 to 3% inch

Patented August 13, 1895; March 31, 1896.

This tool is the same as No.  $5\frac{1}{2}$ , shown on the preceding page, except that it has a different End Handle.

The polished Hard-wood Handle has a large head upon which pressure can be exerted comfortably when using large Drills. A large knob Side Handle is also provided.

The Frame is malleable iron, black enameled.

All gear teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel.

This Drill has two speeds, changed by turning the Shifter Knob marked "Fast" and "Slow." The recently improved clutch makes shifting mechanism stronger and easier to operate.

The accurately turned steel Spindle runs on Ball Bearings. End runs in a hardened steel Cone Bearing.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills 0 to  $\frac{3}{8}$  inch.

Length,  $14\frac{1}{2}$  inches. Net weight,  $2\frac{1}{4}$  pounds.

No Drills furnished with this tool.

Price, each.....(wygag) \$5.50

Packed one in a pasteboard box,  $15\frac{1}{4}$  x  $4\frac{1}{2}$  x  $3\frac{1}{4}$  inches.

Weight, 23 pounds.

## Ratchet Hand and Breast Drill

No. 259

Capacity 0 to 3/8 inch

Patented August 13, 1895; March 31, 1896

This tool is practically the same as No. 5½B, shown on the preceding page, with the addition of a ratchet mechanism.

The polished Hard-wood Handle has a large head upon which pressure can be exerted comfortably when using large Drills. A large knob Side Handle is also provided.

The Frame is malleable iron, black

Crank Arm is drop-forged steel.

The Large Gear and Steel Pinions have machine-cut teeth. Large Gear is finished in red enamel.

The Ratchet is both right and left hand. It is operated by turning a knurled ring between the Crank and the Gear. Tool steel dogs make it very strong.

This Drill has two speeds, changed by turning the Shifter Knob marked "Fast" and "Slow."

The accurately turned steel Spindle runs in Ball Bearings. End runs in a hardened steel Cone Bearing.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills 0 to 3 inch.

Length,  $14\frac{1}{2}$  inches. Net weight,  $2\frac{1}{2}$  pounds.

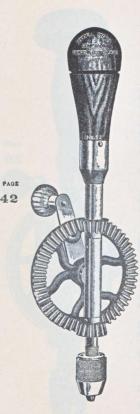
No Drills furnished with this tool.

Price, each.....(YIBIF) \$6.00

Packed one in a pasteboard box,  $15\frac{1}{2}$  x  $4\frac{1}{2}$  x  $3\frac{1}{2}$  inches.

Weight, 3 pounds.





## Hand Drill

No. 52

Capacity 0 to 5 inch

Chuck Patented August 13, 1895

This is a very strong and easy running light Hand Drill of small capacity.

Handle.—Polished Rosewood, with a Screw Cap. Can be used for holding Drills.

Frame.—All Steel, polished and nickel plated.

Gears and Steel Pinions are nickel plated. Large Gear finished in red enamel with polished edges.

Bearing.—The second Pinion forms an excellent bearing, practically without friction.

Chuck.—All Steel, with three hardened jaws for holding Round Shank Drills 0 to  $\frac{5}{22}$  inch.

Size.— $10\frac{1}{4}$  inches long. Net weight, 14 ounces.

Equipment.—Eight Drill Points,  $\frac{1}{16}$  to  $\frac{11}{64}$  inch, are contained in the handle of each tool.

Price, each.....(YAFZO) \$3.50

Packing.—One in a pasteboard box,  $11 \times 3\frac{1}{4} \times 2\frac{1}{4}$  inches.

WEIGHT .- 1 pound.

## Hand Drill

No. 53

Capacity 0 to 5/32 inch
Chuck Patented August 13, 1895

This Hand Drill is exactly the same as No. 52, shown on the preceding page, except that the Gear has a wide face. This wide Gear face can be used in place of the crank handle in starting a Drill or for delicate work.

Handle.—Polished Rosewood with Screw Cap. Can be used for holding Drills.

Side Handle.—A small knob Side Handle of polished Rosewood is attached to the Frame.

Frame.—All Steel, polished and nickel plated.

Gears.—Large Gear is finished in red enamel, with a polished face ½ inch wide. Teeth are all machine cut. Gear and Steel Pinions are nickel plated.

Bearing.—The second Pinion forms an excellent bearing, practically without friction.

Chuck.—All Steel, with three hardened jaws for holding Round Shank Drills 0 to  $\frac{5}{32}$  inch.

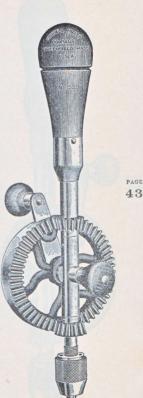
Size.—104 inches long. Net weight, 1 pound.

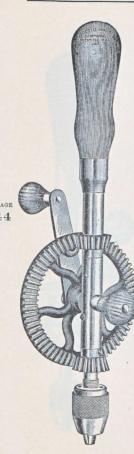
EQUIPMENT.—Eight Drill Points,  $\frac{1}{16}$  to  $\frac{11}{64}$  inch, contained in the Handle.

Price, each .... (YAGBO) \$3.90

Packing.—One in a pasteboard box,  $10\frac{3}{4} \times 4 \times 3\frac{1}{4}$  inches.

WEIGHT.-14 pounds.





# Hand Drill

No. 329

Capacity 0 to 1/4 inch Chuck Patented August 13, 1895

This will be found an excellent Drill of  $\frac{1}{4}$ -inch capacity, at a very reasonable price.

Handles.—Polished Hard Wood.

A small Side Handle is provided.

Frame.—All Steel, polished and nickel plated.

Gears.—Teeth are all machine cut. Gear and Steel Pinions are nickel plated. Large Gear is finished in red enamel with polished edges.

Bearing.—The second Pinion forms an excellent bearing, practically without friction.

CHUCK.—All Steel, with three hardened jaws for holding Round Shank Drills 0 to 4 inch.

Size.— $11\frac{3}{4}$  inches long. Net weight,  $1\frac{1}{4}$  pounds.

No Drills furnished with this tool.

Price, each . . . . . . . (YIMYT) \$3.60

Packing.—One in a pasteboard box,  $12 \times 3\frac{1}{2} \times 3\frac{1}{4}$  inches.

Weight.—1½ pounds.

# Hand Drill

No. 487

Capacity 0 to 1/4 inch Chuck Patented August 13, 1895

This Hand Drill is the same as the one previously described except that the gear has a wide face that is a great convenience in starting Drills and for delicate work.

Handles.—Polished Hard Wood; a small Side Handle is provided.

Frame.—All Steel, polished and nickel plated.

GEARS.—Teeth are all machine cut. Gear and Steel Pinions are nickel plated. Large Gear is finished in red enamel with a polished edge.

Bearing.—The second Pinion forms an excellent bearing, practically without friction.

Chuck.—All Steel, with three hardened jaws for holding Round Shank Drills 0 to  $\frac{1}{4}$  inch.

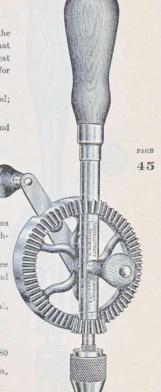
Size.— $11\frac{3}{4}$  inches long. Net weight,  $1\frac{1}{4}$  pounds.

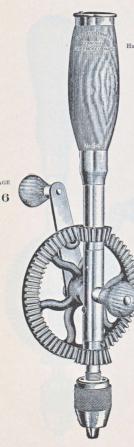
No Drills furnished with this tool.

Price, each . . . . . . . . (YOTAB) \$3.80

Packing.—One in a pasteboard box,  $12 \times 3\frac{1}{2} \times 3\frac{1}{4}$  inches.

WEIGHT .- 12 pounds.





# Hand Drill

No. 54

Capacity 0 to 1/4 inch

Chuck Patented August 13, 1895 Handle Patented September 30, 1890; November 17, 1891

This tool is the same as No. 329, shown on page 44, with the addition of a magazine handle containing Drill Points.

Handle.—Polished Hard Wood, with patented magazine holding eight Drill Points, each in a separate numbered compartment.

Frame.—All Steel, polished and nickel plated.

Gear and Steel Pinions are nickel plated. Large Gear is finished in red enamel with a polished edge.

Bearing.—The second Pinion forms an excellent bearing, practically without friction.

Chuck.—All Steel, with three hardened jaws for holding Round Shank Drills 0 to  $\frac{1}{4}$  inch.

Size.— $11\frac{1}{2}$  inches long. Net weight,  $1\frac{1}{4}$  pounds.

Equipment.—Eight Drill Points, <sup>1</sup>/<sub>16</sub> to <sup>1</sup>/<sub>6</sub> inch, contained in the Handle.

Price, each.....(YAGIZ) \$4.40

Packing.—One in a pasteboard box,  $12 \times 3\frac{1}{2} \times 3\frac{1}{4}$  inches.

WEIGHT.-12 pounds.

### Hand Drill

No. 154

Capacity 0 to 3/8 inch

Chuck Patented August 13, 1895

This very large Hand Drill is similar to our Steel Frame Breast Drills, but has a Rosewood Handle instead of a Breast Plate.

Handle.—Polished Rosewood with a Screw Cap. Can be used for holding Drills.

Frame.—All Steel, polished and nickel plated.

Gears.—Machine-cut teeth. Steel Pinions.

Bearing.—The second Pinion forms an anti-friction bearing.

Сниск.—Three-jawed. Holds Round Shank Drills 0 to 3 inch.

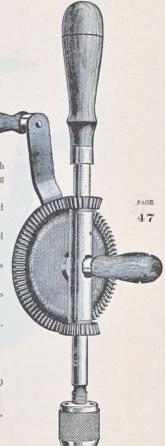
Size.— $16\frac{1}{2}$  inches long. Net weight, 3 pounds.

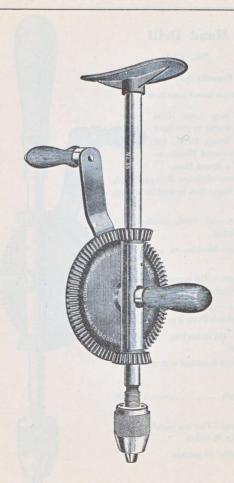
No Drills furnished with this tool.

Price, each . . . . . . (YEFEC) \$5.00

Packing.—One in a pasteboard box,  $12\frac{1}{2} \times 6\frac{1}{4} \times 2\frac{1}{2}$  inches.

WEIGHT.-31 pounds.





PAGE

No. 55

Capacity 0 to 3/8 inch Chuck Patented August 13, 1895

As these Breast Drills have only one speed they are sold at prices that are very reasonable. The steel Frames make very attractive Drills, however, and are preferred by many mechanics.

HEAD.—Enameled Iron, adjustable.

FRAME.—All Steel, polished and nickel plated.

HANDLES.-Polished Hard Wood.

Gears.—Teeth are all machine cut. Pinions are steel. Large Gear is finished in red enamel with a polished edge.

Bearing.—The second Pinion forms an excellent bearing, practically without friction.

PAGE 49

Chuck.—All Steel, with three hardened jaws for holding Round Shank Drills 0 to 3 inch.

Size.—14½ inches long. Net weight, 3¾ pounds.

Price, each.....(YAGOB) \$5.00

Packing.—One in a pasteboard box, 15 x 6½ x 2½ inches.

WEIGHT.-41 pounds.

# Breast Drill

No. 56

Capacity 0 to 1/2 inch

This Breast Drill is the same as No. 55, but it has a larger Chuck, all steel, with three hardened jaws for holding Round Shank Drills 0 to  $\frac{1}{2}$  inch.

Size.—141 inches long. Net weight, 4 pounds.

Price, each . . . . . . . . . . . . . . . . . (YAGWA) \$5.20

Packing.—One in a pasteboard box, 15 x 64 x 22 inches.

Weight.-41 pounds.

FAGE

#### Breast Drill

With Level Attachment

No. 493

Capacity 0 to 1/2 inch

Chuck Patented August 13, 1895

This Breast Drill is the same as No. 56, shown on the preceding page, with the addition of a Level.

Frame.—All Steel, polished and nickel plated.

Level.—A small Level is firmly attached to the Frame for convenience in accurately starting the Drill.

Gears.—Teeth are all machine cut. Pinions are steel. Large Gear is finished in red enamel with a polished edge.

Bearing.—The second Pinion forms an excellent bearing, practically without friction.

Chuck.—All Steel, with three hardened jaws for holding Round Shank Drills 0 to ½ inch.

Size.—14½ inches long. Net weight, 4 pounds.

Price, each.....(YOUMY) \$5.40

Packing.—One in a pasteboard box,  $15 \times 6\frac{1}{4} \times 2\frac{1}{2}$  inches.

Weight,  $-4\frac{1}{2}$  pounds.

### Breast Drill

No. 57

For Square Shanks

This Breast Drill is the same as our other Steel Frame Drills, except that the Chuck holds Square instead of Round Shank Drills.

Head.—Enameled Iron, adjustable.

Frame.—All Steel, polished and nickel plated.

HANDLES .- Polished Hard Wood.

Gears.—Teeth are all machine cut. Pinions are steel. Large Gear is finished in red enamel with a polished edge.

Bearing.—The second Pinion forms an excellent bearing, practically without friction.

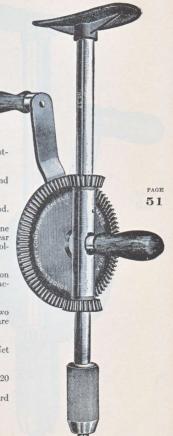
Chuck.—All Steel, with two forged steel jaws for holding Square or Bit Brace Shank Drills only.

Size.— $14\frac{1}{2}$  inches long. Net weight, 4 pounds.

Price. each.....(YAHCO) \$5.20

Packing.—One in a pasteboard box, 15 x  $6\frac{1}{4}$  x  $2\frac{1}{2}$  inches.

WEIGHT.-41 pounds.





For Square Shanks

Owing to economies in design and finish, this Breast Drill is sold at a much lower price than our other styles. It is not as efficient a tool as the others, out will be perfectly satisfactory for mechanics who have only slight use for such a tool.

The Frame of this tool is one solid piece of polished steel. Gear teeth are all machine cut.

> Pinion is steel. Large Gear is finished in red enamel with a polished edge.

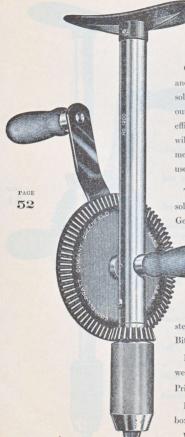
All steel Chuck has two forged steel jaws for holding Square or Bit Brace Shank Drills only.

Length,  $14\frac{1}{4}$  inches. Net weight,  $4\frac{1}{8}$  pounds.

Price, each . . . . . (ZISPA) \$4.00

Packed one in a pasteboard box,  $10\frac{1}{2} \times 6\frac{1}{4} \times 2\frac{1}{4}$  inches.

Weight, 45 pounds.



# Automatic Feed Frame

Patented June 30, 1908.

Fitting Breast Drills Nos. 6, 07, 7, 71/2, 61, 62, and 245

When any of the Goodell-Pratt Breast Drills mentioned above is fastened into this device by means of the three screws provided, it is converted into a Bench Drill with Automatic Feed.

Two different ratios of feed can be obtained by turning an adjusting screw provided for that purpose; combined with the two speeds on the Breast Drill, this makes four different feeds available.

The Automatic Feed can be instantly thrown out and the Table raised or lowered by the hand feed. The extreme distance between the Chuck and the Table is about 9 inches, and the tool will drill to the center of a 5-inch circle.

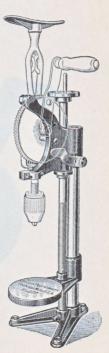
Iron parts are finished in black enamel, all steel parts are polished.

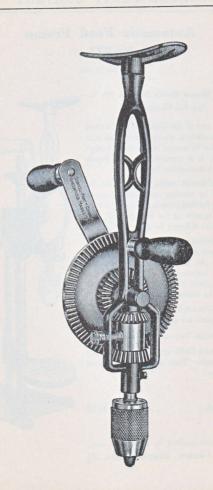
Net weight, 12 pounds.

No Breast Drills are included with this Feed Frame. They must be purchased separately.

Price, each . . . . . . . . (YIDOJ) \$8.50

Each one packed in a wooden case, 23 x 9 x 8 inches. Shipping weight, 18<sup>3</sup> pounds.





#### No. 6

Capacity 0 to 1/2 inch

Patented August 13, 1895: March 31, 1896

This Breast Drill is very popular because it represents such great value for the price at which it is sold. Please notice particularly the provision made to prevent wear on the Spindle, the steel Pinions, and the strength and reliability of the gear shifting device.

Breast Plate.—Enameled Iron, adjustable.

Frame.—Malleable Iron, black enameled.

HANDLES .- Polished Hard Wood.

Gears.—All teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel.

Speeds, changed by turning the Shifter Knob marked "Fast" and "Slow."

SPINDLE.—Accurately turned steel Spindle; has a hardened end that runs in a hardened steel cone bearing.

Chuck.—All Steel, with three hardened jaws for holding Round Shanks 0 to ½ inch. Shell is polished and nickel plated.

Size.-16 inches long. Net weight, 41 pounds.

Price, each . . . . . . . . . . . . . . . . . . (wygga) \$5.90

PACKING.—One in a pasteboard box, 17½ x 5½ x 3¼ inches.

Weight.—5 pounds.

#### Breast Drills

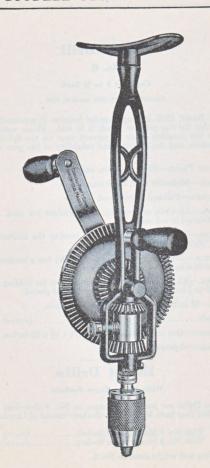
With Morse Taper Sockets

These Drills are exactly the same as No. 6 described above, except that they have Morse Taper Sockets instead of Chucks.

No. 61. With No. 1 Morse Taper Socket.....(YAIFY) \$6.00 No. 62. With No. 2 Morse Taper Socket....(YAIFX) 6.00

Packing and weight same as No. 6.

PAGE



#### Breast Drill

#### No. 6A

Capacity 0 to 1/2 inch

Patented August 13, 1895; March 31, 1896

This Drill is the same as No. 6, shown on pages 56 and 57, but with the addition of Ball Bearings. These make the tool run easier on heavy work and by reducing the wear on the Spindle greatly increase the amount of service that may be obtained from the Drill.

Breast Plate.—Enameled Iron, adjustable.

PAGE

Frame.-Malleable Iron, black enameled.

HANDLES.—Polished Hard Wood

Gears.—All teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel.

Speeds.—Two Speeds, changed by turning the Shifter Knob marked "Fast" and "Slow."

Spindle.—Accurately turned steel Spindle runs in ball bearings. It also has a hardened end that runs in a hardened steel cone bearing.

Chuck.—All Steel, with three hardened jaws for holding Round Shanks of all sizes from 0 to ½ inch in diameter.

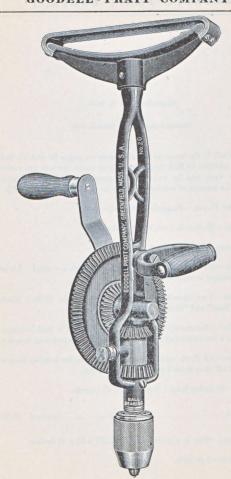
Size.—16 inches long. Net weight, 41 pounds.

Price, each . . . . . . . . . . . . . . . . . (wyghe) \$6.20

Packing.—One in a pasteboard box,  $17\frac{1}{2} \times 5\frac{1}{2} \times 3\frac{1}{4}$  inches.

WEIGHT .- 5 pounds.

....



No. 20

Capacity 0 to 1/2 inch

Patented August 13, 1895; March 31, 1896

This Drill is similar to those previously described, but is intended for heavy duty or continuous use.

Breast Plate.—Saddle design, with broad leather strap. This is much easier on the chest than the ordinary iron head.

Frame.—Malleable Iron, black enameled.

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Handless.—Crank handle is Polished Hard Wood. Side Handle is a heavy grip pattern.

Gears.—All teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel.

Speeds.—Two Speeds, changed by turning the Shifter Knob marked "Fast" and "Slow."

Spindle.—Accurately turned steel Spindle runs in ball bearings. It also has a hardened end that runs in a hardened steel cone bearing.

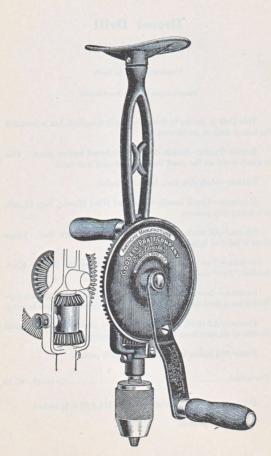
Chuck.—All Steel, with three hardened jaws for holding Round Shanks of all sizes from 0 to ½ inch in diameter.

Size.—18½ inches long. Net weight, 6½ pounds.

Price, each . . . . . . . . . . . . . . . . . . (wyuch) \$7.20

Packing.—One in a pasteboard box,  $17\frac{1}{2} \times 5\frac{1}{2} \times 3\frac{1}{4}$  inches.

WEIGHT .- 7 pounds.



PAGE

#### No. 245

Capacity 0 to 1/2 inch

Patented August 13, 1895; March 31, 1896

This Breast Drill is similar in design and construction to those viously described but the metal parts are without the protection 0 it 2

nickel plate.	Certain othe	r economies	are also intro	oduced into
s finish and conte price.	struction which	ch enable us	to sell it at a v	ery moder-

Breast Plate.—Enameled Iron, adjustable.

PAGE

Frame.—Malleable Iron, well japanned.

63

HANDLES .- Polished Hard Wood.

GEARS.-All teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel with a polished edge.

Speeds, changed by turning the Shifter Knob marked "Fast" and "Slow."

SPINDLE.—Accurately turned steel Spindle; has a hardened end that runs in a hardened steel cone bearing.

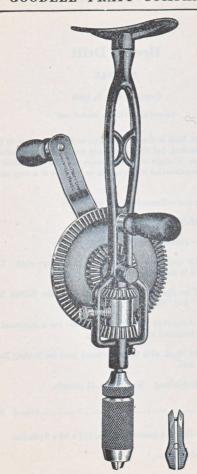
CHUCK .- All Steel, with three hardened jaws for holding Round Shanks 0 to 1 inch.

Size.-16 inches long. Net weight, 41 pounds.

Price, each .... .... (YEZIX) \$5.40

Packing.—One in a pasteboard box, 17 x 5 x 3 inches.

Weight.-5 pounds.



#### No. 7

#### For Round or Square Shanks

Patented March 31, 1896

This Drill has an improved Bit Brace Chuck with two sets of jaws, one for holding Round and the other for Square Shank Drills.

Breast Plate.—Enameled Iron, adjustable.

Frame.—Malleable Iron, well japanned.

HANDLES .- Polished Hard Wood.

Gears.—All teeth are machine cut. Pinions are steel. Large Gear is finished in red enamel.

SPEEDS.—Two Speeds, changed by turning the Shifter Knob 65 marked "Fast" and "Slow."

Spindle.—Accurately turned steel Spindle; has a hardened end that runs in a hardened steel cone bearing.

Chuck.—A strong all-steel Chuck with two pairs of forged steel jaws, one for holding Round and the other for Square Shanks.

Size.—17½ inches long. Net weight, 4¾ pounds.

Price, each.....(wyhha) \$6.20

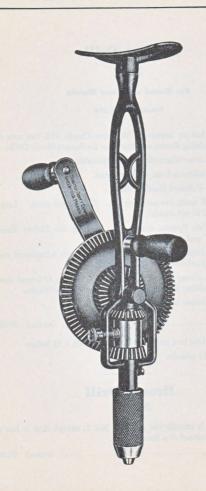
Packing.—One in a pasteboard box,  $17\frac{1}{2} \times 5\frac{1}{2} \times 3\frac{1}{4}$  inches. Weight.— $5\frac{1}{4}$  pounds.

# Breast Drill

No. 71/2

This Drill is exactly the same as No. 7, except that it has a Spade Handle instead of a Breast Plate.

Price, each.....(WYHIK) \$6.20



No. 07

#### For Square Shank Drills

Patented March 31, 1896

This Breast Drill will be found most satisfactory for use with Bit Brace, or Square Shank Drills, or Auger Bits.

Breast Plate.—Enameled Iron, adjustable.

FRAME.—Malleable Iron, black enameled.

HANDLES.-Polished Hard Wood.

GEARS.—All teeth are machine cut. Pinions are steel. Large Gear finished in red enamel.

Speeds.—Two Speeds, changed by turning the Shifter Knob marked "Fast" and "Slow."

Spindle:—Accurately turned steel Spindle; has a hardened end that runs in a hardened steel cone bearing.

Chuck.—All Steel, with two hardened forged steel jaws. This Chuck is very strong and will hold Square Shank Drills firmly and accurately.

Size.—16½ inches long. Net weight, 4½ pounds.

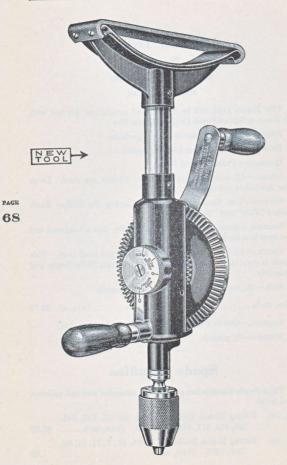
PACKING.—One in a pasteboard box,  $17\frac{1}{2} \times 5\frac{1}{2} \times 3\frac{1}{4}$  inches,

Weight.-51 pounds.

### Spade Handles

These Spade Handles are made of red enameled iron and polished hard wood.

No. 188. Fitting Breast Drills Nos. 55, 56, 57, 219, 245, 246, 473, 477, 483, 493, 1200. Price, each...... \$0.50



#### Ratchet Breast Drill

No. 677



Capacity 0 to 1/2 inch

Patent Applied For

This is a sturdy and compact Breast Drill with a simple and serviceable ratchet mechanism. Changes of speed and changes of motion are both made by turning the large and conveniently located dial on the back of the frame, giving the following movements: Fast Right Hand Ratchet; Slow Right Hand Ratchet; Fast Direct; Slow Direct.

PAGE

The breast plate is of saddle design with a broad leather strap; easier on the chest than the old style iron head. The Drill is short for use in cramped quarters.

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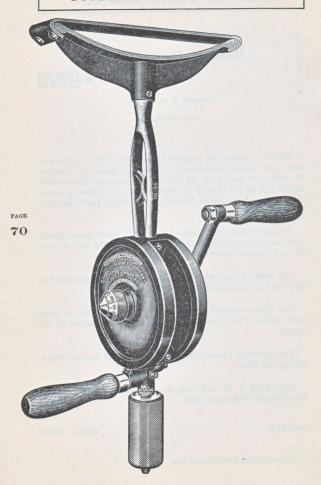
The frame of this tool is aluminum alloy of ample strength but light weight. It is finished in ebony enamel.

The Gears and steel pinions have all teeth machine cut from solid blanks. Pinions are inclosed. Large gear is finished in red enamel

The accurately turned steel spindle runs in ball bearings which take up end thrust.

. The Chuck is all steel, with three hardened jaws for holding Round Shank Drills 0 to  $\frac{1}{2}$  inch.

Packed one in a pasteboard box.



### Ratchet Breast Drill

No. 186

Capacity 0 to 1/2 inch

Patented March 31, 1896; November 29, 1910

This Drill is provided with changes of motion in addition to changes of speed. The necessary mechanism makes this tool somewhat larger and heavier than our other Breast Drills; but the mechanism is very strong and dependable, a feature that is more important than the difference in weight.

Breast Plate.—Saddle design, with broad leather strap; easier on the chest than the old style iron head.

FRAME.—Malleable Iron, black enameled.

HANDLES.—The Handles are Polished Hard Wood, extra large.

Gears.—All teeth are machine cut. Pinions are steel. Large Gears are finished in red enamel. The Gears are inclosed and protected by a black enameled iron Guard.

MOTIONS.—Four motions, changed by turning the Knurled Ring shown in the illustration. The motions are Right Hand Ratchet; Left Hand Ratchet; Reciprocating or Double Ratchet, and Direct.

Speeds, changed by turning the Shifter Knob marked "Fast" and "Slow."

SPINDLE.—Accurately turned steel Spindle runs in ball bearings. It has a hardened end that runs in a hardened steel cone bearing.

Chuck.—Special three jawed Chuck; has three hardened jaws for holding Round Shank Drills 0 to  $\frac{1}{2}$  inch. The Chuck is very strong and is designed for heavy work.

Size.—19 inches long. Net weight, 101 pounds.

Price, each.........(YERRO) \$15.00 Packing.—One in a pasteboard box,  $16\frac{1}{2} \times 6\frac{1}{2} \times 4\frac{3}{4}$  inches.

WEIGHT.-111 pounds.

### Ratchet Breast Drill

No. 187

For Square Shank Drills

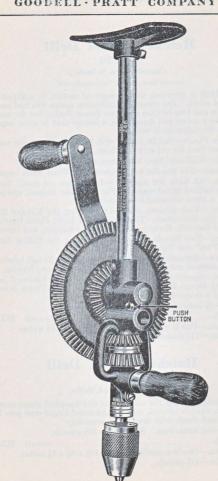
This Drill is exactly the same as the one described above except the Chuck, which is all steel, with two hardened forged steel jaws for holding round shank drills firmly and accurately.

Size.—184 inches long. Net weight, 101 pounds.

Packing.—One in a pasteboard box,  $16\frac{1}{2} \times 6\frac{1}{2} \times 4\frac{1}{2}$  inches.

Weight.-111 pounds.

PAGE



No. 246

Capacity 0 to 3/8 inch

Patented November 26, 1912

This Breast Drill has two speeds and a Chuck for holding Round Shank Drills, yet its price is very low.

BREAST PLATE.—Black Enameled Iron; adjustable.

 $F_{RAME}$ .—Black Enameled Iron. A polished steel Shank connects the Frame with the Breast Plate.

Gears.—All teeth are machine cut. Large Gear is finished in red enamel. Please note that there are two steel Pinions, one for each speed.

Speeds.—Two, changed by pushing the pin on the side of the Frame; this releases the Gear Shaft, which is then drawn out and inserted in the other bearing, where a spring latch holds it in place.

Ball Bearings.—The Spindle runs in ball bearings.

Chuck.—All Steel, with three hardened jaws for holding Round Shank Drills 0 to  $\frac{3}{8}$  inch in diameter

Size.—16% inches long. Net weight, 4% pounds.

Price, each..... (YEZOZ) \$4.50

Packing.—One in a pasteboard box,  $10\frac{1}{2} \times 5\frac{1}{2} \times 3\frac{1}{4}$  inches.

WEIGHT.-43 pounds.

#### Breast Drill

No. 477

Capacity 0 to 1/2 inch

Patented November 26, 1912

This Breast Drill is exactly the same as No. 246 above, except that the Chuck of this tool has a capacity for holding Round Shanks 0 to  $\frac{1}{2}$  inch in diameter.

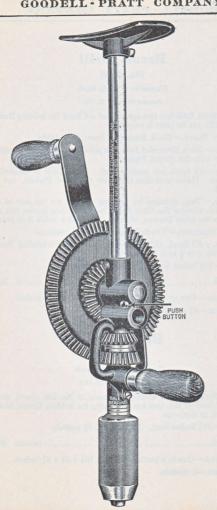
Size.— $16\frac{1}{2}$  inches long. Net weight,  $4\frac{1}{2}$  pounds.

Price, each...... (YORZE) \$5.00

PACKING.—One in a pasteboard box,  $10\frac{1}{2} \times 5\frac{1}{2} \times 3\frac{1}{4}$  inches.

Weight.-5 pounds.

PAGE



#### No. 219

For Square Shank Drills

Patented November 26, 1912

This Breast Drill is exactly the same as those described on the preceding pages, except that it has a Chuck for holding Square instead of Round Shank Drills.

BREAST PLATE.—Black Enameled Iron; adjustable.

Frame.—Black Enameled Iron. A polished steel Shank connects the Frame with the Breast Plate. PAGE

Gears.—All teeth are machine cut. Large Gear is finished in red enamel. Please note that there are two steel Pinions, one for each speed.

Speeds.—Two, changed by pushing the pin on the side of the Frame; this releases the Gear Shaft, which is then drawn out and inserted in the other bearing, where a spring latch holds it in place.

Ball Bearings.—The Spindle runs in ball bearings.

Chuck.—All Steel, with two forged jaws for holding Square or Bit Brace Shanks only.

Size.—16½ inches long. Net weight, 4¾ pounds.

Price, each.....(YERUS) \$4.80

PACKING.—One in a pasteboard box,  $10\frac{1}{2} \times 5\frac{1}{2} \times 3\frac{1}{4}$  inches.

WEIGHT .- 51 pounds,



Breast Drill

With Level Attachment No. 483

Capacity 0 to 3% inch

Patented November 26, 1912

This Breast Drill is the same as the No. 246, shown on pages 74 and 75, with the addition of a small Level for convenience in starting Drills accu-

BREAST PLATE.—Black Enameled

FRAME.—Black Enameled Iron.

LEVEL.-A Level Vial is accurately set in the polished steel Shank that connects the Breast Plate with the

GEARS.—All teeth are machine cut. Large Gear is finished in red enamel. Please note that there are two steel Pinions, one for

Speeds.-Two, changed by pushing the pin on the side of the Frame; this releases the Gear Shaft, which is then drawn out and inserted in the other

bearing, where a spring latch holds it in place.

BALL BEARINGS.—The Spindle runs in Ball Bearings.

CHUCK.—All Steel, with three hardened jaws for holding Round Shank Drills 0 to 3 inch in diameter.

Size.—161 inches long. Net weight, 41 pounds.

Price, each .... (YOSOD) \$4.70

PACKING.—One in a pasteboard box, 10½ x 5½ x 3½ inches.

WEIGHT. 43 pounds.

### **Breast Drill**

With Level Attachment

No. 473

For Square Shank Drills

Patented November 26, 1912

This Breast Drill is the same as the No. 219, shown on pages 76 and 77, with the addition of a small Level for convenience in starting Drills accurately.

Breast Plate.—Black Enameled Iron; adjustable.

Frame.—Black Enameled Iron.

Level.—A Level Vial is accurately set in the polished steel Shank that connects the Breast Plate with the Frame.

Gears.—All teeth are machine cut. Large Gear is finished in red enamel. Please note that there are two steel Pinions, one for each speed.

SPEEDS.—Two, changed by pushing the pin on the side of the Frame; this releases the Gear Shaft, which is then drawn out and inserted in the other bearing, where a spring latch holds it in place.

BALL BEARINGS.—The Spindle runs in ball bearings.

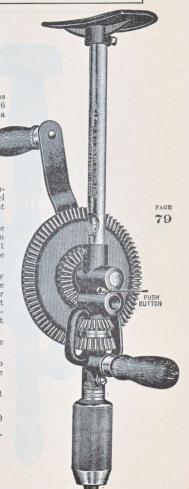
Chuck.—All Steel, with two forged jaws for holding Square or Bit Brace Shanks.

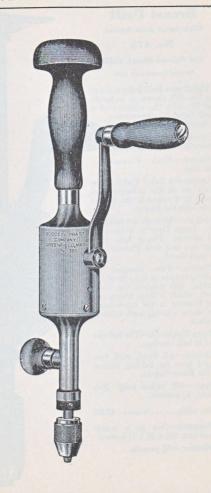
Size.— $16\frac{1}{2}$  inches long. Net weight,  $4\frac{3}{4}$  pounds.

Price, each....(YORIB) \$5.00

Packing.—One in a pasteboard box,  $10\frac{1}{2} \times 5\frac{1}{2} \times 3\frac{1}{4}$  inches.

WEIGHT. -51 pounds.





PAGE

# High Speed Hand Drill

No. 385

Capacity 0 to 1/4 inch

This Hand Drill is particularly useful for wood finishers, floor layers, or any one else who must drill a large number of small holes very rapidly.

Instead of the usual Hand Drill speeds, this Drill has the very high speed of seven revolutions of the Chuck to one turn of the Crank.

PAGE

The Gears are inclosed in an aluminum casing to protect them from dirt or breakage, and packed in grease to insure proper lubrication. All the Gears are machine cut and carefully fitted.

83

The large End Handle enables the tool to be used as either a Hand or Breast Drill. The long Drop Forged Crank with a large Crank Handle insures ample power. The Aluminum Casing makes the Drill as light as possible. Ball bearings make the Spindle run easily.

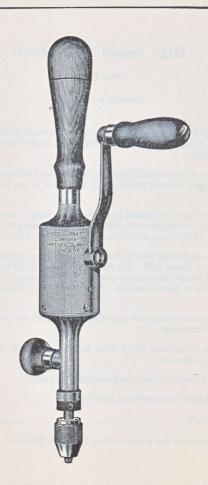
All the aluminum parts are polished and the steel parts are polished and nickel plated.

The three-jawed Chuck holds Round Shank Drills from 0 to 1/4 inch in diameter.

The tool is 151 inches long and weighs 21 pounds.

No Drill Points furnished with this tool.

Packed one in a pasteboard box, 153 x 32 x 23 inches,



## High Speed Hand Drill

No. 486

Capacity 0 to 1/4 inch

This Hand Drill, like the No. 385 shown on pages 82 and 83, is intended for drilling a large number of small holes very rapidly.

Instead of the usual Hand Drill speeds this Drill has the very high speed of seven revolutions of the Chuck to one turn of the Crank.

PAGE 85

The Gears are inclosed in an aluminum casing to protect them from dirt or breakage, and packed in grease to insure proper lubrication. All the Gears are machine cut and carefully fitted.

The polished Rosewood End Handle has a screw cap that can be removed and used for holding Drills. The long Drop Forged Crank with a large Crank Handle insures ample power. The Aluminum Casing makes the drill as light as possible. Ball bearings make the Spindle run easily.

All the aluminum parts are polished and the steel parts are polished and nickel plated.

The three-jawed Chuck holds Round Shank Drills from 0 to 1 inch in diameter.

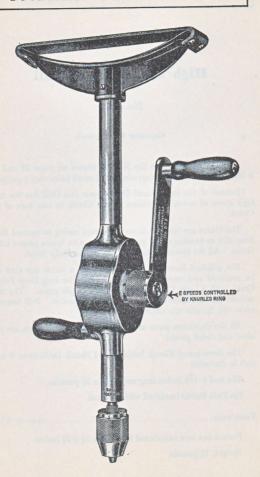
The tool is  $15\frac{1}{2}$  inches long and weighs  $2\frac{1}{4}$  pounds.

No Drill Points furnished with this tool.

Price, each... ... (YOSZA) \$7.00

Packed one in a pasteboard box,  $15\frac{3}{4} \times 3\frac{1}{2} \times 2\frac{3}{4}$  inches.

Weight, 25 pounds.



### High Speed Breast Drill

No. 279

Capacity 0 to 1/2 inch

Patented October 19, 1915.

This Breast Drill is a marvel of mechanical ingenuity and expert workmanship. It is a new tool, altogether different in design and construction from any other Drill ever manufactured.

Instead of the usual Breast Drill speeds, this tool has the very high speed of seven revolutions of the Chuck to one turn of the Crank. The slow speed is two to one.

The Speeds are changed, or the Spindle locked for opening and closing the Chuck, by simply turning the Knurled Ring between the Crank Handle and the Gear Casing.

PAGE

The Gears, which are inclosed in an aluminum casing and packed in heavy grease, are all machine cut and carefully fitted.

The construction of this tool is up to date in every particular, with many conveniences for the operator. The Saddle Breast Plate is very much easier on the chest than the old style iron head. The hollow Steel Tubes and the Aluminum Casing make the Drill as light as possible. Ball bearings make the Spindle run easily.

All the aluminum parts are polished and the steel parts are polished and nickel plated.

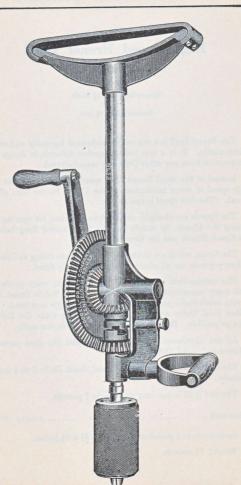
The three-jawed Chuck holds Round Shank Drills 0 to ½ inch in diameter.

The tool is 20 inches long and weighs 7 pounds.

Price, each ...... (YIDYL) \$13.00

Packed one in a pasteboard box, 19 x 51/4 x 31/2 inches.

Weight, 73 pounds.



## Giant Breast Drills

For work that is continuously  $\frac{1}{2}$  inch or larger, these tools will be found more satisfactory than ordinary Breast Drills.

Breast Plate.—Saddle design, much easier on the chest than a plain iron head.

FRAME.—Heavy Iron, black enameled.

SIDE HANDLE.—A heavy grip Side Handle is provided.

GEARS .- Teeth are all machine cut.

Speeds.—Two, changed by turning the Shifter Knob marked "Fast" and "Slow."

SPINDLE.—Lathe turned; the end runs against ball bearings.

#### No. 58

#### Capacity 0 to 1/2 inch Chuck Patented August 13, 1895

PAGE

CHUCK.—All Steel, with three hardened jaws. Holds Round 89
Shanks 0 to ½ inch.

Size. -201 inches long. Net weight, 10 pounds.

Price, each ....... \$13.00

#### No. 59

### Capacity 0 to 3/4 inch

Chuck Patented August 13, 1895

Chuck.—Strong and well made. Holds Round Shanks 0 to 3 inch.

Size. -221 inches long. Net weight, 121 pounds.

### No. 60

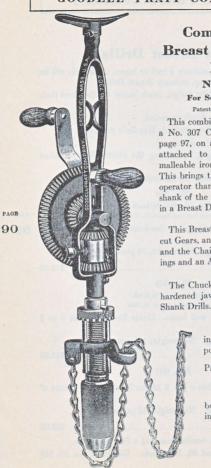
SOCKET.—This Drill has a No. 2 Morse Taper Socket instead of a Chuck.

Size. -211 inches long. Net weight, 10 pounds.

Price, each.....(YAHZE) \$13.00

Each one packed in a wooden case,  $14\frac{1}{2} \times 7\frac{1}{2} \times 6\frac{1}{4}$  inches.

Weight of Nos. 58 and 60, 14 pounds. Weight of No. 59, 162 pounds.



# Combination Breast and Chain Drill

No. 7307

For Square Shanks

Patented March 31, 1896

This combination tool consists of a No. 307 Chain Drill, shown on page 97, on a special long Spindle attached to one of our regular malleable iron frame Breast Drills. This brings the work nearer to the operator than is possible where the shank of the Chain Drill is inserted in a Breast Drill Chuck.

This Breast Drill has two Speeds, cut Gears, and other improvements, and the Chain Drill has Ball Bearings and an Automatic Feed.

The Chuck is all steel, with two hardened jaws for holding Square Shopp Drills

Length over all, 20¼ inches. Net weight, 6¼ pounds.

Price, each,

(ZOSTA) \$8.00

Packed one in a pasteboard box, 21 x  $5\frac{1}{2}$  x  $3\frac{1}{4}$  inches.

Weight, 71 pounds.

# Combination Breast and Chain Drill No. 7316

Capacity 0 to 1/2 inch Patented August 13, 1895; March 31, 1896

This combination tool consists of a No. 316 Chain Drill, shown on page 96, on a special long Spindle attached to one of our regular malleable iron frame Breast Drills. This brings the work nearer to the operator than is possible when the shank of a Chain Drill is inserted in a Breast Drill Chuck.

The Breast Drill has Speeds, cut Gears, and other improvements; and the Chain Drill has Ball Bearings and an Automatic Feed

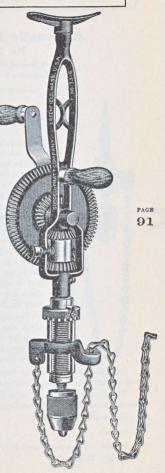
The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes from 0 to  $\frac{1}{2}$  inch in diameter.

Length over all, 193 inches. Weight, 61 pounds.

Price, each..... (zosuz) \$9.00

Packed one in a pasteboard box,  $21 \times 5\frac{1}{2} \times 3\frac{1}{4}$  inches.

Weight, 71 pounds.



# Automatic Chain Drill

No. 326

For Round Shank Drills Capacity 0 to ½ inch

Patented October 25, 1910



This Chain Drill is equipped with our new Automatic Feed Device, which saves both time and breakage. The feed does not operate until the Drill actually engages with the work; this enables the operator to run the Drill rapidly down to the work and, when it is completed, to back out just as fast as he can turn the Spindle. In other styles of feeds, one can only back out as fast as the feed operates, or else the operator is obliged to turn the feed screw back with his fingers.

Another important feature of this Automatic Feed is its adjustment. The amount of feed is governed by the Knurled Nut visible on the front of the Frame. This Nut is marked with different Drill sizes, which are turned to come opposite a fair mark on the Frame.

The squared end of the steel Spindle, which also forms the Feed Screw, is case hardened to prevent its being damaged. The Spindle runs in ball bearings which reduce the end thrust.

Each Drill is equipped with three feet of strong steel chain of our own manufacture. Special lengths can be furnished to order.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes from 0 to  $\frac{1}{2}$  inch.

Net weight, 31 pounds.

Packed one in a pasteboard box,  $9\frac{1}{4}$  x  $4\frac{1}{2}$  x  $3\frac{1}{2}$  inches.

Weight, 3½ pounds.

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# Automatic Chain Drill

No. 327

For Square Shank Drills

Patented October 25, 1910

This Chain Drill is equipped with our new Automatic Feed Device, which saves both time and breakage. The feed does not operate until the Drill actually engages with the work; this enables the operator to run the Drill rapidly down to the work and, when it is completed, to back out just as fast as he can turn the Spindle. In other styles of feeds, one can only back out as fast as the feed operates, or else the operator is obliged to turn the feed screw back with his fingers.

Another important feature of this Automatic Feed is its adjustment. The amount of feed is governed by the Knurled Nut visible on the front of the Frame. This Nut is marked with different Drill sizes, which are turned to come opposite a fair mark on the Frame.

The squared end of the steel Spindle, which also forms the Feed Screw, is case hardened to prevent its being damaged. The Spindle runs in ball bearings, which reduce the end thrust.

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Each Drill is equipped with three feet of strong steel chain of our own manufacture. Special lengths can be furnished to order.

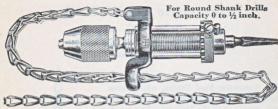
The Chuck is all steel, with two forged jaws for holding Square Shank Drills.

Net weight, 3½ pounds.

Price, each.....(YIMRO) \$5.30

Packed one in a pasteboard box,  $10 \times 4\frac{1}{2} \times 3\frac{1}{2}$  inches. Weight,  $3\frac{3}{2}$  pounds.

### Automatic Chain Drill No. 316



This Chain Drill has a very simple and serviceable Automatic Feed Device that has proved its value by many years of satisfactory use. It is not adjustable, however, like those just shown.

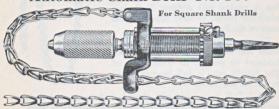
The square end of the Ball Bearing Spindle, which also forms the Feed Screw, is case hardened to prevent damage. Each Drill is equipped with three feet of strong steel chain of our own manufacture. Special lengths can be furnished to order. The iron Frame of this tool is black enameled. The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes from 0 to \( \frac{1}{2} \) inch.

The tool is 9 inches long and weighs 2½ pounds net.

Price, each ... (YIKPO) \$4.10

Packed one in a pasteboard box,  $9\frac{3}{4}$  x  $4\frac{3}{4}$  x  $2\frac{1}{2}$  in. Weight,  $2\frac{3}{4}$  lbs.

# Automatic Chain Drill No. 307



This Drill is identical with the No. 316 shown above, with the exception of the Chuck which is all steel, with two forged jaws for holding Square Shank Drills of all sizes.

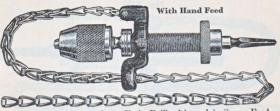
The tool is 93 inches long and weighs 23 pounds net.

Price, each ...... (YIJAK) \$3.90

Packed one in a pasteboard box,  $9\frac{3}{4} \times 4\frac{3}{4} \times 2\frac{1}{4}$  inches. Weight, 3 pounds.

PAGE

# Automatic Chain Drill No. 0316



Many mechanics prefer a Chain Drill with a plain Screw Feed, as they can absolutely control the pressure upon their Twist Drill at all times. The Hand Feed is much simpler and Drills so equipped can be sold at lower prices. The Feed on this tool is very easily controlled by the large Knurled Ring on the Feed Screw.

Each Drill is equipped with three feet of strong steel chain of our own manufacture. Special lengths can be furnished to order.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes from 0 to ½ inch.

The tool is 9 inches long and weighs 21 pounds net.

Packed one in a pasteboard box,  $9\frac{1}{2} \times 4\frac{3}{4} \times 2\frac{1}{4}$  inches.

Weight, 23 pounds.

# Chain Drill No. 0307



This Drill is identical with the No. 0316 shown above with the exception of the Chuck, which is all steel, with two forged jaws for holding Square Shank Drills of all sizes.

The tool is  $9\frac{1}{2}$  inches long and weighs  $2\frac{3}{4}$  pounds net.

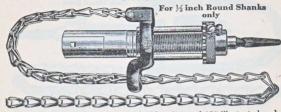
Packed one in a pasteboard box,  $9\frac{3}{4} \times 4\frac{3}{4} \times 2\frac{1}{4}$  inches.

Weight, 3 pounds.

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### Automatic Chain Drill

No. 308



This Drill is identical with the Nos. 316 and 307 illustrated and described on page 96, with the exception of the Chuck, which consists of a socket with a hardened steel set screw for holding ½-inch Round-Shanks only.

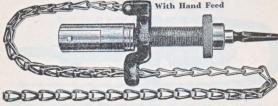
The tool is  $7\frac{1}{2}$  inches long and weighs  $2\frac{1}{4}$  pounds net.

PAGE

Packed one in a pasteboard box,  $8\frac{1}{4} \times 4\frac{3}{4} \times 2\frac{1}{4}$  inches. Weight,  $2\frac{1}{2}$  pounds.

# Chain Drill

No. 0308



This Drill is identical with the Nos. 0316 and 0307 illustrated and described on page 97, with the exception of the Chuck, which consists of a socket with a hardened steel set screw for holding ½-inch Round Shanks only.

The tool is  $7\frac{1}{2}$  inches only and weighs  $2\frac{1}{4}$  pounds net.

Packed one in a pasteboard box,  $8\frac{1}{4} \times 4\frac{3}{4} \times 2\frac{1}{4}$  inches. Weight,  $2\frac{1}{7}$  pounds.

### Giant Chain Drills

These Chain Drills are very much larger and heavier than any other Chain Drills ever manufactured.

They have two 5-foot steel sash chains attached to a  $4 \times 6$  inch iron Frame. Ball bearings reduce the end thrust. Spindles have case-hardened ends.

The Frames are black enameled and all bright steel parts are polished.

### No. 317

This Drill has a ½-inch Round Socket with a Set Screw for holding Drills with ½-inch Round Shanks.

It is 9 inches long and weighs  $5\frac{1}{2}$  pounds net.

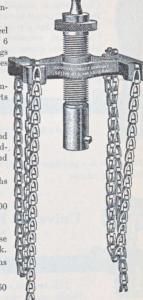
Price, each.....(YIKYR) \$5.00

### No. 318

This Drill has a No. 1 Morse Taper Socket instead of a Chuck.

It is  $10\frac{1}{2}$  inches long and weighs 6 pounds net.

Price, each..... (YILAM) \$6.50



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### No. 319

This Drill has a No. 2 Morse Taper Socket instead of a Chuck. It is 11 inches long and weighs 6 pounds net.

Packed one in a pasteboard box, 11 x 64 x 44 inches.

Weight of No. 317, 6 pounds. Weight of Nos. 318 and 319,  $6\frac{1}{2}$  pounds.

# Ratchet Attachment for Chain Drills

No. 81

This Attachment was designed for use with our Chain Drills in cramped quarters where a Bit Brace or Breast Drill cannot be turned.

The tool has a polished hard-wood Handle and a 7-inch black enameled iron Handle. The Ratchet. which is very strong, can be used for either right or left hand work. The polished Socket has a square taper hole provided with a set screw for holding square shank tools.



The tool is 6½ inches high and weighs 1½ pounds net.

100 Price, each ....... (YAREK) \$2.80

Packed one in a pasteboard box, 81 x 21 x 21 inches. Weight, 13 pounds.

# Universal Ratchet Handle No. 83

This tool has a 7-inch black enameled iron Handle and a very strong Ratchet that can be

used for either right or left hand work. The hard-wood Head runs on ball bearings. The polished Socket has a square taper hole provided with a set screw for holding square shank tools.

The tool is 41 inches high and weighs 12 pounds net.

Price, each ..... (YASEL) \$3.00

Packed one in a pasteboard box, 81 x 43 x 21 inches.

Weight, 13 pounds.



# Universal Ratchet Handle

This tool has a 7-inch enameled iron Handle and a very strong Ratchet that can be used for either right or left hand work. The hard-wood Head runs on ball bearings.

The all-steel Chuck is polished and nickel plated. It has two hardened jaws to hold Square Shank Bit Stock Drills.

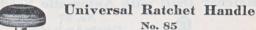
The tool is 6½ inches high and weighs 2¼ pounds net,

Price, each....

... (YASLE) \$4.30

Packed one in a pasteboard box,  $8\frac{1}{4} \times 6\frac{3}{4} \times 2\frac{1}{2}$  inches. Weight,  $2\frac{1}{7}$  pounds.

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GREEN TO MASS USA 05

No. 85 Chuck Patented August 13, 1895



With the exception of the Chuck, this tool is exactly the same as the No. 84 Ratchet Handle shown above. The Chuck of this tool is all steel, polished, and nickel plated. It has three hardened jaws for holding Round Shank Drills of all sizes up to ½ inch in diameter.

This tool is 51 inches high and weighs 2 pounds net.

Price, each.....(YASON) \$4.50

Packed one in a pasteboard box,  $8\frac{1}{4} \times 6\frac{1}{4} \times 2\frac{1}{2}$  inches.

Weight, 21 pounds.

### Ratchet Drill

No. 86

Capacity 0 to 1/2 inch Chuck Patented August 13, 1895

This Ratchet Drill is provided with a Screw Feed for use in connection with an "old man" or clamp. The Feed can be operated by turning the Knurled Handle or by using a lever in the steel center provided for this purpose. This tool has a 7-inch enameled iron Handle and a strong and positive Ratchet for either right or left, hand work. The Knurled Feed Handle and the Chuck are polished and nickel plated.

The all-steel Chuck has three hardened jaws for hold-

ing Round Shank Drills 0 to 1 inch. The tool is 73 inches high and weighs 21 pounds net. Packed one in a pasteboard box,  $8\frac{1}{4} \times 8\frac{1}{4} \times 2\frac{1}{4}$  inches.

Weight, 23 pounds.

# Ratchet Drill with Automatic Feed

No. 87 Capacity 0 to 1/2 inch

Chuck Patented August 13, 1895

This Ratchet Drill is identical with No. 86, shown above, with the addition of a Feed Device which can be attached to the Feed Screw. The friction of this device automatically regulates the feed of the Ratchet Drill.

The tool is 83 inches high with Feed

Device attached and weighs 3 pounds net. Price, each, complete as shown, (YATLA) \$6.00

Packed one in a pasteboard box, 81 x  $8\frac{1}{4} \times 2\frac{1}{4}$  inches.

Weight, 31 pounds.

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### Ratchet Drill

No. 99

Capacity 0 to % inch Chuck Patented August 18, 1895

This is a very serviceable Ratchet Drill with a threejawed Chuck, sold at a moderate price. The tool has a 7-inch black enameled iron Handle and a strong Ratchet for either right or left hand work. The Feed Screw is controlled by

a case hardened hexagon nut that can be

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operated by an ordinary wrench. The Chuck holds Round Shank Drills 0 to  $\frac{3}{8}$  inch.

Packed one in a pasteboard box,  $8\frac{1}{4} \times 6\frac{1}{4} \times 2\frac{1}{2}$  inches. Weight, 2 pounds.

# Chain Attachment for Ratchet Drills

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This ingenious little device can be used with Ratchet Drills as a clamp wherever a chain can be passed around the work. For use in connection with the No. 99 Ratchet Drill.

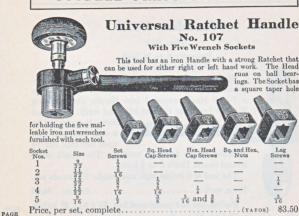
shown above, it makes a very satisfactory substitute for an automatic feed.

Four feet of heavy steel sash chain is attached.

Price, each..... (YIJNO) \$1.30

Packed one in a pasteboard box, 5½ x 4½ x 1¾ inches.

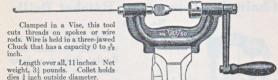
Weight, 11 pounds.



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Packed one in a pasteboard box,  $8\frac{1}{2} \times 4\frac{3}{4} \times 2\frac{1}{2}$  inches. Weight,  $2\frac{1}{2}$  pounds.

### Wire Threader No. 50



Price, each, without dies..... \$5.40

Packed one in a pasteboard box,  $9\frac{1}{4} \times 6\frac{1}{4} \times 1\frac{3}{4}$  inches. Weight,  $3\frac{1}{2}$  pounds. NOTICE:—This device can be furnished with a Collet for  $\frac{3}{4}$  instead of  $\frac{4}{4}$  inch dies if desired.

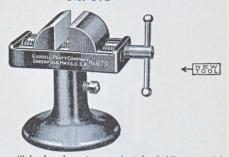
# Vise Drilling Attachment No. 51



Price, each......(YAFWE) \$4.50

Packed one in a pasteboard box, 9½ x 6½ x 1½ inches. Weight, 3½ pounds.

### Swivel Bench Vise No. 679



This Vise will be found most convenient for holding material or parts for light operations at the bench. It will swing freely or can be solidly fixed by tightening the set screw at the side. The same set screw can be used to vary the height from 51 to 71 inches.

The Vise Jaws are both movable, opening or closing equally by a right and left hand screw. The Jaws are 21 inches wide and will open 2 inches. Diameter of Base, 43 inches. Attractively finished in polished steel, black and red enamel.

Net weight, 5 pounds.

Price, each. ..... (ZAKZO) \$4.00

Packed one in a pasteboard box

### Adjustable Bench Table No. 195



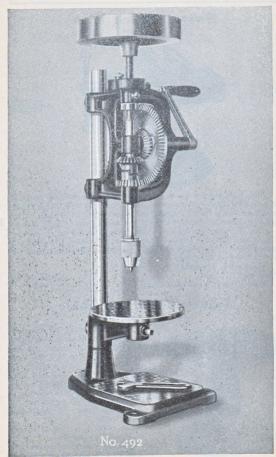
This little device will be found very convenient on a machinist's workbench. Its height can be varied from 41 to 61 inches and it is 5 inches in diameter. It has a turned and polished top, practically true, although we do not pretend that it is equal to a Surface Plate; in proportion to the price charged it represents equal value.

Price, each....(YELJE) \$3.00

Weight, 31 pounds.

Packed one in a pasteboard box,  $7\frac{1}{4} \times 7\frac{1}{4} \times 3\frac{5}{4}$  inches.

PAGE



### Bench Drills

We have been making these tools for more than twenty years, and now have a very complete line of them in many different styles and sizes, enabling any one to find a Drill adapted to his needs.

They are made with Hand Feeds controlled both by a Hand Wheel and by a Lever. There are also two different styles of Automatic Feed—one a plain Cam Feed, and the other our Patented Adjustable Intermittent Friction Feed.

This Friction Feed has a controlling nut which can be turned to bring a fair mark opposite the desired drill size stamped on the dial. This regulates the amount of feed according to the drill size and saves a great deal of Drill breakage. This Feed does not operate until the Drill actually strikes the work, and ceases to operate as soon as the Handle is turned backward. The Feed Screw runs rapidly up or down through a threaded spool when the feed is not actually operating. This saves much time.

The Gears and Pinions in all our Bench Drills are turned from solid blanks, accurately cut and carefully fitted to run smoothly. The steel Feed Screws are lathe turned. The two-speed Drills are provided with the same speed change device that has been so successful in our Breast Drills.

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Every machine is equipped with a three-jawed steel Chuck that will hold Round Shank Drills accurately and securely. This Chuck is very simple in construction and requires no spanner wrench or other tools.

Iron parts are finished in red and black enamel, and all steel parts are polished.

# Special Short Twist Drills



We can furnish Special Short Twist Drills in Sets, particularly adapted for use in our smaller Bench Drills where Drills of regular length take up too much room. All of these Drills are  $2\frac{1}{4}$  inches long.

Price per Set

SET No. 080. 1 each,  $\frac{1}{16}$ ,  $\frac{3}{32}$ ,  $\frac{1}{8}$ ,  $\frac{5}{52}$ ,  $\frac{3}{16}$ ,  $\frac{7}{32}$ ,  $\frac{1}{4}$  inch... (yapok) \$2.00 SET No. 090. 1 each,  $\frac{1}{16}$ ,  $\frac{3}{32}$ ,  $\frac{1}{8}$ ,  $\frac{5}{52}$ ,  $\frac{3}{16}$ ,  $\frac{7}{32}$ ,  $\frac{1}{4}$ ,  $\frac{9}{32}$ ,  $\frac{5}{16}$ ,  $\frac{11}{32}$ ,

3 inch.....(YAUCY) \$4.00

PAGE

# Bench Drill

Capacity 0 to 5 inch Chuck Patented August 13, 1895



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This small lever-feed Bench Drill will be found convenient for any small work. It is well designed and well made; the Gears are machine cut. The iron parts are finished in black and red enamel; steel parts are polished.

The Spindle has a travel of  $1\frac{\pi}{3}$  inches. Extreme distance from Chuck to Table is  $3\frac{\pi}{2}$  inches. The Table has a working surface,  $3 \times 3\frac{\pi}{2}$  inches. Height above Table, 11 inches. Net weight,  $3\frac{\pi}{2}$  pounds.

Three-jawed Chuck holds Round Shank

Drills 0 to  $\frac{5}{32}$  inch.

Eight Drill Points,  $\frac{1}{16}$  to  $\frac{11}{84}$  inch, are furnished.

Price, each.....(YEEMK) \$6.80

Packed one in a pasteboard box, 10½ x 6½ x 4½ inches.

Weight, 4½ pounds.

# Bench Drill and Vise No. 147

Capacity 0 to 32 inch Patented August 13, 1895

This machine is a combination of a small Drill with our 2-inch Bench Vise No. 161. The Drill has a Lever Feed, cut Gears, and is equipped with a three-jawed Chuck, capacity 0 to  $\frac{5}{82}$  inch.

This Vise is very strong and well made. Drill can be readily removed from Vise if desired.

Eight Drill Points,  $\frac{1}{16}$  to  $\frac{11}{64}$  inch, are furnished.

Net weight, 6 pounds.

Price, each.....(YEELJ) \$9.00

Packed one in a pasteboard box,  $10\frac{3}{4}$  x  $6\frac{1}{2}$  x  $4\frac{1}{2}$  inches.

Weight, 6½ pounds.



# Universal Bench Drill

No. 145 Capacity 0 to 5 inch

This Bench Drill has many unique features that are not to be found in any other similar tools. It will be found very useful in any workshop where there is much small work to be done.

The Rod which supports the Table will hold the Drill accurately in a vertical position. It can be readily set at any other angle and held firmly in place by the Thumb Screw. The Table is adjustable. Extreme distance between Chuck and Table, 7½ inches.

The whole tool is 12 inches high over all, and weighs 3 pounds. It has a Lever Feed, Cut Gears, a steel Feed Screw, and many other features. The Chuck is all steel, with three hard-ened Jaws for holding Round Shank Drills of all sizes up to \$5 inch in diameter. It will drill to the center of a 2-inch circle when in the vertical position. Net weight, 3 pounds.

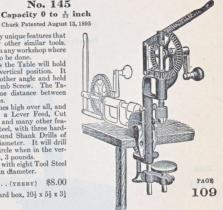
Each Drill is furnished with eight Tool Steel

Drill Points to to the inch in diameter.

..... (YEEBY) \$8.00 Price, each

Packed one in a pasteboard box, 101 x 51 x 31 inches.

Weight, 31 pounds



# Universal Bench Drill and Vise

No. 146

Capacity 0 to 52 inch

Chuck Patented August 13, 1895

This is a combination of Universal Bench Drill No. 145, which is described above, and the 2-inch Bench Vise No. 161, shown on page 254. The Drill is mounted upon the Vise with the Chuck directly above the Jaws when in a vertical position.

The Drill, which can be readily removed from the Vise when it is not desired, has all the features of the No. 145; Cut Gears, Lever Feed, steel Feed Screw, and an even greater possibility of adjustment.

The whole tool is 15 inches over all and weighs 61 pounds net. The Chuck is all steel, with three hardened Jaws for holding Round Shank Drills of all sizes up to 5 inch.

Eight Tool Steel Drill Points, 1 to 14 inch, are furnished with each tool.

Net weight, 61 pounds.

.....(YEEGD) \$11.00 Price, each.....

Packed one in a pasteboard box,  $10\frac{1}{2} \times 6\frac{3}{4} \times 4\frac{1}{2}$  inches. Weight, 7 pounds.

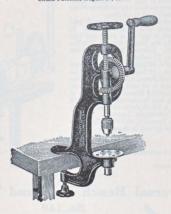


# Bench Drill

No. 8

Capacity 0 to 1/4 inch

Chuck Patented August 13, 1895



110

This Bench Drill has a solid cast iron Frame which is designed to give the maximum strength with the lightest weight consistent. It has a Hand Feed that is controlled by the Feed Wheel on the top of the steel Feed Screw.

The Gears of these Drills are all turned and cut from solid blanks, and are fitted carefully so that they run smoothly and easily.

The Table has a turned and polished top and is adjustable for height.

The iron parts of this machine are finished in red and black machine enamel. The steel parts are polished.

The all-steel Chuck has three hardened jaws for holding Round Shank Drills of all sizes from 0 to ½ inch.

Eight Fluted Tool Steel Drill Points,  $\frac{1}{16}$  to  $\frac{11}{64}$  inch, are furnished with each machine.

Height above Bench, 13 inches. Net weight, 7½ pounds.

Price, each.....(WYHJE) \$8.00

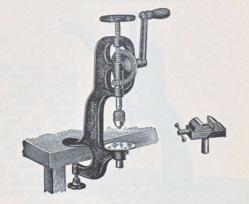
Packed one in a wooden case,  $16\frac{1}{2} \times 10 \times 6\frac{1}{4}$  inches. Shipping weight,  $12\frac{1}{2}$  pounds.

### Bench Drill

No. 81/2

Capacity 0 to 1/4 inch

Chuck Patented August 13, 1895



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This Machine is identical with the No. 8, shown and described on the preceding page, except that it has the additional equipment of a special Vise which can be used in place of the Table for holding the work.

The Jaws of the Vise are both movable and are opened equally by a right and left hand screw. The Jaws are 2 inches wide, and will open 14 inches.

Price of Machine and Vise, complete ..... (WYHOL) \$10.00

Packed one in a wooden case,  $16\frac{1}{2} \times 10 \times 6\frac{1}{4}$  inches. Shipping weight,  $13\frac{1}{2}$  pounds. Net weight, 9 pounds.

# Bench Drill Vise

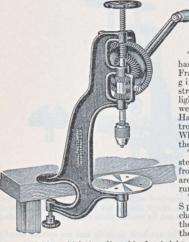
No. 81/2

# Bench Drill

No. 9

Capacity 0 to 3/8 inch

Patented August 13, 1895; March 31, 1896



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This Bench Drill has a solid cast iron Frame designed to give maximum strength with the lightest consistent weight. It has a Hand Feed controlled by the Feed Wheel on the top of the steel Feed Screw.

The Gears and steel Pinions are cut from solid blanks and are carefully fitted to run smoothly.

There are two Speeds which are changed by turning the Knurled Knob on the side of the Frame.

The Table, which is adjustable for height, has a turned and polished top.

All the iron parts of the Drill are finished in red and black enamel and the steel parts are polished.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes up to \(^2\_3\) inch in diameter.

Eight Fluted Drill Points,  $\frac{1}{16}$  to  $\frac{11}{64}$  inch in diameter, furnished with each machine.

Height above table, 18 inches. Net weight, 131 pounds.

Price, each.....(WYIBD) \$11:50

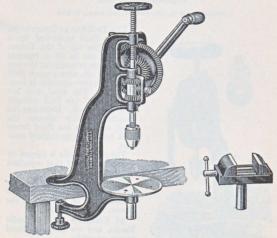
Packed one in a wooden case, 21 x 12 x 6 inches.

Shipping weight, 19 pounds.

### Bench Drill

No. 91/2

Capacity 0 to 3% inch
Patented August 13, 1895; March 31, 1896



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This Machine is identical with the No. 9, shown and described on the preceding page, except that it has the additional equipment of a special Vise which can be used in place of the Table for holding the work.

Both of the Jaws of the Vise are movable, and are opened equally by a right and left hand screw. The Jaws are  $2\frac{1}{2}$  inches wide, and will open 2 inches.

Price of Machine and Vise, complete..... (WYIJL) \$14.50

Packed one in a wooden case, 21 x 12 x 6 inches.

Shipping weight, 22 pounds.

# Bench Drill Vise

No. 91/2

Price of Separate Vise, each......(wyiln) \$3.00 Net weight, 3½ pounds.

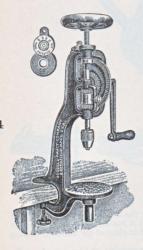
### Bench Drill

No. 490

With Patent Automatic Feed

Capacity 0 to 3/8 inch

Patented August 13, 1895; March 31, 1896; October 25, 1910



This Drill has an Intermittent Friction Feed controlled by a Nut on the top of the Frame. This Nut can be set to regulate the pressure properly for the size of Drill in use, saving much Drill breakage where operator is inexperienced. The Feed does not operate until the Drill actually strikes the work. Reversing the Handle instantly releases the Feed and runs the Feed Screw back rapidly to its original position.

The steel Spindle is topped by a Balance Wheel that equalizes

its movement.

There are two Speeds that are easily changed by turning the Shifter Knob on the front of the Frame.

All Gears are cut from solid blanks, and are carefully fitted

to run smoothly.

The Adjustable Table has a turned and polished top; other iron parts are finished in red and black enamel, and all steel parts are polished.

The Chuck is all steel, with three hardened jaws for holding Round Shank Drills of all sizes from 0 to \$\frac{3}{5}\$ inch in diameter.

Eight Fluted Tool Steel Drill Points,  $\frac{1}{16}$  to  $\frac{11}{94}$  inch, are furnished with each tool.

Height above Table, 18 inches. Net weight, 141 pounds.

Price, each....... \$17.00

Packed one in a wooden case, 21 x 12 x 6 inches. Shipping weight, 20 pounds.

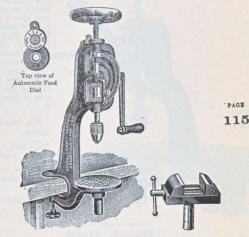
PAGE 114

# Bench Drill

No. 4901/2

With Patent Automatic Feed Capacity 0 to 3% inch

Patented August 13, 1895; March 31, 1896; October 25, 1910



This machine is identical with the No. 490, described on the preceding page, but is furnished with the additional equipment of one No. 9½ Bench Drill Vise.

This Vise has 24-inch jaws and opens 2 inches.

Net weight of machine, complete with Vise, 18 pounds.

Packed one in a wooden case, 21 x 12 x 6 inches.

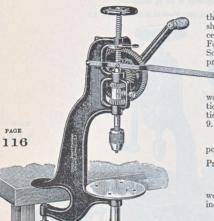
Shipping weight, 24 pounds.

### Bench Drill

No. 90

Capacity 0 to 3% inch

Patented August 13, 1895; March 31, 1896



This Drill is exactly the same as the No. 9 shown on page 112, except that it has a Lever Feed in addition to the Screw Feed ordinarily provided. This will be

found a great convenience for certain classes of

work. For further particulars, see the description of Bench Drill No.

Net weight,  $13\frac{1}{2}$  pounds.

Price, each,

(YAUDZ). \$14.50

Packed one in a wooden case, 21 x 12 x 6 inches.

Shipping weight, 19½ pounds.

# Bench Drill

This is our No. 90 Bench Drill, described above, with the additional equipment of a No. 9½-inch Bench Drill Vise, with jaws opening 2 inches.

Net weight, 163 pounds.

Price of Machine, complete with Vise,

(YAUJF) \$17.50

Packed one in a wooden case, 21 x 12 x 6 inches.

Shipping weight, 223 pounds.



### Bench Drill No. 18

Capacity 0 to ½ inch Patented August 13, 1895

This Bench Drill is attached to a rigid wall plate by means of a swinging arm 24 inches long. It can be used over a wide bench to good advantage as it will drill to the center of a 54-inch circle and will swing back against the wall when not in use.

The Feed is operated by a Hand Wheel on the top of the steel Feed Screw. There are two Speeds which are readily changed by turning the Shifter Knob on the back of the Frame.

Gears and Pinions are turned and cut from solid blanks and carefully fitted to run smoothly.

Each machine is fitted with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills of all sizes up to ½ inch in diameter.



Iron parts are finished in red and black enamel; all steel parts are polished.

Net weight of complete machine, about 53 pounds.

Packed one in a wooden case, 27 x 11 x 10 inches.

Shipping weight, 65 pounds.

## Bench Drill

With Automatic Feed No. 18A

Capacity 0 to ½ inch Patented August 13, 1895

This Drill is exactly the same as the No. 18 shown and described above, except that it has an Automatic Cam Feed in addition to the Screw Feed ordinarily provided.

Packed one in a wooden case, 27 x 11 x 10 inches,

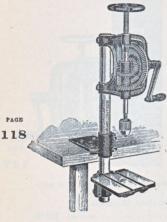
Shipping weight, 65 pounds,

### Bench Drill

No. 10

Capacity 0 to 1/2 inch

Patented August 13, 1895; March 31, 1896



All the working parts of this machine are clamped on a 1½-inch steel Tube that is 24 inches long. This is a very light but strong construction. The Feed is operated by a Hand Wheel on the top of the steel Feed Screw.

Gears and Pinions are cut from solid blanks and are carefully fitted to run smoothly.

There are two Speeds which are changed by turning the Shifter Knob in the rear of the Frame.

The Table is 6 x 6½ inches milled and T-slotted. It is adjustable up or down, and right or left. It can be entirely removed if desired, and the work blocked up from the floor.

Iron parts are finished in red and black enamel, and all steel parts are polished.

Each machine is fitted with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills of all sizes up to ½ inch in diameter.

Net weight, 30 pounds.

Packed one in a wooden case, 27 x 11 x 10 inches. Shipping weight, 40 pounds.

### Bench Drill

No. 101/2

Capacity 0 to 1/2 inch

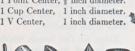
Patented August 18, 1895: March 31, 1896

This Bench Drill is identical with No 10 shown and described on the preceding page, except that it has the additional equipment of a special Vise and a set of Centers.

Both jaws of the Vise are movable and are opened equally by a right and left hand screw. The jaws are 21 inches wide, and will open 2 inches. The sides of the Vise engage the slots in the Table, which prevent its turning.

There are three steel centers: 1 Point Center. 5 inch diameter.

1 Cup Center, 1 inch diameter.







These Centers fit the hole in the center of the Table. They will be found very useful for a variety of special work. Net weight, 331 pounds.

Price of Machine, complete with Attachments..... (WYIKE) \$25.00 Packed one in a wooden case, 27 x 11 x 10 inches. Shipping weight, 43½ pounds.

### Bench Drill Vise and Centers No. 101/2

Price of separate Vise, each (WYJMO)	\$2.80
Net weight, 3 pounds.	
Price of Centers, per set of three	1.50

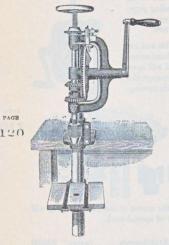
Net weight per set, & pound.

### Bench Drill

No. 11

Capacity 0 to 1/2 inch

Patented August 13; 1895; March 31, 1896



This Drill has an Automatic Cam Feed in addition to the Hand Feed ordinarily provided. This Feed is simple and practical and will be appreciated wherever such a Feed is desired.

All the working parts of this machine are clamped on a 1½-inch steel tube that is 24 inches long.

Gears and Pinions are cut from solid blanks and are carefully fitted to run smoothly.

There are two Speeds, which are changed by turning the Shifter Knob in the rear of the Frame.

The Table is  $6 \times 6\frac{1}{2}$  inches, milled and T-slotted. It is adjustable up or down and right or left. It can be entirely removed if desired, and the work blocked up from the floor.

Iron parts are finished in red and black enamel, and all steel parts are polished.

Each machine is fitted with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills 0 to ½ inch in diameter.

Net weight, 30 pounds.

Price, each.....(WYKAK) \$23.00

Packed one in a wooden case, 27 x 11 x 10 inches.

Shipping weight, 40 pounds.

## Bench Drill

No. 11 1/2

Capacity 0 to ½ inch
Patented August 18, 1895; March 31, 1896

This Machine is identical with the No. 11, shown and described on the preceding page, except that it has the additional equipment of a No. 10½ Bench Drill Vise and Set of Centers.



Both jaws of the Vise are movable and are opened equally by a right and left hand screw. The jaws are 2½ inches wide and open 2 inches. The sides of the Vise engage the slots in the Table which prevent its turning.

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There are three steel Centers:

1 Point Center, \$ inch diameter.

1 Cup Center, 1 inch diameter.

1 V Center, 1 inch diameter.

These Centers fit the hole in the center of the Table. They will be found very useful for a variety of special work.

Net weight, 33 pounds.

Price of Machine, complete with Attachments ..... (WYKLE) \$27.00

Packed one in a wooden case, 27 x 11 x 10 inches. Shipping weight, 43 pounds.

For Prices of Separate Vises and Centers, see page 119.

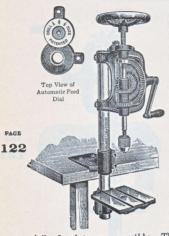
# Bench Drill

With Patent Automatic Feed

Capacity 0 to 1/2 inch

Patented August 13, 1895; March 31, 1896; October 25, 1910

This Drill has



This Drill has an Intermittent Friction Feed, controlled by a Nut on the top of the Frame. This Nut can be set to regulate the pressure properly for the size of Drill in use, saving much Drill breakage where the operator is inexperienced. The Feed does not operate until the Drill actually strikes the work, but runs the Feed Screw rapidly down to the work, saving a great deal of time. Reversing the Handle also releases the Feed instantly. The steel Spindle is topped by a Balance Wheel that equalizes its movement.

All the working parts of this machine are clamped on a 14-inch steel Tube that is 24 inches long. This is a light but strong construction. Gears and Pinions are cut from solid blanks and are care-

fully fitted to run smoothly. There are two Speeds, which are changed by turning the Shifter Knob on the back of the Frame.

The table is  $6 \times 6\frac{1}{2}$  inches, milled and T-slotted. It is adjustable up or down, and right or left. It can be entirely removed, if desired, and the work blocked up from the floor.

Iron parts are finished in red and black enamel and all steel parts,

are polished.

Each machine is fitted with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills of all sizes up to inch in diameter.

Great care must be exercised when this machine is used with Drills under a inch in size.

Net weight, 35 pounds.

Price, each .... (YOTUG) \$28.00

Packed one in a wooden case, 27 x 11 x 10 inches. Shipping weight, 45 pounds.

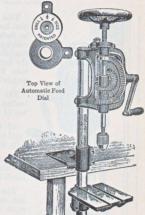
# Bench Drill

With Patent Automatic Feed

Capacity 0 to 1/2 inch

Patented August 13, 1895; March 31, 1896; October 25, 1910

This machine is identical with the No. 491, shown and described on the preceding page, except that it has the additional equipment of a No. 10½ Bench Drill Vise and Set of Centers.



PAGE.

Both jaws of the Vise are movable and are opened equally by a right and left hand screw. The jaws are 2½ inches wide and open 2 inches. The sides of the Vise engage the slots in the Table which prevent its turning.

There are three steel Centers:

1 Point Center, § inch diameter.

1 Cup Center, 1 inch diameter. 1 V Center, 1 inch diameter.

These Centers fit the hole in the center of the Table. They will be found very useful for a variety of special work.

Great care must be exercised when this machine is used with Drills under inch in size.

Net weight, 38 pounds.

Price of Machine, complete with Attachments.....(YOTTH) \$31.00

Packed one in a wooden case, 27 x 11 x 10 inches.

Shipping weight, 48 pounds.

For Prices of Separate Vises and Centers, see page 119.

# Wall Drilling Machine

No. 63

Capacity 0 to 1/2 inch

Patented August 13, 1895

This Machine is provided with two iron brackets so arranged that it can be fastened to a post or to the wall making it a very convenient drilling machine without occupying space upon the bench. The Shaft is hollow steel tube 1½ inches in diameter and 33 inches long.

. The Drill has a Hand Feed controlled by turning the Feed Wheel on top of the steel Feed Screw.

All Gears and Pinions are turned and cut from solid blanks and are carefully fitted to run smoothly.

There are two Speeds that are readily changed by turning the Shifter Knob in the rear of the Frame.

The Table is milled and T-slotted, and can be adjusted up or down and right or left. Extreme distance between the Chuck and Table is 11½ inches.

Iron parts are finished in red and black enamel. All steel parts are polished.

Each machine is provided with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills of all sizes from 0 to  $\frac{1}{2}$  inch.

Net weight, 35 pounds.

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Packed one in a wooden case, 37 x 10 x 9 inches.

Shipping weight, 49 pounds.

### Wall Drilling Machine No. 631/2

Capacity 0 to 1/2 inch Patented August 13, 1895

This Machine is identical with No. 63, shown and described on the preceding page, but it has the additional equipment of one No. 101 Bench Drill Vise and a set of three steel Centers.



Both jaws of the Vise are movable and are opened equally by a right and left hand screw. The jaws are 24 inches wide and open 2 inches. The sides of the Vise engage the slots in the Table, which prevents its turning.

There are three steel Centers: 1 Point Center, 5 inch diameter. 1 Cup Center, 1 inch diameter. 1 V Center. 1 inch diameter.

These Centers fit the hole in will be found very useful for a variety of special work.

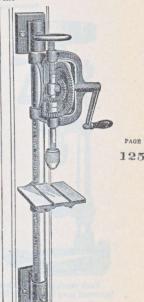
the center of the Table. They Net weight, 39 pounds.

Price of Machine, complete with Attachments. . . . . (YAJBE) \$27.00

Packed one in a wooden case, 37 x 10 x 9 inches.

Shipping weight, 53 pounds.

For prices of Separate Vises and Centers, see page 119.

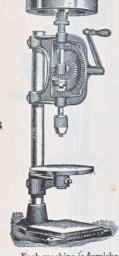


### Bench Drill

No. 72

Capacity 0 to 1/2 inch

Patented August 13, 1895; March 31, 1896



Drill under & inch in size.

All the working parts of this machine are clamped on a 1½-inch steel Tube. This is a light but strong construction. The Spindle is provided with a heavy Balance Wheel 8 inches in diameter, 1½-inch face, that gives it momentum and equalizes its movement. The Spindle runs inside of the Feed Screw, and the Balance Wheel rests on a Knurled Nut, which is turned to run the Feed Screw up or down.

The Gears, which are turned and cut from blanks, are carefully fitted to run smoothly. There are two Speeds, which are changed by turning the Shifter Knob in the rear of the Frame.

Two Tables are furnished: a Round Table, 7 inches in diameter, that can be swung out of the way; and a 6 x 7 inch Rectangular Table. The extreme distance from the Chuck to the Round Table is 4½ inches; from the Chuck to the Rectangular Table is 11 inches.

All steel parts and also Table Tops and edge of Balance Wheel are polished, other iron parts are finished in red and black enamel.

Each machine is furnished with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills 0 to  $\frac12$  inch.

Height of Tube, 24½ inches. Net weight of machine, 47 pounds.

Great care must be exercised when this machine is used with a

Price, each.....(YANAF) \$30.00

Packed one in a wooden case, 28 x 14 x 12 inches. Shipping weight, 65 pounds.

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#### Bench Drill

No. 721/2

Capacity 0 to 1/2 inch

Patented August 13, 1895; March 31, 1896

This Bench Drill is identical with the No. 72, shown and described on the preceding page, except that it has a special Vise on the swinging arm in place of the Round Table.

Both jaws of the Vise are movable and are opened equally by a right and left hand screw. The jaws are 24 inches wide and will open 21 inches. The swinging arm to which the Vise is attached can be swung to one side when the operator desires to use the Rectangular Table.

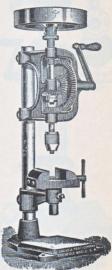
Great care must be exercised when this machine is used with Drills under inch in size.

Net weight, 45 pounds.

Price of Machine, complete with Vise ...... (YANFA) \$33.00

Packed one in a wooden case, 28 x 14 x 12 inches.

Shipping weight, 63 pounds.



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### Bench Drill Vise No. 721/2

Price of Separate Vise, each. ..... (YANGE) \$3.80

Net weight, 4 pounds.

## Bench Drill

With Patent Automatic Feed Capacity 0 to ½ inch

Patented August 13, 1895; March 31, 1896; October 25, 1910



This Drill has an Intermittent Friction Feed controlled by a Nut on the top of the Frame. This Nut can be set to regulate the pressure properly for the size of Drill in use, saving much Drill breakage, where the operator is inexperienced. The Feed does not operate until the Drill actually strikes the work, but runs the Feed Screw rapidly down to the work, saving a great deal of time. Reversing the Handle also releases the Feed instantly. The steel Spindle is topped by an 8 x 11 inch Balance Wheel which gives it momentum and equalizes its movement.

The Gears which are turned and cut from solid blanks are carefully fitted to run smoothly. There are two Speeds which are changed by turning the Shifter Knob in the rear of the Frame.

Two Tables are furnished: a Round Table 7 inches in diameter that can be swung out of the way; and a 6 x 7 inch Rectangular Table. The extreme distance from the Chuck to the Round Table is 4½ inches, from the Chuck to the Rectangular Table is 11 inches. All steel parts and also Table

All steel parts and also Table Tops and edge of Balance Wheel

are polished, other iron parts are finished in red and black enamel.

Each machine is furnished with an all-steel Chuck that has three hardened jaws for holding Round Shank Drills 0 to ½ inch.

Height of Tube, 24½ inches Net weight of Machine, 48 pounds.

Great care must be exercised when this machine is used with a Drill under ½ inch in size.

Price, each.....(YOURS) · \$36.00

Packed one in a wooden case, 28 x 14 x 12 inches. Shipping weight, 66 pounds.

## Bench Drill

No. 4921/2

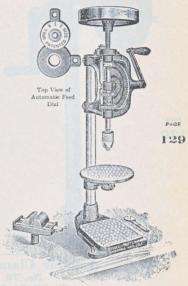
With Patent Automatic Feed Capacity 0 to ½ inch

Patented August 13, 1895; March 31, 1896; October 25, 1910

This Bench Drill is identical with the No. 492, shown and described on the preceding page, except that it has the additional equipment of a No. 72½ Bench Drill Vise which can be used in place of the Round Table.

Both jaws of the Vise are movable, and are opened equally by a right and left hand screw. The jaws are 2½ inches wide and will open 2½ inches. The swinging arm, to which the Vise is attached, can be swung to one side when the operator desires to use the Rectangular Table.

Net weight, 52 pounds.

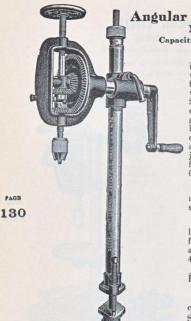


Great care must be exercised when this machine is used with Drills under \( \frac{1}{8} \) inch in size.

Price of Machine, complete with Vise....... (YOUJT) \$39.00

Packed one in a wooden case, 28 x 14 x 12 inches.

Shipping weight, 70 pounds.



Angular Clamp Drill No. 74

Capacity 0 to 1/2 inch

This Angular Clamp Drill is a well made machine that will be greatly appreciated for all kinds of heavy repair work. It has a tubular Shaft eliminating all unnecessary weight, but giving great strength. The Drill has two Speeds that are easily changed, cut Gears, and a Hand Feed. A three-jawed Chuck is provided for holding Round Shanks 0 to ½ inch.

All iron parts are finished in red and black enamel; steel parts are polished

Standard Tube, 24 inches long. Will drill 8 inches from Tube. Length over all, 31 inches. Net weight, 42 pounds.

Price, each. (YANLY) \$36.00

Packed one in a wooden case, 36 x 17 x 7 inches.
Shipping weight, 57 pounds.

## Angular Clamp Drill No. 76

Capacity 0 to 1 inch

This tool is similar to the one showa above, but is much larger and heavier.

The Spindle has a socket for holding ½-inch Round Shanks.. A three-jawed Chuck fitting this Socket holds Round Shank Drills 0 to ½ inch. With this machine holes 1 inch in diameter can be drilled with comparative ease. The Shaft is 2 inches in diameter and 30 inches long. Net weight of machine, 75 pounds.

Price, each.....(YAOPK) \$50.00

Shipping weight, 94 pounds.

## Universal Clamp Drill

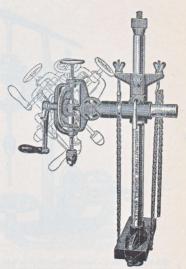
No. 112

Capacity 0 to 3/8 inch

This is a Universal Claimp Drilling Machine with a Ratchet Attachment. It will, we believe, drill in any conceivable position, and the ratchet mechanism enables it to be turned in any corner For various kinds of repair work it will prove very valuable.

The Machine has a tubular Shaft eliminating all unnecessary weight. The Head is clamped to the Shaft by means of a swivel The Shaft can be held by the Clamp or by the Chain.

The Drill has a Hand Feed and is provided with two speeds that can be readily changed. It is equipped with a three-jawed Chuck for holding Round Shank Drills 0 to  $\frac{3}{8}$  inch.



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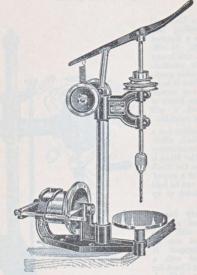
Iron parts are finished in red and black enamel; steel parts are polished.

Standard Tube, 24 inches long. Chain, 5 feet long. Will drill 11½ inches from center of tube. Length over all, 34 inches. Net weight, 33 pounds.

Packed one in a wooden case, 36 x 17 x 7 inches. Shipping weight, 50 pounds.

# Power Bench Drill

Capacity 0 to 1/4 inch Chuck Patented August 13, 1895



This little machine is a Sensitive Bench Drill for light work. It is of good quality but it is sold for a very low price. The Head is enameled iron attached to a polished steel Shank.

Each machine is fitted with a three-jawed steel Chuck for holding Round Shank Drills of all sizes up to ½ inch in diameter.

The machine drills to the center of a 6½-inch circle. The Spindle can be set for any movement 3½ inches or less. The Table is 4½ inches in diameter and has a 2½-inch adjustment. Extreme distance from Chuck to Table is 8 inches.

The loose pulley is 3 inches in diameter with a 1-inch face. The steps are  $3\frac{1}{2}$  and  $4\frac{1}{2}$  inches made for  $\frac{1}{4}$ -inch round belt. No belt is furnished.

Total height, 24 inches. Net weight, 20 pounds.

Price, each ..... (WYKNO) \$24.00

Packed one in a wooden case, 20 x 17 x 8 inches.

Shipping weight, 32 pounds.

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# Foot Power Drilling Machine

No. 79

Capacity 0 to 1/4 inch

Chuck Patented August 13, 1895

This sensitive, High Speed Foot Power Drilling Machine is a great improvement over the original model of this machine that we brought out several years ago. It has a Double Treadle Foot Power with a Geared Drive, making it possible to use the machine either standing up or sitting down: and with either one or both feet.

The Feed of this Drill is operated by raising the Table by means of the Lever provided. The Pulleys have two steps, making two Speeds possible.

The Spindle has two spottings in which the Ball Bearing Collar may be located. When sent out, the Collar is in the highest spotting, giving a distance of 4 inches from Chuck to Table. When the Collar is in the spotting next to the Chuck, the distance from Chuck to Table is 6 inches.

Each machine is fitted with an all-steel Chuck that has three hardened Jaws for holding Round Shank Drills 0 to \(^1\_4\) inch in diameter. It will drill to the center of a 6-inch circle.

Each machine is attractively finished in red and black machine enamel with steel parts polished. The necessary Belt is furnished.

Height, 54 inches. Height to Table, 36 inches. Net weight, 110 pounds.

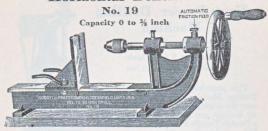
Price, each.... (YAPIJ) \$70.00

Packed in a wooden case, 35 x 14 x 12½ inches.

Shipping weight, 135 pounds.



### Horizontal Bench Drill



This Machine has a steel Feed Screw and Spindle that is provided with an Automatic Friction Feed which is regulated by turning the thumb screw shown in the illustration. The Bed and Tail Stock are milled on face and bearing surfaces. The Tail Stock is clamped by means of two handles. The machine is finished in red and black machine enamel.

Each machine is provided with an all-steel Chuck with three hardened Jaws for

PAGE "

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Lacting machine is provided with an anisted cluck with three narcened Jaws 107 holding Round Shank Drills 0 to § inch in diameter.

Total length of Bed, 21 inches: Milled Bed, 12§ inches. The Spindle runs 3 inches and drills to the center of a 7§-inch circle. Extreme distance between Chuck and Tail Stock, 10 inches. Height above bench, 10 inches. Length over all, 25§ inches. Net weight, 16½ pounds.

... (WYTVE) \$20.00 Price, each . . Packed in a wooden case, 23 x 11 x 8 inches. Shipping weight, 26 pounds.

#### Track Drilling Machine No. 113

This is a well made and nicely finished machine fitted with a Tubular Shaft for minimizing the weight. The Spindle is adjustable for any distance from  $7\frac{3}{4}$  inches to  $13\frac{1}{4}$  inches from the justance for any custance from 17 inches to 153 inches from the center of the tube. The Boring Head travels 22 inches. Sliding Rest travels 29 inches. Total length, 663 inches. Netweight, 67 pounds. The spindle has a \$-inch steel; specket for holding drills with \$-inch round shanks. A three-jawed Chuck is also provided for holding Round Shank Drills of all sizes up to ½ inch in diameter. No. III3

Price, each (YAZUV) \$50.00

Packed in a wooden case, 36 x 22½ x 10½ inches. Shipping weight, 105 pounds.

## Horseshoers' Butteris



These Butterises are well designed tools for paring hoofs. The Handle is adjustable for length, and shaped to fit the arm, making it very easy to use.

The Blades are made of crucible steel, hardened, tempered, and ground. It will

#### Horseshoers' Butteris



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Belt Tightener

No. 39

This is a strong and very rapid device for drawing belts together for the purpose of lacing. It is the most satisfactory device ever made for the purpose. It can be put into place in an instant and tightened by two or three throws of the levers. It takes belt up to and including 104 inches with these.



Price, each (YADAT) \$15.00
Packed one in a wooden case, 29 x 5 x 5 inches. Shipping weight, 19 pounds.

### Goodell-Pratt Drill Chucks

Patented August 13, 1895



These Chucks are fitted with lathe-turned ½-inch or ½1-inch abanks. In ordering, be sure to specify which size is desired.

		Pr	ice, Each
PAGE	No. 14.	Capacity 0 to 5/32 inch(WYMEN)	\$1.40
100	No. 15.	Capacity 0 to \(\frac{1}{4}\) inch(wynus)	1.80
138	No. 151	Capacity 0 to $\frac{1}{4}$ inch(WYNUS) Capacity 0 to $\frac{3}{8}$ inch(WYPOS)	2.20
		Capacity 0 to ½ inch(wyrov)	3.00

Each Chuck packed in a separate pasteboard box.

Half-inch Shanks sent unless otherwise specified.

## Goodell-Pratt Drill Chucks.

### Left Hand

Patented August 13, 1895

These Chucks are exactly the same as those described above, except that the shanks are made with left-handed threads, and can be used only with machines that run left-handed. They are made with  $\frac{1}{2}$ -inch shanks only.

	11	ice, Lach
No. 14L.H.	Capacity 0 to 5/32 inch(WYMUR)	\$2.50
No. 15L.H.	Capacity 0 to \( \frac{1}{4} \) inch(wyops)	3.00
No. 151L.H.	Capacity 0 to 3 inch(WYRAR)	3.50
	Capacity 0 to 1 inch(wysas)	4.50

Each Chuck in a packed separate pasteboard box.

#### Goodell-Pratt Drill Chucks

With Morse Taper Shanks

Patented August 13, 1895



These Drill Chucks are provided with standard No. 1 and No. 2 Morse Taper Shanks. In ordering, please specify which size is desired

		Pri	ce, Each
No. 14M.T.	Capacity 0 to 5	inch(WYNAN)	\$2.00
No. 15M.T.		inch(wyorv)	2.50
No. 151M.T.	Capacity 0 to 3	inch(WYRIT)	3.30
No. 16M.T.	Capacity 0 to 1	inch(wyset)	4.00

Each Chuck packed in a separate pasteboard box.

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## Goodell-Pratt Drill Chucks

With Cross Handles

Patented August 13, 1895



These Chucks are exactly the same as those with 1-inch shanks with the addition of a Cross Handle that will be found very convenient for holding Reamers and Taps for cleaning out holes and removing burrs. The Cross Handle can be removed when not desired and the Chuck used as a regular Straight Shank Chuck.

		ice, Each
No. 14C.	Capacity 0 to $\frac{5}{32}$ inch(WYMMA)	\$1.80
No. 15C.	Capacity 0 to \(\frac{1}{4}\) inch(wyorm)	2.20
No. 15½C.	Capacity 0 to 3 inch(wypso)	3.00
No. 16C.	Capacity 0 to 1 inch. (WYRSE)	3.50

Each Chuck packed in a separate pasteboard box.

PAGE

#### Goodell-Pratt Drill Chucks

With Bit Brace Shanks
Patented August 13, 1895



These Drill Chucks have taper square shanks that can be held in an ordinary Bit Brace Chuck. The shanks are milled on centers to keep them in perfect alignment and are hardened so that they will not be damaged by the jaws in which they are held.

		Pı	ice, Each
	No. 14B.	Capacity 0 to $\frac{5}{32}$ inch(WYMIP)	\$1.80
	No. 15B.	Capacity 0 to 1/4 inch(WYOHL)	2.20
PAGE	No. 151B:	Capacity 0 to 3 inch(WYPPA)	3.00
	No. 16B.	Capacity 0 to ½ inch(WYRRA)	3.50
140	- 1 01	Capacity U to 2 inch(WYRRA)	

Each Chuck packed in a separate pasteboard box.

## Goodell-Pratt Drill Chucks

With Taper Square Shanks



These Chucks will be found very useful when it is desired to use Round Shank Twist Drills in connection with a Ratchet Drill. They have  $\frac{3}{4} \times \frac{1}{2} \times 1\frac{3}{4}$  inch square taper shanks fitting No. 2 Ratchets. The shanks are milled on centers, and carefully hardened.

	Pr	rice, Each
No. 14R.	Capacity 0 to $\frac{5}{32}$ inch(WYMNE)	\$2.50
No. 15R.	Capacity 0 to 1 inch(wyolp)	3.00
No. 15½R.	Capacity 0 to 3 inch(WYPUT)	3.50
No. 16R.	Capacity 0 to ½ inch(wyrvo)	4.50

Each Chuck packed in a separate pasteboard box.

#### Goodell-Pratt Drill Chuck

No. 131/2

Capacity 0 to 16 inch

Although it has an extremely small capacity, this Chuck will be found excellent for any kind of small work. We sell them in very large quantities for use upon small Multiple Spindle



Drilling Machines, Button Machinery and Dental Drills.

Each Chuck is made entirely of steel, with three hardened jaws that will hold Round Shank Drills of all sizes up to \( \frac{1}{2} \) inch. The construction of these Chucks is extremely simple and they are not easy to get out of order.

Each Chuck is furnished with a \frac{1}{2}-inch shank unless otherwise specified. Length over all, 4 inches. Net weight, 4 ounces.

Price, each.....(WYMAM) \$1.40

Packed one in a pasteboard box, 41 x 11 x 11 inches.

We shall be pleased to quote special prices on these Chucks when ordered without shanks in large quantities.

## Goodell-Pratt Drill Chuck

No. 161/2

Capacity 0 to 3/4 inch

Patented August 13, 1895





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This Chuck is very much the same as the other Goodell-Pratt Drill Chucks, but it is of greater capacity and consequently is very much larger and heavier. It has a capacity up to \(^1\) inch and will be found an excellent tool for holding Drills up to its extreme capacity.

Price, each, with 1-inch Straight Shank..................(wysiv) \$7.50 Price, each, with No. 3 Morse Taper Shank.....................(wyssa) 10.00

Packed one in a pasteboard box,  $10\frac{3}{4}$  x  $2\frac{3}{4}$  x  $2\frac{3}{4}$  inches. Weight,  $4\frac{3}{4}$  pounds.

#### Greenfield Drill Chucks

With Straight Round Shank



The Shell of these Chucks is all one piece; the Shank forming the Back of the Chuck. The shank thread is concealed and cannot be damaged by rough handling. These Chucks have a Ball Bearing in the center as shown in the illustration on page 137. They are regularly furnished with ½-inch round shanks and ½¼-inch round shanks.

Half-inch shanks will always be furnished unless otherwise ordered.

Capacity

Price, Each

		Capacity	ice, Each
PAGE	No. 1501.	0 to 5/3/2 inch	\$2.00
		0 to \( \frac{1}{4} \) inch(zivoy)	2.50
142	No.,1503.	0 to \(\frac{3}{8}\) inch(zizav)	3.50
	No. 1504.	0 to ½ inch(zizva)	5.00

Each Chuck packed in a separate pasteboard box.

#### Greenfield Drill Chucks

With Bit Brace Shanks



These Chucks are provided with taper square shanks that can be held in any two-jawed chuck on a Bit Brace, Breast Drill, or similar tool.

		Price, Each
No. 1501B.	0 to $\frac{5}{32}$ inch(ZIYMP	\$2.50
No. 1502B.	0 to \(\frac{1}{4}\) inch(ziyuz	3.00
No. 1503B.	0 to \(\frac{3}{8}\) inch(zizoz	) 4.00
No. 1504B.	0 to ½ inch(zizzo	5.50

Each Chuck packed in a separate pasteboard box.

### Greenfield Drill Chucks

With Morse Taper Shanks



These Chucks are provided with standard Morse Taper Shanks Nos. 1, 2, 3, and Each Chuck will run accurately on its own shank.

In ordering be sure to specify which size shank is desired.

	Capacity	N	Price, Each o. 1 or No. 2	No. 3 or No. 4
No. 1501M.T.	0 to $\frac{5}{32}$	inch(ZIYLN)	\$3.00	
No. 1502M.T.	0 to 1	inch(ZIYTA)	3.50	
No. 1503M.T.	0 to 3	inch(zızıx)	4.50	\$5.75
No. 1504M.T.	0 to ½	inch(zizwe)	6.00	7.25

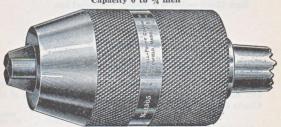
Each Chuck packed in a separate pasteboard box.

## Greenfield Drill Chucks

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No. 1505 Capacity 0 to 3/4 inch



These Chucks are very much similar in construction to the smaller sizes of Greenfield Drill Chucks but are very much larger and heavier. They are built to stand up under the hardest kind of shop use, and will hold accurately all sizes of drills up to their extreme capacity.

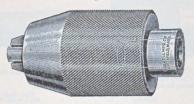
These Chucks can be provided with either a No. 3 Morse Taper Shank, a No. 4 · Morse Taper Shank, or with a taper hole instead of a shank.

			Price, Each
No.	1505M.T.	With Morse Taper Shank(ZOAHJ)	\$18.75
No.	1505S.	With Taper Hole(ZOAJK)	16.50

Each Chuck packed in a separate pasteboard box.

## Greenfield Drill Chucks

With Taper Holes



These Chucks are the same as those described on the preceding pages, but are sold without shanks, being provided instead with a taper hole. This enables the user to fit to the Chuck any special shank that he desires.

	DELCONIC CONTROL			
PAGE			rice, Each	
144	No. 1502S. 0 to 4 inch		\$3.00	
	No. 1503S.	0 to $\frac{3}{8}$ inch(zizub)	4.00	
		0 to ½ inch(zoagh)	5.50	

Each Chuck packed in a separate pasteboard box.

## Arbors for Greenfield Drill Chucks

For the convenience of customers who do not care to make their own shanks, we can supply Arbors fitting the taper holes of the

Chucks shown above.				
	Fitting No. 1502S	Fitting No. 1503S	Fitting No. 1504S	Fitting No. 1505S
1 inch Blacksmith	\$0.80	\$0.80	\$0.80	
41 inch Blacksmith	.80	.80	.80	
3 inch Blank	.80	.80	.80	\$0.80
1 inch Blank	.80	.80	.80	.80
Morse Taper No. 1	1.30	1.30	1.30	
Morse Taper No. 2	1.30	1.30	1.30	
Morse Taper No. 3		1.50	1.50	1.50
Morse Taper No. 4			1.80	1.80

#### Scroll Chucks

With Outside and Inside Jaws

These are very strong and serviceable Chucks for use with small Lathes. Although their cost is moderate, they have a number of improvements over other tools of this kind.

Each Chuck has a hole through the body so that it can be used for holding rods.

The jaws are case hardened and all other parts are polished bright. The jaws are not interchangeable, each one being carefully fitted to its own Chuck. These Chucks have both outside and inside jaws: one set



No. 180½ Showing Inside Jaws

can be easily removed and the other inserted, but each jaw is numbered and must be inserted in the slot of corresponding number.

No Face Plates are furnished.

	Diameter	Hole	Price, Each
No. 180½	2 inches	½ inch(YEJGE)	\$15.00
No. 181 <sup>2</sup>	3 inches	11 inch(YEJŌJ)	20.00
No. 1821	4 inches	1 inch(YEKAG)	
No. 182½			

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Each Chuck packed in a separate pasteboard box.



## Scroll Chucks

With Outside Jaws Only

These Chucks: are extactly the same as those described above, except that they have outside jaws only. They are accurate, strong, and serviceable, although their prices are moderate.

No. 182 Showing Outside Jaws

	Diameter	Hole.	Price, Each
No. 180	2 inches	½ inch (YEJFA)	
No. 181	3 inches	11 inch(YEJLY)	
No. 182.	4 inches	1 inch, (YEJYL)	

Each Chuck packed in a separate pasteboard box.

NOTICE: These Scroll Chucks can be fitted to Face Plates for use with our small Lathes.

## Chuck for Square Shanks

No. 17 Patented March 31, 1896



This Chuck will be found useful for machines in which it is desired to use Drills or Bits with square shanks. It is all steel with two forged jaws. The construction is simple, but strong and accurate. All exposed parts are nicely polished.

These Chucks are made with both  $\frac{1}{2}$ -inch and  $\frac{4}{64}$ -inch round shanks. In ordering be sure to specify which size is desired; otherwise  $\frac{1}{2}$  inch will be sent.

Length over all, 7 inches.

Packed one in a pasteboard box,  $7\frac{1}{2} \times 1\frac{3}{4} \times 1\frac{1}{2}$  inches.

Weight, 11 pounds,

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### Odd Jobs Chuck No. 179



This Chuck is, as its name implies, suitable for a variety of work. Unique in its construction it will hold almost any shape within the range of its capacity. It can be used for outside or inside work by simply turning the studs about; the holes are so spaced that any size piece from \( \frac{1}{2} \) inches in diameter can be firmly secured. The back is recessed for a 3-inch face plate, drilled and tapped for \( \frac{1}{2} \) inches in crews, which are furnished with the Chuck. Its extreme diameter is \( \frac{5}{2} \) inches; it is 1 inch thick, has five rows of holes, and is so constructed that the bearing point comes \( \frac{1}{4} \) inch from the face of the Chuck; the screws which act as the bearings are hardened and tempered, the studs fit accurately in their places, making a thoroughly practical and useful device and furnishing what is in reality a 5-inch Chuck at a remarkably low figure.

Packed one in a pasteboard box,  $5\frac{3}{4} \times 5\frac{3}{4} \times \frac{7}{8}$  inch.

Weight, 47 pounds.

#### Bit Brace Extensions



These Bit Brace Extensions are very simple in construction, being made of only two pieces. The shank has a square taper hole swaged in one end; and the sleeve has a milled opening through which the bit shank can be inserted. The sleeve runs on a fine thread, insuring a strong and positive grip. They are made entirely of steel, nicely polished, and knurled, as shown in the illustration.

These tools are made in two sizes, one for Bits  $\frac{5}{8}$  to  $\frac{3}{4}$  inch, and the other for  $\frac{3}{4}$ -inch Bits.

	To follow 5-inch Bits		200
No. 450. 12 in	ch. Price, each (YONVE)	\$1.25	
No. 451. 15 in	ch. Price, each(YONYO)	1.35	
No. 452. 18 in	ch. Price, each (YOOHR)	1.45	
No. 453. 21 in	ch. Price, each(yoojs)	1.55	
No. 454. 24 in	ch. Price, each (YOOKT)	1.60	PAGE
	To follow 3-inch Bits		147
No. 530. 18 in	ich. Price, each(YUDIR)	\$1.80	TT.
No. 531. 24 in	ch. Price, each(YUDPA)	2.00	

Packed one in a pasteboard box.

# Bit Brace Chucks with Long Shanks



These Chucks are all steel with two forged jaws for holding Square Shank Drills. They are furnished with shanks of various lengths. The ends of the shanks will fit Bit Brace or other two-jawed

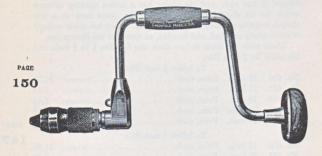
Chucks.	
Length over all Pr	ice, Each
12 inches(YENAK)	\$1.60
15 inches(YENEL)	1.80
18 inches(YENKA)	2.00
20 inches(YENLE)	2.20
24 inches (YENNO)	2.60

Packed one in a pasteboard box.

## Ratchet Bit Braces

With Quick-Action Chuck

Patented December 27, 1892; September 18, 1894



These Braces have steel-clad Rosewood Heads that run on roller bearings, which are contained in a dust-proof compartment. The Rosewood Handle runs in adjustable steel collars.

Sweeps are forged steel, with very smooth and even bends. The Ratchet is strong and is easily operated by a small lever.

The Hay Patent Quick Action Chuck that is used on these Braces requires only a half turn to tighten or loosen it, no matter what size of bit shank is used. Chuck socket and shell are malleable iron; jaws are forged steel.

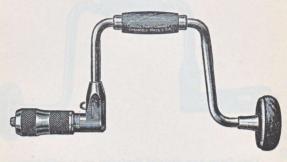
All exposed steel parts are handsomely polished and heavily nickel plated.

	Pr	ice, Each
No. 1308.	8-inch sweep(ziujk)	\$5.00
No. 1310.	10-inch sweep(ziulm)	5.20
No. 1312.	12-inch sweep(ziumn)	5.40
No. 1314.	14-inch sweep(ziurs)	5.60

Packed two in a pasteboard box. Weight, per dozen, 34 to 39 pounds.

### Ratchet Bit Braces

Patented December 27, 1892



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These Braces have steel-clad Rosewood Heads that run on roller bearings, which are contained in a dust-proof compartment. The Rosewood Handle runs in adjustable collars.

The Sweep is forged steel, with smooth and even bends. The Ratchet is strong and is easily operated by a small lever.

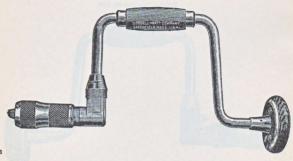
The chuck socket and shell are malleable iron; jaws are forged steel. Chuck holds all sizes of square shank Bits.

All exposed steel parts are polished and heavily nickel plated.

	Pr	ice, Each
No. 408.	8-inch sweep(YOHNA)	\$4.40
No. 410.	10-inch sweep(уонко)	4.60
No. 412:	12-inch sweep(YOHUS)	4.80
No. 414.	14-inch sweep(YOIKS)	5.00

Packed two in a pasteboard box. Weight, per dozen, 33 to 38 pounds.

#### Ratchet Bit Braces



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These Braces have steel-clad Heads that run on roller bearings, which are contained in a dust-proof compartment. The Handles run in adjustable collars. The hard-wood Heads and Handles are finished in mahogany enamel.

The Sweep is forged steel, with smooth and even bends. The Ratchet is very strong and is easily operated by turning the large knurled ring.

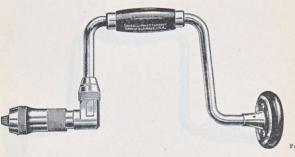
The chuck socket and shell are malleable iron; jaws are forged steel. Chuck holds all sizes of square shank Bits.

All exposed steel parts are polished and heavily nickel plated.

	Pr	ice, Each	
No. 6008.	8-inch sweep(zorsa)	\$3.80	
No. 6010.	10-inch sweep(zorte)	3.90	
No. 6012.	12-inch sweep(zorux)	4.10	
No. 6014.	14-inch sweep(zorwo)	4.30	

Packed two in a pasteboard box. Weight, per dozen, 35 to 39 pounds.

#### Ratchet Bit Braces



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These Braces have steel-clad Heads that run on roller bearings, which are contained in a dust-proof compartment. The Handles run on adjustable steel collars. The Heads and Handles are finished with rubber enamel, ebony finish.

The Sweep is forged steel, with smooth and even bends. Ratchet is very strong and is easily operated by turning the large knurled ring.

The chuck socket and shell are malleable iron; jaws are forged steel. The Chuck holds all sizes of square shank Bits.

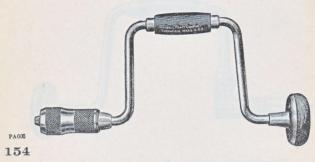
All exposed steel parts are polished and nickel plated.

	Pr	rice, Each
No. 7008.	8-inch sweep(zorzy)	\$3.00
No. 7010.	10-inch sweep(zosat)	3.10
No. 7012.	12-inch sweep(zosev)	3.30
No. 7014.	14-inch sweep(zosor)	3.40

Packed two in a pasteboard box. Weight, per dozen, 35 to 39 pounds.

### Plain Braces

Patented December 27, 1892



These Braces have steel-clad Heads that run on roller bearings, which are contained in a dust-proof compartment. The Handle runs in adjustable collars. Heads and Handles are hard wood with a mahogany enamel finish.

The Sweep is forged steel, with smooth and even bends. Chuck socket and shell are malleable iron; jaws are forged steel. Chuck holds all sizes of square shank Bits.

All exposed steel parts are polished and heavily nickel plated.

	Pr	ice, Each
No. 208.	8-inch sweep(YENON)	\$2.50
No. 210.	10-inch sweep(YEPAL)	2.60
·No. 212.	12-inch sweep(YEPME)	2.80
No. 214.	14-inch sweep (YEPRY)	3.00

Packed two in a pasteboard box. Weight, per dozen, 30 to 35 pounds.



These Double Sweep or Wimble Braces for ship carpenters are made in two sizes. The design and finish are similar to the other Goodell-Pratt Braces.

PAGE 155

	Pri	ce, Lach	7
No. 260.	10-inch(YIBOG)	\$3.80	1
No. 262.	12-inch (YICAD)	4.40	

Packed two in a pasteboard box.

## Brace Screw-Driver Set



# Universal Corner Brace

Patented May 9, 1905

This tool is in every way a Universal Corner Brace. The steadying Handle attached to the knurled sleeve can

be used in any one of the eight positions shown in the illustration. The Crank Handle is adjustable to two different lengths.

The geared drive is completely inclosed in a casing that protects it from dirt or breakage. The Chuck holds all sizes of square shank Bits.

All exposed steel

page parts are polished
and nickel plated;

a casing n dirt or ck holds s shank

6 iron parts are finished in red and black enamel.

Distance from gearing to end of Chuck is 6 inches. Net weight, 3 pounds.

Packed one in a pasteboard box,  $7\frac{1}{4} \times 7\frac{1}{4} \times 1\frac{3}{4}$  inches. Weight,  $3\frac{1}{4}$  pounds.

## Angular Brace



This Angular Brace can be securely fastened at any desired angle. The setting mechanism absolutely prevents slipping. Chuck holds all sizes of square shank Bits. Length over all, 13 inches.

Packed one in a pasteboard box,  $13\frac{1}{4} \times 2\frac{3}{4} \times 2$  inches.

Weight, 21 pounds.



new features with the best of the old ones, The cutter cannot slip in use. The thickness of the cut can easily be changed without changing the cutter. It is graduated for both diameter and length of cut and can be instantly set to cut any size Tenon from 1

PAGE

inch to 11 inches in diameter and up to 4 inches in length. All parts are carefully fitted; iron parts are enameled and steel parts polished. Length over all, 71 inches. Net weight, 21 pounds.

Price, each.... ..... (YEZZO) \$5.00 157

Packed one in a pasteboard box, 7\frac{3}{4} x 4\frac{3}{4} x 3 inches. Weight, 21 pounds.

## Hollow Auger

No. 248



Price, each .....

..... (YEZWE) Packed one in a pasteboard box, 19 x 9 x 3 inches.

Weight, 43 pounds.

# Butchers' Saw Coils



PAGE 158

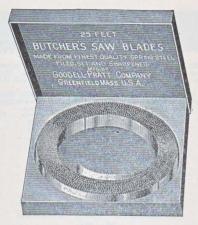
These Butchers' Saws are made from the finest quality of spring steel, tempered, ground, and polished. The Teeth are filed, set, and re-filed after setting, and are consequently ready for immediate use. The Teeth are correctly shaped for free cutting. They can be re-filed, but their first cost is so low that it is hardly profitable. Nothing that we can say about these Saws will be so convincing as an actual trial.

These Blades are put up in coils fifty feet long in order that the dealer need not carry all lengths in stock. It is only necessary to cut off the right length from one of these coils.

Length Weight Width Teeth per inch Price	per Coil
No. 310 50 feet 2 pounds 1 inch 13 (YIJON)	\$6.00
No. 311 50 feet 2½ pounds 5 inch 11 (YIJUP)	6.50
No. 312 50 feet 3\frac{1}{4} pounds \frac{3}{4} inch 11 (YIKAL)	7.00
No. 313 50 feet 4 pounds 1 inch 11 (YIKEM)	7.50
No. 314 50 feet 54 pounds 14 inch 11 (YIKLA)	8.50

A Saw Punch suitable for punching these Blades is shown on page 163.

### Butchers' Saw Coils 25-Foot



PAGE 159

Many users of Butcher Saws now buy them in coils, and as 50 feet is more than the average user cares to purchase, we are making coils 25 feet long.

They are made from the very finest quality of spring steel, tempered, ground, and polished. The Teeth are filed, set, and re-filed after setting, leaving them sharp and ready for use.

	Length	Weight	Width T	Teeth per	inch	Price per Coil
No. 250	25 feet	1 pound	½ inch	13	(YIAHJ)	\$3.00
No. 251	25 feet	1½ pounds	§ inch	11	(YIALM)	3.25
No. 252	25 feet	$1\frac{3}{4}$ pounds	3 inch	11	(YIANP)	3.50
No. 253	25 feet	2½ pounds	1 inch	11	(YIAST)	3.75
No. 254	25 feet	$2\frac{3}{4}$ pounds	11 inch	11	(YIAZB)	4.50

A Saw Punch suitable for punching these Blades is shown on page 163.



PAGE

## Butchers' Saw Blades



TRADE MARK REGISTERED U. S. PATENT OFFICE



These Blades are made from the finest quality of spring steel, tempered, ground, and polished. The teeth are filed, set, and re-filed after setting. We make these Blades in four widths, § inch, ¾ inch, 1 inch, and 1¼ inches; all with 11 teeth to the inch.

As the length of different makes of Frames varies considerably, these Blades are not punched. A Saw Punch suitable for punching them is shown on page 163.

	Length, inches	Per Dozen	Per Dozen ¾ inch wide	Per Dozen 1 inch wide.	Per Dozen 1¼ inches wide	
	12	\$1.70	\$1.80	\$2.10	\$2.30	
	14	1.90	2.00	2.30	2.60	
	16	2.20	2.30	2.70	3.00	
	18	2.50	2.70	3.10	3.40	
	20	2.80	3.00	3.60	3.80	
1	22	3.10	3.40	3.90	4.20	
,	24	3.40	3.70	4:30	4.60	
	26	3.60	3.90	4.60	5.00	
	28	3.80	4.10	4.80	5.20	

## Butchers' Saw Blades

Black Finish





These Blades are offered to meet the demand for a good Blade at a moderate price.
They can be re-sharpened if desired. They are made from a good quality of steel,
tempered but not polished. The teeth are filed, set, and re-filed after setting. All
of these Blades are \( \frac{1}{2} \) inch wide and have 11 teeth to the inch. The holes are punched.

	CI Doneil
14 inch(YAMEF)	\$1.80
16 inch(YAMFE)	2.10
18 inch(YAMHO)	2.40
20 inch(YAMIG)	2.70
22 inch(YAMKY)	3.00
24 inch(YAMOH)	3.30
26 inch(YAMUJ)	3.60
28 inch(YAMAY)	3.90

Packed six dozen in a pasteboard box.

## Butchers' Saw Frames

No. 75

Made from Round Edge Steel



These Frames are exceptionally well made and nicely finished. Not only are they attractive in appearance, but they are also popular with users on account of their nice balance.

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The Frames are made of heavy  $1\frac{1}{4}$  x  $\frac{1}{4}$  inch round edge steel, nicely polished. The Handles are correctly shaped and well finished. End of Frame is offset so that Blade lines up with handle.

Minimum depth of throat, 5 inches.

Each Frame is equipped with one of our very best tempered and polished Butchers' Saw Blades.

		rice, Each	
14 inch	2½ pounds(YANOJ)	\$2.80	
16 inch	23 pounds. (YANUK)	2.90	
18 inch	2½ pounds(YANYL)	3.00	
20 inch	25 pounds (YAODY)	3.10	
22 inch	23 pounds(YAOJD)	3.20	
24 inch	2½ pounds(YAOLO)	3.30	
26 inch	3 pounds(TAONJ)	3.40	

Packed one third dozen in a pasteboard box.



blade. Net weight, 12 pounds. Price, each.....(YAPGA) \$1.60

Packed one in a pasteboard box, 143 x 61 x 11 inches.

Weight, 2 pounds.

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## Dehorning Saw Blades

These Blades are made 10 inches long only, and are particularly adapted for dehorning. For best results, they should be used in the Frames described above. 

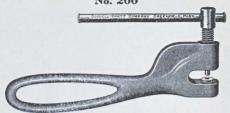
Kitchen Saw No. 77

The Frame of this Saw is made of 5 inch nickel plated steel shaped so that natural spring insures the proper tension on the Blade. The Blade is 12 inches long and 5 inch wide, as fine a blade as was ever put into a Butcher Saw. The teeth are cut, filed, set and re-filed after setting. Length over all, 15 inches. Depth of throat,  $4\frac{1}{2}$  inches. Net weight, 10 ounces.

.. (YAOZT) \$0.60 Packed one dozen in a pasteboard box, 15½ x 6½ x 4½ inches.

Weight, 81 pounds.

#### Saw Punch No. 200



There is so much variation in the sizes of various styles of Butchers' Saw Frames that most of the better class of Butchers' Saw Blades are not punched when they leave the factory. All dealers in and users of these blades will find this inexpensive device very convenient for punching the necessary holes.

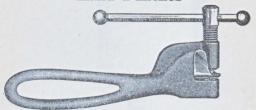
The Frame is made of nickel plated, malleable iron. The Screw and Crossbar are polished steel. The Punch and Die are made from fine tool

steel, carefully tempered.

Length over all, 54 inches. Size of punch, 44 inch. Net weight, 7 ounces, Price, each..... 163 .. (YEMAJ) \$0.90 Packed one in a pasteboard box, 61 x 23 x 3 inch. Weight, 8 ounces.

PAGE

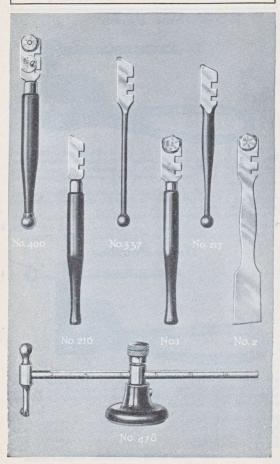
#### Hand Punches



These little Hand Punches have nickel-plated, malleable iron Frames. and polished steel Screws, Crossbars, and Strippers. Punches and Dies are carefully tempered tool steel. The Stripper is so arranged that no work too large for the Punch can be inserted. These Punches are 52 inches long over all, and weigh 7 ounces each net.

			ice, Each
No. 284.	Size 1 inch	(YIEMP)	\$1.20
No. 285.	Size $\frac{3}{32}$ inch	(YIERT)	1.20
No. 286.	Size ½ inch	(YIEVY)	1.20
No. 287.	Size 5/32 inch	(YIEWZ)	1.20

Packed one in a pasteboard box, 61 x 23 x 1 inch. Weight, 8 ounces.



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#### Glass Cutters

The efficiency of a Glass Cutter depends entirely upon the cutting wheels. That is why we are so particular about ours,

Each separate wheel is made of a high grade of tool steel, hardened by a special process, honed twice, and then tested by actually cutting glass. This extra care insures wheels that are absolutely right.

Test them for yourself. Compare the total number of pieces of glass that one of these wheels will cut with the total number that any other kind of wheel will cut. We are sure that you will not find any wheels superior to these.

If a Glass Cutter is kept immersed in kerosene, or dipped in it before use, it will prolong its life and improve its cutting qualities.

On the following pages, there are shown ten styles of Glass Cutters besides the Circular and Glass Tube Cutters. We are the originators of the six-wheel turret head glass cutters, and the enviable reputation of these tools is due to the superior quality of our cutter wheels. Our original No. 1 Glass Cutter can be distinguished by the vellow carton in which each one is packed.

### Glass Cutter Wheels

These high grade wheels made by the processes described above are sold in large quantities to Glass Manufacturers. They can be inserted in our Turret Head Glass Cutters when the original wheels become worn.

Every one of these wheels is tested.

Price, per dozen ...... \$0.60

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#### Turret Head Glass Cutters



This tool has a Rosewood Finish Handle, polished and nickel-plated Frame with a Turret holding six Cutter Wheels. This Turret can be revolved or clamped to the frame by means of a screw in the center. This cutter tan be revolved or clamped to the frame by means of a screw in the center. This cnables the operator to place any of the Cutter Wheels in position instantly. The Turret can be removed and the Cutter Wheels replaced with new ones in a minute's time. The Turret is held in a circular recess that protects all wheels not in use. Every wheel is tested by actually cutting glass.

.... (WYBCE) \$4.40 No. 1. Price, per dozen ..

Each Cutter in a separate carton: 12 cartons in a pasteboard box. Weight per dozen, 13 ounces.





This Glass Cutter is similar to the No. 1, described above, but is furnished with twelve wheels, six in the Turret and six in the Magazine Compartment shown in the 

Each Cutter in a separate carton; 12 cartons in a pasteboard box.

166 Weight per dozen, 1 pound.

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This Glass Cutter and Putty Knife combined has a Turret holding six Cutter Wheels. The Head and Knife are nicely polished and the Handle is finished in Red enamel.

No. 2. Price, per dozen..... ..... (WYCED) \$5.60 Packed one dozen in a pasteboard box. Weight per dozen, 13 pounds.

#### Glass Cutters

This Glass Cutter has an enameled wood Handle, a polished Frame, and two Cutter Wheels.

... (WYDOH) \$2.80 No. 3. Price, per dozen..

Weight per dozen, 10 ounces. No.4

This Glass Cutter and Putty Knife combined has two Cutter Wheels. The Head and Knife are nicely polished and the Handle finished in Red enamel.

(WYEWY) \$3.50 No. 4. Price, per dozen..... All Glass Cutters packed one dozen in a pasteboard box.

Weight per dozen, 12 pounds.

# Glass Cutters



Red enameled iron Handle with a polished Head. Two Cutter Wheels.

No. 5. Price, per dozen. (WYFFA) \$2.80

Weight per dozen. 1 pound.



Polished hard-wood Handle and a polished Frame. One Cutter Wheel.

No. 216. Price, per dozen. (YEREP) \$2.30

Weight per dozen, 10 ounces.



Red enameled iron Handle with a polished Head. One Cutter Wheel.

No. 217. Price, per dozen, (YEBOB) \$2.30
Weight per dozen, 4 pound.

PAGE

BODDELL-PRINT COMPONE GPERVELIN MASSUSA



No. 338. Price, per dozen. (Y18WO) \$2.25
Weight per dozen, 1½ pounds.
All of these Glass Cutters are packed one dozen in a pasteboard box.

### Glass Tube Cutter No. 218



This Cutter is 12½ inches long over all, provided with a Graduated Steel Beam, dej inches long, with a Gauge Stop that can be set at any desired point. The Cutter Wheel is honed and tested; and as it can be easily replaced as it becomes dull, the tool will always be in a serviceable condition. The Beams of this tool are nickel plated and the Handles finished in Red enamel. Net weight, 10 ounces

Price, each ... (YERRO \$1.30 Packed one in a pasteboard box, 13½ x 2½ x 7½ inches. Weight, 12 ounces.

# Circular Glass Cutter



This Glass Cutter has a graduated Beam that can be quickly and firmly

set to cut circles of any size from 2 to 12 inches in diameter.

Each of these Glass Cutters is provided with one of our high grade Cutter Wheels. Each wheel is honed twice, and tested by actually cutting glass before being mounted in the tool.

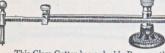
The Standard has a rubber Base to prevent slipping. Net weight, 5 ounces.

Price, each......(yośaz) \$1.10

Packed one in a pasteboard box,  $7\frac{1}{2} \times 2\frac{3}{4} \times 2\frac{1}{4}$  inches. Weight, 8 ounces.

# Circular Glass Cutter

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This Glass Cutter has a double Beam so that it can be set to cut circles of any size from 2 to 48 inches in diameter. The Beams are graduated, and one of them is fitted with one of our high grade Cutter Wheels. The Standard has a rubber Base. Net weight, 9 ounces.

# Circular Glass Cutter



Packed one in a pasteboard box,  $14 \times 2\frac{3}{4} \times 2\frac{1}{4}$  inches. Weight, 15 ounces. All of these Circular Glass Cutters can be furnished with Metric Graduation if desired.

#### Turret Head Tool Set No. 10

Handle Patented September 30, 1890; November 17, 1891



This Set consists of a polished hard-wood handle with a patented magazine containing five Fluted Awls, two small Screw-Driver Blades, and a Scratch Awl, each in a separate compartment. The Fluted Awls will be found vastly superior to other kinds, as they are very much less liable to split the work. All tools are made of tool steel 169 drill rod and are carefully tempered. All the metal parts of the Handle are polished and nickel plated.

PAGE

Length of Handle, 5 inches. Length of Tools, 2 inches.

Packed one in a pasteboard box, 53 x 13 x 13 inches. Weight, 6 ounces.

#### Universal Tool Handle No. 13

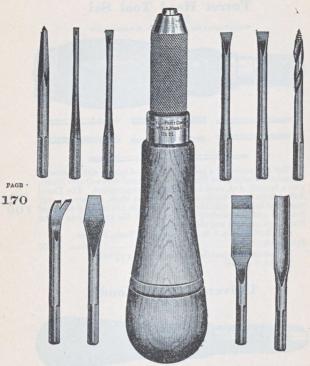


This Handle will hold any small square shank tools similar to those furnished with our Hollow Handle Tool Sets. The Handle is polished hard wood. All metal parts are polished and nickel plated.

Length over all, 73 inches. Net weight, 7 ounces.

Price, each.... . (WYLPO) \$1.00

Packed one in a pasteboard box,  $7\frac{7}{8} \times 2 \times 1\frac{3}{4}$  inches. Weight, ½ pound.



Handle is 61/2 inches long. Tools are 21/4 inches long

# Hollow Handle Tool Set

No. 11

We have recently provided this popular little tool with a new style of Chuck which greatly increases its effectiveness.

This tool has a beautifully polished Rosewood Handle with a screw cap. The cap can be easily removed for access to the tools which are contained inside of the Handle when not in use.

There are ten small tools in this Set. They are all made in our own forging plant under the same careful supervision as our other high grade forged tools. They are made of a good grade of tool steel, correctly hardened and tempered.

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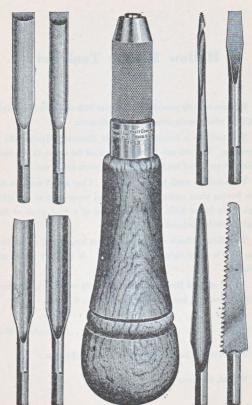
The all-steel Chuck on this tool is extra long, giving a very firm grip that is easily tightened or loosened. It is nickel plated and polished.

Length of Tool Handle, without tools, 6½ inches. Approximate length of tools, 2¼ inches. Weight, complete, 6 ounces.

Price, each ..... (wykka) \$2.60

Packed one set in a pasteboard box, 7 x 13 x 13 inches.

Weight, 8 ounces.



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Illustration is not full size.

Tools are 4 inches long. Handle is 7¾ inches long.

# Hollow Handle Tool Set No. 12

This Set is of exactly the same high quality as the No. 11, shown on pages 170 and 171. It is very much larger, however, and is equipped with only eight tools.

The Handle of this tool is beautifully polished Rosewood with a screw cap. The cap can easily be removed for access to the tools which are contained inside of the Handle when not in use.

173

There are eight tools in this Set. They are all made in our own forging plant under the same careful supervision as our other high grade forged tools. They are made of a good grade of tool steel, correctly hardened and tempered.

The all-steel Chuck on this tool is extra long, giving a very firm grip that is easily tightened or loosened. It is polished and nickel plated.

Length of Tool Handle, without tools, 7\(^3\)4 inches. Approximate length of tools, 4 inches. Weight, complete, 12 ounces.

Price, each...... \$3.50

Packed one set in a pasteboard box, 8 x 2 x 2 inches.

Weight, 14 ounces.

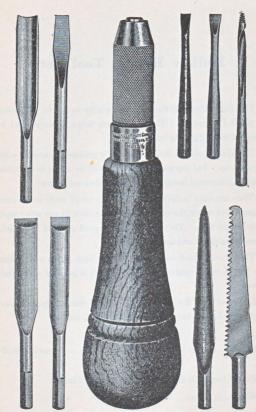


Illustration is not full size
Tools are 4 inches long. Handle is 7% inches long

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# Hollow Handle Tool Set

This Set is exactly the same as the No. 12, shown on pages 172 and 173, with the exception of the assortment of tools furnished.

The Handle of this tool is beautifully polished Rosewood with a screw cap. The cap can be easily removed for access to the tools which are contained inside of the Handle when not in use.

There are nine tools in this Set. They are all made in our own forging plant under the same careful supervision as our other high grade forged tools. They are made of a good grade of tool steel, correctly hardened and tempered.

PAGE

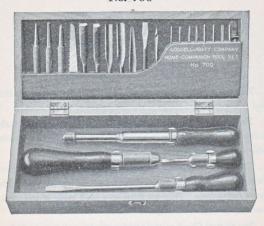
The all-steel Chuck on this tool is extra long, giving a very firm grip that is easily tightened or loosened. It is nickel plated and polished.

Length of Tool Handle, without tools,  $7\frac{3}{4}$  inches. Approximate length of tools, 4 inches. Weight, complete, 12 ounces.

Packed one set in a pasteboard box, 8 x 2 x 2 inches.

Weight, 14 ounces.

#### Home Companion Tool Set No. 700



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> This Set contains an assortment of high grade tools of exceptional value in the home, the office, or the workshop. They are conveniently arranged in a handsome hard-wood case. The attractiveness of this Set will be appreciated at once by any one.

The following tools are contained in the Set:

No. 2 Rosewood Handle Automatic Drill, with 8 Drill Points  $\frac{1}{16}$  to  $\frac{11}{64}$  inch.

No. 13 Universal Tool Handle for Holding:

2 Chisels 2 Gouges

1 Reamer 1 Gimlet 1 Screw-Driver 1 Saw

No. 66 Ratchet Screw-Driver, 11 inch

No. 66 Ratchet Screw-Driver, 6 inch

No. 997 Saddlers' Drive Punch

No. 998 Prick Punch No. 999 Nail Set.

Size of case, 13 x 51/4 x 3 inches. Net weight, 31/4 pounds.

Price, each, complete as shown.....(ZANZA) \$9.00 Each complete set is packed in a pasteboard box, 13½ x 5½ x 3¼

inches.

Weight, 33 pounds.

# Home Companion Tool Set No. 710



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This Set is somewhat larger than the one shown on the preceding page and contains a more complete assortment of high grade tools as follows:

No. 2 Automatic Drill

8 Drill Points, 1 to 11 inch

No. 3 Glass Cutter No. 3 Hack Saw Frame

6 Coarse Hack Saw Blades 3 Fine Hack Saw Blades

2 Extra Fine Hack Saw Blades

1 Polished Bone Saw No. 36 Spoke Shave

No. 66 Ratchet Screw-Driver, 11 inch No. 66 Ratchet Screw-Driver, 6 inch

No. 999 Nail Set Small Oil Stone

No. 13 Tool Handle for Holding:

2 Brad Awls 1 Gouge 1 Screw-Driver

1 Reamer 1 Saw No. 996 Solid Punch

No. 997 Saddlers' Punch No. 998 Prick Punch

Size of case, 16 x 81 x 31 inches. Net weight, 6 pounds:

.... (ZAPUG) \$15.00

Each one packed in a pasteboard box, 163 x 83 x 31 inches.

Weight, 7 pounds.



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# Home Companion Tool Set

No. 711

In designing these Sets, we have tried to include not the tools everybody has, but tools every one needs. We are justly proud of the handsome cases in which these tools are included; with the fine finish of the tools they make very attractive Sets. This Set and the two that follow it are exactly the same as the No. 710 on page 177, but they have a drawer containing additional equipment.

A complete list of the tools in this Set follows:

```
1 No.
         2 Automatic Drill with
              8 Fluted Drill Points, 16 to 11 inch.
   No
         3 Glass Cutter.
         3 Hack Saw Frame.
  No.
              6 Coarse Tooth Hack Saw Blades.
              3 Fine Tooth Hack Saw Blades.
              2 Extra Fine Hack Saw Blades.
              1 Polished Bone Saw Blade.
1 No. 41 Hand Drill with
              8 Drill Points, 1/16 to 1/14 inch.
1 No. 13 Tool Handle for holding:
              1 Gouge.
              2 Chisels
              1 Screw-Driver.
              2 Brad Awls.
              1 Gimlet.
              1 Reamer.
              1 Saw.
   No. 33 Gunsmiths' Screw-Driver.
   No. 36 Hand Shave.
   No. 66 Ratchet Screw-Driver, 12 inch.
   No. 66 Ratchet Screw-Driver, 6 inch.
   No. 92 Brass Hammer.
   No. 200 Metal Punch.
   No. 503 Iron Level.
   No. 996 Solid Punch.
   No. 997 Saddlers' Punch, No. 6.
   No. 998 Prick Punch.
   No. 999 Nail Set, 3 inch.
1
  Small Oil Stone.
```

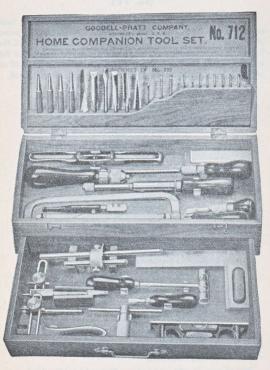
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Size of case,  $16 \times 8\frac{1}{2} \times 5\frac{1}{2}$  inches. Net weight,  $10\frac{1}{2}$  pounds.

Each complete set is packed in a pasteboard box.

Weight, 11½ pounds.



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# Home Companion Tool Set

#### No. 712

This assortment contains more tools than those previously shown and will enable its owner to do many little odd jobs more conveniently. A complete list of tools in the Set follows:

2 Automatic Drill with No. 8. Fluted Drill Points, 1 to 11 inch. 3 Glass Cutter. No 1 No. 3 Hack Saw Frame. 6 Coarse Tooth Hack Saw Blades. 3 Fine Tooth Hack Saw Blades. 2 Extra Fine Hack Saw Blades. 1 Polished Bone Saw Blade. 1 No. 13 Tool Handle for holding: 1 Gouge. 2 Chisels. 1 Screw-Driver. 2 Brad Awls. 1 Gimlet. 1 Reamer. 1 Saw. No. 33 Gunsmiths' Screw-Driver. No. 36 Hand Shave. No. 41 Washer Cutter. No. 66 Ratchet Screw-Driver, 11 inch. 1 No. 66 Ratchet Screw-Driver, 6 inch. 1 No. 89 Tool or Tap Holder. No. 93 Brass Hammer. No. 200 Metal Punch. No. 221 Roller Gauge. No. 513 Iron Level. No. 906 Try Square. No. 996 Solid Punch. No. 997 Saddlers' Punch, No. 6. No. 998 Prick Punch. No. 999 Nail Set, 3 inch. Small Oil Stone.

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Each complete set is packed in a pasteboard box.

Weight, 14 pounds.



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# Home Companion Tool Set

No. 713

This is the most complete assortment of tools that we have to offer. It contains many useful tools, all of the very best quality. A complete list follows:

> No. 2 Automatic Drill with

8 Fluted Drill Points, 1 to 11 inch.

No. 3 Glass Cutter.

No. 3 Hack Saw Frame.

6 Coarse Tooth Hack Saw Blades. 3 Fine Tooth Hack Saw Blades.

2 Extra Fine Hack Saw Blades.

1 Polished Bone Saw Blade.

No. 4 Hand Drill with

8 Drill Points, 15 to 11 inch.

1 No. 13 Tool Handle for holding:

1 Gouge.

2 Chisels.

1 Screw-Driver.

2 Brad Awls.

1 Gimlet.

1 Reamer.

1 Saw.

No. 33 Gunsmiths' Screw-Driver.

No. 36 Hand Shave.

No. 66 Ratchet Screw-Driver, 11 inch.

1 No. 66 Ratchet Screw-Driver, 6 inch.

1 No. 89 Tool or Tap Holder.

No. 92 Brass Hammer.

No. 96 Hand Vise.

No. 221 Roller Gauge.

No. 513 Level.

No. 906 Try Square. No. 996 Solid Punch.

1 No. 997 Saddlers' Punch, No. 6.

No. 998 Prick Punch.

No. 999 Nail Set, 3 inch.

Small Oil Stone.

Size of case, 16 x 8½ x 5½ inches. Net weight, 13 pounds.

Price, per Set, complete......(ZARDA) \$32.00

Each complete set is packed in a pasteboard box.

Weight, 14 pounds.

PAGE

1.83



Bunkan

# Spiral Ratchet Screw-Driver

No. 111

Patented May 12, 1908

This tool is a strong, heavy, practical Automatic Screw-Driver, capable of either right or left hand work, automatically or by using the ratchet mechanism. It can also be used as a stationary Screw-Driver by setting the Shifter Knob at the star marked on the polished ferrule.

The mechanism is as simple as it is possible to make it and provide for the various changes necessary. Moving the Shifter Knob moves a formed ring which shifts the Dogs to the required position. The Dogs which act upon the Spiral Nuts are hardened steel.

The entire bearing of an Automatic Screw-Driver is upon the internal thread of the Spiral Nuts. The Spiral Nuts and the Spiral are now made of hardened steel. This form of construction prolongs the life of these parts which, owing to the great power of the tool, are subjected to a tremendous strain.

Length extended, with Blade in place, 18 inches. Length closed, without Blade, 10 inches. Angle of Spiral, 20°. Net weight, 14 ounces.

Each Screw-Driver is provided with three tool steel blades, hardened, tempered, and polished.

Packed one in a pasteboard box,  $10\frac{1}{4} \times 1\frac{3}{4} \times 1\frac{3}{4}$  inches.

Weight, 1 pound.

For Drill Attachments, see page 190.

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#### Reversible Automatic Screw-Driver No. 555



This tool can be used as an Automatic Screw-Driver for either driving or drawing screws, but it has no ratchet or locking device. The shifting mechanism is contained within the knurled ferrule nearest the handle, and is regulated by turning this ferrule to the right or left as it is desired that the spiral should run.

Every part is so constructed as to make the tool not only practical but very durable. The Spiral and Spiral Nuts are hardened steel. The Springs and Dogs are spring steel, oil tempered. The Handle is polished hard wood. All exposed steel parts, except the Spiral and Blades, are polished and nickel plated.

Three interchangeable tool steel blades, hardened, tempered, and polished, are furnished with each Screw-Driver.

Length, extended, with Blade in place, 181 inches; closed, without Blade, 93 inches. Net weight, 14 ounces.

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Packed one in a pasteboard box, 101 x 13 x 13 inches. Weight, 1 pound.

#### Reversible Automatic Screw-Driver No. 22



This tool contains the simplest mechanism possible for both driving or drawing screws automatically. It has two separate and distinct Spirals, each working independently of the other. The inner Spiral is used for driving and the outer for drawing screws, the one not in use being held in place by a locking nut.

The Handle is polished hard wood. All exposed steel parts, except the Spiral and Blades, are polished and nickel plated.

Three interchangeable tool steel blades, hardened, tempered, and pol-

ished, are furnished with each tool. Length, with one Spiral extended and Blade in place, 161 inches; closed, without Blade, 9 inches. Net weight, 13 ounces.

\$3.00 .....(wyvwe) Price, each . . . Extra Blades, each.....

Packed one in a pasteboard box, 9 x 2 x 13 inches. Weight, 15 ounces. For Drill Attachments fitting these Screw-Drivers, see page 190.

# Spiral Ratchet Screw-Driver

With Spring for Quick Return

No. 325

For Driving Small Screws



This Screw-Driver, for right-hand work only, can be used with great rapidity for driving small screws. The mechanism consists of a brass Spiral, driven by a hard brass Center Nut, and a right-hand ratchet mechanism. A light coil Spring inside of the Handle gives a quick return without being stiff enough to make the tool more difficult or tiring to operate.

The tool is made of brass, polished and nickel plated. The Handle is polished Rosewood.

Two small interchangeable Blades are furnished with each tool. They are made of good tool steel, hardened, tempered, and polished.

Length, with Blade in place, 121 inches. Net weight, 7 ounces.

 PAGE
 Price, each
 (YIMOR)
 \$3.00

 188
 Extra Blades, each
 .20

Packed one in a pasteboard box, 113 x 13 x 12 inches. Weight, 9 ounces.

# Reciprocating Automatic Screw-Driver



This Screw-Driver is for driving screws only; moving the Traveling Handle up and down causes the Spiral to revolve continuously to the right. It is a very practical tool for rapidly driving large numbers of screws into soft wood or tapped holes in metal.

The polished hard-wood Head has a heavy steel Quill running on Ball Bearings. The Traveling Handle is polished hard wood, 4½ inches long. It contains the Flanges and hard bronze Nuts which constitute the driving mechanism. The Spiral is polished steel, 12½ inches long, accurately cut to a 20° slant, giving ample power.

Three interchangeable tool steel Blades are furnished with each tool. Length, 17 inches. Net weight, 1 pound.

Price, each..........(YAWRO) \$3.00

Packed one in a pasteboard box, 17½ x 2½ x 2½ inches. Weight, 1½

pounds.

#### Automatic Screw-Drivers

Patented July 22, 1890: November 17, 1891



These tools can be used as Automatic Screw-Drivers for driving screws. The Spirals can be locked, however, for use as Plain Screw-Drivers in drawing screws. They are simple in construction, but are strong and durable, and will not get out of order.

The Handles are polished hard wood, mahogany finish. All exposed

steel parts except the Spiral are polished.

Each Screw-Driver is supplied with three interchangeable tool steel blades that are hardened, tempered, and polished.

Made in three sizes for driving small, ordinary, or very large screws.

No.	Length extended with blade	Length closed without blade	Angle of Spiral	Net Weight	Pr	ice, Each
1	14 inches	7½ inches	40°	8 ounces	(WYBID)	\$1.90
2	16 inches	81 inches	30°	10 ounces	(WYDEF)	2.00
3	18 inches	9½ inches	20°	13 ounces	(WYENP)	2.50
Ex	tra Blades, ea	ch				.20

Each Screw-Driver packed in a separate pasteboard box.

For Drill Attachments fitting these Screw-Drivers, see next page,

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### Ratchet Screw-Driver No. 66



These Ratchet Screw-Drivers have already made a reputation for themselves because of their strength and durability, and the steady increase in the sale of these tools proves that they are giving satisfaction.

The mechanism is very simple; the Ratchet Teeth are cut directly into the shank of the Blade, a very strong method of construction. The two Springs and two Dogs which make up the entire ratchet mechanism are oil-tempered tool steel. Changes from right to left or rigid are accomplished by simply turning the knurled Ferrule.

Blades are hammer forged from a high grade of tool steel. Handles of the three smallest sizes are knob shaped; other sizes are like illustration

above.

	I	Price, Each Pr		
11/2	inch(YAKBA)	\$0.90	5 inch.,, (YAKID)	\$1.15
2	inch(YAKCE)	.95	6 inch(YAKOF)	1.20
3	inch(YAKEC)	1.00	8 inch(YAKUG)	1.30
4	inch (YAKFO)	1.10	10 inch(YAKYE)	1.50

#### **Drill Attachments**

For Goodell-Pratt Automatic Screw-Drivers



These sets can be used in connection with our Automatic Screw-Drivers to do small jobs of drilling. They are not as convenient as Automatic Drills, but are perfectly satisfactory for occasional use.

These Sets consist of a Chuck for holding Fluted Drill Points, attached to a steel shank fitting the sockets of our Automatic Screw-Drivers.

Eight Fluted Tool Steel Drill Points, 1/16 to 11/16 inch, are furnished with each set.

		Per Set
No. 1.	Fitting No. 1 Screw-Driver(WYBBA)	\$1.00
No. 2.	Fitting No. 2, 22, 111 or 555 Screw-Driver(wycca)	1.00
No. 3.	Fitting No. 3 Screw-Driver(wydig)	1.00

Each set packed in a pasteboard box,  $4\frac{1}{4} \times 1\frac{1}{4} \times 1\frac{1}{4}$  inches. Weight,  $2\frac{1}{2}$  ounces.

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# 190 Bench Automatic Screw-Driver

No. 32



This tool was designed for use in assembling small hardware, firearms, or parts of tools or machines. It is particularly recommended for driving small screws into iron, brass, or porcelain where holes have previously been tapped.

The Frame is screwed to the bench and the Screw-Driver Blades are driven continuously in one direction by moving the Traveling Handle back and forth. Each end of the Spiral is fitted with a Chuck and Screw-Driver Blade, one for driving and the other for drawing screws.

The Frame is finished in black enamel, and all steel parts are polished. The Traveling Handle is polished hard wood. Length over all, with Blades inserted, 20 inches. Height of Blade above Bench, 2\(\frac{1}{2}\) inches. Net weight, 2\(\frac{1}{2}\) pounds.

The tool-steel Blades are furnished with each Screw-Driver, but in many cases special Blades, particularly adapted for the work to be done, can be readily made by the user.

Packed one in a pasteboard box, 18 x 44 x 2 inches. Weight, 3 pounds.

## Pocket Screw-Driver Set No. 231



This is a convenient, practical, and justly popular tool that every one has use for. Particularly useful for repairing firearms, fishing tackle, clocks, radio, sewing machines, etc. The Set consists of a Hollow Handle, with a Chuck, three small Screw-Driver Blades, and a Reamer. When not in use the Chuck and Blades are contained inside the handle, as shown in the

illustration below. The Blades are made of tool steel and will give satisfactory service. The Handle is handsomely polished, nickel plated, and buffed. It is 31 inches long when closed and weighs 4 ounces.



PAGE

(YEVVO) Price, each... 191 Packed one in a pasteboard box, 3½ x 1¼ x 1¼ inches. Weight, 5 ounces.

# Pocket Screw-Driver





This Pocket Screw-Driver has a disappearing Blade. It is closed by pressing the Blade into the Handle, where it is held by giving the Chuck a slight turn. The Blade is forced out by a spring when the Chuck is loosened, and a slight turn locks it in place. The Blades are made of tool steel. Handles are polished, nickel plated, and buffed. Length closed, 4 inches; open, 51 inches. Net weight, 4 ounces.



... (YEWAS) \$1.40 Price, each .. Packed one in a pasteboard box, 41 x 11 x 11 inches. Weight, 5 ounces.



PAGE

# Screw-Driver

Tool Steel Blade locked to Steel Head





This new line of Steel Headed Screw-Drivers is made in six lengths of blade from 4 inches to 12 inches. The highly finished tool steel Blades are hammer forged and carefully hardened and oil tempered. The end of the shank is forged square and is pressed through the ferrule and handle preventing any possibility of turning in the handle and is ingeniously locked into the heavy steel head set nearly flush into the end of the nicely mahogany finished birch handle. The heavy steel ferrule is nickel plated and buffed.

 Blade
 Per Dozen
 Blade
 Per Dozen

 4 inch
 (zajye)
 \$4.30
 8 inch
 (zakix)
 \$7.50

 5 inch
 (zakyo)
 5.00
 10 inch
 (zakoz)
 9.00

 6 inch
 (zakay)
 6.00
 12 inch
 (zakuz)
 11.00

194 Packed one half dozen in a pasteboard box.

# Screw-Driver



These plain Screw-Drivers are made in twelve sizes, with blades 2 inches to 18 inches long. They are designed on modern lines, well made and well finished. The Blades are hammer forged from a high grade of tool steel and are carefully hardened and oil tempered. A square tang holds the Blade in place. The Handles are polished Hard Wood with longitudinal corrugations to keep the hand from slipping. The Handles are protected from splitting by heavy steel ferrules. Every one of these Screw-Drivers is tested to break a Screw-Head.

a Screw-Head.			
Blade	Per Dozen	Blade	Per Dozen
2 inch (ZIASP	\$3.50	8 inch(zibuc)	\$6.60
3 inch(ZIAWS	3.80	10 inch(zibwa)	7.80
4 inch (ZIAXT	4.10	12 inch(zibye)	9.60
5 inch (ZIBBO	4.40	14 inch(zicay)	11.40
6 inch(ZIBIZ	5.00	16 inch. : (zicco)	13.20
7 inch (ZIBOB	6.00	18 inch(zicez)	15.00

# Screw-Driver

No. 332



This is as good a line of plain Screw-Drivers as can be made. Each Blade is pinned through the Handle so that it cannot possibly turn, and is tested to break a Screw Head. The Handles are Hard Wood, mahogany finish, protected by nickel-plated ferrules. The Blades are hammer forged from the best steel that can be bought for the purpose, and are very carefully hardened and tempered.

Blade	Per Dozen	Blade F	er Dozen
1½ inch (1	rions) \$3.00	6 inch(YIPER)	\$5.20
2 inch		7 inch (YIPRE)	6.00
3 inch(		8 inch (YIPTO)	6.80
4 inch (1		10 inch (YIPUV)	7.80
5 inch (Y		12 inch (YIRAS)	10.00

Packed one half dozen in a pasteboard box.

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# Screw-Driver

No. 350



This is a very good moderate-priced Screw-Driver, well designed, well balanced, strong, and serviceable. The Handle is Hard Wood, mahogany finish, fluted to prevent the hand from slipping and protected by a heavy steel ferrule. The Blades are hammer forged from a good grade of steel, and carefully hardened and tempered.

0			
Blade	Per Dozen	Blade -	er Dozen
2 inch (YIT)	ув) \$3.20	8 inch(YIUJP)	\$5.50
3 inch (YIT	VA) 3.50	10 inch(YIUMS),	6.00
4 inch (YITY	VE) 3.80	12 inch(YIURY)	7.20
5 inch (YIT	20) 4.20	14 inch (YIUSZ)	8.00
6 inch (YIUG	M) 4.40	16 inch(YIVBO)	10.50
7 inch (viris	5 00	18 inch (viviz)	12.00

#### Machinists' Screw-Driver No. 367



These powerful Screw-Drivers have short, heavy Blades that are hammer forged from high grade steel. They are particularly useful for machinists' heavy work. The Handles are polished hard wood, very large, with

	Length over all Price, p	er Dozen
13 inch	.73 inches(YOARY)	\$4.60
3 inch.	8 <sup>3</sup> / <sub>4</sub> inches(YOASZ)	4.80
	93 inches(YOAWD)	5.50

Packed one half dozen in a pasteboard box.

#### Gunsmiths' Screw-Driver No. 33

Every Blade Warranted

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This is a very fine tool for the reasonable price at which it is sold. The Blade is made of the very best steel obtainable, and is securely fastened into the polished hard-wood Handle. Made with a 1-inch Blade only. Length, 41 inches over all; weight, 1 ounce.

..... (YABRA) 84.00 Price, per dozen...

Packed one half dozen in a pasteboard box, 63 x 41 x 11 inches. Weight, 9 ounces.

# Electricians' Screw-Driver

No. 330

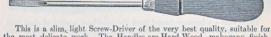


This Screw-Driver was designed especially for electricians, and is insulated to protect the user from electric shocks. The Handle is hard wood, mahogany finish, and is made six sided to insure a firm grip. The Blade is set in a hard rubber Socket that is solidly set in the Handle. The Blade is hammer forged from the best tool steel, hardened and tempered.

Blade		ice, Each
4 inch.	3 ounces(YINAP)	\$0.60
6 inch.	4 ounces(YINIR)	.75
8 inch.	5 ounces(YINOS)	.90

# Jewelers' Screw-Driver

No. 331



the most delicate work. The Handles are Hard Wood, mahogany finish, protected by nickel-plated ferrules. The Blades are hammer forged from the best steel drill rod, carefully hardened and tempered.

Blade	Per Dozen	Blade	Per Dozen
2 inch(YINPA)	\$3.00	6 inch(угосн)	\$4.50
3 inch(YINSO)	3.30	8 inch(YIOFK)	6.00
4 inch (YINUT)	3.60	10 inch(угонм)	7.00
5 inch(YINYV)	4.00	12 inch (YIOJN)	8.40

Packed one half dozen in a pasteboard box.

Pocket Screw-Driver



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This extremely popular little Screw-Driver has a polished Rosewood Handle, a nickel-plated Ferrule, and a high grade tool steel Blade, carefully tempered. The Blade is knurled for convenience in rapid rotation and will drive or draw surprisingly large screws.

It is a useful article in any tool box, in an office desk, or in any home. Length over all, 3\(^3\) inches. Net weight, \(^1\) ounce.

# Cabinet Screw-Driver

No. 355

SOCOELL- PRATT COMPANY GREENFIELD MASSELLS AV



These Cabinet Screw-Drivers are carefully manufactured from the best materials obtainable for this purpose.

The Handles are Hard Wood, mahogany finish, fluted to prevent the hand from slipping. The Handle is protected by a heavy steel ferrule.

The Blades are hammer forged from an extra good grade of tool steel, very carefully hardened and tempered. Every Screw-Driver is tested before

leaving our factory.			
Blade	Per Dozen	Blade	Per Dozen
2½ inch., (YIWA		7½ inch (YIWY.	A) \$5.20
3½ inch (YIW)		8½ inch(YIZA	B) 6.00
4½ inch (YIW)		9½ inch (YIZB.	A) 6.60
5½ inch (YIW)	oc) 4.20	101 inch (YIEC	E) 7.20
6½ inch (YIWU	(D) 4.80	12½ inch (YIZE	a) 8.40

#### Screw-Driver Bits



These Bits are hammer forged from the very best quality of steel that can be procured for the purpose. Hammer forging gives the steel a fibrous structure which when carefully hardened and tempered insures the toughness so desirable in this class of tool. They have a bright polished finish.

			Per
	Length	Width at Point	Dozen
No. 351.		1 inch(YIVOB)	\$2.20
		5 inch(YIVUC)	2.40
		3 inch(YIVWA)	2.60
	5 inches.		2.80
		16 inch(YUHUX)	3.00
		½ to 3 inch. Assorted(YUNIC)	2.40
		in a match and how fil w 2 w 11 inches	

Packed one dozen in a pasteboard box,  $5\frac{1}{4} \times 2 \times 1\frac{1}{8}$  inches Weight, 11 pounds.

# Cabinet Screw-Driver Bits

These Screw-Driver Bits are exactly the same as those described above, except that they are longer and have a straw color instead of a bright finish. TT77 345

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,	Length	at Point	Dozen
,		3/8 inch(YIZFO) 3/8 inch(YIZID)	
		a nestaboard how	410.0

# Square Reamer No. 397



These Reamers are made of the very best steel that can be procured for the purpose. They are hammer forged and very carefully hardened, polished, and tempered to a straw color. Length over all, 61 inches. ..... (YOFOP) \$8.40 Price, per dozen.....

Packed one dozen in a pasteboard box,  $6\frac{3}{4}$  x  $2\frac{1}{4}$  x  $1\frac{3}{4}$  inches.

Weight, 21 pounds.

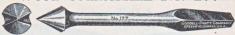
# Octagon Reamer No. 398



This Reamer is exactly the same as the one described above, except that it has eight cutting edges instead of four. Length over all, 62 inches. Price, per dozen.....

Packed one dozen in a pasteboard box,  $6\frac{3}{4}$  x  $2\frac{1}{4}$  x  $1\frac{3}{4}$  inches. Weight, 21 pounds.

# Wood Countersink No. 177



An unusually fine line of Countersinks hammer forged,—not drop forged,—from the very best quality of steel that can be procured for this class of tool. Their hammer refined steel is correctly hardened and well polished and then carefully tempered to a straw color to withstand the grueling work expected of them. The Cutting Edges are clean and sharp and the tools will do exceptionally smooth work.

This Wood Countersink is about 4 inches long over all, and has an

extreme diameter of ½ inch. It has two cutting edges.

## Metal Countersink No. 178



Length over all, about 4 inches. Extreme diameter, ½ inch.

Weight per dozen, 14 ounces.

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# Large Wood Countersink No. 394



Length over all,  $4\frac{1}{4}$  inches. Extreme diameter,  $\frac{3}{4}$  inch.

Price, per dozen. (YOFEM) \$6.00

Weight per dozen,  $1\frac{1}{4}$  pounds.

# Flat Countersink No. 395



Length over all, 4½ inches. Extreme diameter, ¾ inch.

Price, per dozen.....(YOFLA) \$4.80

Weight per dozen, 14 pounds.

#### Rose Countersink



No. 396 Extreme diameter, 2 inch. (YOFME) \$5.00

All of these Countersinks packed one dozen in a pasteboard box.

#### Screw-Driver Sets



These Sets consist of a polished hard-wood Handle, a strong steel Chuck, and three Blades made of the very best steel, carefully tempered and highly polished.

No. G20. Handle with 2 Screw-Driver Blades and 1 Reamer.

Price, each.....(WYUTZ) \$1.00

No. G25. Handle with 2 medium and 1 large Screw-Driver 200 Blades.

Price, each ... (wyzpo) \$1.00°

Packed one in a pasteboard box,  $6\frac{1}{2} \times 1\frac{3}{4} \times 1\frac{1}{2}$  inches. Weight, 8 ounces.

## Tack Claw No. 583



This is a handsome, practical, and serviceable tool for pulling all sizes of tacks. The blade is forged from a high grade of  $\frac{5}{16}$  inch steel, hardened, tempered, and polished. The handle is hard wood, nicely polished.

Length over all, 7 inches. Length of Blade, 3 inches. Net weight, 3 ounces.

Price, each ...... \$0.50

Packed one half dozen in a pasteboard box,  $7\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{3}{4}$  inches. Weight,  $1\frac{1}{4}$  pounds.

#### File Handle Assortment No. 724



These Handles are made of thoroughly seasoned hard wood with polished mahogany finish. The shape is a most comfortable one in use.

The polished nickel ferrule is amply heavy to allow firm seating of the file tang without danger of splitting.

The assortment consists of twelve handles made up of five different sizes from 3 inches to 43 inches in length.

Price, per assortment...... \$2.00

Packed one dozen assorted in a pasteboard box.

Weight, 11 pounds.

# Screw-Driver Handle Assortment No. 726





These Handles will be found most excellent for replacements and for handling any tool with a round shank within their capacity. They are made of thoroughly seasoned hard wood with a highly polished mahogany finish fluted to give a sure grip. This is the same handle used on our No. 909 Screw-Driver and the assortment is made up of twelve handles as used on the 2, 4, 5, 6, and 8 inch sizes.

Price, per assortment of twelve..... \$2.00,

Packed one dozen assorted in a pasteboard box. Weight, 11 pounds.

# Hand Rimmer

No. 346



This is a very fine little tool for removing the burr around the edge of a hole and for many other little jobs. Every gunsmith, assembler, or repairman will find a great deal of use for a tool of this kind.

The Blade is hammer forged from good tool steel, and is carefully hardened, tempered, and polished. The Handle is made of polished hard wood, and is protected by a heavy ferrule.

The tool is 61 inches long over all and weighs nearly 2 ounces.

Price, per dozen ... (YISYO) \$4.00

Packed one half dozen in a pasteboard box. 6\frac{2}{3} x 3\frac{1}{3} x 1\frac{1}{3} inches. Weight,

Packed one half dozen in a pasteboard box,  $6\frac{3}{4} \times 3\frac{1}{2} \times 1\frac{1}{4}$  inches. Weight, 11 ounces.

Ice Pick No. 339

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9

GODELL-PRATT COMPANY GREENFIELD, MASSUSA

This is a strong, well made Ice Pick that will stand a great deal of hard service. The Handle is large so that it may be used for cracking ice. The Blade is hammer forged from tool steel, carefully hardened, tempered, and polished. The Handle is hard wood, mahogany finish, 1\(\frac{1}{4}\) inches in diameter. It is protected by a heavy steel ferrule.

The tool has a 5½-inch Blade, is 9 inches long over all, and weighs over 3 ounces, net.

Price, per dozen. .... \$4.00

Packed one half dozen in a pasteboard box,  $9\frac{1}{4} \times 5\frac{1}{4} \times 2$  inches. Weight,  $1\frac{3}{8}$  pounds.

Ice Pick



This is a long, thin Ice Pick of the style generally preferred by ice men.

It has a good steel Blade, well tapered, tempered, and polished. The

Handle is made of hard wood, enameled to render it as near moisture-proof

as possible, and protected by a nickel-plated ferrule.

The tool has a 6-ineh Blade, is 10 inches long over all, and weighs slightly less than 2 ounces net.

Price, per dozen.....(YEHAD) \$2.00

Packed one dozen in a pasteboard box,  $10\frac{1}{2} \times 4 \times 2\frac{3}{4}$  inches. Weight,  $1\frac{1}{2}$  pounds.

#### Scratch Awl No. 344



This is an exceptionally well made and nicely balanced Awl. The Blade is hammer-forged tool steel, carefully hardened, tempered, and polished. The Handle is Birch, mahogany finish, 1½ inches in diameter, protected by a heavy steel ferrule.

The tool has a 4-inch Blade, is 7 inches long over all, and weighs about

2 ounces.

Packed one half dozen in a pasteboard box,  $7\frac{3}{4} \times 5 \times 1\frac{1}{2}$  inches. Weight, PAGE



This is a short, stocky Awl of the kind generally used by bridge builders and ship carpenters. It is a strong, serviceable tool. The Blade is hammer forged from good tool steel, and is carefully hardened, tempered, and polished. The Handle, which is polished Birch, 1½ inches in diameter, is protected by a heavy ferrule.

The tool has a 21/2-inch Blade, is 5 inches long over all, and weighs about

1 ounce net.

Price, per dozen.....(YIRSA) \$3.00

Packed one dozen in a pasteboard box,  $5\frac{1}{4} \times 4 \times 2\frac{3}{4}$  inches. Weight, 15 ounces.

### Belt Awl No. 336



This is a thin, nicely tapered, and well balanced Awl for making holes in Belts and for other similar purposes. The Blade is 4½ inches long, hammer forged, hardened, tempered, and polished. The Handle is Birch, mahogany finished, corrugated to prevent the hand from slipping, and protected by a heavy steel ferrule.

The tool is 8½ inches long over all, and weighs about 2 ounces.

Price, per dozen......(YERTE) \$4.20
Packed one half dozen in a pasteboard box,  $9\frac{1}{4} \times 3\frac{1}{2} \times 1\frac{1}{4}$  inches. Weight, 1 pound,

#### Nail Set No. 999



These Nail Sets are made from a very high grade of \(\frac{2}{2}\)-inch round tool steel about 4 inches long. The centers are knurled and the points are cupped. These Nail Sets are very carefully hardened and are tempered their entire length. Blue Finish.

Made with  $\frac{2}{32}$ ,  $\frac{3}{32}$ ,  $\frac{4}{32}$ ,  $\frac{5}{32}$  inch or assorted points.

### Nail Set No. 990



These slim Nail Sets are only  $\frac{5}{16}$  inch in diameter. They are equal in every way to our other styles. Blue Finish.

Made with  $\frac{2}{32}$ ,  $\frac{3}{32}$ ,  $\frac{4}{32}$  inch or assorted points.

# 206 Solid Punches No. 996



These Punches are exactly the same as our No. 999 Nail Sets, but they have solid instead of cupped points.

Price, per dozen, assorted points,  $\frac{2}{32}$  to  $\frac{5}{32}$  inch.....(zinak) \$2.00 Packed one dozen in a pasteboard box. Average weight,  $1\frac{1}{4}$  pounds.

## Center Punches



No. 995. With Regular point, per dozen, \$\frac{1}{84}\$ inch...(zimyp) \$2.20 No. 994. With Special Small Point, per dozen, \$\frac{5}{64}\$ inch.(zimpy) 2.20 Packed one dozen in a pasteboard box. Average weight, \$1\frac{1}{4}\$ pounds.

#### Prick Punch No. 998



Same as No. 995, but with longer point.

Price, per dozen......(ZIPRY) \$2.00

Packed one dozen in a pasteboard box. Average weight, 14 pounds.

PAGE

### Pocket Set of Nail Sets

No. 900

This Set consists of four of our high grade No. 999 Nail Sets, one each  $\frac{2}{32}$ ,  $\frac{3}{32}$ , and  $\frac{5}{32}$ ; put up in a convenient pocket case.

Net weight, 7 ounces.

Price, per set, com-

plete....(ZEZTO) \$0.80

Packed three sets in a pasteboard box,  $4\frac{1}{2} \times 2\frac{1}{4} \times 2$  inches.

Weight, 13 pounds.



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# Pocket Set of Nail Sets

No. 901



This Set consists of four of our high grade No. 999 Nail Sets, one each  $\frac{2}{32}$ ,  $\frac{2}{32}$ ,  $\frac{4}{32}$ , and  $\frac{4}{32}$ ; put up in a leather pocket case.

Net weight, 6 ounces.

Price, per set, complete .... (ZEZUV) \$0.90

Packed three sets assorted leather cases in a pasteboard box,  $4\frac{1}{2} \times 2\frac{1}{4} \times 1\frac{3}{4}$  inches.

Weight, 11 pounds.

# Concave Chisel



All of these tools are made from a fine quality of \(^3\)-inch round tool steel, \(^4\) inches long. The points are carefully shaped and properly tempered. The centers are knurled to give a firm grip. \(^3\)-inch Point, \(^3\)-inch Diameter. Per dozen.....(zllo) \(^3\)3.60

## Concave Chisel No. 984



3-inch Point, 3-inch Diameter. Per dozen.....(zilny) \$3.30

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# Straight Angle Chisel No. 985



1/8-inch Point, 3/8-inch Diameter, Per dozen.....(ZILOL) \$3.00

# Straight Angle Chisel No. 986



3-inch Point, 3-inch Diameter. Per dozen......(ZILUM) \$3.00

#### Rivet Set No. 987



7/82 inch Point, 3-inch Diameter. Per dozen . . . . . . (zilyn) \$3.30

All packed one dozen in a pasteboard box, 43/8 x 17/8 x 13/8 inches.

Average weight, per box, 11/4 pounds.

# Round Nose Punch



### Round Nose Punch No. 989



3-inch Point, 3-inch Diameter. Per dozen.....(ZIMEK) \$3.00

Small Center Punch

PAGE

209

ED (INVAS)

5-inch Point, 3-inch Diameter. Per dozen.....(ZIMJA) \$2.20

### Cold Chisel No. 992



1/8-inch Blade, 3-inch Diameter. Per dozen.....(ZIMKE). \$3.00

### Cold Chisel No. 993



### Heavy Center Punch No. 368



This Punch is made from a high grade of \(\frac{1}{2}\)-inch round tool steel, 5 inches long, properly tempered. The Centers are knurled. Price, per dozen......\$4.00

Packed one dozen in a pasteboard box,  $5\frac{3}{8} \times 2\frac{3}{8} \times 1\frac{3}{4}$  inches.

Weight, 23 pounds.

PAGE

### Nail Set No. 347



These Nail Sets are hammer forged from high grade tool steel, and are very carefully hardened and tempered. They are 33 inches long,  $\frac{1}{4}$  inch square. They are furnished with  $\frac{1}{10}$ ,  $\frac{5}{8}$ ,  $\frac{5}{32}$  inch or assorted points. 210 Price, per dozen . .

Average weight, 11 ounces.

### Center Punch No. 348



These Punches are hammer forged from high grade tool steel, carefully hardened and tempered. They are 33 inches long, 1 inch square.

Price, per dozen..... \$1.80

Packed one dozen in a pasteboard box, 4½ x 2 x ¾ inches.

Weight, 1 pound.

### Tinners' Punch No. 349



These Punches are hammer forged from high grade tool steel, and are carefully hardened and tempered. They are 41 inches long,  $\frac{3}{8}$  inch diameter. Furnished with  $\frac{7}{54}$ ,  $\frac{1}{8}$ ,  $\frac{5}{32}$  inch or assorted points. Price, per dozen... Packed one dozen in a pasteboard box,  $4\frac{7}{8} \times 1\frac{3}{4} \times 1\frac{1}{4}$  inches.

Average weight, 13 pounds.

# Saddlers' Drive Punches No. 997



These Punches are made from a very high grade of round tool steel about 4 inches long. The centers are knurled to insure a firm grip. These Punches are very carefully hardened and tempered their entire length. The cutting edges are sharpened.

These Punches are made in twelve different sizes.

No. 1	3 inch	5 inch	(ZINKA)	\$3.60
No. 2	3 inch	$\frac{3}{32}$ inch	(ZINLE)	3.60
No. 3	3 inch	7 inch	(ZINNO)	3.60
No. 4	3 inch	½ inch	(ZINON)	3.60
No. 5	3 inch	9 inch	(ZINUP)	3.60
No. 6	3 inch	$\frac{5}{32}$ inch	(ZIOXY)	3.60
No. 7	3 inch	3 inch	(ZIPAL)	3.60
No. 8	7 inch	$\frac{7}{32}$ inch	(ZIPEM)	3.90 PA
No. 9	$\frac{7}{1.6}$ inch	½ inch	(ZIPLA)	3.90
No. 10	$\frac{7}{16}$ inch	9 inch	(ZIPME)	3.90 2
No. 11	½ inch	$\frac{5}{16}$ inch	(ZIPOP)	4.40
No. 12	inch	11 inch	(gippo)	4.40

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Price, per Dozen

Packed one dozen in a pasteboard box,  $4\frac{3}{8} \times 2\frac{1}{8} \times 4\frac{3}{8}$  inches. Average weight,  $1\frac{1}{2}$  pounds.

# Saddlers' Drive Punch Sets

This Set consists of one each of our No. 997 Drive Punches, sizes 1 to 12, put up in a round wooden box. This makes a very handy outfit.

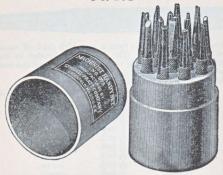
Price per set, complete (ZIGUH) \$4.40

Packed one set in a pasteboard box,  $5\frac{3}{8} \cdot x \ 3\frac{1}{4} \ x \ 3\frac{1}{4} \ inches.$  Weight, 2 pounds.





# Machinists' Handy Set



PAGE

This Set consists of one each of the following Punches and Chisels: Nos. 983, 984, 985, 986, 987, 988, 989, 991, 992, 993, 995, 996, 997, 998, and 999—32, described on pages 206 to 209. These tools are put up in a wooden box as shown in the illustration, and will be found very handy on any workbench. Net weight, 2 pounds. Price, per set, complete.

Packed one in a pasteboard box,  $5\frac{3}{4} \times 3\frac{3}{8} \times 3\frac{1}{8}$  inches.

Weight, 21/8 pounds.



## Nail Set Display Board No. 936

This assortment consists of three dozen No. 999 Nail Sets in assorted sizes, put up on a neat Display Board, as shown in the illustration. Net weight, 4 pounds.

Price, per set, complete.....(ziffo) \$7.00

Packed one set in a paste-board box,  $6\frac{1}{2}$  x  $6\frac{1}{2}$  x  $4\frac{3}{4}$  inches.

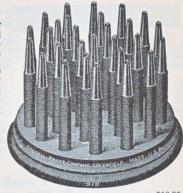
Weight, 43 pounds.

### Hand Cut Steel Letters

No. 978

This Set consists of 26 Hand Cut Steel Letters, A to Z,  $\frac{3}{32}$ -inch, also one each "&" sign and period.

Every one of these Letters is carefully hand cut, and not stamped or pressed out. The Knurled Centers are milled off on one side so that when the thumb rests on the flat part the Letter is sure to be right side up and perpendicular.



PAGE

## Hand Cut Steel Figures



No. 980

This Set consists of 9 Hand Cut 32-inch Steel Figures, 1, 2, 3, 4, 5, 6 (or 9), 7, 8, and 0. These are manufactured exactly the same as the Letters described above, every Figure being strictly hand cut, and the bodies made in such a manner that the Figures are always right side up and perpendicular when in use.

### Machinists' Pin Punches



These Punches are made from a very high grade of round tool steel about four inches long. The centers are knurled and the points and shanks nicely polished. Every punch is very carefully hardened and tempered their entire length. Blue Finish.

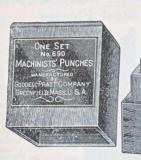
	Point	Stock		Price, per Dozen
No. 681	1 inch	5 inch	(ZALIZ)	\$3.00
No. 682	$\frac{3}{32}$ inch	5 inch	(ZALOB)	3.00
No. 683	½ inch	$\frac{5}{16}$ inch	(ZALUC)	3.00
No. 684	5 inch	5 inch	(ZALWA)	3.00
No. 685	$\frac{3}{16}$ inch	3 inch	(ZALYE)	3.00
No. 686	$\frac{7}{32}$ inch	3 inch	(ZAMAY)	3.00
No. 687	1 inch	3 inch	(ZAMCO)	3.00
No. 688	5 inch	3 inch	(ZAMEZ)	3.00
w				

Packed one dozen in a pasteboard box

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NEW

Machinists' Punch Set No. 690





This Set consists of eight Machinists' Punches, one of each of the following sizes,  $\frac{3}{16}$ ,  $\frac{3}{32}$ ,  $\frac{5}{3}$ ,  $\frac{2}{32}$ ,  $\frac{3}{42}$ ,  $\frac{3}{42}$ ,  $\frac{4}{4}$ , and  $\frac{5}{16}$ , put up in a handsome square box as shown in the illustration.

Weight, 11 pounds.

### Pin Punches



These Pin Punches are forged from a high grade of octagon tool steel, \$\frac{3}{3}\$ inch in diameter, about 5 inches long. They are hardened, ground, tempered, and have polished points.

Broama, comperca, and nave personne P	Per Dozen
No. 573. Size 3/32 inch(YUME:	z) \$2.04
No. 413. Size 1 inch(YOHY)	r) 2.04
No. 574. Size $\frac{5}{32}$ inch(YUMII	в) 2.04
No. 415. Size 3 inch(YOIL	
No. 575. Size $\frac{7}{32}$ inch(YUMO)	
No. 416. Size 1 inch	
No. 417. Size 5 inch(YOIRI	
No. 418. Size 3 inch(YOJAI	P) 2.04

Packed one dozen in a pasteboard box,  $6\frac{3}{8}$  x 2 x  $1\frac{3}{8}$  inches. Average weight, 2 pounds.

# Pin Punch Set

PAGE

This Set consists of 5 Pin Punches, one of each of the following 215 sizes: \(\frac{1}{3}, \frac{3}{16}, \frac{1}{4}, \frac{5}{16}, \text{ and } \frac{3}{8} \text{ inch.}\)
Price, per set. (YOREZ) \$0.85

Packed one set in a pasteboard box,  $6\frac{3}{8} \times 2\frac{1}{4} \times \frac{5}{8}$  inches.

Weight, 13 ounces.

# Pin Punch Set

No. 572

This Set consists of 8 assorted Pin Punches,  $\frac{3}{2}$  to  $\frac{3}{8}$  inch points, put up in a handy round wooden box, as shown in the illustration.

Price, per set, complete.(YUMCO) \$1.80

Packed one in a pasteboard box,  $7\frac{1}{2}$  x  $3\frac{1}{4}$  x 3 inches.

Weight, 2 pounds.





# Gimlet Bits



If you are looking for the very finest Gimlet Bit ever made, we know that these will give you absolute satisfaction. They are the best and quickest Bits for drilling small holes in wood.

Every one of these Bits is hand forged from crucible steel and is sharpened by hand, very carefully hardened, and oil tempered.

Every one of these Bits will bore faster and will last longer than any other brand on the market.

These are very strong statements, but we back them up by warranting every single one of these Bits, and we will gladly replace any Bit that is not perfectly satisfactory.

These Bits have shanks that will fit any Bit Brace or two-jawed Chuck. Length over all, 4 to 64 inches.

The sizes given below are standard gimlet sizes which are slightly over the actual size of the smaller Bits: Per Dozen Per Dozen 8 inch ..... .... \$2.20 1 inch . . . . . . . . . . . . . . . . \$2.20 .2.20 9 inch..... 2.20 2 inch..... 2,20 2.20 10 inch..... 2.40 2.20 PAGE 2.20 2.40 Assorted  $\frac{4}{32}$  to  $\frac{8}{32}$  inch... 216 2.20 2.20 Assorted  $\frac{1}{32}$  to  $\frac{12}{32}$  inch... 2.30 2.20

Packed one dozen in a pasteboard box,  $6\frac{3}{4} \times 2\frac{1}{4} \times \frac{3}{4}$  inch. Average weight per box, 10 ounces.

# Gimlet Bit Set

This Set consists of twelve Gimlet Bits, do to 12 inch, put up in a handy round wooden box, where they are always readily available when desired. Each one of these Bits is hand-forged from crucible steel. carefully hardened, oil tempered, and sharpened by hand. This will be found a most convenient outfit upon any woodworker's workbench.





Price, per set, complete.....(YUMYA)
Packed one in a pasteboard box, 7½ x 3½ x 3 inches.

Weight, 1½ pounds.

## Chisel and Punch Set No. 470

This Set consists of 12 octagon Chisels and Punches, 5 inches long and 3 inch in diame-The tools are forged from a very high grade of tool steel. They are hardened. ground, tempered, and have polished points.

Each Set is put up in a handy wooden box and will be found convenient on any workhench.





... (YORAY) Price, per set, complete.

Packed one in a pasteboard box, 61 x 31 x 3 inches.

Weight, 21 pounds.

### Carpenters' Handy Set No. 524





This Set consists of ten small tools that will be found most convenient upon any carpenter's workbench. These tools are all forged from a high grade of tool steel. hardened, ground, and very carefully tempered.

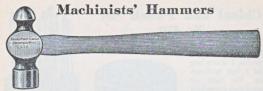
The following tools are contained in this Set: 5 Screw-Driver Bits, 1 Countersink, 1 Cold Chisel, 1 Solid Punch, 1 Nail Set, 1 Prick Punch.

Each Set is put up in a handy round wooden box where the tools are always readily available when desired.

..... (YUCOR) \$3.00 Price, per set, complete.....

Packed one in a pasteboard box, 6% x 31 x 3 inches. Weight, 21 pounds.

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These Ball Peen Hammers have heads of excellent design, forged from a high grade of very tough steel properly hardened and the temper scientifically distributed over the face and peen.

The Hickory Handles are shorter than those generally furnished with hammers of similar size, in order that they may fit into tool

rolls or small tool boxes.

	Head	Length	Price, Each
No. 557	12 ounces	9½ inches(YUIG	
No. 559	16 ounces	12 inches(YUJA	r) 1.80

Each Hammer packed in a separate pasteboard box.

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## **Combination Pliers**



These Combination Pliers are drop-forged, carefully hardened and tempered. Each pair has a cutting slot and a pipe grip and is provided with a slip joint. Both handles are scored, and one has a screw-driver end.

These tools are made just as well as they can be made and are sold at a price as low as is consistent with the quality of the article.

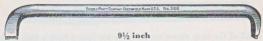
These Pliers are made in one size only,  $6\frac{1}{2}$  inch, with two different finishes. Black finish; or fully polished, nickel plated, and buffed.

Net weight, 9 ounces.

No. 376.	Black Finish(YOCAJ)	\$1.30
No. 377.	Polished and Nickel Plated(YOCEK)	2.00

Packed one in a pasteboard box, 7 x 2 x 7 inch. Weight, 10 ounces.

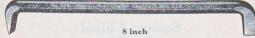
# Offset Screw-Driver



This Screw-Driver is forged from a high grade of  $\frac{1}{2}$ -inch round tool steel, hardened, ground, tempered, with points polished. Blades are placed at right angles to each other. Length over all,  $9\frac{1}{2}$  inches. Net weight, 9 ources.

Packed one half dozen in a pasteboard box,  $10\frac{3}{4}$  x  $3\frac{1}{4}$  x  $1\frac{1}{2}$  inches. Weight,  $3\frac{5}{8}$  pounds.

### Offset Screw-Driver No. 579



PAGE 210

This Screw-Driver is forged from a high grade of  $\frac{3}{3}$ -inch octagon tool steel, hardened, ground, tempered, and points polished. Length over all, 8 inches. Net weight, 5 ounces.

Packed one dozen in a pasteboard box,  $8\frac{3}{4} \times 2\frac{3}{4} \times 2\frac{1}{2}$  inches. Weight, 4 pounds.

### Cold Chisels



These Cold Chisels are forged from a very high grade of octagon tool steel. They are hardened, ground, tempered, and have polished points.

	Width of Point	Dia. of Stock	Length Over All		Price Per Dozen
No. 456	3 inch	3 inch	5 inches	(YOONY)	\$2.20
No. 455	1 inch	3 inch	5 inches	(YOOLV)	2.20
No. 623	5 inch	½ inch	6½ inches	(YUZYR)	4.80
No. 627	3 inch	5 inch	7 inches	(ZABAM)	7.20
No. 629	7 inch	3 inch	7½ inches	(ZABIP)	9.60

Packed one dozen in a pasteboard box.

# Cape Chisel



All of the tools shown on this page are forged from a high grade of octagon tool steel, hardened, ground, and carefully tempered. All the points are polished.

Length over all, 5 inches; diameter, 3 inch.

14-inch Point. Price, per dozen.....(YOOPZ) \$2.40

### Cape Chisel No. 458



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#### Square Chisel No. 459



5/32-inch Point. Price, per dozen.....(YOOSD) \$2.40

### Diamond Point Chisel No. 460



5/32-inch Point. Price, per dozen.....(yoovg) \$2.40

# Half Round Chisel



 $\frac{1}{2}$ -inch Blade. Price, per dozen......(y002K) \$2.40 All packed one dozen in a pasteboard box,  $5\frac{5}{8}$  x 2 x  $1\frac{3}{8}$  inches. Average weight,  $1\frac{3}{4}$  pounds.

# Half Round Cape Chisel



All of the tools shown on this page are forged from a high grade of octagon tool steel, hardened, ground, and carefully tempered. All the points are polished.

Length over all, 5 inches; diameter, 3 inch.

14-inch Blade. Price; per dozen.....(YOPAV) \$2.40

# Solid Punch



5-inch Point. Price, per dozen.....(YOPCY) \$2.20

Cup Punch

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# No. 464

5/32-inch Point. Price, per dozen (YOPIX) \$2.20

# Prick Punch

121 GOWELL-PROJ GOWANT GETWING MASS U.S.A. 465

## Center Punch

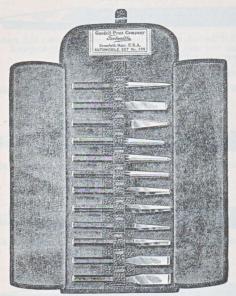
Goods Part Commit Systems Miss U.S.A. No. 466

3 16-inch Point. Price, per dozen.....(YOPUB) \$2.20

All packed one dozen in a pasteboard box, 5\s^5 x 2 x 1\s^3 inches.

Average weight, 1\s^2 pounds.

# Motor Set



PAGE 222

This Set consists of 12 octagon Chisels and Punches 5 inches long and \( \frac{3}{6} \) inch in diameter. The tools are forged from a very high grade of tool steel. They are hardened, ground, tempered, and have polished points. The tools in this set are carefully selected to meet the needs of automobilists. The tools are shown and listed separately on pages 219 to 221.

Each Set is put up in an attractive leather-cloth case. The tools are held in place by a leather Strap. Net weight, 2 pounds.

Price, per set, complete in case.....(YOFYR) \$4.00

Packed one set in a pasteboard box,  $6\frac{1}{2} \times 3\frac{1}{4} \times 3$  inches. Weight,  $2\frac{1}{4}$  pounds.

### Motor Set No. 499



PAGE

This Motor Set contains 12 good tools in a strong, leather-bound Canvas Case, where they are held in place by strong leather straps.

The tools are selected to make any ordinary road repairs on a small car. Every tool in the set is fully up to the highest standards, and can be depended upon in any emergency. This Set will also be found exceedingly well adapted for motorcycle repairs and will easily pack into any motorcycle tool box. Net weight, 4 pounds,

The following tools are included:

No. 231 Screw-Driver Set. No. 376 Combination Pliers. No. 456 Cold Chisel.

No. 457 Cape Chisel. No. 463 Solid Punch.

No. 465 Prick Punch.

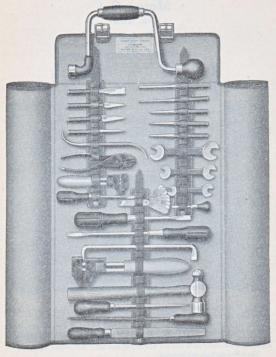
No. 466 Center Punch.

No. 481 Adjustable Wrench. No. 557 Ball Peen Hammer. No. 909 Screw-Driver, 2 inch. No. 909 Screw-Driver, 5 inch.

Half Round File, 6 inch.

Price, per set, complete... ..... (YOVED) \$10.00

Packed one set in a pasteboard box, 12½ x 4½ x 3½ inches. Weight, 4½ pounds.



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### Motor Set

No. 599

Knowing that there is a demand among discriminating motorists for extra fine Motor Kits containing an assortment of high grade tools, we have prepared these Sets.

This Set contains 27 good tools for making all ordinary road repairs. They are all tools that will do good work and can be depended upon.

The tools are contained in an extra heavy leather bound canvas roll, and are held in place by strong leather straps.

PAGE

The following tools are included:

No. 82	Rim Wrench.	No. 465	Prick Punch.	
No. 278	Screw-Driver.	No. 466	Center Punch.	
No. 359	Thickness Gauge.	No. 474	Double End Wrench.	
No. 366	Offset Screw-Driver.	No. 475	Double End Wrench.	
No. 367	Screw-Driver, 4 inch.	No. 476	Double End Wrench.	
No. 376	Combination Pliers.	No. 479	Cotter Pin Puller.	
No. 413	Pin Punch.	No. 481	Adjustable Wrench.	
No. 416	Pin Punch.	No. 484	Adjustable Wrench.	
No. 455	Cold Chisel.	No. 559	Ball Peen Hammer.	
No. 457	Cape Chisel.	No. 909	Screw-Driver, 3 inch.	
No. 462	Half Round Chisel.	No. 909	Screw-Driver, 7 inch.	
No. 463	Solid Punch.	6-inch Three-Square File.		
No. 464	Cup Punch.	8-inch Flat File.		
	O inch I	Daniel Dila		

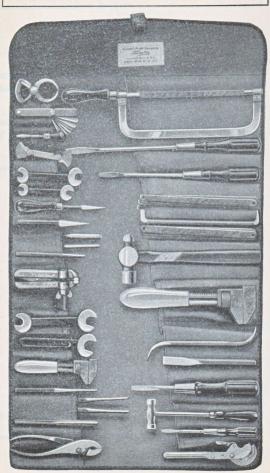
8-inch Round File.

Net weight, 111 pounds.

Price, per set, complete .......(YUPUG) \$20.00

Packed one complete set in a pasteboard box,  $16 \times 9\frac{1}{2} \times 4$  inches.

Weight, 12 pounds.



YEYL→

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## General Repair Kit

#### No. 1111



PAGE

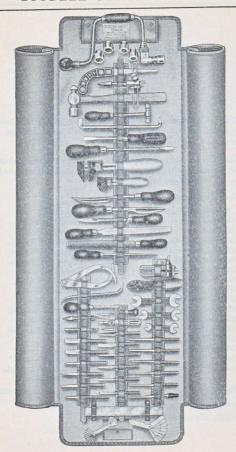
This Set consists of 33 high grade tools especially selected for general field or road repairs on automobiles, trucks, tractors, gas engines, etc.

The tools are all contained in pockets in the extra heavy, leather bound canvas case from which they can be instantly removed or replaced. Net weight,  $11\frac{5}{8}$  pounds.

#### The following tools are included:

No. 8	Hack Saw Frame.	No. 458 Cold Chisel.	
No. 93	Brass Hammer.	No. 464 Round Cup Punch.	2
No. 96	Hand Vise.	No. 466 Center Punch.	
No. 135	Screw Pitch Gauge.	No. 474 Double End Wrench.	
No. 278	Pocket Screw-Driver.	No. 475 Double End Wrench.	
No. 346	Hand Rimmer.	No. 476 Double End Wrench.	
No. 350	3 inch Screw-Driver.	No. 479 Cotter Pin Puller.	
No. 350	6 inch Screw-Driver.	No. 481 Adjustable Wrench.	
No. 350	8 inch Screw-Driver.	No. 484 Adjustable Wrench.	
No. 359	Thickness Gauge.	No. 498 Single End Wrench.	
No. 367	3 inch Screw-Driver	No. 557 Machinists' Hammer.	
No. 376	Combination Plier.	No. 579 Offset Screw-Driver	
No. 413	Pin Punch.	No. 595 Chauffeur's Universal	
No. 415	Pin Punch.	Wrench.	
No. 416	Pin Punch.	No. 623 Cold Chisel.	
No. 418	Pin Punch.	No. 662 Indicating Caliper.	
No. 456	Cold Chisel.	No. GP/777 Hack Saw Blades, 8- inch Fine, 1 Dozen.	

Packed one in a pasteboard box,  $17\frac{1}{2}$ -x 5 x 4 inches. Weight,  $12\frac{1}{4}$  pounds.



PAGE

## Complete Motor Set

No. 699

This Kit was designed for the use of small garages or for long tours. It consists of 53 good tools in a strong khaki-colored canvas case. The tools are held in place by leather straps, and a leather carrying handle is provided.

Every tool in these kits is the best of its kind and can be depended upon in any emergency.

The following tools are contained in this outfit:

No. 93 Brass Hammer.	No. 434 Hexagon Socket.
No. 96 Hand Vise.	No. 435 Hexagon Socket.
No. 135 Screw Pitch Gauge.	No. 441 Washer Cutter.
No. 214 Steel Rule.	No. 455 Cold Chisel.
No. 231 Screw-Driver Set.	No. 456 Cold Chisel.
No. 237 Keyhole Hack Saw.	No. 457 Cape Chisel.
No. 278 Screw-Driver.	No. 458 Cape Chisel.
No. 332 Screw-Driver, 3 inch.	No. 459 Square Chisel.
No. 332 Screw-Driver, 8 inch.	No. 460 Diamond Point Chisel.
No. 359 Feeler Gauge.	No. 461 Half Round Chisel.
No. 366 Offset Screw-Driver.	No. 462 Half Round Cape Chisel.
No. 367 Screw-Driver, 4 inch.	No. 463 Solid Punch.
No. 376 Combination Pliers.	No. 464 Cup Punch.
No. 381 Bearing Scraper.	No. 465 Prick Punch.
No. 382 Bearing Scraper.	No. 466 Center Punch.
No. 383 Bearing Scraper.	No. 474 Double End Wrench.
No. 389 Ratchet Rim Wrench.	No. 475 Double End Wrench.
No. 396 Rose Countersink.	No. 476 Double End Wrench.
No. 398 Octagon Reamer.	No. 479 Cotter Pin Puller.
No. 403 Firm Joint Caliper.	No. 481 Adjustable Wrench.
No. 413 Pin Punch.	No. 484 Adjustable Wrench.
No. 415 Pin Punch.	No. 559 Ball Peen Hammer.
No. 416 Pin Punch.	No. 997 Drive Punch, No. 6.
No. 417 Pin Punch.	6-inch Three-Square File.
No. 418 Pin Punch.	8-inch Flat File.

PAGE 229

For complete information regarding these tools, refer to the other pages of this catalog. Net weight, 19 pounds.

Price, per set, complete.......................(2ANIC) \$40.00

8-inch Half Round File.

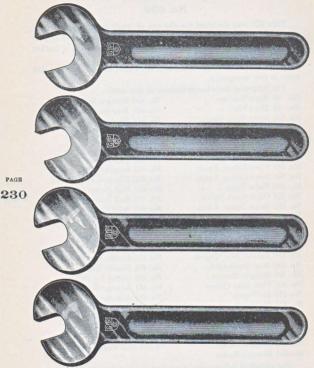
Each complete set is packed in a pasteboard box,  $16 \times 11\frac{1}{2} \times 6$  inches.

Weight, 20 pounds.

No. 432 Hexagon Socket.

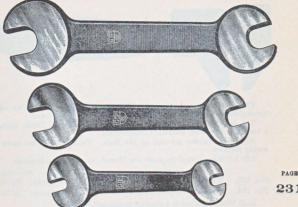
No. 433 Hexagon Socket.

## Single End Wrenches



These Wrenches have large black enameled Handles that will start the hardest serews. They are forged from a very tough wrench steel, properly hardened and tempered. Heads are polished. Length over all, 55 inches. Average weight, 6 ounces,

## Double End Wrenches



231 These Wrenches are forged from a special tough wrench steel.

	Length	Weight Per Box	Ope	nings		Per Dozen
No. 474	4 inches	7 pounds	5 16	13	(YOROC)	\$3.70
No. 475	5 inches	15 pounds	3/8	1 2	(YORUD)	4.70
No. 476	6 inches	$2\frac{1}{2}$ pounds	9 16	11	(YORYA)	6.50

The openings are milled. They are carefully hardened. Handles

Packed one half dozen in a pasteboard box.

are finished in black enamel. Heads are polished.

### Automobile Tools

In addition to the tools shown on pages 222 to 243, we manufacture the following tools used in Automobile Repairing:

Brass Hammers. Hack Saw Blades. Screw Pitch Gauges. Breast Drills. Hack Saw Frames. Steel Rules. Caliners. Hand Drills. Thickness Gauges. Chain Drills. Micrometers. Vises

Circular Glass Cutters. Screw-Drivers. Washer Cutters.

## Adjustable Wrenches



These attractive and serviceable Wrenches will be appreciated by all automobilists; the small size will also be found useful in any home.

The Jaws are case-hardened steel, running on two steel Guide Rods, a very light but strong method of construction.

Aluminum Handles are cast on the Rods. These Handles are handsomely polished.

The Adjusting Nut of the small size Wrench runs on Roller Bearings.

PAGE 232

			Troight.	ne, Laci
	No. 481.	6 inch	9 ounces(YOSEB)	82.00
2	No. 484.	10 inch	2 pounds(YOSUF)	\$3.00

Each Wrench packed in a separate pasteboard box.

## Chauffeurs' Universal Wrench



This Chauffeurs' Universal Wrench is so named because it is self-adjusting for any size square or hexagon nut up to  $\frac{5}{6}$  inch, and will hold round rods from  $\frac{1}{16}$  inch to  $\frac{5}{2}$  inch in diameter. The jaws are opened by pressing the trigger and automatically closed by means of a spring. It will firmly grip any size piece within its capacity.

The entire tool is strongly made from steel with hardened jaws. The handle is shaped to give a good grip.

Length over all, 7 inches. Net weight, 8 ounces.

Price, each \$2.50

Packed one in a pasteboard box, 71 x 21 x 2 inches. Weight, 10 ounces.



size. The four sizes of sockets are \$, 11, 3, and 7 inch.

PAGE 233

13 pounds.

Price, per set... ..... (YOCIL) Each Set packed in a pasteboard box, 93 x 23 x 2 inches. Weight, 17 pounds.

#### Socket Wrench Set No. 380



This Set consists of four Sockets, sizes \$, 11, 2, and 7 inch, all fitting one knurled steel handle.

Length over all, 103 inches. Net weight, 13 pounds,

Price, per set .. .. (YOCKE) \$1.60 Packed one Set in a pasteboard box, 10 x 2 x 11 inches. Weight, 12 pounds.

#### Offset Socket Wrench No. 482

This Wrench can be used in a great many places that no ordinary Wrench will reach. It will be found particularly useful on several places in a Ford Car. The Handle is polished steel, knurled to give a good grip. The Socket is very strong, and is broached to exact \$\frac{1}{2}\$-inch hexagon size. Length over all, 101 inches. Net weight, 11 ounces.

Price, each..... . (YOSIC) \$0.90 Packed three in a pasteboard box, 11 x 2½ x 2 inches. Weight, 2½ pounds.

### Ratchet Socket Wrench No. 419

This tool has a 7-inch black enameled iron Handle, provided with a very strong ratchet that can be used for either right or left

hand work. The polished hard-wood Head runs on ball bearings. The 3-inch

hexagon Socket is made from solid steel and broached to accurate size. The tool is 32 inches high, and weighs 13 pounds net.

Price, each..... (YOUIR) \$3.00 Packed one in a pasteboard box, 8½ x 4½ x 2½ inches. Weight, 13 pounds.

#### Socket Wrench Set No. 589

PAGE 234



The Set consists of a No. 419 Ratchet Socket Wrench, a No. 564 Extension fitting it, and 8 extra Sockets which will fit either the Wrench or the Extension. Each Set is packed in a strong, attractive, hard-wood box, 10 x 5% x 3% inches. Net weight, 51 pounds.

.... (YUODS) \$7.50 Price, per set, complete.... Each complete set is packed in a pasteboard box, 10½ x 6½ x 3½

inches. Weight, 6 pounds.

# Socket Wrench Set

This Set consists of a No. 419 Ratchet Socket Wrench with a \$\frac{3}{4}\text{-inch hexagon socket, and 4 extra Sockets fitting it. Extra Sockets have \$\frac{1}{8}\tau\_1\text{-1}\frac{1}{6}\tau\_7\text{-1}\frac{2}{6}\text{-1}\frac{1}{6}\text{-1}\frac{2}{6}\text{-1}\frac{1}{6}\text{-1}\frac{1}{6}\text{-1}\frac{2}{6}\text{-1}\frac{1}{6}\text{-1}\frac{2}{6}\text{-1}\frac{1}{6}\text{-1}\frac{2}{6}\text{-1}\frac{1}{6}\text{-1}\frac{2}{6}\text{-1}\frac{1}{6}\text{-1}\frac{2}{6}\text{-1}\frac{1}{6}\text{-1}\frac{2}{6}\text{-1}\frac{1}{6}\text{-1}\frac{2}{6}\text{-1}\frac{1}{6}\text{-1}\frac{2}{6}\text{-1}\f

Each Set is packed in a strong, attractive hard-wood box,  $9 \times 4\frac{7}{8} \times 3$  inches. Net weight,  $3\frac{3}{4}$  pounds.

Price, per set, complete.(YOTHY) \$6.00

Each complete set is packed in a pasteboard box,  $9\frac{1}{2} \times 5\frac{1}{4} \times 3\frac{1}{4}$  inches. Weight,  $4\frac{1}{4}$  pounds.



PAGE

## Hexagon Sockets

These Sockets can be used with our Rim Wrenches, Socket Wrenches, or in any other \(^3\_4\)-inch hexagon socket. They are made of steel castings, white nickeled, with a spring pin to hold them in place. Sockets are broached to accurate size.



	Hexagon Opening		Price, Each
No. 591	½ inch	(YUOWM)	\$0.24
No. 592	9 inch	(YUPAB)	.24
No. 432	5 inch	(YOLIT)	.24
No. 433	11 inch	(YOLOV)	.24
No. 434	13 inch	(YOLRA)	.24
No. 435	7 inch	(YOLSE)	.24
No. 593	15 inch	(YUPBA)	.28
No. 594	1 inch	(YUPCE)	.28
D. J. J	and Joseph in a	nastahan	nd how

Packed one dozen in a pasteboard box. Average weight per box,  $2\frac{3}{4}$  pounds.

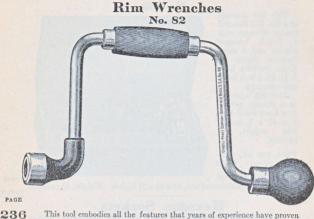
#### Socket Wrench Extension No. 564

This device will be found very convenient in connection with a Socket Wrench to reach into many places that are otherwise inaccessible. One end is provided with a \(\frac{3}{2}\)-inch hexagon socket, while the other will fit into a similar socket on any other wrench.

The tool is made of solid steel, 9 inches long over all. Net weight, 11 ounces.

Price, each ....

Packed one fourth dozen in a pasteboard box,  $9\frac{1}{2} \times 3\frac{1}{4} \times 1\frac{3}{8}$  inches. Weight,  $2\frac{1}{7}$  pounds.



This tool embodies all the features that years of experience have proven necessary or desirable. The built in strength and reliability insure the user satisfactory service in spite of the severe demands made on this class of tool.

It has a 10-inch forged steel sweep which is nicely polished and nickelplated. The powerful Socket is broached out giving it sharp corners and accurate size and is carefully hardened to withstand the severest requirements. At the bottom is a tapered square hole for holding countersinks, reamers, screw-drivers bits, and drills with bit brace shanks. The Socket is finished in red enamel with polished and nickel-plated edges. The Handle, which runs in adjustable collars, is large to prevent hurting the hand. Both the Head and the Handle are finished with black rubber enamel.

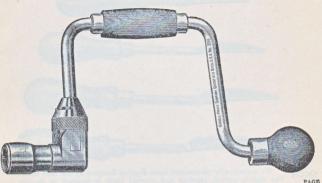
In ordering, be sure to specify which size is desired, as, otherwise, the \( \frac{3}{4}\)-inch size will be sent. Net weight, \( 1\) \( \frac{3}{8}\) pounds.

	ce, Each
With 5 inch socket, 10 inch sweep(YARJA)	\$1.30
With 11/16 inch socket, 10 inch sweep(YARKE)	1.30
With 3/4 inch socket, 10 inch sweep(YARMO)	1.30
With 13 inch socket, 10 inch sweep(YARPY)	1.30
With $\frac{7}{8}$ inch socket, 10 inch sweep(YARYP)	1.30

Packed one half dozen in a pasteboard box,  $12\frac{1}{2} \times 7\frac{1}{2} \times 5$  inches. Weight, 9 pounds.

Notice.—For Hexagon Sockets of various sizes fitting the  $\frac{3}{4}$ -inch Socket of this Rim Wrench, see page 235.

# Ratchet Rim Wrench



23.7

This is a very strong and serviceable Rim Wrench with a ratchet mechanism for added convenience. The sturdy ratchet is milled directly in the shank of the Socket and is engaged by a pair of powerful Dogs that make slipping or stripping impossible. The Hexagon Socket also has a square taper hole for holding countersinks, reamers, screw-driver bits, and drills with bit brace shanks.

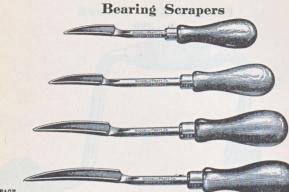
The Ratchet is operated by a strong ring shift. The 10-inch sweep is forged steel. All steel parts are polished and nickel-plated. The Head and Handle are finished with black rubber enamel. The large comfortable Handle runs in adjustable collars.

In ordering, be sure to specify which size is desired, as otherwise the 3-inch size will be sent. Net weight, 12 pounds.

4-Inch blac will be beller 2100 meights at pounds	
Pric	ce, Each
With 5 inch socket, 10 inch sweep(YOECK)	\$3.00
With 11 inch socket, 10 inch sweep(YOEGN)	3.00
With 3/4 inch socket, 10 inch sweep (YOELS)	3.00
With 13/16 inch socket, 10 inch sweep(YOEMT)	3.00
With $\frac{7}{8}$ inch socket, 10 inch sweep(YOENV)	3.00

Packed two in a pasteboard box, 13 x 7½ x 3¼ inches. Weight, 4¼ pounds.

Notice.—For Hexagon Sockets of various sizes fitting the  $\frac{3}{4}$ -inch socket of this Rim Wrench, see page 235.



PAGE 238

We unreservedly recommend these Bearing Scrapers as the best made. The slightly curved, tapering and recessed blade is designed to do nice scraping without chattering. The blades are forged from a very high grade of tool steel correctly hardened and so carefully tempered that they will scratch glass and hold their keen razor-like edge over a long period. After being dulled by long usage they can be easily sharpened by a few strokes on an oil stone.

The polished round shanks and large polished mahogany finished handle

make a most attractive tool and a comfortable one to use.

37 804	Cutting Edge			Price, Each	
No. 581	1½ inches	8 inches	(YUNDO)	\$0.70	
No. 381	$2\frac{1}{2}$ inches	10 inches	(YOCYP)	.80	
No. 382	3½ inches	11 inches	(YODAK)	.90	
No. 383	4½ inches	12 inches	(YODEL)	1.00	
			(IODEL)	1.00	

Packed one half dozen in a pasteboard box.

## Bearing Scraper Set

This Set consists of one each No. 581, No. 381 and No. 382 Bearing Scrapers, described above, put up in a neat leather case to protect their cutting edges.

Packed one set in a pasteboard box.

## Bearing Scraper Set

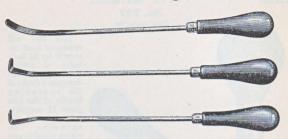
This Set consists of one of each of the following Bearing Scrapers which adescribed above: No. 381, No. 382, and No. 383.

Net weight, 1 pound.

Price, per set.....(YORCO). \$2.70

Packed one set in a pasteboard box, 12½ x 3½ x 1½ inches. Weight, 1½ pounds.

## Carbon Scrapers



These Carbon Scrapers are forged from a high grade of  $\frac{3}{16}$ -inch round tool steel, hardened and tempered to have good scraping edges and yet be as springy as possible. The Blades are 9 inches long and  $\frac{7}{16}$ -inch wide with polished shanks.

PAGE 239

The handles are nicely polished and properly shaped, making them very easy to use. The tools are attractive in appearance and well made.

Each Scraper is 131 inches long over all. Net weight, 3 ounces.

			Price, Each
No. 565.	Round end.	Curved blade(YULBO)	\$0.60
No. 566.	Round end.	Bent blade(YULIZ)	.60
No. 567.	Square end.	Bent blade(YULOB)	.60

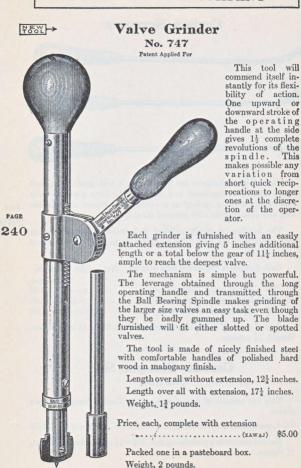
Packed one half dozen in a pasteboard box,  $13\frac{\pi}{8} \times 4\frac{1}{8} \times 1\frac{3}{8}$  inches. Weight,  $1\frac{1}{8}$  pounds.

# Carbon Scraper Set

This Set consists of one of each of the Carbon Scrapers shown above.

Price, per set(YULUC) \$1	t	(YULUC)	\$1.80
---------------------------	---	---------	--------

Packed one set in a pasteboard box,  $13\frac{7}{8} \times 2\frac{7}{8} \times 1\frac{3}{8}$  inches. Weight, 11 ounces.



## **Automobile Valve Grinders**

Patented July 7, 1914

These tools will be found a great convenience in grinding Automobile Valves. Although this was formerly drudgery, it is now done easily and rapidly with these tools. By means of a simple operating mechanism, the Spindle is caused to rotate back and forth when the Crank is turned continuously in one direction.

The tools are designed to have sufficient weight so that additional pressure need not be

applied to the valve seat.

Both an adjustable Spanner and a Blade are provided with each of these tools in order that they may be used on different types of cars.

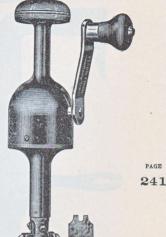
Length over all,  $10\frac{1}{4}$  inches.

No. 288. Enameled Iron Frame. Weight, 3\frac{3}{4} pounds.

Price, each....(YIFAG) \$4.50

No. 467. Polished Aluminum
Frame. Weight, 2½ pounds.

Price, each...(YOPVA) \$6.00



Packed one in a pasteboard box, 103 x 33 x 3 inches.

### Valve Grinder Blade No. 518



The use of this Blade in the Valve Grinders, shown above, enables the user to grind valves that he would otherwise be unable to reach with these tools.

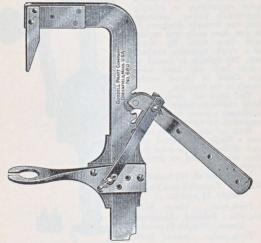
The Blade is made of case hardened steel, 8 inches long. Net weight, 2½ ounces.

Price, each.....(YUBNE) \$0.40

Packed one half dozen in a pasteboard box,  $8\frac{1}{2} \times 1\frac{3}{8} \times \frac{5}{8}$  inches. Weight,  $1\frac{1}{8}$  pounds.

## Valve Spring Compressor

No. 680
Patent Applied For



This Compressor is designed as a serviceable tool for use in compressing the springs of overhead valves. It is strongly made of forged steel and positive in action.

Springs are compressed by a single throw of the lever and held under compression so that both hands can be used for removing or inserting the valve stem washer. The distance between the fork and the center is changed by placing the lever in various grooves on the back of the frame. A closer adjustment is obtainable by adjusting the length of connecting rods. Extreme depth of throat, 4 inches.

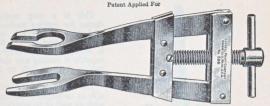
The distance from center to frame is adjustable and when extended is great enough to reach the valve on any standard overhead valve automobile.

Net weight, 13 pounds.

PAGE

Packed one in a pasteboard box,  $9\frac{3}{4}$  x  $4\frac{3}{4}$  x  $1\frac{3}{4}$  inches. Weight, 2 pounds.

### Valve Lifter No. 596



This Valve Lifter is a strong and powerful all-steel tool that will be appreciated by all automobile mechanics. It is short and compact enough to be used in any car, and powerful enough to compress any valve spring and hold it under compression. It is used by inserting the jaws beneath the valve spring, which is compressed as the jaws are opened by turning the handle. As the jaws move on hardened rollers, and the screw on ball bearings, the tool is very easy to operate.

The design of the larger circular opening in the upper jaw allows this 243 jaw to extend above the small connecting parts on and about the valve stem, thus allowing them to be easily removed.

The arms of this tool are drop-forged steel. All exposed parts are nicely polished.

Length over all, 6 inches. Net weight, 9 ounces.

.....(YUPFO) \$2.50

Packed one in a pasteboard box, 61 x 25 x 17 inches. Weight, 3 pound.

### Cotter Pin Puller No. 479

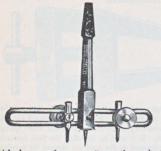
This Cotter Pin Puller is forged from a high grade of 3-inch hexagon tool steel, carefully hardened, ground, and tempered. Length from point to spreader, 8 inches. Net weight, 31 ounces.

Price, per dozen..... ..... (YOSBE) \$4.00

Packed one dozen in a pasteboard box, 8½ x 2¾ x 1½ inches. Weight, 23 pounds.

PAGE

# Washer Cutter



This is a very useful device for cutting washers of leather, fiber, cloth, or very thin sheet metal. It is strong and well made, capable of cutting any size washer from 1 inch to 5 inches.

The Blades are adjustable as to length of cutting edge as well as to position. They can be easily removed for sharpening or for replacement when worn out.

The tool is made entirely of steel and is nicely pol-

ished everywhere except on the end of the shank; which is case hardened. Net weight, 8 ounces.

Packed one in a pasteboard box,  $5\frac{3}{4}$  x  $5\frac{3}{4}$  x  $1\frac{3}{4}$  inches. Weight, 10 ounces.

.60

### Washer Cutter No. 441

This tool is similar to that described above, but is equipped with an Offset Blade with which it is possible to cut washers of all sizes from ½ to 5½ inches.

PAGE

Made entirely of steel, all polished except the end of Shank Net weight, 8 ounces.

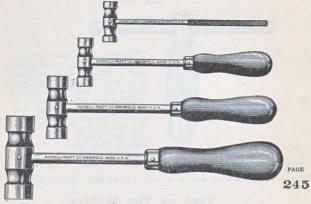
Price, each.. (YOMSA) \$2.40 Extra Blades, per

Packed one in a pasteboard box,  $5\frac{3}{4} \times 5\frac{3}{4} \times 1\frac{3}{4}$  inches.

Weight, 10 ounces.



## Brass Hammers



These Brass Hammers' will be found convenient and practical for use on finished work, or in any place where a soft hammer is desired. The Brass Heads and Steel Shanks are both nicely polished, and the three largest sizes have polished hard-wood handles.

No. 91. Head,  $\frac{1}{2}$  x  $1\frac{1}{2}$  inches. Steel handle with knurled grip. Length over all,  $5\frac{1}{2}$  inches. Net weight, 2 ounces. Price, each........................(YAURN) \$0.60

Packed one in a pasteboard box, 6 x 2 x  $\frac{3}{4}$  inch. Weight, 3 ounces.

No. 92. Head,  $\frac{9}{16}$  x  $1\frac{3}{4}$  inches. Length over all,  $7\frac{1}{4}$  inches. Net weight, 4 ounces. Price, each.....(YAUXT) .80

Packed one in a pasteboard box, 8 x  $2\frac{1}{4}$  x  $1\frac{1}{4}$  inches. Weight, 6 ounces

No. 93. Head,  $\frac{3}{4}$  x  $2\frac{1}{4}$  inches. Length over all, 8 inches. Net weight, 8 ounces. Price, each.....(xaven) 1.00

Packed one in a pasteboard box,  $8\frac{1}{2} \times 2\frac{1}{2} \times 1\frac{1}{4}$  inches. Weight, 10 ounces.

No. 94. Head, 1 x 3 inches. Length over all, 10 inches. Net weight, 16 ounces. Price, each.....(xayma) 1.60
Packed one in a pasteboard box,  $10\frac{1}{2}$  x  $3\frac{1}{4}$  x  $1\frac{1}{2}$  inches. Weight,  $1\frac{1}{4}$  pounds.

# Tool or Tap Holder

No. 88



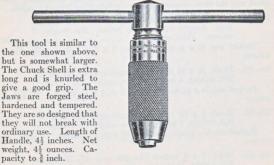
This tool will be found very convenient for holding small Drills, Taps, Reamers, or other small tools to be turned by hand. The Chuck Shell is extra long, and is knurled to give a firm grip. The Jaws are forged steel, hardened and tempered. They are so designed that they will not break with any ordinary use. Length of Handle, 3½ inches. Net weight, 3 ounces. Capacity up to ½ inch.

PAGE 1

246 Packed one in a pasteboard box, 4 x 3 x 3 inch. Weight, 4 ounces

# Tool or Tap Holder

No. 89



Price, each.....(YATYR) \$0.80

Packed one in a pasteboard box, 5 x 3 x 1 inch. Weight, 6 ounces.

# Tool or Tap Holders

With Long Shanks Capacity 3/2 inch

These tools have been brought out to meet the demand for a Holder with long shank to reach otherwise inaccessible positions.

The Knurled Chuck with capacity to \$ inch is identical with our No. 89 on the preceding page.



The cross handles of these holders are held in position by the knurled screw shown in the end of the shank. This permits shifting the length to one side giving a much greater leverage than in the central position. By removing the knurled screw the handle can be carried in the hollow shank, conserving space.

No. 689

No. 789

Length of Shank Length over all 6 inches

81 inches ..... (ZAMIB) \$1.40 121 inches ...... (ZEFAV) 1.80 247

PAGE

10 inches Packed one in a pasteboard box.

#### Tool or Tap Holder No. 730 ← NEW Capacity 1/2 inch



This tool is heavier than those shown heretofore having a capacity to ½ inch. The Handle is 10 inches long, affording ample leverage to perform any work within its capacity easily and quickly. Net weight, 1 pound.

Price, each..... ..... (ZATKO) \$2.00

Packed one in a pasteboard box.

# Ratchet Tool or Tap Holder



For small work, a Ratchet Tool or Tap Holder is often very convenient. This tool has a Ratchet Mechanism that is operated by turning the knurled Shell nearest to the Handle. The Chuck is made entirely of steel with a long knurled Shell. The Jaws are forged, hardened, and tempered. They are so designed that they will not break. The Handle is polished Hard Wood. All exposed metal parts are also polished. Length over all,  $4\frac{3}{4}$  inches. Net weight, 4 ounces. Capacity up to  $\frac{7}{12}$  inch.

Price, each \$1.60

Packed one in a pasteboard box,  $5 \times 1\frac{3}{4} \times 1\frac{1}{2}$  inches. Weight, 5 248 ounces.

## Pin Vises

-Chuck Patented August 13, 1895



In designing these Pin Vises, we endeavored to make a really practical tool at a reasonable price, and we are sure that no fault can be found with the results.

The Handles are polished Hard Wood, shaped to fit the hand nicely. They have holes drilled through in order that wires or small rods of any length may be held.

The Chucks are all steel with three hardened Jaws. They have a very firm grip. The Chuck Shells are polished and nickel plated.

 No. 104.
 Capacity 0 to \$\frac{5}{32}\$ inch.
 No. 106.
 Price, Each

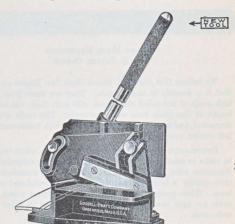
 No. 106.
 Capacity 0 to \$\frac{1}{4}\$ inch.
 4 ounces.....(YAYIR)
 \$1.00

 1.20
 1.20

Packed one in a pasteboard box.

# Brake Lining Cutter

Not designed for cutting iron or steel



PAGE .

This machine is designed to cut all widths and thicknesses of brake lining up to six inches in width by one-half inch thick. The long handle gives an unusually powerful leverage which is transmitted to the upper blade and transformed into a shearing motion by means of two cams, insuring an easy, clean cut. The knurling on the handle gives an easy grip even when hands are greasy.

The construction is simple and rugged insuring uninterrupted service. The Blades are made of carefully hardened and tempered steel and are easily removable for sharpening.

The cutter will also be found convenient for cutting belting, shim material, etc.

Iron parts are attractively finished in red and black enamel and the exposed steel parts nicely polished.

Net weight, 33 pounds.

Packed one in a wooden case.



## Hack-Saw Blades



All Hard



# TRADE MARK REGISTERED U. S. PATENT OFFICE

We believe that our G Brand Hack Saw Blades are the best that it is possible to manufacture. They are made from a special high grade of hot-rolled sheet steel, .025 inch thick, cut so that the length of the blade runs with the grain. The teeth are formed, sharpened, and set by our special processes which insure exceptionally fast cutting qualities.

250

Extreme care is used in tempering these Blades, which we endeavor to make as nearly perfect as possible. They are subjected to rigid inspection after the various operations of their manufacture; and their quality is being continually proven by careful and exhaustive tests. While many Blades are sold at much lower prices, we have never yet seen one that could equal this Brand in either speed or endurance.

The materials which we use, the workmen whom we employ, the special methods that we have devised, and the care that we exercise, all combine to make possible a standard of excellence known and recognized the world over.

The life of a Hack Saw Blade and the speed with which it cuts depend largely upon the conditions under which the Blade is used, and the pitch of the teeth. For general work, such as cutting iron or steel rods or bars, Blades with 14 teeth to the inch should be used; for brass, heavy tubing, or pipe, Blades with 20 teeth to the inch; and for thin steel tubing, Blades of short lengths with 32 teeth to the inch.

A list of all (G) Brand Hack Saw Blades will be found on the opposite page. Information about other styles and sizes of Hack Saw Blades will be found on the following pages.

Standard length measurements of Hand Blades are taken from the center of one hole to the further end of the Blade.



## Hack-Saw Blades



All Hard



TRADE MARK REGISTERED U. S. PATENT OFFICE

REGULAR. 14 teeth to the inch.

· For Iron and Steel Rods or Bars.

	Width	Weight per Gross	Pric	e per Gross
8 inch	7 inch	4 pounds	(WUVNE)	\$8.00
9 inch	1 inch	5 pounds	(wuvys)	9.00
10 inch	i inch	5½ pounds	(WUYIR)	10.00
11 inch	i inch	6 pounds	(WUYOS)	11.00
12 inch	inch inch	6½ pounds	(wuyso)	12.00
13 inch	i inch	7 pounds	(WUZER)	13.00
14 inch	inch inch	7½ pounds	(WUZRE)	14.00

PAGE 251

FINE. 20 teeth to the inch.

For Brass, Pipe, or Tubing.

	Width	Weight per Gross	Pri	ce per Gross
\8 inch	7 inch	4 pounds	(wuvsy)	\$8.00
9 inch	1/2 inch	5 pounds	(WUYAP)	9.00
10 inch	½ inch	$5\frac{1}{2}$ pounds	(WUYLJ)	10.00
11 linch	½ inch	6 pounds	(WUYPA)	11.00
12 inch	inch inch	6½ pounds	(WUYUT)	12.00

EXTRA FINE. 32 teeth to the inch.

For Thin Steel Sheets or Tubing.

	Width	Weight per Gross	Pric	e per Gross
8 inch	7 inch	4 pounds	(WUVUR)	\$8.00
9 inch	1 inch	5 pounds	(WUYGD)	9.00
10 inch	inch inch	5½ pounds.	(WUYMK)	10.00
12 inch	inch inch	6½ pounds	(WUYVY)	12.00

Packed one half gross in a pasteboard box.

The following quantities of Blades make a full case lot: 8 inch, 45 gross; 9 inch, 60 gross; 10, 11, and 12 inch, 25 gross.

Regular Blades, 14 teeth to the inch, will always be sent unless otherwise specified.

**GP** 888

# Hack-Saw Blades

All Hard

**GP** 888



TRADE MARK REGISTERED U. S. PATENT OFFICE

These Blades were placed on the market several years ago to meet the demand for a first class Hack-Saw Blade suitable for all-around work, that could be sold in competition with the many other brands of Blades now on the market. With our present equipment we can produce these Blades in large quantities and we endeavor to maintain, at all times, a large stock of Blades ready for shipment.

PAGE

252

These Blades are made from a high grade of hot rolled sheet steel, .025 inch thick, cut so that the length of the Blade runs with the grain. The teeth are formed, sharpened, and set, and the holes punched, by our own special labor saving machinery. The shape of teeth and the even set are responsible for their cutting speed.

A method of hardening has been evolved that will turn out Blades of a uniform degree of quality, in quantities, and our methods of tempering insure evenly tempered Blades with lasting qualities. We are continuously testing these Blades under actual shop conditions, requiring them to meet an exceptionally high standard and we know that it is an excellent Blade for all-around work and one that has no superior at its price.

The life of any Hack-Saw Blade and its cutting speed depend largely upon the conditions under which it is being used, the material being cut, and the pitch of the teeth. In order to obtain the best results, use a Blade with 14 teeth to the inch for cutting iron, or steel rods and bars; 20 teeth to the inch, for pipe, tubing or brass rod; 24 teeth to the inch, for light tubing or soft metals; 32 teeth to the inch, for thin steel sheets or tubing.

Standard length measurements of Hand Blades are taken from the center of one hole to the farther end of the Blade.

**GP** 888

# Hack-Saw Blades

**GP** 888

All Hard



#### TRADE MARK REGISTERED U. S. PATENT OFFICE

14 teeth to the inch. For Iron and Steel Rods, or Bars.

	Width Weight per Gross		Price per Gross	
8 inch	7 inch	4 pounds	(ZETRY)	\$7.20
9 inch	½ inch	5 pounds	(ZETYR)	8.10
10 inch	½ inch	5½ pounds	(ZEVAM)	9.00
11 inch	½ inch	6 pounds	(ZEVEN)	9.90
12 inch	inch inch	$6\frac{1}{2}$ pounds	(ZEVIP)	10.80

20 teeth to the inch. For Brass, Tubing, or Pipe.

PAGE

	Width	Weight per Gross	Pri	ce per Gross 253
8 inch	$\frac{7}{16}$ inch	4 pounds	(ZEVMA)	\$7.20
9 inch	$\frac{1}{2}$ inch	5 pounds	(ZEVNE)	8.10
10 inch	½ inch	5½ pounds	(ZEVSY)	9.00
11 inch	½ inch	6 pounds	(ZEVUR)	9.90
12 inch	½ inch	$6\frac{1}{2}$ pounds	(ZEVYS)	10.80

24 teeth to the inch. For Soft Metals, or Light Tubing.

	Width	Weight per Gross	Pri	ce per Gross
8 inch	7 inch	4 pounds	(ZEWAN)	\$7.20
9 inch	½ inch	5 pounds	(ZEWEP)	8.10
10 inch	½ inch	5½ pounds	(ZEWNA)	9.00
12 inch	½ inch	6½ pounds	(ZEWOR)	10.80

32 teeth to the inch. For Thin Steel Sheets, or Tubing.

	Width	Weight per Gross	Pri	ce per Gross	
8 inch	7 inch	4 pounds	(ZEWPE)	\$7.20	
9 inch	½ inch	5 pounds	(ZEWRO)	8.10	
10 inch	inch inch	5½ pounds	(ZEWTY)	9.00	
12 inch	inch inch	6½ pounds	(ZEWUS)	10.80	

Packed one half gross in a pasteboard box.

Regular Blades, 14 teeth to the inch, will always be sent unless otherwise specified.

<u>GP</u>

# Special Hack-Saw Blades

**GP** 888

·For Power Machines .028 Inch Thick



# TRADE MARK REGISTERED II. S. PATENT OFFICE

These Blades are made in exactly the same manner as those on the preceding page but are slightly heavier. This makes them a little better suited for use in Power Hack-Sawing Machines.

Regular. 14 teeth to the inch.

	Width	Thickness	Weight per Gross		e per Gross
12 inch 14 inch	5/8 inch 5/8 inch	.028	8 pounds 9 pounds	(ZEYAP)	\$11.40

PAGE

Packed one half gross in a pasteboard box.

# Special Tool-Room Hack Saws



G

G

Experience has taught us that it is often a mafter of great convenience, especially in tool-room work, to have Hack-Saw Blades of various thicknesses and with comparatively little set for special slotting and a variety of accurate work which otherwise could not be done with a Hack Saw. The Blades which we have listed below will be found well adapted for these uses. The teeth are cut and swaged by a special process, different from the one we use in making the ordinary set Blades. They are made in 8-inch lengths only, and can be furnished separately in any of the dimensions listed, or in sets, as desired.

Length	Thickness	Per Dozen
8 inch	.016(дотдо)	\$1.50
8 inch	.020(zougm)	1.50
8 inch	.028(zouhn)	1.50
8 inch	.032(zoujp)	1.50
8 inch	.040(zoums)	1.50
8 inch	.050(zoury)	1.50

# Flexible Hack-Saw Blades

#### TRADE MARK REGISTERED U. S. PATENT OFFICE

HARDENED TEETH

SOFT CENTER

For many kinds of work where a hand frame is used, a Blade is desired that will not break, even when subjected to severe twists and side strains. The Teeth, however, must be as hard as in any other Blade in order to insure its cutting qualities.

To meet this demand, we are making this line of Blades from the

10 m	rolled sheet steel wit	h hardened teeth	and back h	ut soft	
best not	The result is that we	have produced a	fact cutting	service.	
centers.	de that will not break	under ordinary us	age	,011100	
able Dia					
		inch. For iron or			
	Width	Weight per Gross		\$7.20	
8 inch	7 inch	4 pounds	(ZEBAR)	8.10	PAGE
9 inch	½ inch	5 pounds	(ZEBIT)	9.00	255
10 inch	½ inch ½ inch	5½ pounds	(ZEBSE)	9.90	~00
11 inch		6 pounds		10.80	
12 inch	½ inch	$6\frac{1}{2}$ pounds	(ZEBVO)	10.00	
	20 teeth to the inch.	For Brass, Tubir			
	Width	Weight per Gross		per Gross	
8 inch	7 inch	4 pounds	(ZEBYX)	\$7.20	
9 inch	½ inch	5 pounds	(ZECAS)	8.10	
10 inch	½ inch	$5\frac{1}{2}$ pounds	(ZECET)	9.00	
11 inch	½ inch	6 pounds	(ZECIV)	9.90	
12 inch	½ inch	6½ pounds	(ZECSA)	10.80	
9/	teeth to the inch. F	or Soft Metals, or	Light Tubing	o.	
47	Width	Weight per Gross		per Gross	
8 inch	7 inch	4 pounds	(ZECTE)	\$7.20	
9 inch	½ inch	5 pounds	(ZECUX)	8.10	
10 inch	inch inch	5½ pounds	(ZECWO)	9.00	
11 inch	inch	6 pounds	(ZECZY)	9.90	
12 inch	inch	6½ pounds	(ZEDAT)	10.80	
12 men			ubing		
		inch. For Thin T	ubling.	per Gross	
0:	Width 7 inch	Weight per Gross 4 pounds	(ZEDEV)	\$7.20	
8 inch 9 inch		5 pounds	(ZEDOY)	8.10	
	½ inch ½ inch	5½ pounds	(ZEDTA)	9.00	
10 inch		6½ pounds	(ZEDTA)	10.80	
12 inch	½ inch	02 pounds	(ZEDUZ)	10.00	

Packed one half gross in a pasteboard box.

Regular Blades, 14 teeth to the inch, always sent unless other, wise specified.

# Heavy Hack-Saw Blades

No. 300



These Blades are intended for heavy work, or for use in power machines. They are \$\frac{1}{4}\$ inch wide, No. 21 Gauge (about .035 inch thick). The teeth are shaped and set for fast cutting. Blades are tempered all over to give long service.

The G stamped on these Blades is proof of their quality.

Lengths are from center of hole to center of hole, except in the case of the 14 and 17 inch blades which are 13½ and 16½ inches from center of hole to center of hole respectively. COARSE, 12 teeth to the inch.

		Width	Weight per Gross	Pric	ce per Gross
	12 inch	3 inch	14 pounds	(YIGLO)	\$17.00
PAGE	14 inch	3 inch	16 pounds	(YIGOL)	20.00
	16 inch	3 inch	18 pounds	(YIGUM)	23.00
256	17 inch	3 inch	19 pounds	(YIHAJ)	24.00
	Packed	one half gross in	a pasteboard box.		

## Extra Heavy Hack-Saw Blades No. 500

.050 Inch Thick



These Blades are intended for heavy work in power machines. They are  $\frac{3}{4}$  inch wide, No. 18 Gauge (about .050 inch thick). The teeth are shaped and set for fast cutting. Blades are tempered all over to give long service.

Lengths are from center of hole to center of hole, except in the case of the 14 and 17 inch blades.

COARSE. 12 teeth to the inch.

	Width'	Weight per Gross	Pric	e per Gross	
12 inch	3 inch	18 pounds	(YOVGO)	\$24.00	
14 inch	3 inch	23 pounds	(YOVJY)	28.00	
16 inch	3 inch	24 pounds	(YOVOG)	32.00	
17 inch	å inch	25 pounds	(AOAA1)	34.00	
18 inch	inch inch	26 pounds	(YOWAD)	36.00	

Packed one half gross in a pasteboard box.

# Extra Heavy Hack-Saw Blades No. 750 On One Thick



These Blades are intended for use in high speed power machines. They are 1 inch wide, No. 18 Gauge (about .050 inch thick). The teeth are shaped and set for fast cutting. Blades are tempered all over to give long service.

The G stamped on these Blades is proof of their quality.

Lengths are from center of hole to center of hole, except in the case of the 14 and 17 inch blades which are 13½ and 16½ inches from center of hole to center of hole to respectively.

COARSE. 10 teeth to the inch.

	Width	Weight per Gross	Pric	e per Gross	
12 inch	1 inch	25 pounds	(ZAWJA)	\$34.00	
14 inch	1 inch	28 pounds	(ZAWKE)	40.00	
16 inch	1 inch	33 pounds	(ZAWMO)	46.00	PAGE
17 inch	I inch	34 pounds	(ZAWPY)	49.00	
18 inch	1 inch	35 pounds	(ZAWYP)	54.00	257
20 inch	1 inch	40 pounds	(ZAYAK)	57.00	
Dealrad an	a half among is	a postshoond how			

Packed one half gross in a pasteboard box.

# Extra Heavy Hack-Saw Blades No. 800



These Blades are designed to stand up under the very heaviest work. They are 1 inch wide, No. 16 Gauge (about .065 inch thick). The teeth are shaped and set for fast cutting. Blades are tempered all over to give long service. Lengths are from center of hole to center of hole, except in the case of the 14 and 17 inch blades.

COARSE. 8 teeth to the inch.

CUARSE.	8 teeth to	the inch.		
Same Appendix	Width	Weight per Gross	Pric	e per Gross
14 inch	1 inch	35 pounds	(ZEGWA)	\$52.00
17 inch	1 inch	43 pounds	(ZEGYE)	63.00
18 inch	1 inch	46 pounds	(ZEHAY)	68.00
20 inch	1 inch	51 pounds	(ZEHCO)	70.00
24 inch	1 inch	63 pounds	(ZEHEZ)	90.00

Packed one quarter gross in a pasteboard box.

We will be glad to quote prices on any size of Blades not listed, here up to  $24 \times 1\frac{1}{4} \times .065$  inch.



## Circular Saws No. 70

For Metal, Bone, or Ivory

These moderately priced Circular Saws are most satisfactory for cutting copper, brass, silver, ivory, bone, and similar materials.

Exceptional quality is obtained by use of the highest grade of hot rolled sheet steel. The teeth are carefully cut and oil tempered making them well suited for screw slotting or cutting shallow slots in iron or steel.

These saws are made in six sizes and thicknesses as follows:

Diameter . Hole 2½ inch ¾ inch 3 inch 1 inch. 1¼ inch 11/2 inch 2 inch \* 3% inch Thickness 3/s inch 3% inch per Doz. \$5.00 \$2.60 \$3.20 \$4.00 .016 inch \$2.00 \$2.40 per Doz. 3.20 4.00 5.00 2.60 .021 inch 2.00 2.40 PAGE 3.20 4.00 5.00 . per Doz. .028 inch 2.00 2.40 2.60 5.00 per Doz. 2.40 2.60 3.20 4.00 258 .032 inch 2.00 per Doz. 5.00 3.20 4.00 .040 inch 2.00 2.40 2.60 5.00 per Doz. 3.20 4.00 2.00 2.40 2.60 .050 inch

Packed one dozen in a box.

### Keyhole Hack Saw No. 237

Every one who has occasion to use a Keyhole Saw will appreciate the convenience of a tool like this that will not be damaged by nails. The Handle is finished in black enamel; it is light and fits the hand well. The Blade is made of the same materials and with just as much care as our regular Hack-Saw Blades.

Length over all, 91 inches. Cutting edge, 51 inches. Net weight, 2 ounces.

(YEYAT) \$0.40 Price, each.

Packed one half dozen in a box, 101 x 3 x 11 inches. Weight, 15 pounds. Extra Keyhole Hack-Saw Blades, per dozen....(YEYBD)

\$2.00.

#### Hack-Saw Sets With Frame and 12 Blades



These Sets consisting of a Solid Steel, Natural Finish Frame and one dozen of our best Hack Saw Blades to fit have proven popular with both the trade and the consumer.

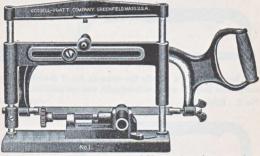
The Frames used are our Nos. 8, 9, 10, 11, and 12 illustrated

and described on page 205.	·Per Set
No. 812. 8-inch Frame and 12 Blades(ZEJBE)	\$1.60
No. 912. 9-inch Frame and 12 Blades(ZICUD)	1.80
No. 1012. 10-inch Frame and 12 Blades(ZIRRO)	2.00
No. 1112. 11-inch Frame and 12 Blades(zisos)	2.20
No. 1212. 12-inch Frame and 12 Blades(zisso)	2.30
Dealrad and get in a pastaboard boy	

Packed one set in a pasteboard box.

#### Bench Hack Saw No. 1 Patented June 20, 1899

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This machine will be found very useful in any shop where power is not available. By its use, even an unskilled operator can cut metal rods or tubing rapidly and smoothly without breaking Blades. The Vise attached to the Bed can be set to saw at any desired angle.

Made entirely of iron and steel this machine is capable of long service under hard use. Iron parts are all finished in red and black enamel. Either 8 inch or 9 inch Blades can be used.

Height, 101 inches. Base, 103 x 33 inches. Stroke, 63 inches. Vise has 24 inch jaws that open 2 inches. Extreme capacity, 2 x 2 inches. Net weight, 103 pounds.

Price, complete with one 9 inch Blade. ..... (WYBAB) \$9.00

Packed one in a wooden case, 182 x 11 x 5 inches.

Shipping weight, 16 pounds.

# Adjustable Hack-Saw Frames

One 8-inch G Blade Furnished with Each Frame



These Hack-Saw Frames are made entirely of steel except the Handle. They are very serviceable, and are polished and nickel plated, making very handsome tools. Each one is adjustable from 8 to 12 inches, and designed so that the Blade can be faced in four different ways. The proper tension on the Blade is obtained by turning the handle. The Handle is polished hard wood, mahogany finish.

Depth of throat, 2½ inches. Net weight, 14 ounces.

262



These Frames are exactly the same as No. 1 described above, except that they are white nickeled only, and not polished.

No. 2. Price, each ..... (wycgo) \$1.80



The above Frames packed one in a pasteboard box, 11 x  $3\frac{3}{4}$  x  $1\frac{3}{8}$  inches. Weight, 1 pound.

## Solid Hack-Saw Frames



This Frame is made of solid steel fully polished and nickel plated, making a very handsome tool. The proper tension on the Blade is obtained by turning the polished hard wood handle. The Blade can be faced four ways. For 8 inch Blades only, depth of throat, 2½ inches. Net weight, 11 ounces.

One 8-inch G Blade furnished with each Frame.

No. 3. Price, each. . . . . . . . . . . . . . . . . (wydu) \$1.50 Packed one in a pasteboard box, 11 x 3\frac{3}{4} x 1\frac{1}{2} inches. Weight, 15 ounces.

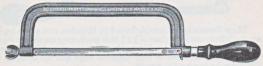


263

These Frames are made of solid steel, natural finish. They have polished hard wood Handles. The proper tension on the Blade is obtained by turning the handle. Blade can be faced four ways. Death of threat 24 inches

2 cp	ULL OI	CARA	,000, = 2 11	Pri	ice, Lach
No.	8.	For	8-inch	Blade(wyhlo)	\$1.00
No.	9.	For	9-inch	Blade(wyicf)	
No.	10.	For	10-inch	Blade(WYJAJ)	
No.	11.	For	11-inch	Blade(WYKEL)	1.30
No.	12.	For	12-inch	Blade(wykon)	1.40
T	)andra	don	a in a n	agtahaard hay	

Packed one in a pasteboard box.



These Frames are made of Cast Iron, black enameled. Handles are polished hard wood. Blades can be faced four ways. Depth of throat 24 inches

of throa	at, $2\frac{1}{2}$ inches.	Pri	ice, Each
No. 4.	For 8-inch Blades	. (WYEZB)	\$0.70
No. 5.	For 9-inch Blades	. (WYFGE)	.80
No. 6.	For 10-inch Blades	. (WYGIJ)	,90

Packed one in a pasteboard box.

# Adjustable Hack-Saw Frames

With Pistol Grip



These Frames are adjustable from 8 to 12 inches, but are very much more rigid than most adjustable frames because they are made of ½ x ¾ inch steel with an extra heavy back.

The black composition handles are molded in a single piece. peculiarly shaped to give a very comfortable grip. The Frames are so designed that they balance well and hang nicely.

Depth of throat, 31 inches. Net weight, 17 pounds.

One (G) Blade furnished with each Frame. PAGE

Price. Each Fully Polished and Nickel Plated .... (YEZUB) \$3.60 No. 247. 

Weight, 21 pounds.

264

# Heavy Adjustable Hack-Saw Frames



These Frames are adjustable from 8 to 12 inches, and as the backs are made from one solid piece of \( \frac{1}{4} \) x \( \frac{7}{8} \) inch stock, they are always rigid, even when fully extended. The two handles are polished Hard Wood.

Blades can be faced in four different ways and are strained in the frame by turning the handle.

Depth of Throat, 3½ inches. Net weight, 17/8 pounds.

One (G) Blade furnished with each Frame. Price. Each No. 69. Polished and Nickel Plated Back ..... (YALUH) \$3.00 No. 69B. Black Finish.... ..... (YALYJ) 2.50 Packed one in a pasteboard box, 16 x 43 x 13 inches.

Weight, 2½ pounds.

# Heavy Hack-Saw Frames



These Frames are made very much heavier than the solid frames on the preceding pages, and will be found much more satisfactory by any one who has much heavy sawing to do by hand. They are made of heavy steel with smooth, even bends. They are made for Blades of different lengths, but all throats are 3½ inches deep. Blades are strained in the Frames by turning the polished hard wood Handles.

One G Blade furnished with each Frame.

One	Diade.	umsne	d with cach 2 range.		
	For Blades	Back	- Finish Pri	ice, Each	
No. 64.	8-inch	1 x 3	Full Nickel (YAJEB)	\$2.00	
No. 64B.			Black(YAJIC)	1.60	9.27
No. 65.			Full Nickel (YAJOD)	2.30	PAGE
	10-inch		Black (YAJUF)	1.90	265
	12-inch		Full Nickel(YAJZA)	2.60	200
	12-inch		1 Black (YAKAB)	2.20	
70 1	, .	1.1			



These Frames are similar to those described above, but they have a greater depth of throat. They are all made of  $\frac{1}{4} \times 1$  inch steel with throats  $5\frac{1}{4}$  inches deep.

One (G) Blade furnished with each Frame.

One 1	Didd	o Ittimojiou ii iti dada a a a a a a a	
	For Blades		ice, Each
No. 14.	12-inch	Polished and Nickel Plated (WYNEP)	\$2.80
No. 14B.		Black Finish (WYNNA)	2.30
No. 67.	13-inch	Polished and Nickel Plated (YALDE)	3.00
No. 67B.	13-inch	Black Finish(YALED)	2.50
No. 68.	14-inch	Polished and Nickel Plated (YALIF)	3.20
No. 68B.	14-inch	Black Finish (YALJY)	2.70
Packe	d one in a	pasteboard box,	

## Heavy Hack-Saw Frames



These Frames are made entirely of ½ x 1 inch steel and are similar to the heavy styles shown on the preceding page, but are equipped with Saw Handles, which make them better adapted for heavy work. For 14-inch Blades, depth of throat, 51 inches.

One 14-inch (G) Blade furnished with each Frame. Price, Each Nickel Plated and Polished . . . . . . . (YEYLN) \$3.40 No. 240.

No. 240B. Black Finish.... Packed one in a pasteboard box,  $25\frac{1}{4} \times 7 \times 1\frac{1}{4}$  inches. Weight, 3 266 pounds.

PAGE

ODDELL-PRATT COMPANY GREENFIELD MASS U.S.A.

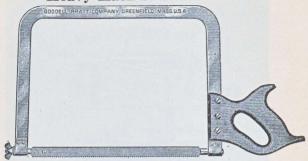
These Frames are made entirely of 1/4 x 1 inch steel, and fitted with Saw Handles. They are made with a deep throat for use on large work. They will be found very convenient in many places where heavy rail saws cannot well be used. These Frames are made fully polished and nickel plated, with 9-inch throat, for 10-inch Blades only

One 10-inch (G) Blade furnished with each Frame.

No. 244. Price, each... ., (YEZAV) \$3.20

Packed one in a pasteboard box,  $21\frac{1}{4} \times 10\frac{1}{2} \times 1\frac{1}{4}$  inches. Weight, 3½ pounds.

Heavy Hack-Saw Frames



These Frames are made entirely of steel 1/4 x 1 inch. They are equipped with one 12-inch (G) Hack-Saw Blade, and will take Blades of this length only. They are intended to cut rails, girders, 267 or other large work where depth of throat is an essential feature.

PAGE

They are 101 inches from Blades to back. Net weight, 3 pounds.

Polished and Nickel Plated . . . . . . . . (wyovz) \$4.00 No. 15. No. 15B. Black Finish.....(wyowb)

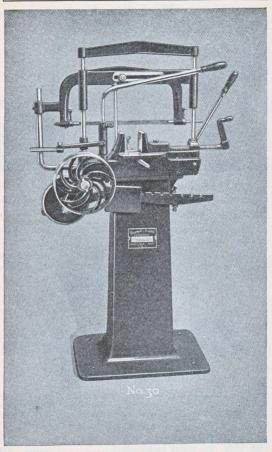
Packed one in a pasteboard box, 233 x 12 x 11 inches. Weight,



These Frames are made entirely of 1/4 x 1 inch steel. They are equipped with two Handles for use in cutting rails, girders, or other large pieces. They are made 101 inches from Blade to back, in black One (G) Blade furnished with each Frame.

finish only. Price. Each No. 238B. For 14-inch Blades only . . . . . . . (YEYEY) \$3.60 No. 239B. For 17-inch Blades only.....(YEYJL)

Packed one in a pasteboard box. We will gladly quote on special Frames similar to the above to take Blades up to and including 24 inches in length.



PAGE 268

# Power Hack-Saw

No. 30

No up-to-date shop of any kind can afford to be without a Power Hack Saw and many shops would find more equally profitable. This Power Hack Saw is a simple but efficient machine. The Raising and Stop Levers and Vise Handle are all at one end of the machine which occupies very little floor space. These features will be appreciated in a large shop where one workman operates a battery of these machines.

The illustration on the opposite page conveys a good idea of the general characteristics of the machine. The Pulleys are small and the machine is geared down to the proper speed. The gears are machine cut, eliminating all noise, and are carefully fitted so that they will not slip.

The machine is provided with an adjustable Automatic Stop which can be set to stop the saw at any desired depth or as soon as the work is completely cut off. This Stop is connected with the Clutch on the Drive Pulley so that it acts instantaneously.

PAGE 269

The back of the Saw Frame runs in a guide which in turn slides up and down on two perpendicular Guide Rods. The traveling motion is conveyed to it by a horizontal guide which runs parallel to the bottom of the Vise. This feature enables the machine to be used for slotting of any desired depth.

The Vise will take work  $4\frac{1}{2}$  x  $4\frac{1}{2}$  inches. It is operated by a handled Screw at the front of the machine. The bed of the Vise extends beyond the Jaws, another feature of practical advantage.

The Tight and Loose Pulleys are 7 inches in diameter, geared 3 to 1. The pulley should run 150 revolutions per minute, making the blade travel at 50 strokes per minute in order to obtain the best results.

The Frame is made to take either 10 or 12 inch Hack Saw Blades.

One dozen 12 inch (G) Blades with each machine.

Floor space, 25 x 15 inches. Height, 42 inches. Net weight, 155 pounds.

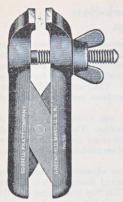
Price, each.....(YAAHY) \$65.00

Crated, 46 x 26 x 17 inches. Weight, 214 pounds.

Boxed for export,  $45\frac{1}{2} \times 26 \times 17$  inches.

Boxed knocked down, in 2 boxes, 281 x 26 x 17 inches.

Weight, 235 pounds.



# Hand Vise

Parallel Jaws

This Hand Vise is provided with parallel Jaws, a form of construction that, although it adds to the cost, greatly increases the convenience and utility of the tool.

The Jaws are drop forged from steel bars. The Jaw Faces are scored and case hardened. Jaw Faces are 1 $\frac{1}{16}$  inches long and  $\frac{3}{8}$  inch wide. They will open 1 $\frac{1}{4}$  inches and are always parallel whether open or closed.

The entire tool has a mottled finish except the edges of the Jaws, which are polished. Length,  $4\frac{1}{2}$  inches. Net weight, 12 ounces.

Price, each ..... (YAVYS) \$2.80

Packed one in a pasteboard box,  $5\frac{1}{4} \times 3 \times 1\frac{1}{4}$  inches. Weight, 14 ounces.

# Lineman's Hand Vise

No. 360

Parallel Jaws

This tool is exactly the same as the Hand Vise shown above, except that it has a ring to hold it on a lineman's belt.

The Jaws are drop-forged steel, with Jaws Faces scored and case hardened. Jaws are  $1\frac{3}{16}$  inches by  $\frac{3}{6}$  inch and open  $1\frac{1}{4}$  inches. They are always parallel.

This tool is finished entirely in black except the edges of the Jaws, which are polished. Length, 6 inches. Net weight, 14 ounces.

Price, each.....(yızug) \$3.60

Packed one in a pasteboard box,  $6\frac{1}{4} \times 3 \times 1\frac{1}{7}$  inches.

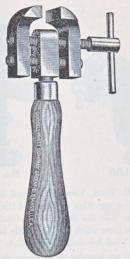
Weight, 1 pound.



PAGE

## Hand Vises

Parallel Jaws



PAGE

072

These Vises are provided with a double screw, geared together, insuring parallel jaw faces up to extreme capacity. This makes possible a firmer hold than could be secured by the use of a single screw.

The jaws are drop-forged steel with the faces scored and hardened. All other working parts are made of steel. The jaws are tightened by means of a sliding handle that will be found convenient.

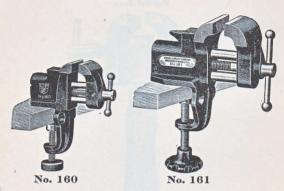
Each Vise has a taper square shank that can be removed from the polished hard-wood handle if desired, and held in any two-jawed chuck.

Jaw faces are  $1\frac{3}{8}$  x  $\frac{3}{8}$  inches. Jaws open  $1\frac{1}{2}$  inches. Length over all,  $8\frac{1}{2}$  inches. Net weight,  $1\frac{1}{4}$  pounds.

			Pi	ice, Each
No.	97	Polished and nicke	l platea(YAWNA)	\$5.00
No	08	Blook finish	Yermon	4 00

Packed one in a pasteboard box,  $9\frac{1}{4} \times 5 \times 1\frac{3}{4}$  inches. Weight,  $1\frac{1}{7}$  pounds.

## Bench Vises



PAGE 274

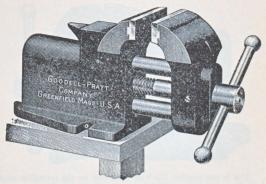
These little Bench Vises are different in design and general appearance from any other small tools of this character. They are constructed to meet the demand for a small vise of better construction than those which have previously been made. They will clamp to any bench less than  $1\frac{1}{2}$  inches thick.

These vises are operated by an accurately cut steel feed screw. Two steel guide rods are provided to insure rigidity. All parts are carefully fitted so that the jaws are easily operated, but without lost motion. After the vise is completely assembled, the jaws are machined so that they will meet accurately.

All steel parts are polished and all iron parts are finished with enamel, baked on.

		Width of Jaws		. Jaws Open	Net Weight		Price Each
No. 1	60 1	inch	$1\frac{1}{2}$	inches	13 pounds	(YEGAC)	\$1.80
No. 16	61 2	inches	2	inches	33 pounds	(YEGCA)	2.40
YEW → No. 70	$08  2\frac{1}{4}$	inches	2	inches	33 pounds	(ZAPFO)	2.80

# Bench Vise



PAGE 275

This is an excellent Bench Vise of medium size. The steel Feed Screw and two  $\frac{5}{8}$ -inch steel Guide Rods give it rigidity and the careful fitting makes it work smoothly and grip tightly. The special thread on the Feed Screw was designed to give it great strength.

The Jaw Faces are made of a very tough steel,  $2\frac{1}{2} \times \frac{3}{4}$  inch. They are scored and case hardened. The taper-headed Screws by which the Jaws are fastened to the Vise will take up any looseness. Jaws open  $2\frac{1}{4}$  inches. Net weight, 10 pounds.

Iron parts are finished in red and black enamel; steel parts are polished.

Packed one in a pasteboard box,  $9\frac{3}{4} \times 6\frac{1}{2} \times 4\frac{1}{4}$  inches. Weight, 11 pounds.

# Bench Vise

← YESK

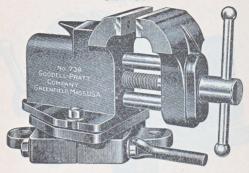
No. 709

This Vise is exactly the same as No. 168 described above except that the Jaws are plain gray iron. Net weight, 10 pounds.

Price, each.....(zapid) \$5.00

Packed one in a pasteboard box,  $9\frac{3}{4} \times 6\frac{1}{2} \times 4\frac{1}{4}$  inches. Weight, 11 pounds.

Swivel Bench Vise



PAGE

276

This is our number 168 Vise described on the preceding page bolted to a swivel base which in turn is bolted to the bench.

The base is heavy with a quick, positive lock controlled by the lever handle shown allowing the vise to be swung to, and locked at any position, instantly.

The Jaw Faces are made of very tough steel  $2\frac{1}{2} \times \frac{3}{4}$  inch, scored and case hardened. They are held in position by taper headed screws. Jaws open  $2\frac{1}{4}$  inches.

Net weight, 16 pounds.

Packed one in a wooden case.

# PEW →

# Swivel Vise Base

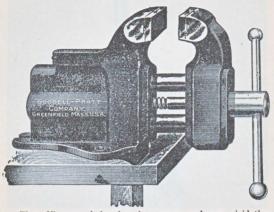
No. 737

This is the swivel base only as shown above fitted with the necessary screws for attaching without alteration our Nos. 168 and 709 vises shown on page 275.

Net weight, 6 pounds.

Packed one in a pasteboard box.

## Mechanics' Vises



PAGE

These Vises are designed to be stronger and more rigid than such tools are usually made, in order that they will stand the hard usage generally given them in machine shops.

The Jaws are peculiarly shaped to give them great strength and the two 1½-inch steel Guide Rods and the large steel Feed Screw with a special square thread give it rigidity. The Jaw Faces are made of very tough steel scored and case hardened. They are fastened in place by taper-headed screws that will readily take up any looseness.

All iron parts are finished in red and black enamel; steel parts are polished.

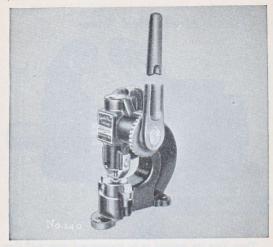
No. 370. Jaw Faces, 3 x 1½ inches. Jaws open 4½ inches. Net weight, 40 pounds. Price, each.....(YOBIK) \$15.00

Packed one in a wooden case,  $16 \times 10^{\frac{1}{2}} \times 8^{\frac{3}{4}}$  inches. Shipping weight, 49 pounds.

No. 523. Jaw Faces,  $3\frac{1}{2} \times 1\frac{1}{4}$  inches. Jaws open  $4\frac{1}{8}$  inches. Net weight, 41 pounds.

Price, each.....(YUCNA) \$16.00

Packed one in a wooden case,  $16 \times 10\frac{1}{2} \times 8\frac{3}{4}$  inches. Shipping weight, 50 pounds.



PAGE 278

# Bench Punching Machine

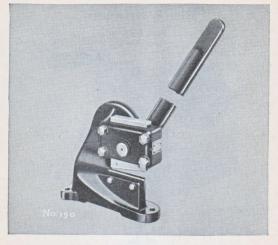
No. 140

This Bench Punch will be found an excellent machine for punching holes in thin sheet iron or steel. Each machine is provided with a Handle, 24 inches long, and a \(^3\_8\)-inch round Punch and Die. The machine is well designed and carefully made. Iron parts are finished in red and black enamel; steel parts are polished. Depth of Throat, 4 inches. Net weight, 54 pounds.

Holes up to  $\frac{3}{8}$  inch can be readily punched in soft iron or steel inch thick, but no heavier work should be attempted.

Price, each, with 3-inch Punch and Die ..... (YEDEB) \$33.00

Packed one in a wooden case, 26 x 12 x 6 inches. Shipping weight, 72 pounds.



PAGE

279

# Bench Shear

#### No. 150

The construction of this Shear will be appreciated by every one having use for such a tool. The Frame is so designed that sheets of any width can be readily cut. The Lever is 20 inches long, and the tool steel Blades have 4-inch cutting edges. All iron parts are finished in red and black enamel; steel parts are polished. Net weight, 31 pounds.

Although the opening is  $\frac{9}{16}$  inch at the front, no iron or steel larger than  $\frac{3}{16}$  inch round or flat should be cut. This machine will also be found useful for cutting Brake Lining.

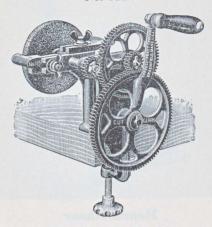
Price, each(YEEVS)	\$33.00
Extra Blades, per set	7.00

Packed one in a wooden case,  $24\frac{1}{2}$  x 11 x 6 inches.

Shipping weight, 46 pounds.

# Bench Grinder

No. 115



PAGE 282

This is not the ordinary cheap type of household Grinder, but a thoroughly well-made little machine.

It has cut Gears and reamed Bearings. All parts are carefully fitted by skillful mechanics so that the whole machine runs smoothly and quietly.

The Wheel is 4 inches in diameter with a 1-inch face. It is a high grade Abrasive Wheel particularly adapted for grinding small edge tools. The Wheel makes 22 revolutions to each turn of the crank.

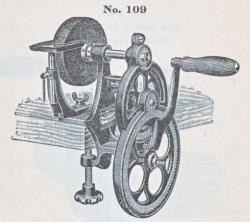
Work Rests are provided for both right and left hand work. The grinder can be clamped to any bench not over 2 inches thick.

All iron parts are finished in red and black enamel. The steel parts are polished. Net weight, 9 pounds.

Price, each.....(YEACY) \$8.50

Packed one in a wooden case,  $11\frac{1}{2} \times 8\frac{1}{2} \times 8\frac{1}{2}$  inches. Shipping weight, 13 pounds.

## Bench Grinder



PAGE

This Bench Grinder is particularly recommended for household use because it is convenient in size and the Gears are completely inclosed to prevent pinching the fingers or tearing the clothes. Knives, shears, chisels, and all other kinds of edge tools are quickly and easily sharpened on this little Grinder.

The Gears are all turned and the teeth accurately cut by machinery. The Bearings are reamed to just the right size. All parts are carefully fitted by skillful mechanics so that the machines run smoothly and quietly.

A high grade Abrasive Wheel is furnished, the best that we can buy, for sharpening small edge tools. It is 4 inches in diameter with a 1-inch face. The Wheel makes 22 revolutions for each turn of the crank.

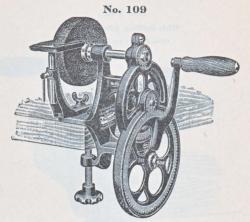
An adjustable Work Rest that can be used on either side of the Wheel is provided.

All steel parts are polished and iron parts are finished in red and black enamel. Net weight, 10 pounds.

Packed one in a wooden case,  $11\frac{1}{2} \times 8\frac{1}{2} \times 8\frac{1}{2}$  inches.

Shipping weight, 14 pounds.

## Bench Grinder



PAGE

This Bench Grinder is particularly recommended for household use because it is convenient in size and the Gears are completely inclosed to prevent pinching the fingers or tearing the clothes. Knives, shears, chisels, and all other kinds of edge tools are quickly and easily sharpened on this little Grinder.

The Gears are all turned and the teeth accurately cut by machinery. The Bearings are reamed to just the right size. All parts are carefully fitted by skillful mechanics so that the machines run smoothly and quietly.

A high grade Abrasive Wheel is furnished, the best that we can buy, for sharpening small edge tools. It is 4 inches in diameter with a 1-inch face. The Wheel makes 22 revolutions for each turn of the crank.

An adjustable Work Rest that can be used on either side of the Wheel is provided.

All steel parts are polished and iron parts are finished in red and black enamel. Net weight, 10 pounds.

Price, each ..... (YAYSO) \$10.00

Packed one in a wooden case,  $11\frac{1}{2} \times 8\frac{1}{2} \times 8\frac{1}{2}$  inches.

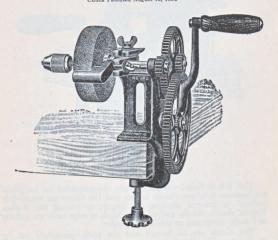
Shipping weight, 14 pounds.

## Bench Grinder

No. 142

With Drilling Attachment

Chuck Patented August 13, 1895



PAGE 284

This machine is identical with the No. 115, shown on page 282, with the addition of a three-jawed Chuck on the end of the Spindle. This greatly increases the usefulness of the machine, as it makes it possible to do many small jobs of drilling and polishing. The Chuck holds all round pieces from 0 to  $\frac{1}{4}$  inch in diameter.

A high grade Abrasive Wheel, 4 inches in diameter, with a 1-inch face, is furnished with each machine. Net weight, 9 pounds.

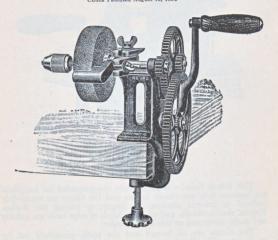
Packed one in a wooden case,  $11\frac{1}{2} \times 8\frac{1}{2} \times 8\frac{1}{2}$  inches. Shipping weight, 13 pounds.

## Bench Grinder

No. 142

With Drilling Attachment

Chuck Patented August 13, 1895



PAGE 284

This machine is identical with the No. 115, shown on page 282, with the addition of a three-jawed Chuck on the end of the Spindle. This greatly increases the usefulness of the machine, as it makes it possible to do many small jobs of drilling and polishing. The Chuck holds all round pieces from 0 to  $\frac{1}{4}$  inch in diameter.

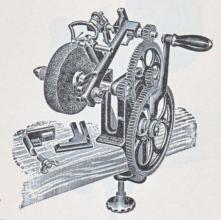
A high grade Abrasive Wheel, 4 inches in diameter, with a 1-inch face, is furnished with each machine. Net weight, 9 pounds.

Packed one in a wooden case,  $11\frac{1}{2} \times 8\frac{1}{2} \times 8\frac{1}{2}$  inches. Shipping weight, 13 pounds.

# Bench Grinder

With Pin Pointing Attachment

Chuck Patented August 13, 1895



PAGE 285

This is our regular No. 142 Grinder, shown on the opposite page, with the addition of an Attachment for pointing pins or small wire.

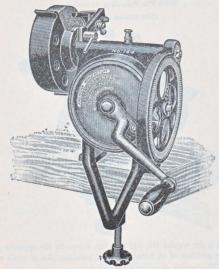
The illustration shows the general features of this Attachment. It has a screw adjustment on the back that will admit its use with any size Wheel, and by moving the two Collars on the Spindle, it is possible to use the entire surface of a \(\frac{3}{4}\)-inch Wheel, The Back Rest with the slotted Pin not only provides pressure for rapid work, but also insures accurate pointing of the wire.

The Pin Pointing Attachment can be readily removed or replaced if desired.

A high-grade Abrasive Wheel, 4 inches in diameter, with a 1-inch face, is furnished with each machine. Net weight, 11 pounds.

Packed one in a wooden case,  $11\frac{1}{2} \times 8\frac{1}{2} \times 8\frac{1}{2}$  inches. Shipping weight, 15 pounds.

# Bench Grinder



PAGE 286

Price, each.

This machine is larger and considerably different in design from those shown on the preceding pages. It is so arranged that when two men are using it, the man turning the crank is entirely out of the way of the other. In addition to this, the tool makes a most convenient one-man machine.

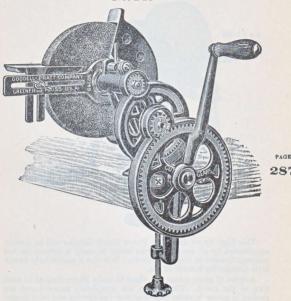
Each Grinder is fitted with a high grade Abrasive Wheel, 5 x 1 inch. An adjustable Tool Rest and a reversible Half Guard for the Wheel are also provided. The Gear Teeth are all covered.

The Gears are all cut, bearings are reamed, and all parts carefully fitted. The Spindle runs in an oil bath. Finished in red and black enamel. Height above bench, 10 inches. Net weight, 18 pounds.

..... (YEDZA) \$14.00

Packed one in a wooden case, 16 x 11½ x 9 inches. Shipping weight, 26 pounds.

# Bench Grinder



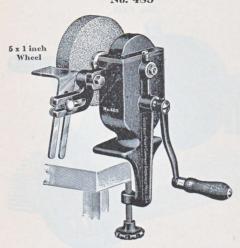
The Most Powerful Bench Grinder ever Made

This machine is much larger and heavier than those previously shown. Strongly made and very powerful, it is an excellent machine for carpenters or small shops. It carries a 7 x 1½ inch high grade Abrasive Wheel that makes 20½ revolutions to every turn of the crank. It has cut gears and reamed bearings. All parts are carefully fitted. All gearing is covered. The Wheel is provided with a reversible Half Guard and Work Rest. The Spindle runs in an oil bath. The Machine can be clamped to any bench less than 4 inches thick. Height above bench, 19½ inches. Net weight, 18 nounds.

Price, each.....(YEERP) \$15.00

Packed one in a wooden case, 16 x 11½ x 9 inches. Shipping weight, 27 pounds.

# High Speed Bench Grinder



PAGE 288

This High Speed and High Power Bench Grinder will be greatly appreciated by all mechanics who desire to carry a serviceable but compact Grinder in their tool chests. It is also a particularly handy little Grinder for household use.

A series of gears causes the wheel to make 22 revolutions to each turn of the crank. These gears are completely inclosed and are packed in grease in order that they may run silently and have proper lubrication.

A high grade Abrasive Wheel, 5 x 1 inch, is furnished with each. The wheels are particularly selected for sharpening edge tools. An adjustable Work Rest is provided.

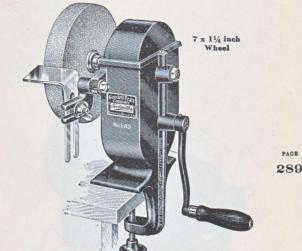
Finished in red and black enamel;  $6\frac{1}{2}$  inches high above bench. Will clamp to any bench less than  $2\frac{1}{4}$  inches thick. Net weight, 10 pounds, 10 ounces.

Price, each.....(YOSYG) \$10.80

Packed one in a wooden case,  $12\frac{1}{4} \times 8\frac{3}{4} \times 7$  inches. Shipping weight, 15 pounds.

## High Speed Bench Grinder

No. 585



This High Speed and High Power Bench Grinder is very much larger and heavier than the one shown on the preceding page. It is particularly adapted for use in shops which are not provided with power, on an automobile service truck, or in a contractor's tool house.

A series of machine-cut gears causes the wheel to make 22 revolutions to each turn of the drop-forged steel crank. These gears are completely inclosed and packed in grease in order that they may run silently and have proper lubrication.

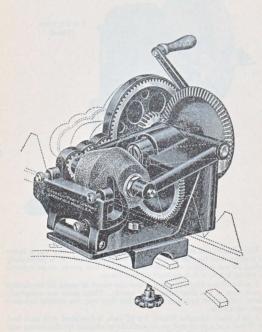
A high grade Abrasive Wheel, 7 x 14 inch, is furnished with each tool. The Wheel is of a grain and grade particularly adapted for sharpening edge tools. An adjustable Work Rest is provided.

Finished in red and black enamel; 9½ inches high above the bench. Will clamp to any bench; less than 3 inches thick. Net weight, 22 pounds.

Packed one in wooden case, 16 x 11½ x 9 inches.

Shipping weight, 30 pounds.

### Sickle Grinders



PAGE 290

This illustration shows Sickle Grinder No. 158, with one beveled Wheel only.

Sickle Grinder No. 159 has one beveled Wheel and one straight Wheel.

# Sickle Grinder

The design, construction, and finish of this Sickle Grinder is of the same high order as our other grinding machines. It is thoroughly mechanical in its construction; Gears are all cut; Spindles are steel; Bearings are reamed; a Gear Guard incloses the chain of four Gears. The adjustable Bar Holder has a Stop which can be set to stop the bar at any desired point. The Crank Handle is 9 inches long, making it a powerful machine.

This Grinder has an Oscillating Motion that can be used or thrown out at will by means of a Lever on the back of the machine.

The Bar Holder is so constructed that with many Cutter Bars no pressure is necessary when grinding as the weight of the bar is sufficient. The machine is designed to be fastened to a Bench, but is provided with an extra Clamp Plate for attaching it to the Wheel of a Mowing Machine. All iron parts of this Grinder are nicely finished in red and black enamel; steel parts are polished.

PAGE 291

A high grade abrasive wheel is furnished  $3\frac{1}{2}$  inches long,  $3\frac{1}{2}$  inches in diameter at the center, beveled to  $2\frac{2}{3}$  inches in diameter at each end. The wheel is of the correct grade and grit for grinding mowing machine-knives. Net weight, 26 pounds.

Packed one in a wooden case, 16 x 11½ x 9 inches. Shipping weight, 36 pounds.

# Sickle Grinder

No. 159

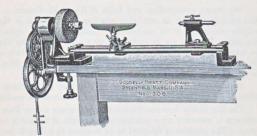
This Grinder is exactly the same as the one described above, except that it has two high grade Abrasive Wheels, one beveled  $3\frac{1}{2} \times 2\frac{3}{8} \times 3\frac{1}{2}$  inches and one straight  $3\frac{1}{2} \times 3\frac{1}{2}$  inches. Net weight, 28 pounds.

Price, each, with two wheels.....(YEFYH) \$22.00

Packed one in wooden case, 16 x 11½ x 9 inches. Shipping weight, 38 pounds.

PAGE

# Bench Grinder with Lathe Attachment



PAGE 292

In order to broaden the field of usefulness of a Foot Power Bench Grinder, we have added a Lathe Attachment for the man who wants to do occasional odd jobs of light wood turning. It will be particularly useful for the carpenter on a job distant from his shop, as it will handle much small work conveniently with the outfit that can be packed compactly in his tool chest.

The Grinder can be clamped to any ordinary table or workbench and the Treadle adjusted to the right length. The Bench Grinder from which

the Lathe Attachment can be removed, if desired, is similar to our No. 109, shown on page 283, but there are several slight mechanical changes and the No. 109 cannot be used as a part of the outfit.

The Bed of the Lathe is 18 inches long, 12 inches between centers, and will swing 5 inches. Combined with the nut that holds the Grinding Wheel is a Spur Center for the Lathe. The Tail Stock has a reversible Spindle with a Center on each end: A long adjustable Tee Rest is provided.

The Grinder is fitted with a high grade Abrasive Wheel, 4 inches by 1 inch, suitable for sharpening edge tools. Net weight, 22 pounds.

Price, complete as shown....(YIHYP) \$14.00

Packed one in a wooden case, 23 x 8½ x 8 inches. Shipping weight, 29 pounds.

#### Countershaft

No. 47

This Countershaft is designed to operate small machines driven by a round belt.

Shaft, &-inch diameter.

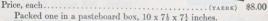
Loose Pulley, 3-inch diameter, 1inch face

Tight Pulley, 3-inch diameter, 13inch face.

1st Step. 31-inch diameter.

2d Step, 4½-inch diameter. Base Plate, 4 inches by 8 inches.

Net weight, 101 pounds.



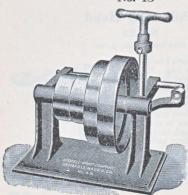
Weight, 111 pounds.



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293

#### Countershaft No. 48



This Countershaft is similar to the one shown above, but has steps for 3-inch flat instead of round helt.

Shaft, 1-inch. Loose Pulley, 3 inches by 1 inch. Tight Pulley, 3 inches by

inches. 1st Step, 5 inches by 1 inch.

2d Step, 6 inches by 1 inch.

Base Plate, 9 inches by 5 inches.

Net weight, 121 pounds.

Price, each.... .. (YAEWP) \$9.50 Each one packed in a wooden case, 111 x 81 x 81 inches. Shipping weight, 17 pounds.

### Polishing Head

No. 21



This little machine has a  $\frac{3}{8}$  inch steel Spindle, 8 inches long. It is provided with carefully threaded Taper Screws on each end. One end is also provided with flanges for holding a wheel  $\frac{3}{4}$  inch thick. Screws and Caps are of brass. The Pulley is  $1\frac{7}{8}$  inches in diameter, will take  $\frac{1}{4}$  inch round or  $\frac{3}{4}$  inch flat Belt. Iron parts are finished in red and black enamel; steel parts, polished. Height, 7 inches. Net weight,  $2\frac{1}{4}$  pounds.

Price, each . .

..... (WYVAV) \$2.40

Packed one in a pasteboard box,  $9\frac{1}{2} \times 7\frac{3}{8} \times 3$  inches. Weight,  $2\frac{1}{2}$  pounds.

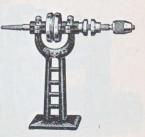
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## Polishing Head

No. 23

Chuck Patented August 13, 1895

This little machine has a  $\frac{3}{8}$  inch steel Spindle, 8 inches long. It is provided with a Taper Screw on one end, and a three-jawed Chuck, capacity 0 to  $\frac{5}{2}$  inch, on the other. It also has flanges for holding a wheel  $\frac{3}{4}$  inch thick. The Pulley is  $1\frac{7}{8}$  inches in diameter and will take  $\frac{1}{4}$  inch round or  $\frac{3}{4}$  inch flat Belt. Then parts are finished in red and black enamel; steel parts, polished. Height, 7 inches. Net weight,  $2\frac{3}{8}$  pounds.



Packed one in a pasteboard box,  $9\frac{1}{2} \times 7\frac{3}{8} \times 3$  inches. Weight,  $2\frac{3}{4}$  pounds.

## Polishing Head

No. 22

This Polishing
Head is somewhat larger and stronger than those shown on the preceding page. It has a \frac{1}{2}-inch steel Spindle, 10 inches long, provided with Taper Screws on each end. One end is also provided with flanges for holding a wheel \frac{3}{2}-inch thick. The Pulley \frac{1}{2}-inch thick in diameter. It will take \frac{1}{2}-inch round or \frac{2}{2}-inch flat Belt. Screws and Caps



are brass. Iron parts are finished in red and black enamel; steel parts, polished. Height, 7

inches. Net weight, 4 pounds.

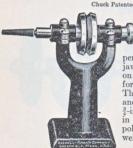
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# Polishing Head

No. 24

Chuck Patented August 13, 1895.



This little machine has a ½-inch steel Spindle, 10 inches long, provided with a Ta-

per Screw on one end, and a threejawed Chuck, capacity 0 to ½ inch, on the other. It also has Flanges for holding a wheel ¾-inch thick. The Pulley is 2½ inches in diameter and will take either ½-inch round or ¾-inch flat Belt. Iron parts are finished in red and black enamel; steel parts, polished. Height, 7 inches. Net weight, 4¼ pounds.

### Grinding Head

No. 25



This Grinding Head is similar to the little machines on the preceding page, but it has a 1 inch Spindle 7 inches long, provided with two sets of Flanges for holding wheels <sup>3</sup>/<sub>4</sub> inch thick. The Pulley is 2<sup>1</sup>/<sub>4</sub> inches in diameter, and will take either 1 inch round or 3 inch flat Belt. Screws and Caps are brass. Iron parts are finished in red and black enamel; steel parts, polished. Height, 7 inches. Net weight, 41 pounds.

Price, each ..... PAGE

.... (WYZBE) \$3.90

Packed one in a pasteboard box, 8½ x.7½ x 3½ inches. 298 Weight, 43 pounds.

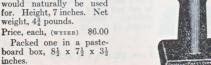
# Grinding Head

No. 251/2

This machine is exactly the same as the No. 25, shown above, except that it is furnished with two high grade abrasive Wheels, 4 inches in diameter, 1 inch face. These Wheels are of different grades, suitable for such small work as they would naturally be used for. Height, 7 inches. Net weight, 43 pounds.

Price, each, (WYZEB) \$6.00 Packed one in a paste-

inches. Weight, 51 pounds.



#### Grinding Head No. 26

This machine is larger and heavier than those previously described. It has a 3-inch Spindle, 9 inches long, provided with two sets of Flanges for holding wheels 3 inch thick with a 1-inch hole. It will hold Wheels up to 8 inches in diameter, but we recommend Wheels 6 inches in diameter with a 1-inch face for use in connection with it. The Pulley is 13 inches in diameter with a 13inch face for flat Belts. Among many other features this machine has patent Oil Cups, case-hardened Nuts, and a Base designed for great



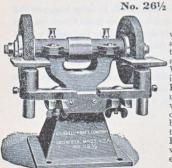
PAGE

rigidity. Iron Parts finished in red and black enamel; steel parts,

polished. Height, 7 inches. Net weight, 7 pounds.

Packed one in a wooden case,  $12\frac{1}{2} \times 9 \times 7$  inches. Shipping weight,  $12\frac{1}{2}$  pounds.

# Grinding Head

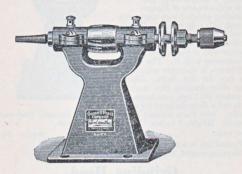


This machine is identical with the No. 26, shown above, except that it has the additional equipment of adjustable and detachable Work Rests, as shown in the illustration. These Work Rests add greatly to the usefulness of the machine without a large increase in cost. Work Rests cannot be used with wheels larger than 6 inches by ½ inch. Height, 7 inches. Net weight, 9 pounds. No Emery Wheels are furnished.

## Polishing Head

No. 27

Chuck Patented August 13, 1895



300

This machine has a  $\frac{3}{4}$  inch steel Spindle 11 inches long, provided with a Taper Screw on one end, and a three-jawed Chuck, capacity 0 to  $\frac{1}{4}$  inch, on the other. It also has Flanges for holding a wheel 6 inches in diameter,  $\frac{3}{4}$  inch thick, with a  $\frac{1}{2}$  inch hole. The Pulley is  $1\frac{3}{4}$  inches in diameter with a  $1\frac{3}{8}$  inch face for flat Belt only.

This machine has adjustable Boxes and patent Oil Cups. Iron parts are finished in black and red enamel; steel parts, polished. Height, 7 inches. Net weight, 9 pounds.

Price, each..... \$8.20

Packed one in a wooden case,  $12\frac{1}{2} \times 9 \times 7$  inches. Shipping weight,  $12\frac{1}{2}$  pounds.

## Grinding Head

No. 38



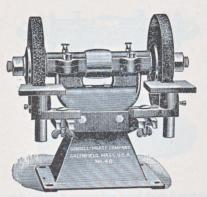
PAGE 301

This machine is much larger and heavier than any of those previously shown. It has a 1 inch Spindle,  $12\frac{1}{2}$  inches long, provided with two sets of Flanges for holding wheels with  $\frac{3}{4}$  inch holes of any size up to 8 inches in diameter and 1 inch thick. The Pulley is 2 inches in diameter with a  $1\frac{1}{2}$  inch face. Boxes are adjustable; Bearings are oiled by patent Oil Cups; Nuts are case hardened. The Base is designed to give the greatest possible rigidity. Iron parts are finished in red and black enamel; steel parts, polished. Height, 8 inches. Net weight, 21 pounds.

Packed one in a wooden case,  $16 \times 11\frac{1}{2} \times 9$  inches. Shipping weight, 26 pounds.

# Grinding Head

No. 40



302

No Emery Wheels Furnished with this Machine

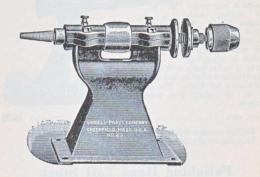
This machine is in every way identical with the No. 38, shown and described on the preceding page, except that it is supplied with the additional equipment of adjustable and detachable Work Rests, as shown in the illustration. These Work Rests add greatly to the usefulness of the machine. Height, 8 inches. Net weight, 25 pounds. No Emery Wheels are furnished.

Packed one in a wooden case,  $16 \times 11\frac{1}{2} \times 9$  inches. Shipping weight, 32 pounds.

# Polishing Head

No. 43

Chuck Patented August 13, 1895



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This machine has a  $\frac{3}{4}$  inch steel Spindle,  $14\frac{1}{2}$  inches long, provided with a Taper Screw on one end, and a three-jawed Chuck, capacity 0 to  $\frac{3}{4}$  inch, on the other. It also has Flanges for holding Wheels up to 8 inches in diameter and 1 inch face, with  $\frac{3}{4}$  inch hole. The Pulley is 2 inches in diameter with a  $1\frac{1}{2}$  inch face. The machine has adjustable Boxes and patent Oil Cups. Iron parts are finished in red and black enamel; steel parts, polished. Height, 8 inches. Net weight, 19 pounds.

Price, each.....(YAEBS) \$14.00

Packed one in a wooden case, 16 x 111 x 9 inches.

Shipping weight, 23½ pounds.

### Polishing Head

No. 31

This machine carries a wheel 8 inches from the standard. This makes it very useful for buffing oddshaped pieces. It has a 1 inch spindle 14 inches long that will take wheels 8 inches in diameter, up to 17 inches thick, with 1 inch hole. The spindle is oiled by two dust-proof, self-closing Oil Cups. The pulley is 2½ by 1½ inches. Net weight, 16 pounds.

PAGE

Packed one in a wooden case,  $15\frac{1}{2} \times 7\frac{1}{4} \times 7$  inches. Shipping weight, 20 pounds.

# Polishing Head Tail Stock

No. 42



plate is 3 inches in diameter. Net weight, 7½ pounds.

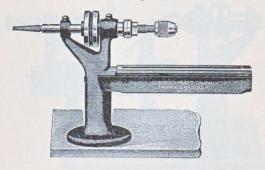
Price, each.....(YADYO) \$6.00

Packed one in a pasteboard box,  $13\frac{1}{2} \times 6\frac{1}{2} \times 4\frac{1}{2}$  inches. Weight,  $8\frac{3}{4}$  pounds.

## Polishing Head

No. 28

Chuck Patented August 13, 1895



PAGE

305

This style of base will be appreciated by many users as it enables them to greatly increase the usefulness of their machines by adjusting various jigs and attachments for any special work.

The Base is black enameled iron with an 83 inch bed.

The  $\frac{1}{2}$  inch spindle is 10 inches long. It has a tapered screw for buffing wheels, flanges for grinding wheels, and a three-jawed Chuck. Wheels 4 inches in diameter with a  $\frac{7}{8}$  inch face can be used. The Chuck is all steel with three hardened jaws; capacity, 0 to  $\frac{1}{4}$  inch.

The pulley is  $2\frac{1}{4}$  inches in diameter and has a  $\frac{7}{8}$  inch face. It can be used for either round or flat belts.

All steel parts are polished.

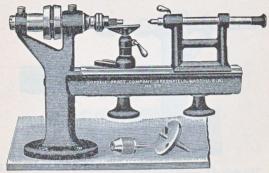
Length over all,  $14\frac{1}{2}$  inches; height,  $6\frac{1}{4}$  inches. Net weight,  $8\frac{3}{4}$  pounds.

Packed one in a pasteboard box, 13 x 8 x 41 inches.

Weight, 10 pounds.

## Polishing Lathe

No. 29



PAGE 306

This Polishing Lathe enables the operator to do a large variety of polishing, grinding, and other similar operations not possible with the ordinary styles of Polishing Heads.

The illustration conveys a good idea of the general characteristics of this Lathe. It is furnished complete with Tail-Stock, Tee Rest, Face Plate, Saw Arbor, and a three-jawed Chuck; capacity, 0 to  $\frac{5}{32}$  inch. The Bed is milled its entire length. The Head Stock has a hollow Spindle. Length of Bed, 12 inches. Extreme distance between Centers,  $\frac{3}{2}$  inches. Swing, 5 inches. Width of Pulleys,  $\frac{3}{4}$  inch. Diameter of Steps, 1 inch and  $1\frac{1}{16}$  inches. The large step is grooved so that round belt may be used if desired. Net weight,  $9\frac{1}{2}$  pounds.

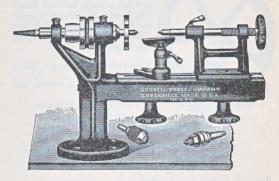
All iron parts except bearing surfaces are finished in red and black enamel; steel parts are polished.

Price, each.....(YAACS) \$11.00

Packed one in a wooden case,  $14 \times 9\frac{1}{2} \times 5\frac{1}{2}$  inches. Shipping weight, 14 pounds.

## Polishing Lathe

No. 291/2



PAGE 307

This Polishing Lathe has a Screw Tail Stock, a Taper Hole in both ends of the Live Spindle, and a Special Spindle for carrying Buffing Wheels. In every other particular it is identical with the No. 29 shown on the preceding page.

It is furnished complete with Tail Stock, Tee Rest, Face Plate, Saw Arbor, and a three-jawed Chuck; capacity, 0 to  $\frac{5}{22}$  inch.

Net weight, 9½ pounds.

Packed one in a wooden case, 14 x 9½ x 5½ inches.

Shipping weight, 14 pounds.

## Foot Power

No. 116



Although this Foot Power is sold at a moderate price it is well made and has a nicely balanced Wheel. The Wheel is 16½ inches in diameter, and is grooved for round Belt only. Finished in red and black enamel. Net weight, 25 pounds.

Price, each ..... (YEAHD) \$10.00

Packed one in a wooden case, 19 x 17 x 8 inches.

Shipping weight, 34 pounds.

908

## Foot Power

No. 35

This will be found an excellent Foot Power for all kinds of work. It is so arranged that it can never get on a dead center, but is always ready to go ahead. The Treadle remains stationary when not being worked, while the Wheel continues to revolve until the momentum has been expended. The Wheel is 20 inches in diameter with a turned face 1\(\frac{3}{8}\) inches wide. The Wheel is grooved for \(\frac{1}{4}\) or \(\frac{3}{8}\) inch round Belt, but flat Belt can also be used. Finished in red and black enamel. Net weight, 64 pounds.

Price, each.....(YACTE) \$20.00

Packed one in a wooden case,
25 x 21 x 8½ inches.

Shipping weight, 82 pounds.



# Foot Power

This is a heavy but compact. Foot Power. It has a leather Pull actuated by a heavy steel Coil Spring so arranged that it cannot get on dead center. The Wheel is 20 inches in diameter with a turned face, grooved for round Belt, but 1-inch flat Belt can also be used. Finished in red and black enamel. Net weight, 64 pounds.

Price, each.....(YEANE) \$23.00 Packed one in a wooden case,

24½ x 21 x 10 inches. Shipping weight, 81 pounds.



PAGE

# Geared Foot Power 309

No. 122



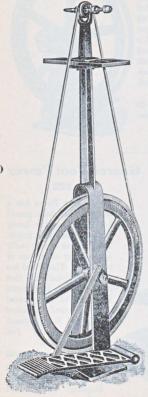
This Foot Power has a double treadle drive, geared 3 to 1, giving the heavy 12-inch Wheel great power. The machine is very easily operated by either one or both feet. The Wheel has a turned 1½-inch face that is grooved so that round Belt may be used instead of flat, if desired. Finished in red and black enamel. Height, 23 inches. Net weight, 81 pounds.

Price, each (YEBIZ) \$30.00

Packed one in a wooden case, 28 x 14 x 12 inches.

Shipping weight, 101 pounds.

# Foot Power Polishing Machine



This useful combination of a Foot Power, with a plain crank motion, and a No. 23 Polishing Head will prove of great convenience to any one who has small polishing to do, but has no power in his shop, or to any one who desires to keep his workbench clear.

This machine is complete in every particular and comes all set up and ready for work. It is fitted with the necessary amount of round belt. A three-jawed Chuck is provided; capacity, 0 to  $\frac{5}{32}$  inch. Finished in red and black machine enamel.

It is 45 inches high over all, 38 inches high to table. The Driving Wheel is 20 inches indiameter and the small Pulley 1½ inches. Size of table, 10 x 5 inches. Net weight, 64 pounds. Price, each....(YEBOB) \$30.00

Packed one in a wooden case, 40 x 21½ x 7 inches.

Shipping weight, 94 pounds.

# Foot Power Polishing Machine No. 124

Except for the difference in the Polishing Heads, this is exactly the same as the No. 123. The Polishing Head, which is our No. 24, has a three-jawed Chuck; capacity, 0 to \( \frac{1}{2} \) inch.

Net weight, 66 pounds.

Price, each . . . . (YEBUC) \$32.00

Packed one in a wooden case, 40 x 21½ x 7 inches. Shipping weight, 96 pounds,

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# Tool Grinder

This is a strong, powerful grinding machine with a double treadle, geared three to one, making possible a speed of 3,000 revolutions per minute. The Head itself is one of our No. 261 Grinding Heads which will take wheels 10 inches in diameter. We recommend wheels 8 inches in diameter. as furnished with the machine.

Iron parts are finished in red and black enamel: steel parts are polished. A highgrade Abrasive Wheel, 8 inches in diameter, 3 inch face, is fitted to each machine. Furnished complete with the necessary belt.

Floor space,  $18\frac{1}{4}$  x 12 inches. Height to top of Emery Wheel, 44 inches. Table, 10 x 9 inches. Net. weight, 109 pounds.

Price, each. (YEASP) \$50.00 Packed one in a wooden box or crate,  $43\frac{1}{2} \times 16 \times 14$ 

inches. Shipping weight, crated,

142 pounds. Shipping weight, boxed for export, 155 pounds.

#### Tool Grinder No. 119

Except for the difference in heads this is exactly the same as the No. 118. The Polishing Head, which is our No. 27, has a threejawed Chuck: capacity 0 to 1 inch.

Net weight, 108 pounds.

No. 118

PAGE

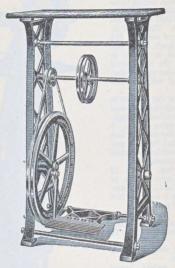
311

Price, each. . (YEAWS) \$52.00

Packed one in a wooden box, or crate, 431 x 16 x 14 inches. Shipping weight, crated, 143 pounds.

Shipping weight, boxed for export, 156 pounds.

# Foot Power Table



9AGE 312

This Table provides in itself a complete Foot Power equipment consisting of Wheel, Countershaft and Bench, so arranged that almost any kind of a small machine can be attached to the table and driven from the Pulley below. No holes are cut in the Table, this being left to the purchaser, who can easily make them to suit his own requirements.

All Pulleys are grooved for round Belt, but the faces are turned so that flat Belt can be used if desired. The Belt shown in the illustration is furnished.

All Metal parts of this machine are attractively enameled. The Table Top is snellacked.

Height, 39 inches. Table Top. 24 x 14 inches. Driving Wheel, 20 inches diameter. Countershaft Receiving Wheel, 3 inches diameter. Countershaft Driving Wheel, 39 inches diameter. Net weight, 115 pounds.

For convenience in shipping this machine is knocked down, but its construction is so simple that it can be easily assembled by the purchaser.

Price each (YEART) \$40.00

### Foot Power Table No. 121



PAGE

313

This Foot Power Table is designed especially for use in connection with our No. 125 Bench Lathe, and is provided with slots for bolting this Lathe to the Table. It is strongly constructed, entirely of iron and steel even to the Table Top. A rim around the edge prevents tools from rolling off. The Tool Rack at the back is provided with 11 small and 12 large holes. The smallest Step of the Cone Pulley is 18 inches; second and third Steps are proportionate to the size of the Pulley on the No. 125 Bench Lathe.

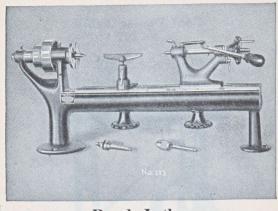
The Foot Power runs very smoothly and easily.

The Table Top, Legs, and Treadle are finished in black enamel. The Foot Power Wheel is finished in red enamel with a polished edge. All steel parts are polished.

The Table is 35 inches high, 31 inches long, and 14 inches wide, exclusive of the tool rack. Net weight, about 160 pounds.

Price of Table only . (YEBBO) \$45.00

Crated, 38 x 32 x 22 inches. Weight, 194 pounds. Boxed, 41 x 22 x 13 inches. Weight, 200 pounds.



PAGE 314

### Bench Lathes

These Lathes are moderate in price, yet they are thoroughly serviceable, practical, and reasonably accurate. They are substantially constructed from good materials and are designed especially for amateurs, experimenters, craftsmen, and designers. The, will handle a wide range of work, making them particularly useful in laboratories, repair.shops, and trade schools.

The construction and fitting of these Bench Lathes is done with great care and reasonable accuracy. We do not claim to make a precision tool for the selling price of these Lathes; but they can, and do, practically fill all the requirements of the average user.

The No. 121 Foot Power Table, shown on the preceding page, will fit the No. 125 Lathe only. The other attachments, shown on the following pages, will fit both No. 125 and No. 494 Lathes. Besides the attachments shown on pages 316 to 321, we can also recommend the 2-inch and 3-inch Scroll Chucks, shown on page 145, for use in connection with these Lathes.

# Bench Lathe

No. 125

12 inches between Centers, 7-inch Swing

This Lathe has a Milled Bed and a Tail Stock with a milled base. The Live Spindle has a cone bearing to take up wear, and is provided with a No. 1 Morse Taper Socket and has a  $\frac{2}{3}$  inch hole clear through. The Tail Stock has both Screw and Lever Feed. Tail Stock Spindle has a No. 0 Morse Taper Socket. The Cone Pulley has three steps,  $1\frac{1}{2}$ ,  $2\frac{3}{2}$ , and  $3\frac{1}{2}$  inches in diameter.

The Lathe is finished with black and red enamel; the bed is milled; all working parts are polished.

. Every Lathe is provided with an adjustable Tee Rest, a Slotted Face Plate, a Saw Arbor, and a Drill Chuck with a No. 1 Morse Taper Shank. The Chuck holds round shanks of all sizes from 0 to  $\frac{1}{4}$  inch. Both the Head Stock and the Tail Stock are provided with Point Centers.

PAGE

Length over all, 25 inches. Height, 11½ inches. Swing, 7 inches. 315
Extreme distance between centers, 12 inches. Net weight, 30 pounds.
No Countershaft is furnished with this machine.

Each Lathe packed in a wooden case,  $28 \times 13 \times 6\frac{1}{2}$  inches. Shipping weight, 42 pounds.

# Bench Lathe

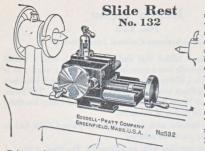
18 inches between Centers, 7-inch Swing

This Lathe is the same as the No. 125 described above, but has a larger Tee Rest and a longer Bed. The swing is the same.

Length over all, 31 inches. Height, 11½ inches. Swing, 7 inches. Extreme distance between centers, 18 inches. Net weight, 36 pounds.

Price, each.....(YOURD) \$40.00

Each Lathe packed in a wooden case,  $34 \times 13 \times 6\frac{1}{2}$  inches. Shipping weight, 50 pounds.



This Slide Rest is made especially for use with our Bench Lathes, and with it, it is possible to do work of reasonable accuracy. It is a strong and thoroughly well made device although not a precision tool. It has a longitudinal motion of 33 inches and a cross motion of 21 inches. The Tool Post holds } x 1 inch Lathe Tools. Net weight, 6½ pounds.

(YECIB)

\$16.00

Price, each Packed one in a wooden case, 14 x 9½ x 5½ inches.

Shipping weight, 11 pounds.

Lathe Tools No. 126 PAGE 316

These Lathe Tools are made especially for use with our No. 132 Slide Rest. tools are about 3 inches long by 1 inch square

Price, per set of twelve..... (YEBYE) \$6.00 .50 Price for separate tool.....

Sanding Disc No. 701 YEV ->

This Disc, 63 inches in diameter, screws on to the live spindle of our Bench Lathes. Its grooved face gives a surface to which sandpaper and other abrasive sheets can be solidly glued. Net weight, 34 pounds. (ZAODS)

Price, each.

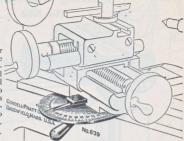
Packed one in a pasteboard box, 71 x 71 x 11 inches.

# Protractor Attachment

No. 639

This attachment is for use on our No. 132 Slide Rest to permit the operator to cut bevels and tapers at any desired angle. It is locked to of the lever and the in-90-degrees right and left.

Net weight, 4 ounces,

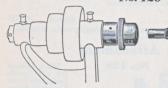


Price, each... ... (ZACPE) \$7.50 Packed one in a pasteboard box,  $3\frac{3}{4} \times 3\frac{1}{2} \times 2\frac{1}{4}$  inches.

Weight, 6 ounces.

#### Compression Chuck No. 129

PAGE 317



This Chuck is made for use with our Bench Lathes. and it will prove a very useful addition to it particularly for holding round rods to be machined.

Each Chuck consists of a Collar, Collet, and Bush-Bushings are furnished in the following

sizes: \(\frac{1}{8}, \frac{3}{16}, \frac{1}{4}, \frac{5}{16}\), and \(\frac{3}{8}\) inch. No larger sizes can be used, but other intermediate sizes can be made to order at special prices.

Price of Chuck, with one Bushing. (YECCO) \$8.00

Packed one in a pasteboard box,  $2\frac{5}{8}$  x  $2\frac{3}{8}$  x  $2\frac{1}{4}$  inches. Weight,  $\frac{3}{4}$  pound. .. (YECCO) \$8.00 Extra Bushings, regular sizes listed above, each

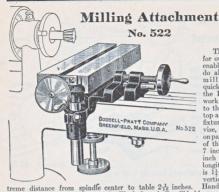
#### Buffing Spindle No. 706

This spindle is for operating wood centered polishing wheels, brushes, etc. It is easily installed by being screwed on to the end of the lathe spindle in place of the original adjusting and lock nut.

Net weight, 4 ounces.

Price, each ..... Packed one in a pasteboard box.

\$2.00 (ZAPCE)



This Attachment, for our Bench Lathes, enables the operator to do all kinds of small milling. It can be quickly clamped on to the Lathe, where the work is held by bolting to the T-slots on the top and one side of this fixture; or held in the vise, or centers, shown on page 325. The Table of this Attachment is 7 inches and has a 5inch movement. The longitudinal movement is 11 inches, and the vertical, 13 inches. Ex-Hand wheels feed the

table in any one of the three ways. The lathe-spindle will hold any end milling cutters with a No. 1 Morse Taper Shank; or the milling cutters on page 444 can be used by holding them in a chuck.

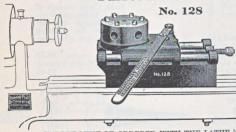
318

PAGE

No milling cutters furnished with this Attachment. Net weight, 111 pounds.

. . (YUCAN) \$40.00 Price of Attachment only .... Packed one in a wooden case, 16 x 10 x 10 x 8 inches. Shipping weight, 20 pounds.

**Turret Attachment** 



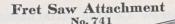
This Attachment for our Bench, Lathes has a Turret 3 inches in diameter, provided with six holes ½ inch in diameter. It has a travel of 25 inches, but will shift and throw automatically only when cuts of 11 inches or less are made. This attachment enables the operator to turn out small duplicate parts economically.

TURRET MUST BE ORDERED WITH THE LATHE in order to have the holes drilled and aligned. When Turrets are furnished separately, the holes will be left undersized and the purchaser must rebore them on the Lathe to which the Turret is attached.

Net weight, 9 pounds

.. (YECAY) \$45.00 Price, each ....

Packed one in a box, 14 x 93 x 51 inches. Shipping weight, 131 pounds.



This Attachment is designed to fit the bed of our Bench Lathes and be driven from the Lathe Spindle by means of Compression or Scroll Chuck, or Dog, clamping on to the 3-inch shaft.

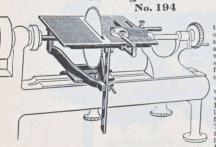
The corrugated table is 63 inches in diameter and can be tilted right or left and locked at any angle by means of the set screw at the back.

The saw has a 11 inch traveland the depth of throat is 81 inches. Designed for 6-inch loop end coping saw blades, No saws furnished. Net weight, 61 lbs.



Price, each..... Packed one in a wooden case.

# Sawing Attachment



This Circular Saw Attachment, for use with our Bench Lathes, consists of a Saw Arbor, and an Adjustable Table with two guides, one for splitting and the other for cross cutting or mitering.

. (ZAVJE)

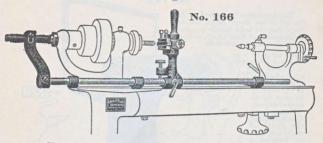
The Table is 83 inches wide by 91 inches long, with a corrugated top. It can be either raised or lowered and securely fastened at any point. The Table Top is hinged to the Frame, which can be clamped to the Lathe

The Saw Arbor is so constructed that the position of the Saw can be varied as desired. One end is 3 inch in diameter, and can be held by a Compression Chuck, a Scroll Chuck, or a Lathe Dog. The other end is centered for receiving the Tail Stock. Center.

Circular Saws 5 inches in diameter with a 3-inch hole are recommended for use with this attachment. We cannot furnish Saws. Net weight, 92 pounds.

Price, each, complete with Arbor but no Saw . . . . . (YELIK) \$15.00 Packed one in a wooden case, 14½ x 9½ x 5½ inches. Shipping weight, 14 pounds.

### Screw Cutting Attachment



We can build Screw Cutting Attachments for our Bench Lathes; they must, however, be ordered at the same time as the Lathe, and fitted to it. They can be supplied with Master Screws for any lead, but 24 threads to the inch will be furnished unless otherwise specified. Shipping weight, 10 pounds.

PAGE

No. 166. Price of Attachment, with one Master Screw. (YEGOG) \$45.00 320 Extra Master Screws and Nuts (regular threads), each.....



Packed one in a wooden case, 142 x 7 x 62 inches. Shipping weight, 14 pounds.

#### Attachments for Bench Lathes

Lathe Dog No. 139



Capacity, \$\frac{1}{16}\$ to \$\frac{3}{2}\$ inch; \$1\frac{1}{16}\$ inches long, \$\frac{7}{16}\$ inch wide, and \$\frac{7}{16}\$ inch thick... Driving Pin, \$\frac{1}{4}\$ inch diameter, \$1\frac{1}{16}\$ inches long. Price, \$0.80

Square Center No. 137



Made of Tool Steel for light turning of wood or steel. Shank No. 1 Morse Taper. Price, \$0.90.

Wood Center No. 134



Diameter, & inch, for use in Tail Stock. Shank No. 0 Morse Taper. Price, \$0.90.

Spur Center No. 135



One inch in diameter for wood turning. Shank No. 1 Morse Taper. Price, \$1.30.

Tail Stock Face Plate No. 133



Diameter, 3 inches. Shank No. 0 Morse Taper, Price, \$1.30.

Clamp Dog No. 127



Opens 3 inch. Price, \$1.00.

Screw Center Face Plate No. 136



Diameter, 1 1 in ches. Screw projects 1 inch. Shank No. 1 Morse Taper. Price, \$1.30.

321

Interchangeable Centers and Shank No. 131





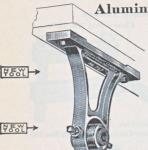


For use in Tail Stock. 1 Cone, 1 Cup and 1 ♥ Center, all ½ inch outside diameter. One Shank No. 0 Morse Taper fitting all centers. Price, per set, \$1.80.

Table Rest No. 138



For use in Tool Rest. Two inches square. Shank, 1 inch. Price, each, \$0.90.



# Aluminum Shafting Hanger

No. 727

A cast aluminum adjustable hanger with a 6½-inch drop fitted with an oilless bearing for ½-inch shaft. Designed and ideal for a small shop line shaft for driving light machinery. Net weight, 2½ pounds.

Price, each.......(ZATGA) \$6.00

Packed one in a pasteboard box.

Packed one in a pasteboard box.

No. 731. Steel Shafting Collar for use with above hanger.

Price, each...(ZATOK) \$1.00

Packed one in a pasteboard box.

Aluminum Pulleys

322

0

Packed one in a pasteboard box.

These pulleys are cast aluminum with machined faces, hubs and bores ready to assemble on  $\frac{3}{4}$ -inch shafting for driving light machinery.

Diameter Face Price, Each
No. 728 3\frac{3}{8} 1\frac{5}{8} (ZATHE) \$2.00
No. 729 11\frac{1}{8} 1\frac{1}{8} (ZATIJ) 4.00

Packed one in a pasteboard box.



# Saw or Emery Wheel Arbors



These polished steel Saw Arbors will be found convenient for holding Saws or Emery Wheels in Lathes. They are made in four sizes:

		Length	Diameter	Opening Between Flanges	Diameter Between Flanges		Price, Each
1	No. 321	4 inches	3 inch	½ inch	3 inch	(YILNE)	\$0.70
1	No. 322	4 <sup>3</sup> / <sub>4</sub> inches	inch inch	½ inch	½ inch	(YILYS)	.90
1	No. 323	7 inches	3 inch	3 inch	½ inch	(YIMEP)	1.40
1	No. 324	10 inches	1 inch	1 inch	3 inch	(YIMNA)	3.20

# Hand Knurling Tool



This is a very convenient outfit for hand knurling. The knurl in use is held in the forged steel shank. Extra knurls are contained in the rosewood handle. The shank is polished and nickel plated.

The three knurls are  $\frac{5}{8}$  inch in diameter and  $\frac{3}{8}$  inch thick with a  $\frac{3}{16}$  inch face. They are finely cut by automatic machinery. "A" Knurl is plain straight. "B" Knurl is fine cross. "C" Knurl is

medium cross.

Length of tool, 9½ inches. Net weight, 7 ounces.

Price of set, complete with 3 knurls. (YAVSY) \$2.50

Extra Knurls, each ... ... .50

Packed one set in a pasteboard box, 10 x 13/4 x 11/2 inches. Weight,

PAGE

9 ounces.

# Cutting-Off Tool



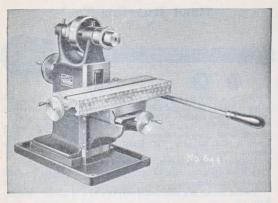
this is a labor-saving device for cutting off any kind of round stock up to ½ inch in diameter. The rod to be cut is fastened in a Lathe and revolved at the same speed that should be used for an ordinary cutting-off tool. Then turn the Thumb Screw to close the hardened Guides to a running fit on the work in order to keep it from chattering. Pressing lightly on the Handles feeds the circular Cutter into the work.

The Cutter is made from a high grade of tool steel; it is very easily sharpened until the entire circumference has been used up.

A Stop is provided in order that short pieces for Dowels, Pins, or Screws may be rapidly cut to a uniform length.

Price, each......(yvcvs) 84.00

Packed one in a pasteboard box.



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## Bench Milling Machine No. 644

This Bench Milling Machine is designed to give compactness and solidity in a machine having a remarkably wide range of work at a price within reach of amateurs, experimenters, and every small shop.

This machine has a three step cone pulley, 1½, 2½ and 3½-inches in diameter, for 1 inch driving belt. The live spindle is ground to size and has a cone bearing to take up wear. Spindle has a No. 1 Morse Taper hole and the nose is threaded to take the Compression Chuck which is furnished

with each machine.

The table is accurately machined 11½ x 3½ inches and can be fed three ways by hand wheels. It is provided with a ½ inch T-slot for fastening work to bed. Feed screw can be disconnected and a lever feed used for longitudinal travel. Feed screws on both top and cross slides have graduations for fine adjustment and are provided with means for taking up wear. Knee is elevated by a screw operated by a hand wheel at the back of the frame. The ways to which the knee is fitted are a part of the frame. Provision is made to take up wear on all slides. The large bearing surfaces of all slides insure rigidity of the table. The machine is mounted in a cast iron bed or pan for holding oil and chips.

Longitudinal feed of table: With screw, 7 inches, with lever, 4½ inches.

Traverse feed, 2 inches. Vertical motion of knee, 7 inches. Height over all, 14 inches. Bench space required, 15½ x 21 inches without lever, 21 x 24 inches with lever. Bench space of pan or bed, 8 x 12 inches. Net weight, 51 pounds.

Maximum distance between center of spindle and table, 51 inches.

This machine is furnished complete with a Compression Chuck with 3-inch bushing. No countershaft, arbor, vise, or centers are furnished but must be purchased separately.

Packed in a wooden case, 20 x 161/2 x 10 inches. Shipping weight, 73 pounds.

## Milling Machine Vises

No. 646. This Vise has 2 x 3 inch jaws that open 1 inch. It is provided with clamps for fastening it to the table of the No. 522-Milling Attachment and No. 644 Milling Machine. Net weight, 11 pounds.

Price of Vise, complete with

Clamps.....(zados) \$5.00

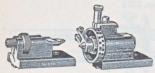
Packed one in a pasteboard box, 4 x 4 x 11 inches. Weight, 11 pounds.

No. 659. This Vise is the same as No. 646 described above but is equipped with a swivel base graduated over an arc of 90 degrees. Net weight, 12 pounds. 

Packed one in a pasteboard box, 5½ x 4¾ x 1½ inches. Weight, 1¼ pounds.



## Plain Index Centers No. 648



Readily clamped in position on the table of the No. 522 Milling Attachment or No. 644 Milling Machine, greatly increasing the range of work. The extreme distance between these centers on the No. 522 Attachment is 3 inches; on the No. 644 Milling Machine 53 inches, the swing is 1½ inches. The Index Plate is provided with 36,

PAGE

40, and 48 holes, making possible any indexing desired. Special Index Plates made to order. Net weight, 11 pounds.

Price, per set. ...... (ZADSO) \$50.00 Packed one set in a pasteboard box, 6 x  $4\frac{3}{4}$  x  $3\frac{1}{2}$  inches. Weight,  $1\frac{3}{8}$  pounds.

### Universal Index Centers No. 649

These Centers make possible the accurate milling of tapers, in making small cutters, reamers, etc. They are exactly the same size as those described above, but the center head can be set at any angle from 0 to 90 degrees. The other center is adjustable for height.

Net weight, 13 pounds.



Price, per set.... (ZADUT) \$90.00 Packed one set in a pasteboard box, 42 x 42 x 31 inches. Weight, 12 pounds.

## Milling Machine Arbor No. 669

This Arbor fitted with a No. 1 M.T. Shank to fit the Spindle of No. 644 Milling Machine is designed for cutters with a 3-inch hole. This Arbor carries five collars of varying widths. Price, each . . . . . . ..... (ганжо) \$12.00

Packed one in a pasteboard box.

NEW

# Single Beam Roller Gauge



This tool has one 8-inch graduated steel Beam, with a roller marker The entire tool is polished and nickel plated.

Price, each.....(YERYT) \$1.40

Packed one in a pasteboard box,  $8\frac{2}{4}$  x  $2\frac{1}{8}$  x  $2\frac{1}{8}$  inches. Weight, 10 ounces.

# Double Beam Roller Gauge

TERRELEGIES | MARKET | MARKET

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This tool has two graduated steel Beams with roller markers. The Beams are 4 and 8 inches long. The tool is fully polished and nickel plated. Price, each. (YESAP) \$1.70 Packed one in a pasteboard box,  $\$2 \times 24 \times 24$  inches. Weight, 11 ounces.

# Triple Beam Roller Gauge



Packed one in a pasteboard box,  $8\frac{3}{4} \times 2\frac{1}{8} \times 2\frac{1}{8}$  inches. Weight, 12 ounces.

# Circular or Oval Gauge



Although this Roller Gauge can be used for straight work, it is particularly designed for circles and ovals. It has a Head which slides along the sinch graduated Beam. The Head can be fastened in position by a knurled thumb screw. The entire tool is nickel plated and the Beam is polished.

Price, each ... ...  $(y_{ESUT})$  \$1.30 Packed one in a pasteboard box,  $8\frac{1}{2} \times 2\frac{3}{4} \times 1\frac{3}{4}$  inches. Weight, 6 ounces.

# Circular or Oval Gauge



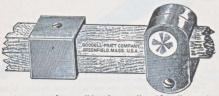
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This tool differs from the one above, in the addition of a fine adjustment of the Head for close work. The adjustment can be operated after the Head is clamped in position.

All parts of this tool are nickel plated, and the 8-inch graduated Beam is polished.

#### Pole Collars



This set consists of one solid and one adjustable collar, each with an opening 1 inch square, for use on either solid or adjustable measuring poles. Where adjustable bars are used they should be about \(\frac{1}{2}\) inch by 1 inch. No Bars are furnished.

No. 45. Black Enameled. Price, per set.........(YARMY) \$1.00
No. 46. Polished and nickel plated. Price, per set...(YARPH) 1.30
Packed one set in a pasteboard box, 4½ x 2 x 1½ inches. Weight, 9 ounces.



This Saw Set is so designed that it can be used on either wide or narrow saws; and it is so constructed that the teeth of the saw are always in sight of the operator, insuring accuracy in setting. The frame and handles are made of malleable iron, finished in red and black enamel. The jaw and inserted anvil are made of tempered steel, and are polished. The adjustable gauge is very easily set in position.

This is well made, and is a very practical tool. It is 8 inches long over

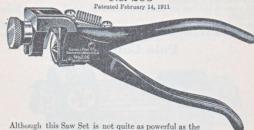
PAGE all, and weighs 14 ounces.

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Price, each.... ... (YEMIL) \$2.30

Packed one in a box, 8½ x 3½ x 1½ inches. Weight, 1 pound.

#### Saw Set No. 206



one described above, it is simpler in design and a little quicker in action. The frame and handles are malleable iron, finished in red and black enamel. The jaws and anvil are tempered steel, well polished.

It is readily adjusted, making a thoroughly efficient tool. Length over all, 63 inches. Net weight, 9 ounces. Price, each ....

Packed one in a box, 71 x 31 x 11 inches. Weight, 3 pounds.

## Combination Butt Gauge



This tool is designed especially for door hanging and mortise work. It is provided with three hardened double edge Spurs, the one on the back of the double end bar being adjustable for the regulation of clearance.

The tool is well made, entirely of steel, and is polished and nickel

plated. 

Packed one in a pasteboard box, 3\frac{3}{4} \times 2\frac{1}{2} \times 1\frac{3}{4} \times inches. Weight, 8 ounces.

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## Clapboard Marker



This is a convenient time-saving tool marking a great improvement over ordinary siding markers. It can be operated by either the right or left hand. The cutters are beveled on one side only and will make an accurate mark, insuring a close joint of Clapboards against a corner board or window casing. It automatically accommodates itself to various thicknesses of Clapboards.

All the metal parts of the tool are white nickeled.

Price, each. . .....(YISAT) \$2.50

Packed one in a pasteboard box, 81 x 33 x 11 inches. Weight, 1 pound.

# Stair Gauge Attachments

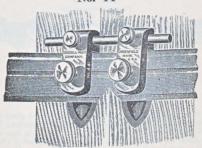
No. 562

These Attachments, for a Carpenter's Steel Square, can be readily clamped in place on the blade to form a gauge for laying out stair stringers, marking any desired angle for sawing, or many other uses.

PAGE or many other uses.

These Attachments are small and compact; nicely finished in white nickel. The set screws are polished. No Squares furnished.

# Draw Shave Guides



These Draw Shave Guides or Chamfer Gauge are particularly useful in cornering before, as they enable the operator to do a good even job in a very short time. They are made in a medium size and will fit any ordinary Draw Shave. The backs of the Guides are polished, and the Faces and Thumb Screws are nickel plated. Illustration shows Guides attached to Blade. No Blades furmished.

Price, per pair.....(YAEGY) \$1.80

Packed one pair in a box, 42 x 12 inches. Weight, 9 ounces.

# Iron Plane Gauge



Illustration shows Gauge attached to Plane. No Plane furnished

When this tool is attached to any Iron Plane by means of the Thumb Screws provided, it enables the operator to accurately plane bevels of any desired angle or make even joints without the continuous use of a Bevel or Try Square. The device is so simple that even inexperienced workmen can do accurate work in a very short time.

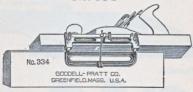
The tool is made entirely of iron and steel, fully nickel plated. The flat surface of the Guide is ground to insure its accuracy.

Price, each..... \$2.10 331

PAGE

Packed one in a pasteboard box, 8½ x 5 x 2 inches. Weight, 1½ pounds.

# Wood Plane Gauge



This device can be attached to any Wood Plane by means of two screws. It is in every way the same as the No. 333, described above, except that it fits Wood Planes instead of Iron ones. It is made entirely of iron and steel, nickel plated. No Plane furnished.

Price each

? Packed one in a pasteboard box,  $8\frac{1}{4} \times 4\frac{1}{4} \times 1\frac{3}{4}$  inches. Weight,  $1\frac{1}{8}$  pounds.

# Pocket Nail Puller



This tool is sure to be most popular with carpenters and householders on account of its simple construction, compactness and strength. It is small enough to be dropped into the pocket and yet is as strong as a tool of this kind needs to be. It is made entirely of drop-forged steel.

To use this Pocket Nail Puller, open jaws and place them over the nail head. Drive in the jaws by pounding on the head of the puller with a hammer.

When the jaws have engaged the nail head insert the claws of the hammerunder the head of the puller and the compound leverage enables any nail to be pulled with ease. It will pull cement coated nails out of knots without difficulty.

This Pocket Nail Puller is quicker, more convenient and easier to operate than a large nail puller.

Packed one in a box, 32 x 378 x 7 inch.

Price, each...

# Universal Center Finders



Showing Operation.

PAGE

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This device accurately locates the center of any round, square, rectangular, or oval piece of material within its capacity, by merely drawing two lines the intersection of which must be the center point. They are made entirely of steel, and nickel plated.

No. 341.	Capacity 0 to 2 inches.	Tiles cucini,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	\$1.20
No. 342.	Capacity 0 to 33 inches.	Price, each(YISOY)	1.50
No. 343.	Capacity 0 to 57 inches.	Price, each(YISTA)	1.80

# Pattern Makers' Spoke Shave



This Spoke Shave was designed particularly for the use of Pattern Makers.

The Frame is made of black enameled iron, shaped to fit the hand of the operator, making possible a more delicate touch than can be otherwise

The Blade is polished steel, 2 inches wide; it is well made and can be easily adjusted, back and forward.

Length over all, 91 inches. Net weight, 101 ounces.

#### Double Knife Spoke Shave No. 37





PAGE

This is a Pattern Makers' tool that will save much time in finishing shoulders, corners, grooves, and other places where an ordinary Spoke Shave cannot be used. A protector that can be placed over either blade is provided. This makes it adaptable for either right or left hand work. The tool is well finished and thoroughly practical.

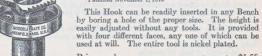
Length over all, 33 inches. Net weight, 4 ounces.

Price, each ...... (YACWO) \$1.40

# Packed one in a pasteboard box, 3\frac{3}{4} \times 1\frac{1}{2} \times \frac{3}{4} \times inch. Weight, 6 ounces.

## No. 196

Patented November 1, 1910



Price, each......(YELLO) \$1.50

Packed one in a pasteboard box. 3½ x 2½ x 2½

inches. Weight, 10 ounces.





This Floor Scraper has a selected hard-wood Handle, 11 inches long, turned down to afford a comfortable grip, and set at the correct angle. The weight of the large Adjusting Knob, which also acts as a handle, supplies most of the necessary pressure to the Blade, making wood scraping a comparatively easy operation.

The Blade, which is reversible, is made from the finest quality of tool steel, 3 x 4½ inches. It is hardened and tempered in such a way that it will

hold a good cutting edge.

PAGE

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Net weight of tool, 12 pounds.



This Floor Scraper has a selected hard-wood Handle, 11 inches long, turned down to afford a comfortable grip, and set at the correct angle. It has a Wing Adjusting Nut instead of a knob, and is provided with a curved relate for anylying pressure to the Blade.

plate for applying pressure to the Blade.

The Blade, which is reversible, is made from the finest quality of tool steel, 3 x 4½ inches. It is hardened and tempered in such a way that it will

hold a good cutting edge.

Net weight of tool, 13 pounds.

Price, each.....(YOPZO) \$1.50

Packed one in a pasteboard box, 111 x 31 x 2 inches. Weight, 11 pounds.

## Cabinet Scraper No. 468

Patented July 25, 1916

This Cabinet Scraper is very compactly designed for close work inside of cabinets, boxes, and other similar places. The large hard-wood Handle affords a firm and comfortable grip.

The Blade, which is reversible, is made from the finest quality of tool steel,  $3 \times 4\frac{1}{2}$  inches, hardened and tempered to hold a good cutting edge. It is fastened on the steel Frame in such a position that it has just the right hang to produce the best results, with the minimum of labor.

The Handle is  $4\frac{1}{2}$  inches long. Net weight of tool,  $1\frac{1}{2}$  pounds.



PAGE

Price, each ..... (YOPWE) \$1.50 335

Packed one in a pasteboard box,  $5\frac{1}{2} \times 3\frac{3}{4} \times 1\frac{3}{4}$  inches. Weight,  $1\frac{3}{4}$  pounds.

# Scraper Steel





This Scraper Steel, or Burnisher, has a round tool steel Blade correctly tapered for turning a scraper edge. The Blade is 4½ inches long, hardened and polished. The Handle is polished hard wood, protected by a nickel plated steel ferrule.

Length over all, 83 inches. Net weight, 4 ounces.

Packed one in a pasteboard box,  $9\frac{1}{2} \times 1\frac{3}{4} \times 1\frac{1}{2}$  inches. Weight, 5 ounces.

## Carpenters' Combination Square

Hard Cast Iron Head. Steel Blade.



These Squares are so useful that no good carpenter should be without them, and their price is sufficiently low that every carpenter can well afford one. The uses of these tools are too well known to require any description. Each one is well made, well finished, and accurate. Blades

are graduated in 8ths, 32ds, 12ths, and 48ths.

936

## Combination Square

Hard Cast Iron Head. Steel Blade No. 667

CONCLESS TO CONCUS AND A CONCUS

This tool is in every way identical with the one shown above, except that it has the additional equipment of a Center Head. The Blade is graduated in 8ths, 16ths, 32ds, and 64ths, but can be furnished like the No. 666 if desired.

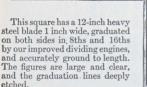
Pr	ice, Each	Pr	ice, Each
9 inch(ZAHET)	\$3.00	18 inch (ZAHSA)	\$4.70
12 inch(ZAHIV)	3.70	24 inch(ZAHTE)	5.70

Packed one in a pasteboard box.

# Carpenters' Combination Square

No. 707

+ TOOL





The beam of improved shape is extra large being 4\frac{3}{4} inches long, machined on the bearing faces, with the remaining portions finished in red enamel.

As there is no level or scriber included with this tool we are enabled to sell it at a very moderate price while maintaining the desired accuracy. Net weight, I pound.

337

List Price, each.......\$1.20

Each square packed in a separate pasteboard box,  $12\frac{1}{4} \times 4 \times 1$  inches. Weight,  $1\frac{1}{8}$  pounds

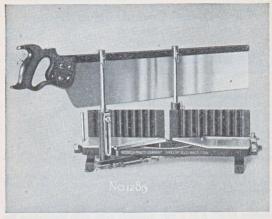
## Carpenters' Bevels

These handsome and accurate Carpenters' Bevels will be appreciated by all particular mechanics. The Handles are Rosewood, fully brass bound with rods dovetailed the entire length of the handle, and doweled to heavy brass end plates. The polished Steel Blades have accurate parallel edges. The Blades can be fastened in any position by turning the large polished thumb screw

	Length of Blade	Length of Beam	Pr	ice, Each
No. 576	6 inch	4½ inch	(YUMUD)	\$2.00
No. 578	8 inch	5½ inch	(YUMZE)	2.20
No. 580	10 inch	6½ inch	(YUNBE)	2.60
No. 582	12 inch	8½ inch	(YUNEB)	3.00

Each Bevel packed in a separate pasteboard box





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#### All-Steel Mitre Boxes

Patented February 9, 1904; Others Pending

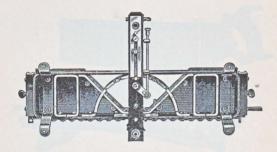
Because every single part of the Goodell Mitre Box is made entirely of steel, there is absolutely no breakage, and consequently no expense for repairs. The total repairs and replacements since their introduction have amounted to almost nothing.

This wonderful durability is due not only to the fact that every piece is steel, but also to the design and workmanship. You will notice from the illustration on the opposite page that the Frame is built in the form of a truss bridge, making it absolutely rigid. The different portions of the truss Frame are strongly riveted together. The very careful workmanship insures absolute accuracy not only when the box is new, but after years of daily use.

When this Mitre Box was first put on the market, it was said that although it would not break, it could be bent. Years of use have proved, however, that strains and blows that would break an iron box, leave this one entirely unharmed.

## All-Steel Mitre Boxes

Patented February 9, 1904; Others Pending



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Durability is but one of the many reasons why you will prefer the Goodell Mitre Box.

The saw when elevated is held in place by a spring lock, which is easily released by a slight downward pressure.

The lever which carries the saw can be swung from 45 to 90 degrees either right or left, without pinching the fingers. It locks automatically at all the most desired angles. At all other angles, it can be locked by pulling forward a small knob on the side of the saw lever. Angles are correctly indicated on the graduated arc by means of a small brass pin in the saw lever.

Angles more acute than 45 degrees are obtained by an extra angle attachment fastened to the left side of the box. This attachment can also be used as a molding holder. A length gauge is fastened to the right side of the box. This can be quickly set in position for cutting duplicate pieces of any length up to 20 inches. Both of these attachments can be removed or replaced by means of four screws.

The steel bottom plates are scored to keep the work from slipping.

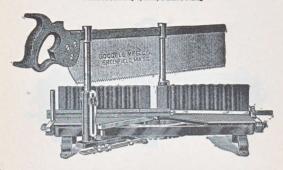
Saw guides are extra long, giving great rigidity and absolute accuracy when the saw is raised.

The stops can be readily regulated to saw to any desired depth.

## All-Steel Mitre Boxes

With Saws

Patented February 9, 1904: Others Pending



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These Mitre Boxes are furnished with high grade Back Saws made especially for us and can be guaranteed only when supplied with saws fitted to the boxes by ourselves.

All sizes have a capacity of 10% inches at Right Angles and 7% inches at Mitre.

For full particulars, see pages 338 and 339.

No. 1244. With 24 x 4 inch Saw. Price, each .... (ZITRE) \$22,00 Packed one in a case, 32 x 16½ x 7½ inches. Gross weight, 30 pounds. Net weight, 20 pounds.

No. 1264. With 26 x 4 inch Saw. Price, each....(zituy) Packed one in a case,  $32\frac{1}{2} \times 10\frac{1}{2} \times 7\frac{1}{2}$  inches.

Gross weight, 31 pounds. Net weight, 21 pounds.

No. 1285. With 28 x 5 inch Saw. Price, each . . . . (ZITWY) 25.00 Packed one in a case, 35 x 10 x 10 inches. Gross weight, 35 pounds. Net weight, 24 pounds.

No. 1305. With 30 x 5 inch Saw. Price, each .... (ZIUGH) 26.00. Packed one in a case, 37 x 10\frac{1}{2} x 10\frac{1}{2} inches. Gross weight, 37 pounds. Net weight, 25 pounds.

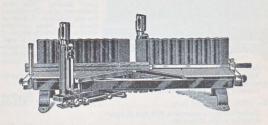
No. 1306. With 30 x 6 inch Saw. Price, each. . . . (ZIUHJ) 28.00 Packed one in a case, 37 x 10½ x 10½ inches. Gross weight, 38 pounds. Net weight, 26 pounds.

List Prices of Mitre Boxes, without Extra Angle Attachment and Length Gauge, \$1.50 less than the prices stated above.

## All-Steel Mitre Boxes

Without Saws

Patented February 9, 1904; Others Pending



These Mitre Boxes can only be guaranteed when supplied with Back Saws fitted to the boxes by ourselves. We can, however, 341 furnish them without saws if desired.

All sizes have a capacity of 10½ inches at Right Angles and 7¼ inches at Mitre.

For full particulars, see pages 338 and 339.

- No. 1004. For 6-inch Saw. Price, each . . . . . . . (ZIRPB) 22.00

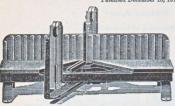
  Each Mitre Box packed in a wooden case, 35 x 10 x 8½ inches.

  Gross weight, 32 pounds. Net weight, 21½ pounds.

List Prices of Mitre Boxes, without Extra Angle Attachment and Length Gauge, \$1.50 less than the prices stated above.

## Iron Mitre Box

Patented December 13, 1910



The Bed and Back of this strong and accurate small Mitre Box are made of a single piece of iron, the legs are steel. Emery Boards keep the work from slipping. The Saw Guides can be quickly adjusted for any thickness of Back or Panel Saw. Stops are pro-vided to regulate the depth of cut when a Back Saw is used. Rawhide in the Gib prevents a Panel Saw from striking metal. Screws on the inside

of the posts can be taken up to compensate for wear on the saw guides. The Saw Lever not only locks automatically at all regular angles, but can also be instantly locked at any angle.

Capacity 71 inches at Right Angles, 41 inches at Mitre.

Price, Each No. 1000. Without Saw .... . (ZIRAN) \$13.00

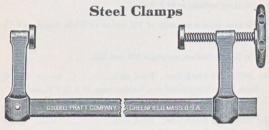
Packed one in a wooden case, 20 x 10 x 81 inches. Shipping weight, 22 pounds.

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Price, Each No. 1001. With 24 x 4 inch Back Saw.....(ZIREP) 18.00

Packed one in a wooden case, 302 x 10 x 9 inches. Shipping weight, 28 pounds.



These Clamps will be found very satisfactory for light or medium work. They are so constructed that they can be quickly adjusted and will lock themselves the moment pressure is applied to the Screw. The Bar is 3½ inches from the center of the Screw; the lengths given below are opening lengths not over-all measurements. They are furnished with a steel button, steel screw, malleable iron arms, and drawn steel bar 7 x 1 inch. The Bars are polished bright, and the arms black enameled.

Pri	ce. Each		Pi	ice, Each
No. 170. 4 in (YEHDA)	\$1.80	No. 173.	10 іп (ченон)	\$2.10
No. 171. 6 in (YEHFE)	1.90	No. 174.	12 in(уенук)	2.20
No. 172, 8 in (YEHIG)	2.00	No. 175.	18 in(YEIFD)	2.50
No 176 94	in	(voir	\$3.00	

Packed two clamps in a pasteboard box.

## Plumb Bobs

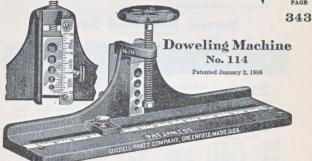
These Plumb Bobs are made to satisfy the most particular workmen. The Bodies are brass, knurled, polished, and nickel plated, and filled with heavy metal to give the required weight. The points are steel, tempered, ground, and polished. Every one is furnished with six feet of laid twine

		ice, Each
No. 539.	8 ounces(YUEWK)	\$1.25
No. 540.	12 ounces(YUTRE)	1.70
No. 541.	16 ounces · (verner)	1.80

Packed one in a pasteboard box.



PAGE



This Machine will be found very valuable for accurately boring holes for Dowel Pins. The Gauge Block in the back is provided with \$\frac{1}{2}, \frac{1}{18}, \frac{2}{3}, \frac{7}{4}, \text{and } \frac{1}{2}} \text{ inch holes, any one of which can be set at the desired point indicated on the Rule. The Stop can be fastened at any position on the Steel Rule graduated 7 inches in each direction from the center. The Clamp Screw will hold any piece less than 3 inches thick.

The Steel Rules are engine divided. The Gauge Block is fitted carefully, making accurate work possible. Iron parts are finished in enamel and steel parts are polished.

The whole tool is 153 inches long over all. Net weight, 10 pounds. Price, each....

..... (YAZWY) \$10.00

Packed one in a wooden case, 17 x 74 x 64 inches Shipping weight, 14 pounds.

## Sectional Rosewood Levels

"Stratton" Brand Patented May 22, 1888



Each of these Levels is made of four pieces of thoroughly seasoned Rosewood built around a solid Mahogany core. Brass Binding Rods are dovetailed the entire length and doweled to the heavy brass End Plates. The side views are protected by

brass Plates. The Vials used in these Levels are accurately ground on the inside and are very sensitive. They are set solid in the stock, as a double movable bar adjustment is used. The Plumb Glass has a similar adjustment.

These Levels are very finely finished.

Single Plumb	Double Plumb					
Number Size Inches		Price, Each	Number		Price, Each	
1024 24 x 3 x 1½	(ZIRTY)	\$8.80	4024	(ZOGAH)	\$10.00	
1026 26 x 3 x 1½	(ZIRUS)	9.20	4026	(ZOGHA)	10.40	
1028 $28 \times 3 \times 1\frac{1}{4}$	(ZIRYT)	9.60	4028	(zogik)	10.80	
1030 $30 \times 3 \times 1\frac{1}{4}$	(ZISAP)	10.00	4030	(ZOGJE)	11.20	

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Each Level packed in a separate pasteboard box.

#### Narrow Rosewood Levels Patented May 22, 1888



These Levels are made from a solid stick of thoroughly seasoned Rosewood. Brass Binding Rods are dovetailed the entire length and doweled to the heavy brass End Plates. The side views are protected by Brass Plates.

The Vials used are accurately ground on the inside and are very sensitive. They are set solid in the stock as a double Movable Bar Adjustment is used. The Plumb Glass has a similar adjustment.

These Levels are very finely finished

			nuciy ninsu	cu.			
Number	ingle Plumb Size In			Price, Each	Double Plumb Number		Price, Each
1406	6 x 1		(ZIVRA)	\$4.10	Number		I nee, Each
1408	8 x 1	5 x 1	(ZIVSE)	4.40			
1410	10 x 1	x 1	(zivvo)	4.70			
1412	12 x 2	x 1	(ZIVYX)	5.00			
1414	14 x 2	x 1	(ZIWAS)	5.30			
1416	16 x 2	x 1	(ZIWET)	5.60			
1418	18 x 2	x 1	(ziwiv)	5.90	4418	(ZOHYP)	\$6.90
1420	20 x 2	x 1	(ZIWUX)	6.40	4420	(ZOIJM)	7.40
1422		x 1	(ZIYAT)	6.70	4422	(ZOILP)	7.70
1424	24 x 2	x 1	(ZIYBD)	7.00	4424	(ZOIPS)	8.00
1426	26 x 2	x I	(ZIYCF)	7.40	4426	(ZOIRV)	8.40
1428	28 x 2	x 1	(ZIYEV)	7.70	4428	(ZOPTY)	8.70
1430	$30 \times 2$	x 1	(ZIYHK)	8.00	4430	(ZOIZD)	9.00

Each Level packed in a separate pasteboard box.

## Sectional Mahogany Levels

"Stratton" Brand Patented May 22, 1889



Each of these Levels is made of five pieces of thoroughly seasoned Mahogany. Brass Binding Rods are dovetailed the entire length and doweled to the heavy brass End Plates. The side views are protected by brass Plates.

The Vials used in these Levels are accurately ground on the inside and are very sensitive. They are set solid in the stock, as a double movable bar adjustment is used. The Plumb Glass has a similar adjustment.

All these Mahogany Levels have a natural finish.

Number	ingle Plumb Size Inches		Price, Each	Double Plumb Number	P	rice, Each
1224	24 x 3 x 1 <sup>1</sup> / <sub>4</sub>	(ZISUT)	\$7.70	4224	(ZOGYN)	\$8.80
1226	$26 \times 3 \times 1\frac{1}{4}$	(ZISVY)	8.10	4226	(ZOHAJ)	9.20
1228	28 x 3 x 1 <sup>1</sup> / <sub>4</sub>	(zisyv)	8.50	4228	(ZOHEK)	9.60
1230	$30 \times 3 \times 1\frac{1}{4}$	(ZITER)	8.90	4230	(ZOHIL)	10.00

Each Level packed in a separate pasteboard box.

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## Mahogany Levels,

Patented May 22, 1888



These Levels are made from a solid stick of thoroughly seasoned Mahogany. Brass Binding Rods are dovetailed the entire length and doweled to the heavy brass End Plates. To facilitate easy bandling, double finger grips are provided.

The Vials are drawn to a true curve and are carefully tested. Each one is sensitive and accurate. They are set solid in the stock as a double Movable Bar Adjustment is used. The Plumb Glass bas a similar adjustment.

All Mahogany Levels have a natural finish.

No. 4124	Size Inches	Weight		Price, Each
	$24 \times 3 \times 1\frac{1}{4}$	23 pounds	(ZOGLO)	\$7.70
No. 4126	$26 \times 3 \times 1\frac{1}{4}$	3 pounds	(ZOGNY)	8.10
No. 4128	28 x 3 x 1½	3½ pounds	(ZOGOL)	8.60
No. 4130	$30 \times 3 \times 1\frac{1}{4}$	$3\frac{1}{2}$ pounds	(ZOGUM)	9.00

Each Level packed in a separate pasteboard box.

## Mahogany Levels

"Stratton" Brand Patented May 22, 1888



These Levels are made from a solid stick of thoroughly seasoned Mahogany. Brass Binding Rods are dovetailed the entire length and doweled to the heavy brass End Plates. To facilitate easy handling, double finger grips are provided.

The Vials are drawn to a true curve and are carefully tested. Each one is sensitive and accurate. They are set solid in the stock as a double Movable Bar Adjustment is used. The Plumb Glass has a similar adjustment.

All Mahagany Levels have a natural finish.

Single Plumb			Price, Each	Double Plumb Number	F	rice, Each
Number 1324	Size Inches $24 \times 2\frac{1}{3} \times 1\frac{3}{4}$	(ZIUST)	\$5.00	4324	(ZOHJA)	\$6.00
1324	$26 \times 2\frac{1}{2} \times 1\frac{3}{16}$		5.30	4326	(ZOHKE)	6.30
1328	$28 \times 2\frac{1}{2} \times 1\frac{3}{16}$		5.60	4328	(донмо)	6.60
1330	$30 \times 2\frac{1}{2} \times 1\frac{3}{16}$		6.00	4330	(ZOHPY)	7.00
	Torol packed in a				14 2 80	

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# Narrow Mahogany Levels



These Levels are made from a solid stick of thoroughly seasoned Mahogany. Brass Binding Rods are dovetailed the entire length and doweled to the heavy brass End Plates.

The Vials used are drawn to a true curve and are very carefully tested. Every vial used is sensitive and accurate. They are all set solid as a double Movable Bar Adjustment is used. The Plumb Glass has a similar adjustment.

All Mahagany Lavels have a natural finish.

		Devels	nave a natur		ouble Plumb		
Number	le Plumb Size Inch	20		Price, Each	Number	,	Price, Each
1508	8 x 15		(ZOALM)	\$3.40	4508	(ZOJAK)	\$4.40
1510	10 x 15		(ZOAMN)	3.60	4510	(ZOJEL)	4.60
1512		x 1	(ZOANP)	3.80	4512	(ZOJKA)	4.80
1514		x 1	(ZOARS)	4.00	4514	(ZOJLE)	5.00
1516	16 x 2		(ZOAWY)	4.20	4516	(zojno)	5.20
1518	18 x 2	x 1	(ZOAZB)	4.40	4518	(zojon)	5.40
1520		x 1	(ZOBAC)	4.60	4520	(ZOJUP)	5.60
1522	22 x 2	x 1	(ZOBCA)	4.80	4522	(ZOKAL)	5.80
1524	24 x 2	x 1	(ZOBDE)	5.00	4524	(ZOKEM)	6.00

For lengths longer than 24 inches see Nos. 1326, 1328, and 1330 above. Each Level packed in a separate pasteboard box.

## Mahogany Levels

"Stratton" Brand Patented May 22, 1888



These Levels are made from a solid stick of thoroughly seasoned Mahogany with the ends protected by heavy brass Channel End Plates. To facilitate easy handling, double finger grips are provided.

The Vials are drawn to a true curve and are carefully tested. Each one is sensitive and accurate. They are set solid in the stock as a double Movable Bar Adjustment

is used. The Plumb has a similar adjustment.

Single Plumb			Double Plumb				
Number	Size Inches		Price, Each	Number	F	rice, Each	
1724	24 x 3 x 1½	(ZOCEF)	\$4.40	4724	(ZOLEN)	\$4.90	
1726	26 x 3 x 11	(ZOCFE)	4.60	4726	(ZOLIP)	5.10	
1728	28 x 3 x 11	(ZOCHO)	4.80	4728	(ZOLMA)	5.30	
1730	30 x 3 x 11	(zocig)	5.00	4730	(ZOLNE)	5.50	
D. ol.	ad and I aval in a	nactabased 1	hov				

#### Narrow Mahogany Levels Patented May 22, 1888

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These Levels are made from a solid stick of thoroughly seasoned Mahogany with the ends protected by heavy brass Plates.

The Vials are drawn to a true curve and are carefully tested. Fach one is sensitive and accurate. They are set solid in the stock as a double Movable Bar Adjustment is used. The Plumb has a similar adjustment.

Si	ngle Plumb			ouble Plumb		
Number	Size Inches		Price, Each	Number	1	Price, Each
1612	12 x 2 x 1	(ZOBOG)	\$2.40	4612	(ZOKPO)	\$3.00
1618	18 x 2 x 1	(ZOBYJ)	2.90	4618	(ZOKYR)	3.50
1624	24 x 2 x 1	(ZOCAD)	3.40	4624	(ZOLAM)	4.00
Pack	ed 4 dozen in a p	asteboard bo	X			

## Mahogany Levels



These Levels are made of thoroughly seasoned wood with heavy brass Top Plates. The Vials are drawn to a true curve and are carefully tested Vials are set solid as Stratton's Movable Bar Adjustment is used.

	Size	Weight	P	rice, Each
No. 2406	6 x 1½ x 1 inch	3 ounces	(ZOFKO)	\$0.90

## Carpenters' Levels

"Stratton" Brand Patented May 22, 1888



These Levels are made from a solid stick of thoroughly seasoned hard wood with the ends protected by heavy brass Channel End Plates. They are stained to imitate Mahagany. To facilitate eavy harding, double finger grips are provided.

Mahogany. To facilitate easy handling, double finger grips are provided.

The Vials are drawn to a true curve and are carefully tested. Each one is sensitive and accurate. They are set solid in the stock as a double Movable Bar Adjustment is used. The Plumb has a similar adjustment.

		Size	Weight		Price, Each	
	No. 1924	24 x 3 x 1½ inches	25 pounds	(ZODLY)	\$3.20	
PAGE	No. 1926	26 x 3 x 1½ inches	27 pounds	(ZODOJ)	3.30 3.40	
4	No. 1928	28 x 3 x 1½ inches	3 pounds	(ZODUK)		
350	No. 1930	$30 \times 3 \times 1\frac{1}{4}$ inches	3½ pounds	(ZODYL)	3.50	



These Levels are exactly the same as those described above, except that they have double instead of single Plumb. To facilitate easy handling double finger grips are novided.

Pro	Size	Weight		Price, Each
No. 4924	$24 \times 3 \times 1\frac{1}{4}$ inches	25 pounds	(ZOMRO)	\$3.70
No. 4926	26 x 3 x 1½ inches	27 pounds	(ZOMUS)	3.80
No. 4928	28 x 3 x 1½ inches	3 pounds	(ZOMYT)	3.90
No. 4930	30 x 3 x 1½ inches	3½ pounds	(ZONAP)	4.00
Packed on	e in a box.			

### Narrow Levels



These Levels are made of thoroughly seasoned hard wood, stained to imitate Mahogany.

The Vials are drawn to a true curve and set solid in the stock as Stratton's Movable

Bar Adjustme	nt is used. The Plumb ha	s a similar adjustme	ent.	
	Size	Weight		Price, Each
No. 2312	12 x 2 x 5 inches	6 ounces	(zofij)	\$1.40



These Levels are exactly the same as those described above, except that they have double instead of single Plumb.

No. 5312 12 x 2 x \frac{8}{8} inches 6 ounces (zopen) \$1.80 Wrapped one fourth dozen in a package.

## Carpenters' Levels

"Stratton" Brand Patented May 22, 1888



. These Levels are made from a solid stick of thoroughly seasoned hard wood, mahogany finish. The ends are protected by brass plates. To facilitate easy handling, double finger grips are provided.

The Vials are drawn to a true curve, and are carefully tested. Each one is sensitive and accurate. They are set solid in the stock, as a double Movable Bar Adjustment

is used. The Plumb Glass has a similar adjustment.

		Jacomone		
** ***	Size	Weight		Price, Each
No. 1818	18 x 2 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub> inches	1½ pounds	(zocon)	\$2.00
No. 1820	20 x 2 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub> inches	$1\frac{1}{2}$ pounds	(zocuj)	2.10
No. 1822	$22 \times 2\frac{3}{8} \times 1\frac{1}{4}$ inches	13 pounds	(ZOCYK)	2.20
No. 1824	24 x 3 x 1½ inches	2 pounds	(ZODAF)	2.30
No. 1826	$26 \times 3 \times 1\frac{1}{4}$ inches	2½ pounds	(ZODEG)	2.40
No. 1828	$28 \times 3 \times 1\frac{1}{4}$ inches	$2\frac{1}{2}$ pounds	(ZODFA)	2.50
No. 1830	$30 \times 3 \times 1\frac{1}{4}$ inches	25 pounds.	(ZODGE)	2.60
	MARKET - SECOND			

# Carpenters' Levels

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These Levels are exactly the same as those described above, except that they have double instead of single Plumb. To facilitate easy handling, double finger grips are recorded.

provided.	- o- single z tamos, zo tacin		, double ling	
	Size	Weight		Price, Each
No. 4818	18 x 2 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub> inches	1½ pounds	(ZOLUR)	\$2.50
No. 4820	$20 \times 2\frac{3}{8} \times 1\frac{1}{4}$ inches	1½ pounds	(ZOLYS)	2.60
No. 4822	22 x 2 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub> inches	13 pounds	(ZOMAN)	2.70
No. 4824	$24 \times 3 \times 1\frac{1}{4}$ inches	2 pounds	(ZOMEP)	2.80
No. 4826	$26 \times 3 \times 1\frac{1}{4}$ inches	2½ pounds	(ZOMNA)	2.90
No. 4828	28 x 3 x 1½ inches	$2\frac{1}{2}$ pounds	(ZOMOR)	3.00
No. 4830	30 x 3 x 1½ inches	25 pounds	(ZOMPE)	3 10

## Carpenters' Levels



These Levels are made from a solid stick of thoroughly seasoned hard wood, stained to imitate Mahogany. The Vials are drawn to a true curve and are carefully tested. They are set solid in the stock, as a double Movable Bar Adjustment is used. The two Plumbs have a similar adjustment. To facilitate easy handling, double finger grips are provided.

M. POOL	04 0 11 1	weight		Price, Each
No. 5224	24 x 3 x 1½ inches	2½ pounds	(ZOOPT)	\$3.00
No. 5226	26 x 3 x 1½ inches	2½ pounds	(zoosy)	3.10
No. 5228	28 x 3 x 1½ inches	23 pounds	(ZOOVB)	3.20
No 5220	20 v 2 v 11 inches	05	(2001D)	0.20

# Carpenters' Levels

"Stratton" Brand



These Levels are made of a solid stick of thoroughly seasoned hard wood, mahogany finish. The Vials are drawn to a true curve and are all carefully tested. Vials are set solid, as a double Movable Bar Adjustment is used. The Plumb has a similar adjustment.

	Size	Weight		Price, Each
No. 2012	12 x 2½ x 1½ inches	12 ounces	(ZOEBD)	\$1.40
No. 2014	14 x 2½ x 1½ inches	14 ounces	(ZOECF)	1.50
No. 2016	16 x 2½ x 1½ inches	1 pound	(ZOEJL)	1.60
No. 2018	18 x 23/x 11/4 inches	1½ pounds	(ZOELN)	1.70
No. 2020	20 x 23/8 x 11/4 inches	1½ pounds	(ZOEMP)	1.80
No. 2022	22 x 23/8 x 11/4 inches	15 pounds	(ZOERT)	1.90
No. 2024	24 x 23 x 11 inches	13 pounds	(ZOEVY)	2.00
No. 2126	26 x 2½ x 1½ inches	2½ pounds	(ZOFAG)	2.20
No. 2128	28 x 2½ x 1¼ inches	2½ pounds	(ZOFGA)	2.30
No. 2130	30 x 2½ x 1¼ inches	$2\frac{1}{2}$ pounds	(zofhe)	2.40

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# Carpenters' Levels

Patented May 22, 1888



These Levels are exactly the same as those described above, except that they have a double instead of single Plumb.

	Size	Weight		Price, Each	
No. 5012	12 x 2½ x 1½ inches	12 ounces	(ZONIR)	\$1.90	
No. 5014	14 x 2½ x 1½ inches	14 ounces	(zonos)	2.00	
No. 5016	16 x 2½ x 1½ inches	1 pound	(ZONPA)	2.10	
No. 5018	18 x 23/x 11/4 inches	1½ pounds	(zonso)	2.20	
No. 5020	20 x 23/8 x 11/4 inches	1½ pounds	(ZONUT)	2.30	
No. 5022	22 x 23/8 x 11/4 inches	15 pounds	(ZONYV)	2.40	
No. 5024	24 x 23 x 11 inches	13 pounds	(zooch)	2.50	
No. 5126	26 x 2½ x 1¼ inches	2½ pounds	(гоонм)	2.70	
No. 5128	28 x 2½ x 1½ inches	2½ pounds	(ZOOJN)	2.80	
No. 5130	30 x 2½ x 1½ inches	2½ pounds	(zoons)	2.90	

#### Mahogany Masons' Levels "Stratton" Brand

Patented May 22, 1888



These Levels are made from a solid stick of thoroughly seasoned Mahogany, making excellent Levels for the reasonable prices at which they are sold.

The Vials are drawn to a true curve and are carefully tested. Each one is sensitive and accurate. Vials are set solid, as a double Movable Bar Adjustment is used.

The Flumb has	Size	Weight		Price, Each
No. 2436	36 x 27 x 11 inches	2½ pounds	(ZOFNX)	\$4.40
No. 2442	42 x 2 <sup>7</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub> inches	3 pounds	(ZOFOK)	5.30



These Levels are the same as those described above, except that they have double instead of single Plumb.

Institute of bringe	Size	Weight		Price, Each	
No. 5436 No. 5442	$36 \times 2\frac{7}{8} \times 1\frac{1}{4}$ inches $42 \times 2\frac{7}{8} \times 1\frac{1}{4}$ inches	2½ pounds 3 pounds	(ZOPRE) (ZOPTO)	\$4.60 5.40	353

PAGE

#### Masons' Levels Patented May 22, 1888

These Levels are made from a solid stick of thoroughly seasoned hard wood, stained to imitate Mahogany. The Vials are drawn to a true curve and are carefully tested. Vials are set solid in the stock, as a double Movable Bar Adjustment is used. The

Single Plumb	Size	Weight		Price, Each
No. 2536	$36 \times 2\frac{7}{8} \times 1\frac{1}{4}$ inches	$2\frac{3}{4}$ pounds	(ZOFUL)	\$3.20
Double Plumb	36 x 2½ x 1½ inches	Weight 2 <sup>3</sup> pounds	(ZOPUV)	Price, Each \$3.80
No 5536	30 X Za X 17 IIICHES	27 Dounds	(ZUPUY)	φυ.ου



These Levels are made of a solid stick of thoroughly seasoned Michigan Pine,

well finished. This makes a Level that is light and easy to handle.

The Vials are drawn to a true curve and are carefully tested. Vials are set solid in the stock, as a double Movable Bar Adjustment is used The two Plumb Glasses

Double Plumb No. 5636 No. 5642	Size 36 x 2 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub> inches 42 x 2 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub> inches	Weight 17/8 pounds 2 pounds	(ZORAS) (ZORET)	Price, Each \$2.80 3.20
No. 5642 No 5648	48 x 2 <sup>3</sup> / <sub>8</sub> x 1 <sup>1</sup> / <sub>4</sub> inches	2½ pounds	(ZORIV)	3.60

### Iron Pocket Levels



These Levels are made of cast iron with milled Bases.

	Length	Finish	Pr	ice, Each
No. 501	2½ inches	Black enameled	(YOWFE)	\$0.70
No. 502	3½ inches	Black enameled	(YOWHO)	.80
No. 601	$2\frac{1}{2}$ inches	White nickeled	(YURDA)	.75
No. 602	3½ inches	White nickeled	(YUREF)	.85

Packed one half dozen in a pasteboard box.

## Nickel-Plated Pocket Levels

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These Levels are made from hexagon brass tubing fully polished and nickel plated. They make very convenient and serviceable Pocket Levels.

No. 611. No. 612.	Length, $2\frac{1}{2}$ inches. Length, $3\frac{1}{2}$ inches.	Price, each(YUVHA) Price, each(YUVIK)	\$0.60

Packed one half dozen in a pasteboard box.

## Electric Levels

Used as Attachments for Electric and Other Machines



These Levels are made of brass tubing, ground flat on the Base.
They are particularly designed to be attached to various kinds of
machinery, but they also make an attractive Pocket Level. They
are fully polished and nickel plated.

No. 624.	Length, 2 inches.	Price, each(ZAAHS)	\$0.40
No. 625.	Length, 3 inches.	Price, each(ZAARD)	.50

Packed one half dozen in a pasteboard box.

### Iron Bench Levels





# Iron Bench Levels

With Double Plumb



These Levels have accurately milled faces. Each one has a Level Vial and two Plumb Glasses. Bodies are finished in black enamel; edges are polished. Length, 6 inches.



These Levels have milled faces and ends. The bodies are finished in black enamel; edges are polished. Each one has a Level Vial and two Plumb Glasses. Length, 6 inches.

All packed one in a pasteboard box.

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### Iron Levels

With Double Plumb



All of these Levels have accurately milled faces; the 9-inch and 12-inch Levels also have milled ends. Each one has a Level Vial and two Plumb Glasses set solid in the stock. Bodies are finished in black enamel; edges are polished.

		Pr	ice, Each
	No. 506.	9 inches(YOYGE)	\$2.90
PAGE	No. 606.	9 inches, Nickel plated(YUSFA)	3.00

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No. 507.	12 inches(YOYNB)	Фэ.э0
No. 607.	12 inches, Nickel plated (YUSOJ)	3.60



No. 509.	18 inches(YOZAG)	\$4.20
No. 609.	18 inches, Nickel plated (YUTHE)	4.30
No. 510.	24 inches(YOZIJ)	4.80
No. 610.	24 inches, Nickel plated(YUTOK)	5.00

All packed one in a pasteboard box.

### Iron Levels

With Grooved Base and Double Plumb



These Levels will be found very convenient for lining shafting or other similar work. All edges are accurately milled and bases are grooved; 6, 9, and 12 inch Levels also have milled ends. Bodies are black enameled and edges are polished. The Level Vial and two Plumb Glasses are set solid in the stock.

We do not recommend a Level with a Grooved Base except for use on

shafting or other similar work.

	· Length Pr	ice, Each	
No. 505V.	6 inches(YOYEG)	\$2.20	
No. 605V.	6 inches, Nickel plated (YUSAF)	2:40	
No. 506V.	9 inches(YOYJO)	2.90	
No. 606V.	9 inches; Nickel plated(YUSGE)	3.00	
No. 507V.	12 inches(YOYOJ)	3.30	PAGE
No. 607V.	12 inches, Nickel plated (YUSUK)	3.60	
No. 509V.	18 inches(YOZGA)	4.20	359
No. 609V.	18 inches. Nickel plated(YUTIJ)	4.30	100
	24 inches(Yozko)	4.80	

5.00

All packed one in a pasteboard box.

## Engineers' Iron Levels

No. 610V. 24 inches, Nickel plated ..... (YUTUL)

Patented October 27, 1896



These Levels are provided with a device for accurately giving the rise and fall of piping, shafting, a roof, or any other object. Each Level is fitted with a double Plumb so that the slant of uprights can also be taken. The tool is graduated to read by sixteenths up to \(\frac{1}{2}\) inch. This device in no way interferes with the use of the level for ordinary purposes.

These Levels all have black enameled bodies, and polished faces and edges.

	Length	ce, Each
No. 526.	12 inches(YUCTY)	\$4.40
No. 626.	12 inches, Nickel-plated(ZAAWJ)	\$4.60
No. 528.	24 inches(YUCYT)	5.40
No. 628.	24 inches, Nickel plated (ZABEN)	5.60

Packed one in a pasteboard box.

## Adjustable Bench Levels

With Plain Vials



All the Levels shown on this page are so constructed that they admit of close and accurate adjustment, and, when so adjusted, are not liable to get out of true as the Vials are set in tubes having solid ends which are firmly clamped to the Base. The Bases of these Levels are accurately ground and can be furnished in either white nickel, or black enamel finish. The Tubes are polished and nickel plated.

		Pr	ice, Each
	No. 514.	Length, 4 inches, black enamel(YUARD)	\$2.20
	No. 614.	Length, 4 inches, white mickel(YUVOL)	2.50
PAGE	No. 515.	Length, 6 inches, black enamel(YUAWJ)	2.70
	No. 615.	Length, 6 inches, white nickel(YUVYN)	3.00
360	No. 516.	Length, 8 inches, black enamel(YUBEN)	3.20
	No. 616.	Length, 8 inches, white nickel(YUWEK)	3.50



These Levels are provided with Handles that are not only convenient, but will also be found better protectors of the Vial than the slide covers sometimes used.

			Pri	ce, Each
No. 715.	Length,	6 inches,	black enamel(ZARFE)	\$4.10
No. 815.	Length,	6 inches,	white nickel(ZEJIC)	4.40
No. 716.	Length,	8 inches,	black enamel(zaroh)	5.00
No. 816.	Length,	8 inches,	white nickel(ZEJOD)	5.20
No. 717.	Length,	12 inches,	black enamel (ZARUJ)	6.50
No. 817.	Length,	12 inches,	white nickel(ZEJUF)	7.00
No. 718.	Length,	18 inches,	black enamel(ZARYK)	9.50
			white nickel(ZEJYG)	10.00

4, 6, and 8 inch Levels are packed, one in a pasteboard box. 12 and 18 inch Levels are packed, one in a wooden box.

## Adjustable Bench Levels

With Ground and Graduated Vials.



These Levels will meet the requirements of the most particular users. All the Vials used are accurately ground and graduated, and each one is inspected before and after being set. The adjustment is close and positive.

The Handles not only add to the convenience and attractiveness of the tools, but also form efficient protectors for the Vials. On all the larger sizes, the supports for the Handle are fastened directly to the Base, so that the tube containing the Vial is not disturbed in handling. Where accurate work is essential, this feature is particularly valuable, as it enables the operator to handle the Level without danger of affecting its accuracy by the heat of the hand.

The Bases of these Levels are accurately ground, and can be furnished in either black enamel, or white nickel finish. All the Tubes are polished

and piokal plated

60 00 70					
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50					
No. 823. Length, 18 inches, white nickel base(ZEKEC) 11.50 4, 6, and 8 inch Levels are packed, one in a pasteboard box.					
12 and 18 inch Levels are packed, one in a wooden box.					
	.70 .00 .00 .00 .00 .00				

## Aluminum Levels



These Aluminum Levels are so light that they are sure to prove popular. They are cast from 92% pure aluminum with just alloy enough to give them sufficient rigidity without too much increase in weight. Both Faces are accurately milled. The Level Vial and two Plumb Glasses are carefully set solid in the Stock.

The 24 inch level weighs but 20 ounces.

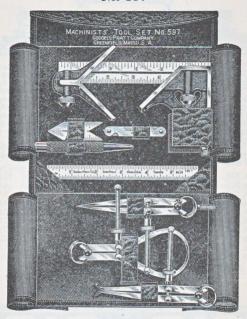
	Length		Price, Each
No. 913.	12 inches	(z	CYA) \$4.40
No. 918.	18 inches	(ZI	DEB) 5.40
No. 924.	24 inches	(z	(DZA) 6.00
Packed	one in a pasteboard box.		

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# Machinists' Tool Kit

No. 597



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This is a small and compact set of Machinists' Tools put up in a genuine leather case, lined with canvas. All of the tools are of the finest quality. The following tools are contained in this set:—

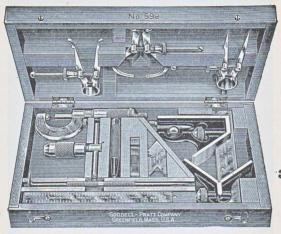
No. 135 Screw Pitch Gauge
No. 235 Seri-Flexible Steel Rule, 6 inch
No. 361 Combination Square
No. 438 Center Gauge

Size of case,  $7\frac{1}{2} \times 4\frac{1}{2} \times 1\frac{1}{2}$  inches. Net weight,  $1\frac{1}{2}$  pounds.

Each set packed in a separate pasteboard box.

This set can also be furnished with tools of Metric Graduation, or with Whitworth Center and Screw Pitch Gauges, if so specified.

### Machinists' Tool Kit No. 598



PAGE 363

This is a very complete and convenient set of Machinists' Tools put up in a handsome Hard Wood case. All of the tools are of the very highest quality and finest grade.

The following tools are contained in this set:-

No.	2K	Ratchet Micrometer, I inch	No. 438	Center Gauge
No.	61	Double Point Scriber	No. 502	Outside Spring Calipers, 4 inch
No.	88	Tap Holder	No. 508	Inside Spring Calipers, 4 inch

No. 135 Screw Pitch Gauge No. 514 Spring Dividers, 4 inch

No. 253 Semi-Flexible Steel Rule, 6 inch No. 995 Center Punch

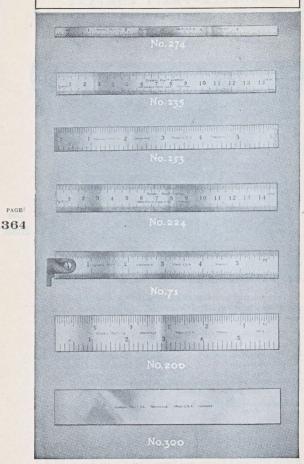
No. 361 Combination Square, 6 inch

Size of case,  $10\frac{3}{8} \times 7\frac{1}{8} \times 2$  inches. Net weight, 3 pounds.

Price, each.....(YUPOF) \$23.00

Each set packed in a separate pasteboard box.

This set can also be furnished with tools of Metric Graduation, or with Whitworth Center, and Screw Pitch Gauges if so specified.



### Tempered Steel Rules

Our Steel Rules are made from the best quality of Crucible Steel, carefully tempered, accurately graduated, and ground. They are graduated on our perfected Dividing Engines, and have as high a finish and accuracy as are obtainable.

Our Standard Yard or Correcting Gauge, used in determining the accuracy of these instruments, was produced directly from the original Standards of Lord Whitworth. These standards have been subdivided with the greatest care and accuracy. Our Rules are as perfect reproductions as expert mechanics assisted by precision machinery can produce.

One of the important points about a Rule is that it should give a correct measurement from the end to the first inch line. By our improved method of manufacture, we can guarantee these measurements to be as near absolute accuracy as it is possible commercially to make them.

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All of our Rules are now made with heavy shaded figures that are very much easier to read than the light figures formerly used.

We manufacture Rules in a number of different sizes and lengths graduated in either English or Metric divisions. A complete price list of all these Rules is given on the following page.

We will also be pleased to quote prices on Steel Rules with both English and Metric measurements.

	Standard	English Gra	aduations	
No. 4	No. 7		No. 8	No. 16
8ths	16ths		8ths,	32ds
16ths	32ds		32ds	64ths
32ds	64ths	hs 12ths		50ths
64ths	100ths	Oths 48ths		.100ths
No. 10	No. 11	No. 12	No. 13	No. 14
32ds	64ths	50ths	8ths	8ths
64ths	100ths	100ths	16ths	32ds

Be sure to specify what graduation is desired.

# Heavy Tempered Rules



	Length	Approximate Width	Thickness	Price, Each
No. 197	2 inches	3 inch	1 inch	\$0.55
No. 198	3 inches	3 inch	$\frac{1}{20}$ inch	.65
No. 199	4 inches	3 inch	$\frac{1}{20}$ inch	.80
No. 200	6 inches	1 inch	1 inch	1.00
No. 201	9-inches	1½ inches	$\frac{1}{12}$ inch	1.40
No. 202	12 inches	1½ inches	$\frac{1}{12}$ inch	1.80
No. 203	18 inches	1½ inches	1 inch	2.80
No. 204	24 inches	1½ inches	$\frac{1}{12}$ inch	3.50
No. 205	36 inches	1½ inches	10 inch	7.00

Graduated full length in No. 4, No. 7, or No. 16 graduation. Packed one half dozen in a pasteboard box.

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# Light Tempered Rules



2 to 12 inch Rules are end graduated

	Length	Approximate Width	Thickness	Price, Each
No. 209	1 inch	½ inch	1 inch	\$0.45
No. 210	2 inches	½ inch	$\frac{1}{20}$ inch	.55
No. 211	3 inches	5 inch	$\frac{1}{20}$ inch	.65
No. 212	4 inches	5 inch	$\frac{1}{20}$ inch	.80
No. 213	6 inches	3 inch	$\frac{1}{20}$ inch	1.00
No. 214	9 inches	1 inch	1 inch	1.40
No. 215	12 inches	1 inch	1 inch	1.80
No. 216	18 inches	1 inch	1 inch	2.80
No. 217	24 inches	1 inch	1 inch	3.50 7.00
No. 218	36 inches	1 inch	16 inch	7.00

Graduated full length in No. 4, No. 7, or No. 16 graduation. Packed one half dozen in a pasteboard box.

### Semi-Flexible Rules



#### 2 to 12 inch Rules are end graduated

	Length	Approximate Width	Thickness	Price, Each
No. 249	1 inch	½ inch	1 inch	\$0.45
No. 250	2 inches	i inch	1 inch	.55
No. 251	3 inches	5 inch	1 inch	.65
No. 252	4 inches	5 inch	1 inch	.80
No. 253	6 inches	5 inch	inch	1.00
No. 254	9 inches	3 inch	1 inch	1.40
No. 255	12 inches	3 inch	1 inch	1.80
No. 256	18 inches	3 inch	1 inch	2.80
No. 257	24 inches	½ inch	an inch	3.50
No. 258	36 inches	7 inch	1 inch	7.00

Graduated full length in No. 4 or No. 7 graduation. Packed one half dozen in a pasteboard box.

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### Flexible Rules



#### Graduated on one side only

	Length	Approximate Width	Thickness	Price, Each
No. 260	1 inch	5 inch	100 inch	\$0.45
No. 261	2 inches	5 inch	100 inch	.55
No. 262	3 inches	5 inch	Too inch	.65
No. 263	4 inches	5 inch	Too inch	.80
No. 264	6 inches	5 inch	100 inch	1.00
No. 265	9 inches	5 inch	100 inch	1.40
No. 266	12 inches	5 inch	100 inch	1.80
No. 267	18 inches	5 inch	100 inch	2.80
No. 268	24 inches	5 inch	100 inch	3.50
No. 269	36 inches	5 inch	100 inch	7.00

Graduated full length in No. 10, No. 11, or No. 12 graduation. Packed one half dozen in a pasteboard box.

### Narrow Tempered Rules

#### reConstitute for the Constitute of the Constitut

Graduated on one edge of each side

	Length	Approximate Width	Thickness	Price, Each
No. 270	1 inch	½ inch	1 inch	\$0.40
No. 271	2 inches	½ inch	$\frac{1}{20}$ inch	.45
No. 272	3 inches	½ inch	$\frac{1}{20}$ inch	.55
No. 273	4 inches	½ inch	$\frac{1}{20}$ inch	.70
No. 274	6 inches	½ inch	$\frac{1}{20}$ inch	.90
No. 275	9 inches	½ inch	$\frac{1}{20}$ inch	1.40
No. 276	12 inches	1/4 inch	$\frac{1}{20}$ inch	1.80

Graduated full length in No. 10, No. 11, or No. 12 graduation Packed one half dozen in a pasteboard box.

## Stop Rule No. 971

PAGE BAS



This consists of a narrow tempered steel rule provided with a thumb slide for measuring against a projection. A thumb screw is provided to hold the slide in any desired position. The rule is 6 inches long, § inch wide by ½ inch thick.

Price, each.....(zikag) \$2.00

Packed one in a pasteboard box, 63 x 11 x 12 inch. Weight, 1 ounce.

# Slide Caliper Rule

10.1771



This useful little tool can be used for three distinct purposes. It is primarily intended for use as a caliper rule, for which purpose it will be found extremely convenient as measurements are read directly from the end of the slide without the necessity of making any allowances.

By reversing the Thumb Slide the tool becomes a Stop Rule, and by removing it entirely a narrow hook rule.

The tempered steel rule is 6 inches long, & inch wide by to inch thick.

Packed one in a pasteboard box, 6 x 1 x 1 inch. Weight, 1 quinces.

### Hook Rules



These Rules will be found very convenient in taking measurements over rounded corners, through the hubs of wheels or pulleys, or in setting Dividers or Inside Calipers.

The hardened steel Hook, which is held in place on the Rule by a hardened steel Eccentric Bolt, can readily be detached when not desired.

	Length of Rule	Width of Rule	Thickness of Rule		Price, Each
No. 70	4 inches	5 inch	1 inch	(YAMDA)	\$1.30
No. 71	6 inches	3 inch	1 inch	(YAMYK)	1.50
No. 72	9 inches	1 inch	1 inch	(YANEG)	2.00
No. 73	12 inches	1 inch	$\frac{1}{16}$ inch,	(YANJO)	2.50
-	The second of the second				

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Graduated in No. 4, No. 7, or Metric Graduations. Each Hook Rule is packed in a separate pasteboard box.

### Narrow Hook Rules



These Rules will be found more convenient for small work than those described above as they are capable of making measurements through a smaller hole.

The hardened steel Hook, which is held in place on the Rule by a hardened steel Eccentric Bolt, can be readily detached when not desired.

	Length of Rule	Width of Rule	Thickness of Rule		Price, Each
No. 770	4 inches	3 inch	1 inch	(ZEALC)	\$1.30
No. 771	6 inches	3 inch	1 inch	(ZEAMD)	1.50

Graduated in No. 10, or Metric Graduation as desired. Each Hook Rule is packed in a separate pasteboard box.

## Standard Tempered Rules

Metric Graduation



These Rules are accurately graduated in Millimeters and ½ Milli-

meters.	Length	Approximate Width	Thickness	Price, Each
No. 222	5 cm.	1 inch	1 inch	\$0.40
No. 223	10 cm.	5 inch	1 inch	.70
No. 224	15 cm.	3 inch	1 inch	.80
No. 225	20 cm.	3 inch	1 inch	1.10
No. 226	25 cm.	1 inch	1 inch	1.40
No. 227	30 cm.	1 inch	1 inch	1.70
No. 228	40 cm.	1 inch	1 inch	2.30
No. 229	50 cm.	1 inch	1 inch	2.80
No. 230	60 cm.	1½ inches	1 inch	3.50
No. 231	80 cm.	1½ inches	1 inch	7.00
No. 232	1 m.	1 <sup>1</sup> / <sub>4</sub> inches	1 inch	9.50

9AGE 370

Packed one half dozen in a pasteboard box.

# Semi-Flexible Rules

**Metric Graduation** 



These Rules are accurately graduated in Millimeters and 1

Millimeters.				
	Length	Approximate Width	Thickness	Price, Each
No. 289	5 cm.	½ inch	$\frac{1}{50}$ inch	\$0.40
No. 290	10 cm.	5 inch	$\frac{1}{50}$ inch	.70
No. 291	15 cm.	5 inch	1 inch	.80
No. 292	20 cm.	5 inch	1 inch	1.10
No. 293	25 cm.	3 inch	1 inch	1.40
No. 294	30 cm.	3 inch	1 inch	1.70
No. 295	40 cm.	3 inch	50 inch	2.30
No. 296	50 cm.	3 inch	$\frac{1}{50}$ inch	2.80
No. 297	60 cm.	7 inch	1 inch	3.50
No. 298	80 cm.	½ inch	1 inch	7.00
No. 299	1 m.	½ inch	1 inch	9.50

Packed one half dozen in a pasteboard box.

### Flexible Rules

Metric Graduation

and in the first of the	GOODELI-PRATT COMPANY
1 2 3	4 5 6 7 8 9
mm	GREENFIELD, MASS. U.S.A. TEMPERED
and melane materials	

These Rules are accurately graduated in Millimeters and 1/2 Millimeters.

Tillimic cors.	Length	Approximate Width	Thickness	Price."Each	
No. 233	5 cm.	5 inch		\$0.40	
No. 234	10 cm.	5 inch	100 inch	.70	
No. 235	15 cm.	5 inch	1 inch	.80	
No. 236	20 cm.	5 inch	100 inch	1.10	
No. 237	25 cm.	5 inch	100 inch	1.40	
No. 238	30 cm.	5 inchi	Too inch	1.70 PAG	18
No. 239	40 cm.	5 inch	100 inch	2.30	7 7
No. 240	50 cm.	5 inch	100 inch	2.80 37	T
No. 241	60 cm.	5 inch	100 inch	3.50	
No. 242	80 cm.	5 inch	1 inch	7.00	
No. 243	1 m.	5 inch	100 inch	9.50	

Packed one half dozen in a pasteboard box.

# Narrow Tempered Rules

Metric Graduation



These Rules are accurately graduated in Millimeters and ½ Millimeters.

	- Length	Approximate Width	Thickness .	Price, Each
No. 280	10 cm.	½ inch	1 inch	\$0.70
No. 281	15 cm.	½ inch	1 inch	.80
No. 282	20 cm.	1 inch	1 inch	1.10
No. 283	30 cm.	½ inch	1 inch	1.70

Packed one half dozen in a pasteboard box.

### Standard Tempered Rules



These Rules are accurately graduated in 8ths and 32ds inches on one side only. One end of the Rule is rounded and provided with a hole in order that it may be hung up when not in use.

These Rules are made of the finest quality of tempered Rule Steel with plain, deeply etched graduations and large clear figures.

No. 763 No. 765	6 inches 12 inches	Width 3 inch 3 inch	Thickness $\frac{1}{20}$ inch $\frac{1}{20}$ inch	Price, Each \$0.50
Packed on	e half dozen in a n	astahaand hat		

Packed one half dozen in a pasteboard box.

# Standard Tempered Rules

Metric Graduation

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These Rules are accurately graduated in Millimeters and  $\frac{1}{2}$  Millimeters, with a line across the end of the graduation marks for convenience in quick reading.

One end of the Rule is rounded and provided with a hole in order that it may be hung up when not in use.

These Rules are made from the finest quality of light tempered Rule Steel, nicely finished, with plain, clear graduations, and heavy shaded figures. These Rules are graduated on one side only.

No. 653	Length 15 cm	Approximate Width 19 mm	Thickness 1.3 mm	Price, Each \$0.60
No. 654	20 cm	19 mm	1.3 mm	.90
Packed on	a half dagen in	a markshared land		

Packed one half dozen in a pasteboard box.

# Semi-Flexible Rules

**Metric Graduation** 

These Steel Rules are similar in every way to the Nos. 653 and 654 illustrated and described above. They are made of lighter material as noted below, making them semi-flexible.

These Rules are graduated on one side only.

No. 693	Length 15 cm	Approximate Width 16 mm	Thickness .5 mm	Price, Each \$0.50
No. 694	20 cm	16 mm	.5 mm	.80
Packed on	- h-10 1	. 1 111		.00

Packed one half dozen in a pasteboard box.

# Keyseating Rule Blocks



These Blocks enable one to convert any Steel Rule or Straight Edge of regular thickness into a keyseat or parallel rule, making it unnecessary to cumber the kit with an extra appliance to scribe parallel lines on round stock. They are made of hardened steel, with ground faces, making them light and accurate.

..... (YAOWR) \$2.00 Price, per pair.

Packed one pair in a box, 21 x 11 x 5 inch. Weight, 2 ounces.

PAGE

### Steel Rule Clamps No. 76



These Clamps are a convenient and useful addition to any machinist's kit. They will clamp two Steel Rules of the same or different widths and hold them firmly end to end, enabling the user to make two Rules of short into one of longer length, saving both the expense and bother of the long Rules. The clamps are made of case-hardened steel, and will hold Rules from 5 to 11 inches wide.

... (YAORM) \$1.80 Price, each! .

Packed one in a box, 3 x 2½ x 1 inch. Weight, 2½ ounces.

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### Straight Edges

Tempered Steel



These Straight Edges are made from the best quality of Crucible Steel accurately ground with parallel edges, tempered, and nicely polished. Not graduated.

	Length	Approximate Width	Thickness	Price, Each
No. 300	6 inches	1 inch	3 inch	\$1.30
No. 301	9 inches	1 inch	3 inch	1.50
No. 302	12 inches	1½ inch	$\frac{3}{16}$ inch	1.60
No. 303	18 inches	1½ inch	$\frac{3}{16}$ inch	2.60
No. 304	24 inches	1½ inch	3 inch	3.60
No. 305	36 inches	2 inches	½ inch	6.50
No. 848	48 inches	3 inches	½ inch	12.00
No. 860	60 inches	3 inches	1 inch	18.00
No. 872	72 inches	3 inches	1 inch	24.00

Packed one in a pasteboard box.

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# Bevel Straight Edges Tempered Steel



These Straight Edges are made from the best quality of Crucible Steel accurately ground, tempered, and nicely polished. One edge only is beveled. Beveled edge is  $\frac{1}{16}$  inch thick. Not graduated.

	Length	Approximate Width	Thickness	Price, Each
No. 320	12 inches	1½ inch	3 inch	\$2.50
No. 321	18 inches	1½ inch	3 inch	3.50
No. 322	24 inches	1½ inch	3 inch	5.00
No. 323	36 inches	2 inches	1 inch	8,00

## Graduated Straight Edges

Tempered Steel



These Straight Edges are made from the best quality of Crucible Steel, accurately ground with parallel edges, tempered, and nicely polished. They are graduated on one side only in 8ths and 16ths.

	Length	Approximate Width	Thickness	Price, Each
No. 702	12 inches	1½ inch	$\frac{3}{16}$ inch	\$2.70
No. 703	18 inches	1½ inch	$\frac{3}{16}$ inch	4.00
No. 704	24 inches	1½ inch	3 inch	5.40
No. 705	36 inches	2 inches	½ inch	8.00

Packed one in a pasteboard box.

PAGE

375

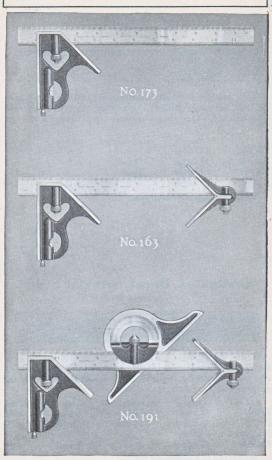
# Graduated Bevel Straight Edges

Tempered Steel



These Straight Edges are made from the best quality of Crucible Steel, accurately ground, tempered, and nicely polished. One edge only is beveled. Beveled edge is  $\frac{1}{16}$  inch thick. Graduated on beveled edge only in 32ds of an inch.

	Length	Approximate Width	Thickness	Price, Each
No. 802	12 inches	1½ inch	3 inch	\$3.20
No. 803	18 inches	1½ inch	3 inch	5.00
No. 804	24 inches	1½ inch	3 inch	6.80
No. 805	36 inches	2 inches	1 inch	9.50



976

### Combination Squares

These Combination Squares are intended to fill every need in their class of tool. They are made in all lengths and with various combinations of heads for every purpose.

The Blades are made from the best quality of crucible steel, correctly tempered, and accurately ground. They are graduated on our perfected Dividing Engines and tested to our standard yard, which was produced directly from the original standards of Lord Whitworth. All of the Blades are now made with heavy shaded figures.

The Heads are designed to give the most rigid working surfaces without being cumbersome. They are accurately made, and machine ground on all angles. All the bearing surfaces are polished and depressed parts are finished in ebony enamel.

The Blades are accurately fastened in the Beams by means of round cornered bolts, which slide in round clamping grooves in the blade. This round groove is stronger than the ordinary square grooves and less liable to collect dirt, which would throw the Square out of true.

Every Square is carefully tested.

# Try Squares

These Squares have tempered steel blades which are accurately fastened to the Beams, and parallel machine ground. They are tested for extreme accuracy.

#### Standard English Graduations

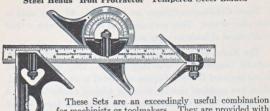
No	. 4	Ne	0. 7	No	. 8
8ths	32ds	16ths	64ths	8ths	32ds
16ths	64ths	32ds	100ths	12ths	48ths

PAGE

377

#### Combination Sets

Steel Heads Iron Protractor Tempered Steel Blades



These Sets are an exceedingly useful combination for machinists or toolmakers. They are provided with drop-forged steel beams and center heads, and a Bevel Protractor No. 180, shown on page 381, all finished in ebony enamel.

The Blades are tempered crucible steel, engine graduated, in either No. 4, No. 7, No. 8, or Metric graduation.

 No. 190.
 9 inch blade.
 (YEKOK)
 \$8.25

 No. 191.
 12 inch blade.
 (YEKUL)
 8.50

 No. 192.
 18 inch blade.
 (YELAH)
 9.75

 No. 193.
 24 inch blade.
 (YELHA)
 10.75

Packed one in a pasteboard box.

# Combination Sets

Iron Heads Tempered Steel Blades



These Sets are exactly the same as those described above except that the beams and center heads are made of hard gray iron.

The Blades are tempered crucible steel, engine graduated, in ther No. 4, No. 7, No. 8, or Metric graduation.

either 140	4, 140. 1, 140. 0, of Metric graduation.	Price, Each
No. 390.	9 inch blade(YOERZ	\$6.65
No. 391.	12 inch blade(YOEVD	7.10
	18 inch blade(YOEWF	
No. 393.	24 inch blade(YOFAL	9.15

# Combination Squares Steel Heads Tempered Steel Blades



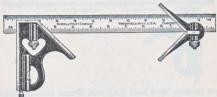
These excellent Combination Squares have drop-forged steel Beams and Center Heads that are finished in ebony enamel.

No Protractor is provided.

The Blades are tempered crucible steel, engine graduated, in

No. 4, No.	. 7, No. 8, or Metric graduation.	Price, Each	
	6 inch blade(YEGDE)		
No. 162.	9 inch blade(YEGED)		
No. 163.	12 inch blade(YEGGO)		PAGE
No. 164.	18 inch blade(YEGIF)	6.50	
	24 inch blade(YEGJY)	7.50	379
Packe	d one in a pasteboard box.		

Combination Squares
Iron Heads Tempered Steel Blades



These Squares have hard gray iron Beams and Center Heads that are finished in ebony enamel. No Protractor is provided.

The Blades are tempered crucible steel, engine graduated, in No. 4, No. 7, No. 8, or Metric graduation.

Price, Each No. 361. 6 inch blade.

No. 362. 9 inch blade.

No. 363. 12 inch blade.

No. 364. 18 inch blade.

No. 365. 24 inch blade.

(YOAJEN) 3.85
(YOAJEN) 3.85
(YOAJEN) 3.85
(YOAJEN) 5.90

### Combination Squares

Steel Heads Tempered Steel Blades



These Squares have drop-forged steel Beams that are finished in ebony enamel. No Protractor or Center Head is provided.

The Blades are tempered crucible steel, engine graduated, in No. 4. No. 7. No. 8. or Metric graduation.

	P	rice, Each
No. 171.	6 inch blade(YEHEF)	. \$3.25
No. 172.	9 inch blade ( үенно)	4.00
No. 173.	12 inch blade(YEHKY)	4.25
No. 174.	18 inch blade(YEHUJ)	5.50
No. 175.	24 inch blade(YEIBZ)	6.50

Packed one in a pasteboard box.

PAGE

### Combination Squares

Iron Heads Tempered Steel Blades

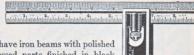


These Squares have hard gray iron Beams that are finished in ebony enamel. No Protractor or Center Head is provided.

The Blades are tempered crucible steel, engine graduated, in No. 4, No. 7, No. 8, or Metric graduation.

140. 3, 140	7. 1, 110. 0, of Metric graduation.	
		ice, Each
No. 371.	6 inch blade(YOBJE)	\$1.95
No. 372.	9 inch blade(YOBLO)	2.75
No. 373.	12 inch blade (YOBOL)	3.00
No. 374.	18 inch blade(YOBUM)	4.25
	24 inch blade (YOBYN)	5.25

### Sliding Blade Squares



These Squares have iron beams with polished edges, and depressed parts finished in black enamel. All of the larger sizes have a Level set in the beam.

The Blades are made of tempered steel, accurately graduated on dividing engines.

	The state of the s	Blade	Beam	Pr	ice, Each
No. 150.	Without Level	4 inches	2 <sup>3</sup> / <sub>8</sub> inches	(YEEWT)	\$1.60
No. 151.	With Level	6 inches	33 inches	(YEFAB)	2.60
No. 152.	With Level	9 inches	43 inches	(YEFBA)	4.00
No. 153.	With Level	12 inches	5¾ inches	(YEFCE)	5.00
T .	1 1 1.1 37 4 3			, ,	

Furnished with No. 4, No. 7, or Metric graduation, as specified.

Packed one in a pasteboard box.

### Bevel Protractors



In the manufacture of these Protractors every attention is paid to have them accurate, complete, and well finished. The blade is held in a revolving turret by a round-ended bolt. Turret is accurately fitted and engine graduated to 90° either side of zero, and every care taken to insure its being at right angle to face of head. It carries a level which is accurately set and fastened to the side of the turret. Blade is of crucible tempered steel. Head is about 7 inches

long.	Pric	e. Each
No. 180.	Protractor head only(YEJEG)	\$3.25
No. 181.	9 inch complete(YEJJO)	5.00
No. 182.	12 inch complete(YEJUK)	5.50
No. 183.	18 inch complete(YEKGA)	6.50
No. 184.	24 inch complete(YEKHE)	7.50
Blades	furnished graduated in either No. 4, No. 7, or No.	. 8 or

Metric graduation, as specified.

Packed one in a pasteboard box.

PAGE 381

# Solid Beam Squares

With Tempered Steel Blades



These Squares are designed to be as accurate and well finnished as special ma-

chinery and skillful operatives can produce. The blade is of crucible steel carefully tempered. Beam is of hard gray iron, carefully machined and ground, and every means possible used to insure the edges of blade being at right angles to the beams. Length of blade given is from inner edge of beam.

	Length of Blade	Length of Beam	P	rice, Each
No. 86	3 inches	2 inches	(YATEM)	\$3.50
No. 87	4 inches	2½ inches	(YATME)	5.50
No. 88	6 inches	3½ inches	(YATOP)	7.00
No. 89	9 inches	5 inches	(YATRY)	8.00
No. 90	12 inches	6 inches	(YAUHD)	10.00

9AGB 382

Packed one in a pasteboard box.

# Solid Beam Squares

With Graduated Tempered Steel Blades



We have made these Squares as accurate and as finely finished as possible, with every detail carefully considered, and.

every means used to produce instruments as near to absolute accuracy as human skill and mechanical ingenuity can make them. These tools are square and they will stay true. The Blades are engine graduated on one edge of each side in 32ds and 64ths. They are made of carefully tempered crucible steel. Beams are hard gray iron.

	Length of Blade	Length of Beam	I	Price, Each
No. 81	3 inches	2 inches	(YARIL)	\$4.00
No. 82	4 inches	2½ inches	(YASAK)	5.50
No. 83	6 inches	3½ inches	(YASKA)	7,50
No. 84	9 inches	5 inches	(YASNO)	9.00
No. 85	12 inches	6 inches	(YASUP)	12.00

# Pattern Makers' Precision Squares



These are excellent Try Squares for the use of Pattern Makers and Woodworkers. The blades are made of tempered steel, accurately parallel ground. The beam is provided with a rest so that the square will lie flat on the work without being held in position. The opening in handle gives a firm and comfortable grip. Handles are nickel plated; and blades, polished.

We guarantee the accuracy of these squares.

	Blade	Beam		Price, Each
No. 806	6 inch	4 inch	(ZEIBT)	\$4.00
No. 808	8 inch	5 inch	(ZEIKD)	4.50
No. 810	10 inch	6 inch	(ZEIRL)	5.00

Each Square packed in a separate pasteboard box.

PAGE 383

# Pattern Makers' Precision Squares Tempered and Graduated Blades



These Try Squares are exactly the same as those above except that the blades are graduated on dividing engines, on one side in 8ths and the other side in 16ths of an inch.

Both the accuracy of the square and the accuracy of the graduations are guaranteed.

AND DESCRIPTION OF THE PERSON	Blade	Beam		Price, Each
No. 906	6 inch	4 inch	(ZIAJF)	\$4.50
No. 908	8 inch	5 inch	(ZIARN)	-5.00
No. 910	10 inch	6 inch	(zicib)	5.50

These Squares can be furnished with Metric graduation if desired.

Each Square is packed in a separate pasteboard box.

## Draughtsman's Protractor No. 50

Patented January 17, 1893



This Protractor has spring tempered Steel Blades about 9 inches long. The arc is inches in diameter, graduated in degrees, with a Vernier reading to five minutes. It has a Binding Screw on one side that securely holds the Blades at any angle and enables it to be picked up and moved about readily. The Blades are fastened into the arc in such a manner as to make all parts come flush on the under side, thus making a perfectly flat surface for resting on the table. Either Blade can be used in contact with a T-square, giving any angle and its complement from 0 degree to 90 degrees. It forms a perfect adjustable triangle. Finished in dull nickel.

Price, in pasteboard box...(YAFIX) \$10.00
Price, in polished hardwood case.(YAFOZ) 11.50

Blades of extra length furnished to order.

RDAS

### Protractor No. 51

384



This 'Protractor, which is accurately graduated in degrees, is one of the most useful articles in a machinist's tool kit. Any desired angle can be laid off yusing this tool in connection with a bevel, making an expensive Bevel Protractor unnecessary. The bevel can be set from either edge. Sides are ground to positive 90° angle.

Price, each . (YAFVA) \$3.00

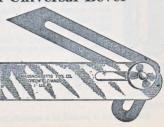
# Improved Universal Bevel

No. 59

This Universal Bevel is a well-finished and reliable tool with an off-set blade that allows the measuring of any angle. One side is perfectly flat and one edge is solid; making it convenient to use in taking angles from blue prints, or in working thin templets.

Length, 3 inches. Width of Blade, 13 inches.

Price, each . . (YAHYA) \$2.20



## Rule Depth Gauges

These Depth Gauges have a milled and ground Base 3 inches long and a narrow tempered steel rule either 4 or 6 inches long. The Blade can be turned parallel to the base so as to occupy but little room in the tool chest or in one's pocket. The tool also makes a useful T-square. Rule graduated in either No. 10 or No. 11 graduation. The Head is graduated with lines indicating 30°, 45°, and 60°.

No. 79. 4 inch........(YAPEO) \$2.40 No. 80. 6 inch.......(YAPUL) 2.60

#### Metric

No. 79M. 10 cm...(YAPMY) \$2.40 No. 80M. 15 cm....(YARAJ) 2.60

### Depth Gauge No. 64

This Gauge is carefully constructed, and is a thoroughly dependable little tool. The milled and ground Base is 3 inches long. The Rod is best quality cast steel, 44 inches long, with a hardened point. It is graduated in half inches. The rod is held accurately in place perpendicular to the base, but can be turned parallel if desired.

Price, each.....(YAJDO) \$1.60

Steel Center Square

No. 78

This all-steel tool combines the most, in the smallest compass and lightest weight, that has ever been offered to machinist. It is a Center Square, T-Square, Depth Gauge, Center Gauge, and Steel Rule. The narrow

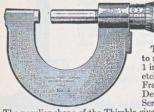
tempered steel Rule furnished with the tool is 6 inches in length.

CHUSETTS TOOL CO. GREENFIELD, MASS. U.S.A.

B and the state of the state of

385

#### Micrometer Caliper No. 2



This Micrometer is graduated to read by 1/1000 inch from 0 to 1 inch. Decimal equivalents are etched on the drop-forged steel Frame. An eccentric Locking Device is provided to hold the Screw in any desired position.

The peculiar shape of the Thimble gives the operator a more delicate touch than is otherwise possible. Every necessary compensation for wear is provided.

Price, each

1.50

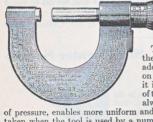
Price of leather case . . . . . . . . . . . . . . . . (WYDDA) No. 2 M. Same as No. 2, for measurements by 1/100 mm.

from 0 to 25 mm. 388

PAGE

#### Micrometer Caliper With Ratchet Stop

No. 2 R



This Micrometer is similar to the one described above with the addition of a ratchet mechanism on the Thimble in a position where it is easily reached by the fingers of the operator. The Ratchet, by always applying an equal amount

of pressure, enables more uniform and accurate measurements to be taken when the tool is used by a number of different persons, or by an unskilled operator. The end of the Thimble is provided with a speeder by means of which the screw can be rapidly run back and forth. Price, each.....(wycog) \$11.00 Price of leather case . . . . . . . . . . . . . . . . (WYDDA) Metric

No. 2 MR. Same as No. 2 R, for measurements by 1/100 mm. from 0 to 25 mm.

.....(WYDAD) \$11.00 

#### Micrometer Caliper With Depth Gauge Attachment No. 3

Patented February 20, 1894.



This Micrometer is similar to the No. 2 described on the preceding page, with the addition of a Depth Gauge Attachment. This consists of a flat Base, and a steel Rod which can be inserted through the Anvil. Accurate measurements of slots, key-ways,

and shoulders are obtained by means of the double graduation. When the Rod is used read the lower row of figures on the Barrel, and the outer row on the Thimble.

Price, each. (WYEGH) \$16.00 Price of leather case. (WYDDA) \$1.50 Metric

No. 3 M. Same as No. 3, for measurements by 1/100 mm. from 0 to 25 mm.

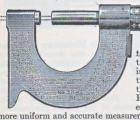
389 ..... (WYELM) \$16.00

PAGE

# Micrometer Caliper

With Depth Gauge Attachment and Ratchet Stop

No. 3 B



Price, each. . .

This Micrometer is similar to the one described above with the addition of a ratchet mechanism on the Thimble in a position where it is easily reached by the fingers of the operator. The Ratchet, by always applying an equal amount of pressure, enables

more uniform and accurate measurements to be taken when the tool is used by a number of different persons, or by an unskilled operator. The end of the Thimble is provided with a speeder by means of which the screw can be rapidly run back and forth.

Price, each... (WYEJK) \$16.50 Price of leather case. (WYDDA) \$1.50

Metric No. 3 MR. Same as No. 3 R. for measurements by 1/100 mm. from 0 to 25 mm. Price, each. ..... (WYEMN) \$16.50

# Micrometer Caliper

No. 12



This Micrometer is graduated to read by 1/1000 inch from 0 to 1 inch. Decimal equivalents are etched on the drop-forged steel Frame. An eccentric Locking Device is provided to hold the Screw in any desired posi-

tion. The Thimble is large and nicely knurled. Every necessary compensation for wear is provided. Price, each . . . . .....(WYKUP) \$10.30

Price of leather case . . . . . . . . . . . . . . . . . (WYDDA) ( 1.50

Metric

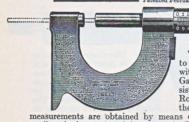
No. 12 M. Same as No. 12, for measurements by 1/100 mm. from 0 to 25 mm. Price, each ... ..... (WYLAL) \$10.30

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# Micrometer Caliper

With Depth Gauge Attachment

No. 13 Patented February 20, 1894



This Micrometer is similar to the one described above with the addition of a Depth Gauge Attachment. This consists of a flat Base and steel Rod which is inserted through the Anvil. Accurate depth

measurements are obtained by means of the double graduations, reading the lower row of figures on the Barrel and the outer row on the Thimble.

Price, each. Price of leather case ..... (WYDDA) 1.50 Metric

No. 13 M. Same as No. 13, for measurements by 1/100 mm. from 0 to 25 mm. Price, each ...... (WYLOP) \$16.00

# Micrometer Caliper

No. 155



to read by 1/1000 inch from 0.to 1 inch. Decimal equivalents are stamped on the drop-forged steel Frame. It has a large square end Thimble; nicely knurled. All necessary compensation for wear is provided.

finished. Every necessary compensation for wear is provided.

PAGE

Price, each.... .....(YEFFO) \$9.00 Price of leather case.... 1.40 ..... (WYDDA)

#### Metric

No. 155 M. Same as No. 155, for measurements by 1/100 mm. from 0 to 25 mm. 391

Price, each.... .... (YEFHY) \$9.00

### Micrometer Caliper No. 156



Price, each(YEFID)	\$8.50
Price of leather case(WYDDA)	1.40

### Two-inch Micrometer Caliper No. 20



This Micrometer is graduated to read by 1/1000 inch from 1 to 2 inches, either lengths or diameters. Decimal equivalents are etched on the Frame which is dropforged from a solid steel bar. An eccentric Lock-

Every necessary compensation for wear is provided. 

Metric PAGE

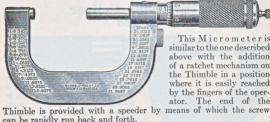
No. 20 M. For measurements by 1/100 mm. from 25 mm. to

392

50 mm. ..... (WYUJN) \$11,50 Price, each.....

#### Two-inch Micrometer Caliper With Ratchet Stop

No. 20 R



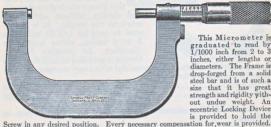
This Micrometer is similar to the one described above with the addition of a ratchet mechanism on the Thimble in a position where it is easily reached by the fingers of the operator. The end of the

can be rapidly run back and forth. ..... (wyuhm) \$12.00 Price, each ... 2.00

Price of leather case. . . . . . . . . . . . . . . . (wyusy) Metric

No. 20 MR. For measurements by 1/100 mm. from 25 mm. to 50 mm. \*12.00 Price, each. .

### Three-inch Micrometer Caliper No. 21



This Micrometer is graduated to read by 1/1000 inch from 2 to 3 inches, either lengths or diameters. The Frame is drop-forged from a solid steel bar and is of such a size that it has great strength and rigidity without undue weight. An eccentric Locking Device is provided to hold the

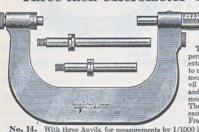
Price of leather case (WYNRO)

Metric

No. 21M. For measurements by 1/100 mm. from 50 mm. to 75 mm. ..... (WYUXD) \$12.00 Price, each...

393

# Three-inch Micrometer Calipers



These Micrometer Calipers are provided with extra Anvils enabling them to make a greater range of measurements. Each An-, vil is carefully hardened and provided with specials means of adjustment. They are quickly and easily adjusted in the Frame.

No. 14. With three Anvils, for measurements by 1/1000 inch from 0 to 3 inches. ..... (WYNOR) \$22.00 Price, each Price of leather case..... ..... (WYNRO) No. 141. With two Anvils, for measurements by 1/1000 inch from 1 to 3 inches.

Price of leather case . . . . .... (WYNRO)

Metric
No. 14M. With three Anvils, for measurements by 1/100 mm. from 0 to 75 mm. Standards for checking setting of these Micrometers are shown on page 395.

PAGE

# Four-inch Micrometer Caliper No. 22



ment to compensate for wear.
Price, each. (wyvux) \$13.50
Price of leather case (wyvub) 2.80

# Five-inch Micrometer Caliper No. 23

894

This Micrometer is similar in design and construction to the one shown above. It is graduated to read by 1/1000 inch from 4 to 5 inches, either lengths or diameters.

Price, each. (wxvzo) \$16.00

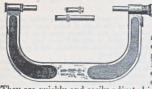
Price of leather case

Metric (WYPIR) 3.20

# Six-inch Micrometer Caliper No. 24



# Six-inch Micrometer Calipers



These Micrometer Calipers are provided with extra Anvils enabling them to make a greater range of measurements. Each Anvil is carefully hardened and provided with special means of adjustment.

They are quickly and easily adjusted in the Frame.

No. 15. With three Anvils for measurements by 1/1000 inch

from 3 to 6 inches. Price, each..... (WYOZD) \$24.00

Price of leather case.....(WYPIR) No. 622. With four Anvils for measurements by 1/1000 inch from 2 to 6 inches.

Price of leather case.....(WYPIR)

Metric No. 15 M. With three Anvils for measurements by 1/100 mm.

from 75 to 150 mm. Price, each ....

No. 622 M. With four Anvils for measurements by 1/100 mm. from 50 to 150 mm. Price, each ..

.... (уплку) \$25.00

# Standards No. 563

These Standards are made of tool steel, hardened and ground. The ends are lapped parallel, which makes them easier to use in setting or testing a Micrometer, and more accurate than when lapped spherical. The rods are provided with hard rubber holders in order that they may not be affected by the heat of the hand. These holders are octagon in shape so that they will not

roll.



One inch and 25 mm. standards are round discs, all other sizes are 5 inch rods with rubber holders.

English Metric 
 1 inch disc.
 (YUJUZ)
 \$1.60
 25 mm. disc.
 (YUXIX)
 \$1.60

 2 inch rod.
 (YUJVE)
 2.00
 50 mm. rod.
 (YUKOZ)
 2.00

 3 inch rod.
 (YUJVE)
 2.30
 75 mm. rod.
 (YUKUB)
 2.30

 4 inch rod.
 (YUKVA)
 2.60
 100 mm. rod.
 (YUKVA)
 2.60
 5 inch rod:....(YUKCY) 3.00 125 mm. rod...(YUKWE) 3.00

Each standard packed in a separate pasteboard box.

# Micrometer Depth Gauge

This Depth Gauge is designed to make accurate measurements of the depth of holes, slots, shoulders, and projections of any distance from 0 to 3 inches. The Spindle, which is adjusted to a very sensitive touch, has a full one-inch movement, and is graduated to read by 1/1000 inch.

Each Depth Gauge is furnished with three Measur-

Each Depth Gauge is furnished with three Measuring Rods with hardened ends, carrying an adjusting device to compensate for wear. The rods are inserted through a hole in the measuring screw by removing the hunted End Nut of the Spindle. They are brought to a positive bearing against a finished seat on the end of the Screw. When the Nut is screwed down, this gives a positive end contact that does not depend on any device liable to be lost or worn, and without rods projecting above the top of the Thimble.

The Base is  $2\frac{1}{2}$  inches long,  $\frac{1}{3}\frac{1}{2}$  inch wide, hardened, ground and accurately hand lapped at right angles to

the rods.

Price, each.....(YAALC) \$10.00 Price of leather case (YAASK) 1.80

Metric

Extra Set of 3 Rods for measurements 3 to 6 inches \$3.50 Extra Set of 6 Rods for measurements 6 to 12 inches 10.00

Micrometer Depth Gauge With Ratchet Stop No. 31B

This Depth Gauge is similar to the one described above with the addition of a ratchet mechanism, which is particularly useful on a tool of this character where a very delicate touch is essential. The Ratchet is operated by a ring placed in a position on the Thimble where it is convenient to the fingers of the operator.

It is provided with three Measuring Rods, and graduated to read by 1/1000 inch from 0 to 3 inches.

Price, each...(YAAMD) \$11.0 Price of leather case (YAASK) 1.8

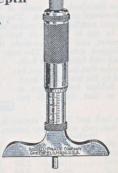
(AASK) 1.80

Metric

No. 31 MR. For measurements by 1/100 mm. from 0 to 75 mm.

Price, each.....(YAARJ) \$11.00

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#### Micrometer Depth Gauge No. 32

This Depth Gauge is exactly the same as our No. 31 shown on the opposite page except for the base which is 4 inches long instead of 21 inches.

Each Gauge is furnished with three measuring rods, giving a capacity of from 0 to 3 inches.

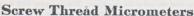
Price, each...(YAAWN) \$13.00 Price of leather case . . .

..... (YABIT)

For prices of extra length rods, see opposite page. GOODELL-PRATT COMPAN GREENFIELD MASS, U.S.A. Metric

No. 32 M. For measurements by 1/100 mm, from 0 to 75 mm.

Price, each. ..... (YABAR) \$13.00





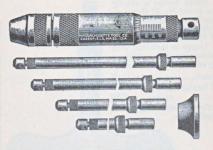
These Micrometers will measure the actual Wall Size of U.S. or Vthreads on screws, taps, or thread gauges. The Spindle Point measures all pitches but the Anvil is limited to its capacity, being correct for only a few pitches.

		Price, Each
No. 33.	For 8 to 13 Pitch(YABSE)	\$20.00
No. 33A.	For 14 to 20 Pitch(YABVO)	20.00
No. 33B.	For 22 to 30 Pitch(YABYX)	20.00
No. 33C.	For 32 to 40 Pitch(YACAS)	20.00
	Two Inch	
No. 34.	For $4\frac{1}{2}$ to 7 Pitch(YACIV)	\$22.00

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### Inside Micrometer Gauges

Patented May 8, 1894



94GB

These Micrometer Gauges possess a number of special features not found in other tools of this character. Particular attention is called to the fact that the screws of these tools, which have the same high degree of accuracy as in all our other Micrometers, have a full ONE INCH RUN, which greatly facilitates their use on large work.

The correctness of the measuring capacity of these tools, and the distance from one anvil to the other, are governed by the ring on the measuring rod which comes to a positive seat against the end of the chuck nut. This does away with the possibility of dirt collecting inside the chuck and preventing the rods from seating properly. Wear of the rods can be compensated for by loosening the binding nut and adjusting the hardened steel anvil in the end of the rod.

These Micrometers are furnished with various assortments of rods for measuring different lengths and each one has a small ring in which the Micrometer may be set when used as a height gauge.

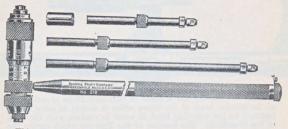
When med as a neight backet	
No. 10. For measurements by 1/1000 inch from 3 to 7 inches.  Price, each	\$10.50
Price of leather case(WYJIL)	1.80
No. 17.         For measurements by 1/1000 inch from 3 to 10 inches.           Price, each	\$13.00 2.40
No. 18. For measurements by 1/1000 inch from 10 to 18 inches.  Price, each	\$14.00 3.00
No. 19. For measurements by 1/1000 inch from 3 to 18 inches.  Price, each	\$22.00 3.00

Special combinations of any length furnished to order.

# Inside Micrometer

No. 618





This new Inside Micrometer, which makes all inside measurements by 1/1000 inch from 2 to 6 inches, possesses many special features which will commend it to any one who has ever used such a tool.

PAGE 399

The lead screw is accurately made and has a ½-inch run. Four measuring rods are furnished, and also a hardened steel collar ½ inch in length, which can be slipped over any rod between the shoulder and the chuck. A lower row of figures is graduated on the barrel from which the measurement can be read directly, when this collar is in use, without the necessity of making allowances for the length of the collar.

The correctness of the measuring capacity and the distances between the anvils are insured by the shoulder on each rod which comes to a positive seat against the end of the chuck nut. This does away with the possibility of dirt collecting inside of the chuck and preventing the rods from seating properly. Wear of the rods may be compensated for by loosening the binding nut and adjusting the hardened steel anvil in the end of each rod.

Each Micrometer is furnished with a long handle for use in places that cannot be reached with the hand. Extra rods not in use are kept inside of this hollow handle where they are always readily accessible and are protected from dirt or damage.

Price, each, complete with handle, rods and collar(YUZAL)	\$12.00
Price of leather case(YUZEM)	1.80

# 0 to Six-inch Beam Micrometer Caliper

Patented December 20, 1892; November 21, 1893; February 28, 1894



This Micrometer has a series of Standard Plugs placed inside of the tubular beam of the frame which is slotted to allow a key fastened to the traveling head to come in contact with the ends of the Standards. The location of the Traveler which carries the measuring screw and thimble is determined by the length of the Standards that are placed ahead of it in the tube towards the fixed

head or anvil.

PAGE

The remaining Standards are then placed in the tube following the Traveler and the knurled Test Screw at the end of the beam is turned until the 0 marks on it and the frame register alike.

One, Two, and Three inch Standard Plugs are furnished which, if used separately or in combination, make possible any position of the Traveler in even inches from 0 to 6. Diameters up to  $2\frac{3}{4}$ 

inches can be calinered.

The hardened Lead Screw runs in a hardened steel Bushing with a full one-inch movement. The Thimble is graduated to read to 1/1000 inch. The Spindle can be locked in any desired position by means of the eccentric Locking Device. The necessary means of compensation for wear are provided.

Care should be taken when using this instrument to see that after the Standard Plugs are removed they are carefully wiped before being replaced in order to insure the contact surfaces being free from dirt or grit, as otherwise the two 0 marks will not register.

The perfect accuracy of the Standard Plug system as applied to a Micrometer will be readily perceived, and it should not be forgotten that new plugs can be procured at any time, should any necessity demand, without the bother and expense of having the entire instrument refitted.

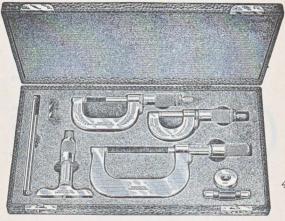
 Price, each
 (WYGEO)
 \$55.00

 Price of leather Case
 (WYGUL)
 3.60

#### Metric

No. 6 M. For all measurements by 1/100 mm. from 0 to 15 cm. Price, each.......(wwook) \$55.00

### Micrometer Sets



PAGE 401

We are in a position to make up any Sets of one to three inch Micrometers, desired by our customers, in velvet-lined leather cases.

We carry in stock two sizes of cases, one to hold any one, two, and three inch Micrometer Calipers; the other to hold the three Micrometer Calipers and a No. 31 or 31 R Micrometer Depth Gauge.

Any of our Micrometers will fit these cases, so that each user can select exactly the assortment that he prefers.

No. 586. For One, Two, and Three inch Micrometers.

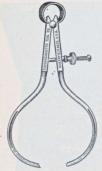
Price of case only......\$6.00

No. 587. For One, Two, and Three inch Micrometers and Micrometer Depth Gauge.

Price of case only.....(YUNYG) \$7.00

Special Cases can be made up to order to contain other assortments.

# Tool Makers' Outside Spring Calipers



The Calipers shown on this page are particularly adapted for tool makers' use, being designed for delicate and accurate work. The springs are strong and stiff; the spools are hardened; the legs, which are made from round stock, are rolled down to make them hard and rigid.

We recommend these tools for the finest class of work.

Furnished with solid nut only.

	Pr	ice, Each
No. 732.	Size 2 inches(ZATUL)	\$1.30
No. 733.	Size 3 inches(zaucs)	1.60
No. 734.	Size 4 inches(ZAUDT)	2.00
No. 736.	Size 6 inches(ZAUSK)	2.30

Packed one fourth dozen in a pasteboard box.

PAGE

# Tool Makers' Inside Spring Calipers

	Pr	ice, Each
No. 742.	Size 2 inches(ZAVLO)	\$1.30
No. 743.	Size 3 inches(ZAVNY)	1.60
No. 744.	Size 4 inches(ZAVOL)	2.00
No. 746.	Size 6 inches(ZAVYN)	2.30

Packed one fourth dozen in a pasteboard box.



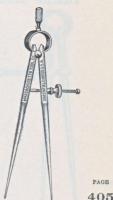
# Tool Makers' Spring Dividers

These Round Leg Dividers are companion tools to the Calipers shown on the previous page. The points are rolled down, making them extra hard; they are thoroughly well made and will be found satisfactory for the finest work.

Furnished with solid nut only.

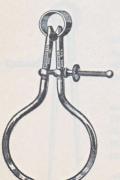
		ice, Each
No. 752.	Size 2 inches(ZAYEL)	\$1.30
No. 753.	Size 3 inches(ZAYHZ)	1.60
No. 754.	Size 4 inches (ZAYKA)	2.00
No. 756.	Size 6 inches(ZAYNO)	2.30

Packed one fourth dozen in a pasteboard hox.



PAGE

# Outside Round Leg Spring Calipers



### POST PATTERN

In bringing out the "Post Pattern". Round Leg Spring Calipers, in which the adjusting screw works through the post instead of through the legs, we are offering at a moderate price a Round Leg Spring Caliper of excellent design and attractive finish, quite as desirable in many instances as the more

expensive tool makers' line.	
	ice, Each
No. 832. Size 2 inches (ZELED)	\$1.20
No. 833. Size 3 inches (ZELGO)	1.50
No. 834. Size 4 inches (ZELIF)	1.90
No. 836. Size 6 inches (ZELOG)	2.200
Packed one fourth dozen	in a

pasteboard box.

# Inside Round Leg Spring Calipers



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### POST PATTERN

The "Post Pattern" Inside Spring Calipers are of the same design as the Outside Calipers of this pattern, and we are likewise offering them at moderate prices.

	Pr	rice, Each
No. 842.	Size 2 inches(ZEMFE)	\$1.20
	Size 3 inches (ZEMHO)	1.50
	Size 4 inches(ZEMIG)	1.90
	Size 6 inches(ZEMOH)	2.20

Packed one fourth dozen in a pasteboard box.

# Round Leg Spring Dividers

POST PATTERN

The Round Leg Spring Dividers of the "Post Pattern" are of the same design and operated in the same manner as the Outside and Inside Calipers of this pattern previously described,

	Pr	ice, Each
No. 852.	Size 2 inches(ZEOJD)	\$1.20
Nó. 853.	Size 3 inches(ZEOLG)	1.50
No. 854.	Size 4 inches(zeonj)	1.90
No. 856.	Size 6 inches (ZEORM)	2.20

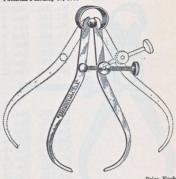
Packed one fourth dozen in a pasteboard box.



# Outside Transfer Spring Calipers

Patented February 17, 1903

These Transfer Calipers are rapid and positive in action, advantages that every mechanic will appreciate. When the Calipers are adjusted, all that is necessary to do to transfer, is to tighten the set screw and pull the legs apart. They will then spring back themselves to the same position without the slightest possibility of orman



PAGE

ity of effe		Pri	ce, Each	400
No. 554.	Size 4 inches(YUH	wo)	\$1.80,	40
No. 556.	Size 6 inches(YU	IFS)	2.00	
	Size Sinches (VIII	rpg)	2.20	

Packed one fourth dozen in a pasteboard box.



# Inside Transfer Spring Calipers

Patented February 17, 1903

These Calipers have a special form of nut that prevents any slipping and insures accurate transferring on inside work.

	Pri	ice, Each
No. 544.	Size 4 inches(YUGIT)	\$1.80
No. 546.	Size 6 inches (YUGRA)	2.00
No. 548.	Size 8 inches (YUGVO)	2.20

Packed one fourth dozen in a pasteboard box.

# Outside Spring Calipers

		With	Solid Nut	Price, Each
<b>A</b>	No. 500.	Size 2½	inches. (YOWDA	\$0.85
	No. 501.	Size 3	inches. (YOWEF	.90
	No. 502.	Size 4	inches (Yowig	) 1.00
	No. 503.	Size 5	inches. (YOWOH	) 1.10
	No. 504.	Size 6	inches. (YOWYK	) 1.20
O. C.			inches (YOYFA	
ad-tit			inches. (YUHET	
900	No. 551.	Size 12	inches. (YUHSA)	2.00
8 8 8				
		With	Quick Nut	Price, Each
	No. 600.	Size $2\frac{1}{2}$	inches. (YUPYH)	\$1.05
	No. 601.	Size 3	inches: (YURAD)	1.10
	No. 602.	Size 4	inches : (YURFE)	1.20
			inches (YURIG)	
			inches (YURUJ)	
			inches (YUSEG)	
			inches (ZADVY)	
	No. 651.	Size 12	inches (ZADYV)	2.20
	Packed board-box		rth dozen in a	paste-

# Inside Spring Calipers With Solid Nut Price Ro

PAGE 408

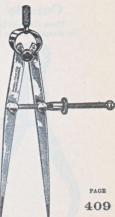
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1000

Packed one fourth dozen in a pasteboard box.



# Spring Dividers

particular.	With Solid Nut Pr	
No. 512.	Size 2½ inches (YOZUL)	\$0.85
No. 513.	Size 3 inches(YUAJT)	.90
No. 514.	Size 4 inches(YUASF)	1.00
No. 515.	Size 5 inches.,(YUBAM)	1.10
No. 516.	Size 6 inches(YUBIP)	1.20
No. 517.	Size 8 inches(YUBMA)	1.30
No. 570.	Size 10 inches(YULYE)	1.80
No. 571.	Size 12 inches(YUMAY)	2.00
	With Quick Nut Pr	rice, Each
No. 612.	Size 2½ inches(YUVJE)	\$1.05
No. 613.	Size 3 inches(YUVNY)	1.10
No. 614.	Size 4 inches(YUVUM)	1.20
No. 615.	Size 5 inches(YUWAJ)	1.30
No. 616,	Size 6 inches(YUWIL)	1.40
No. 617.	Size 8 inches(YUWYP)	1.50
No. 670.	Size 10 inches(ZAHZY)	2.00
No. 671.	Size 12 inches(zaifs)	2.20
Packed	one fourth dozen in a pasteboar	rd box.



# Hermaphrodite Spring Calipers

	With Solid Nut Price	ce, Each
(0_0)	No. 540. Size 3 inches(YUFER)	\$0,90
	No. 541. Size 4 inches,(YUFTO)	1.00
香厂	No. 542. Size 5 inches(YUFWY)	1.10
	No. 543, Size 6 inches(YUGAR)	1.20
C A		
	A MARIAN	
	With Quick Nut Price	
	With Quick Nut Prin No. 640. Size 3 inches: (zagro)	\$1.10
	With Quick Nut Price	ce, Each \$1.10
	With Quick Nut Prin No. 640. Size 3 inches: (zagro)	\$1.10

# Outside Thread Spring Calipers

These Calipers have the ends of their legs flattened for calipering the diameter at the bottom of the thread of bolts, screws, etc.

		With Solid Ivat Frice, Each
	No. 530. No. 531.	
	No. 532.	Size 5 inches(YUDUT) 1.20
	No. 533.	Size 6 inches(YUDVY) 1.30
	No. 545.	Size 8 inches(YUGOV) 1.40
Part Part Part Part Part Part Part Part	No. 547.	Size 10 inches. (YUGSE) 1.80
2 2-		6
		The Court of the C
		With Quick Nut Price, Each
	No. 630.	Size 3 inches (ZABMA) \$1.20
	No. 631.	Size 4 inches (ZABNE) 1.30
	No. 632.	Size 5 inches. (ZABSY) 1.40
	No. 633.	Size 6 inches. (ZABUR) 1.50
	No. 645.	Size 8 inches. (ZADIR) 1.80
	No. 647.	Size 10 inches. (ZADPA) . 2.20
	Packed	one fourth dozen in a paste-

Packed one fourth dozen in a pasteboard box.

With Solid Nut Dries Post

# Inside Thread Spring Calipers

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These Calipers have their points shaped correctly for measuring the diameter at the bottom of the thread of nuts, etc.

	With Solid Nut Price, Each	A MINIMAN
No. 535.	Size 3 inches(YUEGS) \$1.00	
No. 536.	Size 4 inches(YUEMZ) 1.10	
No. 537.	Size 5 inches(YUERF) 1.20	
No. 538.	Size 6 inches(YUETH) 1.30	3
	With Quick Nut Price, Each	12
No. 635.	Size 3 inches(zacan) \$1.20	1 1
No. 636.	Size 4 inches(ZACEP) 1.30	a 19
No. 637.	Size 5 inches(zacna) 1.40	9
No. 638.	Size 6 inches(zacob) 1.50	

Packed one fourth dozen in a pasteboard box.



# Thread Spring Calipers

Price Each

#### With Solid Nut

No.	519.	Size 3	inches(YUBSY)	\$1.20
No.	520.	Size 4	inches(YUBUR)	1.30
No.	521.	Size 5	inches(YUBYS)	1.40

### With Quick Nut

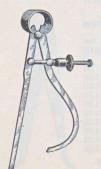
No. 619.	Size 3 inches(YUZLA)	\$1.40
No. 620.	Size 4 inches(YUZME)	1.50
No. 621.	Size 5 inches(YUZOP)	1.60

Packed one fourth dozen in a pasteboard box.



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# **Keyhole Spring Calipers**



#### With Solid Nut

No. 525. Size 3 inches...(YUGPE) \$0.90 No. 526. Size 4 inches...(YUGBO) 1.00

#### With Quick Nut

Price, Each
No. 625. Size 3 inches . . . (zaajt) \$1.10
No. 626. Size 4 inches . . . (zaast) 1.20

Packed one fourth dozen in a pasteboard box.



# Firm Joint Outside Calipers

These Calipers are made of a hard finished crucible steel and are stiff and solid. The firm joint is designed so as to give any desired degree of friction, maintaining a smooth, even tension as desired. Friction adjusting screw has hexagon head for wrench on all sizes. The sizes refer to the length of the different legs. Their capacity to measure is much greater than their ratings. Especial attention is called to the fine proportion of the different sizes.

	No. 400.	Size 3	inches	outside(YOGAM)	\$0.65
	No. 401.	Size 4	inches	outside(YOGIP)	.80
	No. 402.	Size 5	inches	outside(YOGMA)	.90
PAGE 5	No. 403.	Size 6	inches	outside(YOGNE)	1.00
	No. 404.	Size 8	inches	outside(rogsr)	1.20
112	No. 405.	Size 10	inches	outside(YOGUR)	1.40
	No. 406.	Size 12	inches	outside(YOGYS)	1.60
	No. 407.	Size 14	inches	outside(YOHAN)	2.40
	No. 408.	Size 16	inches	outside (YOHEP)	3.00
	No. 409.	Size 18	inches	outside(YOHOR)	4.00
	No. 410.	Size 20	inches	outside(YOHPE)	5.00
	No. 411.	Size 24	inches	outside(YOHTY)	5.50

Packed one fourth dozen in a pasteboard box.

### Firm Joint Inside Calipers

	Pri	ice, Each
No. 420.	Size 3 inches inside(YOJOS)	\$0.65
No. 421.	Size 4 inches inside (YOJPA)	.80
No. 422.	Size 5 inches inside (YOJSO)	.90
No. 423.	Size 6 inches inside (YOJUT)	1.00
No. 424.	Size 8 inches inside(YOJVY)	1.20
No. 425.	Size 10 inches inside(YOJYV)	1.40
No. 426.	Size 12 inches inside(YOKER)	1.60
No. 427.	Size 14 inches inside(YOKRE)	2.40
No. 428.	Size 16 inches inside(YOKTO)	3.00
No. 429.	Size 18 inches inside(YOKUV)	4.00
No. 430.	Size 20 inches inside(YOKWY)	5.00
No. 431.	Size 24 inches inside(YOLAR)	5.50
m 1 1		

Packed one fourth dozen in a pasteboard box.



Price, Each

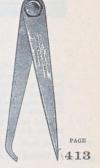
# Firm Joint Hermaphrodite Calipers

With Solid Leg

These Calipers are just the same as our regular Firm Joint Calipers shown on the previous page, with the exception of the legs, one of which is an inside caliper leg and the other a divider leg.

	Pr	ice, Each
No. 384.	Size 4 inches(YODKA)	\$0.80
No. 386.	Size 6 inches(YODNO)	1.00
No. 388.	Size 8 inches(YODUP)	1.20

Packed one fourth dozen in a pasteboard box.



# Firm Joint Hermaphrodite Calipers

With Adjustable Point



The adjustable point on these Calipers is made of the best crucible steel properly tempered, and is firmly fastened to the leg by a bolt with a knurled-headed nut.

		Pı	ice, Each
No. 442.	Size	5 inches(YOMTE)	\$1.10
No. 443.	Size	6 inches(YOMUX)	1.20
No. 444.	Size	8 inches (YOMWO)	1.40
No. 445.	Size	10 inches (YONAT)	1.60

Packed one fourth dozen in a pasteboard box.

### Universal Caliper No. 1917



This remarkable instrument can be used for making any inside, outside, or depth measurements, both English and Metric, up to 4 inches or 10 centimeters. It is graduated on one side in 32ds of an inch and on the other side in millimeters. A thumb screw enables the operator to lock the jaws and depth rod in any desired position. The jaws can be easily adjusted to compensate for wear.

The entire tool is polished. Length over all, 71 inches. Net weight, 4 ounces.

PAGE Price, each .....

414

Packed one in a pasteboard box,  $7\frac{1}{4} \times 2\frac{3}{4} \times \frac{5}{8}$  inch.

### Indicating Calipers



These tools will be found much more convenient than Caliper Rules for making all outside measurements of either lengths or diameters, up to 2 inches.

. (zodjo) \$3.00

The tool is made from a hard stock and is stiff and rigid. The arc is accurately divided to read 16ths of an inch. The entire tool is very nicely finished.

Length over all, 3 inches. Net weight, 1 ounce.

No. 662. 2 inch.

Price, each.....(ZAGAR) \$1.20

Metric

No. 672. 50 mm. Price, each ..... (ZAIGT) \$1.20

Packed one fourth dozen in a pasteboard box, 3½ x 2 x 3 inches.

# Speed Indicator

No. 449



This Speed Indicator is provided with a double end spindle, with a handle that can be placed on either end. This enables the operator to take the speed of either right or left hand shafts without the use of any confusing double numbers on the dial. Both ends of the spindle are hardened.

The tool is neatly finished in black. Two rubber points are furnished

with each tool.

Price, each..... .....(YONUZ) Price of leather case . . . . . . . . . . . . . . . . (WYDDA) 1.50 Packed one in a pasteboard box, 41 x 21 x 5 inch. Weight, 6 ounces.

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# Speed Indicator

No. 387



This Speed Indicator has two separate and distinct dials, one recording the units and another recording the hundreds up to one thousand. The dial for recording the hundreds is fitted with a friction ratchet mechanism so that it can instantly be set back to 0 by turning the knurled ring.

The spindle has a double end for taking either right or left hand shafts. Both ends of the spindle are hardened. The entire tool is fully polished

and nickel plated. Two rubber points are furnished.

Price of leather case.....

Price, each....(YODON) \$3.00 .....(WYDDA) 1.50

Packed one in a pasteboard box, 4½ x 2½ x ½ inch. Weight, 6 ounces.

# Screw Pitch Gauge



This Gauge has 22 Pitches for V-threads, as follows: 9, 10, 11, 11½, 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30, 32, 34, 36, 38, 40. Length of Leaves, 1 inch.

Price, each....

Packed one in a pasteboard box, 100 boxes in a carton.

# PAGE 418

# Metric Screw Pitch Gauge



This Screw Pitch Gauge is similar to the one above, but has 20 Pitches, and instead of giving the number of threads to the inch, this Gauge gives the distance from center to center of teeth in millimeters. The leaves are as follows: .50, .60, .70, .75, .80, .90, 1.00, 1.10, 1.20, 1.25, 1.30, 1.40, 1.50, 1.60, 1.70, 1.75, 1.80, 1.90, 2.00, 2.50 mm. Length of Leaves; 1 inch.

Price, each.....(YECZE) \$1.30

Packed one in a pasteboard box, 100 boxes in a carton.

# Whitworth Screw Pitch Gauge



This Gauge is larger than those previously shown; it has 26 Pitches made on 55° Whitworth angles: as follows; 4, 4½, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32, 40, 48, 60. Length of Leaves, 1½ inches.

PAGE

.....(YEDAZ) \$1.60 419

# Whitworth Screw Pitch Gauge



This Gauge is the same size as those shown on the preceding page, but has 22 Pitches made on 55° Whitworth angles, as follows: 7, 8, 9, 10, 11, 12, 13, 14, 16, 18, 19, 20, 22, 24, 25, 26, 28, 30, 32, 40, 48, 60. Length of Leaves, 1 inch.

Packed one in a box, 100 boxes in a carton.

# Screw Pitch Gauge



This Gauge has 24 Pitches for V-threads, as follows: 4,  $\frac{4}{2}$ , 5,  $\frac{5}{2}$ , 6; 7, 8, 9, 10, 11,  $11\frac{1}{2}$ , 12, 13, 14, 15, 16, 18, 20, 22, 24, 26, 27, 28, 30. Length of Leaves,  $1\frac{1}{8}$  inches.

PAGE Price, each \$1.60

420 Packed one in a pasteboard box, 100 boxes in a carton.

# Screw Pitch Gauge



Packed one in a pasteboard box, 100 boxes in a carton.

## International Screw Pitch Gauge



This Gauge has 17 Pitches and one Center Gauge Leaf. The Pitches, which are for the French International System, show both the Pitch and the diameter of bolt. Pitches are as follows: 5, .75, 1, 1.25, 1.5, 1.75, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7 mm. Length of Leaves,  $1\frac{1}{2}$  inches.

Price, each.....(YONEV) \$1.30

Packed one in a pasteboard box, 50 boxes in a carton.

## Metric French System Screw Pitch Gauge



This Gauge has 22 Pitches of the Metric French System, as follows: 1, 1.5, 2, 2.5, 3, 3.5, 4, 4.5, 5, 5.5, 6, 6.5, 7, 7.5, 8, 8.5, 9, 9.5, 10, 10.5, 11, 11.5 mm. Length of Leaves, 1½ inches.

Price, each......(YONOY) \$1.90
Packed one in a pasteboard box, 50 boxes in a carton.

PAGE.

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# U. S. S. Screw Pitch Gauge



422 Price, each..... (TONTA) \$2.10

Packed one in a pasteboard box, 50 boxes in a carton.

# Precision V-Blocks or Bench Parallels



These Blocks are very useful for machinists and toolmakers, as they are almost a necessity in doing many classes of fine work. They are made of steel, case hardened and accurately ground in the angle, on the Base, and one End:

A ARRIVA	Height	Width		Per Pale
No. 100	1½ inches	1½ inches	(TAWIT)	\$5.00
No. 101	2 inches	2½ inches	(TAWYE)	8.00

Packed one pair in a pasteboard box.

### Thickness or Feeler Gauge No. 569

This Gauge is particularly adapted to the needs of the motor car owner and mechanic for use in setting valve tappets, timers, spark plug points, gauging shims, clearances, etc. It has six leaves, .002, .003, .004, .005, .010, and .015 inch thick, making possible in combination all thicknesses by thousandths from .002 to :039 (except .038).

Leaves are 21 inches long by 1 inch wide. They are held together by a screw and nut, which are readily removable for inserting or replacing leaves. There is no case, or sides, for this Gauge; the leaves not in use forming the handle.

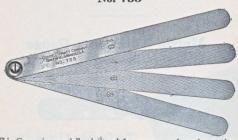
Packed ten in a pasteboard box.

Price, each . . .

PAGE

423

### Thickness or Feeler Gauge No. 735



This Gauge is especially designed for garages and service stations for measuring piston clearances in addition to the other uses for a gauge of this sort. The extra long leaves make it possible to accurately gauge piston Clearances in any part of the cylinder. There are four leaves, .004, .006, .008, and .010 thick, giving a number of thicknesses singly or in combination.

Leaves are six inches long by ½ inch wide. They are held together by a screw and nut which are readily removable for inserting or replacing new leaves. There is no case or sides to this gauge, the leaves not in use forming the handle. Each gauge furnished in a metal bound leather pocket.

Price, each . . . . . .....(ZAURJ) \$1.20

Packed one in a pasteboard box.

### Thickness or Feeler Gauge No. 359



PACE

tools, this particular size is now widely used for setting automobile valves. It has 9 Leaves of the following thicknesses: .0015, .002, .003, .004, .006, .008, .010, .012, .015 inch. These make possible in combination almost any thickness by half-thousandths from .0015 to .0615.

Length of Leaf, 24 inches. Width of Leaf, 1 inch. Length over

all, 23 inches.

..... (YIZOF) \$1.60 Price, each... Packed one in a pasteboard box, 100 boxes in a carton. 124

# Metric Thickness Gauge

No. 588



Price, each, ... (YUNZA) \$1.60

Packed one in a pasteboard box, 100 boxes in a carton.

### Thickness or Feeler Gauge No. 480



This Gauge will be found very useful for comparing or testing thicknesses. It has 24 Leaves from .002 to .025 inch thick. The thickness in thousandths of an inch is marked on each leaf. By using different leaves together a great variety of combinations is possible.

Length of Leaf,  $2\frac{1}{4}$  inches. Width of Leaf,  $\frac{1}{2}$  inch. Length over all,  $2\frac{3}{4}$  inches.

Price, each. (YOSDO) \$2.70.

Packed one in a pasteboard box, 100 boxes in a carton.

PAGE

### Metric Thickness Gauge No. 590



This Gauge has 14 Leaves of the following thicknesses: .04, .05, .06, .07, .08, .10, .15, .20, .25, .30, .40, .50, .75, 1 mm. By using various leaves in combination a great variety of different thicknesses is obtainable.

Length of Leaf, 57 mm. Width of Leaf, 13 mm. Length over all, 7 cm.

Packed one in a pasteboard box, 100 boxes in a carton.

### Thickness or Feeler Gauge

With Long Leaves No. 1359 This Gauge is provided with long

Leaves which can be used in many places to better advantage than the shorter ones. It has 9 Leaves of the following thicknesses: .002, .003, .004. .005, .006, .008, .010, .012, .015 inch, These make possible in combination a great variety of different thicknesses.

Length of Leaf, 45 inches. Width of Leaf, 1 inch. Length over PAGE all,  $5\frac{1}{8}$  inches.

426 Price, each .....

Packed one in a pasteboard box, 50 boxes in a carton.

# Metric Thickness Gauge

With Long Leaves No. 1588



Leaf, 13 mm. Length over all, 12 cm. (довју) \$2.40 Price, each.

Packed one in a pasteboard box, 50 boxes in a carton.

# Adjustable Notch Center Gauge 60°

No. 44 (Tempered)

These Center Gauges are made of tempered crucible steel, and all angles are accurately ground. The notch, being made of separate pieces, insures a perfect angle to the extreme point. By tightening thumbscrew the Sliding Blade is held firmly in any position desired. It



is the only center gauge that will fit any size inside threading tool. The Sliding Blade, together with the size of the tool, makes it very useful in many other ways. Gradnated one corner each in 32ds, 24ths, 20ths, and 14ths. ..... (YAECT) \$1.40

Price, each . . .

Packed one half dozen in a pasteboard box.

# Adjustable Notch Center Gauge 55°



No. 45

**Enolish Standard Whitworth** Graduated same as No. 44.

Price, each ...... (YAELD) \$1.40 Packed one half dozen in a pasteboard box.

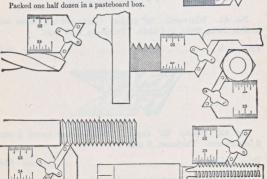
Adjustable Notch Center Gauge 60°

No. 46 (Tempered) Metric

Graduated one corner 1 mm., 3 corners mm. ... (YAENG) Price, each...



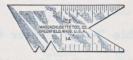
PAGE



## Improved Center Gauges

(Tempered)

These Center Gauges are made from the very best quality of spring tempered crucible steel, graduated on our perfected Dividing Engines. They are accurately ground on all faces, and are lapped in the notches to a light tight fit. They have the highest possible finish and are guaranteed accurate.



No. 40. 60° angles. Graduated one corner each in 32ds, 24ths, 20ths, and 14ths. Thickness, 1/30 inch.

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No. 41. Whitworth. 55° angles. Graduated one corner each in 32ds, 24ths, 20ths, and 14ths. Thickness, 1/30 inch.



No. 42. Metric. 60° angles. Graduated one corner ½ mm., 8 corners mm. Thickness. 8 mm.

Price, each...... \$0.60

Packed one half dozen in a pasteboard box.

### Center Gauges

(Tempered)

These Center Gauges are made from the very best quality of spring tempered crucible steel, graduated on our perfected Dividing Engines. They are accurately ground on all faces, and are Iapped in the notches to a light tight fit. They have the highest possible finish and are guaranteed accurate.



No. 438. 60° angles. Graduated one corner each in 32ds, 24ths, 20ths, and 14ths. Thickness, 1/30 inch.

Price, each ..... (YOMAS) \$0.60

PAGE



No. 439. Whitworth. 55° angles. Graduated one corner each in 32ds, 24ths, 20ths, and 14ths. Thickness, 1/30 inch.



No. 440. Metric. 60° angles. Graduated one corner ½ mm., 3-corners mm. Thickness, 8 mm.

Packed one half dozen in a pasteboard box.

# Single Point Scriber

Tempered cast steel, 41 inches long, 52-inch diameter.

PAGE

430

Price, each . . . . . . . . . . . (YAHOC) \$0.35

Packed one quarter dozen in a pasteboard box, 5½ x ½ x ½ inches. Weight, 1½ ounces,

# Double Point Scriber

MASS

This tool has points of the best quality of cast steel correctly tempered. The Points are firmly fixed in the long knurled center that forms a satisfactory handle. Points can be removed from center for replacement if desired. Length, 6½ inches.

Tool Makers' Precision Scratch Gauge



Packed one in a pasteboard box, 5\(\frac{3}{4}\) x 1\(\frac{3}{4}\) inches.

### Scratch Gauge No. 228



This tool has a beam nearly-7 inches long, graduated 6 inches of its length. The traveling Head is split so that it can be tightened in any desired position, without marring the graduations, by turning the binding ring. Beam is polished and nickel plated; other parts, white nickeled. The marker is a formed cutter, the face of which can be ground and the cutter always kept sharp.

Price, each.....(YEVAR) \$2.00

Packed one in a pasteboard box, 7% x 1% x 1% inches. Weight, 6 ounces.



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This Gauge is simple in construction, but accurate. The face of the Base and the angles formed by the two lugs in front are milled and finished. The rest of the Base is finished in black enamel. The Standard is highly polished steel and the scriber, best drill rod. It has a fine adjustment by means of the knurled nut and base screw. It can be used as a Depth Gauge and, for many cases, makes a useful Scratch Gauge. Spindle is 8 inches long. Net weight, \$\frac{3}{2}\$ nound.

Price, each (YAGYE) \$3.00

Packed one in a pasteboard box,  $10\frac{3}{4} \times 3 \times 2\frac{1}{2}$  inches. Weight, 1 pound.

### Machinists' Tools.

Beside the large assortment of tools shown on pages 362 to 440, we also make the following tools that are commonly used by machinists and toolmakers:—

Bearing Scrapers Double End Wrenches Pin Vises Saw Arbors Drill Chucks Bench Vises Brass Hammers Hand Drills Screw-Drivers Breast Drills Hand Knurling Tools Scroll Chucks Hand Vises Single End Wrenches Cape Chisels Machinists' Hammers Steel Figures Center Punches Machinists' Handy Sets Steel Letters Cold Chisels Tap Holders Cutting-Off Tools Pin Punches



### Surface Gauge No. 115

This is a very useful and efficient Surface Gauge. The Base is solid and stands square on the work. The Spindle has a fine adjustment operated by turning the knurled headed nut on top of the Base; after setting, this can be locked firmly by means of the tightening screw shown in the illustration. The Scriber is made of carefully tempered tool steel, 4 inches long.

The Base is  $2\frac{1}{2}$  inches in diameter, finished in black enamel, with polished bearing surfaces. Height, 9 inches. Net weight, 1 pound.

Price, each.....(YEADZ) \$3.50

Packed one in a pasteboard box,  $10\frac{1}{4} \times 3\frac{1}{4} \times 3$  inches. Weight,  $1\frac{1}{8}$  pounds.

# PAGE 432

# Surface Gauge

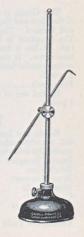
No. 116

This Surface Gauge is similar to the No. 115 shown above, except that it is larger and has a heavier base.

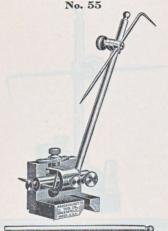
The Gauge has a fine adjustment of the Spindle and can be locked by the Tightening Screw. The Base is  $3\frac{1}{2}$  inches in diameter, finished in black enamel, with polished bearing surfaces. The Scriber is made of tempered tool steel,  $7\frac{1}{2}$  inches long. Height, 12 inches. Net weight,  $1\frac{3}{4}$  pounds.

Price, each.....(YEAJF) \$5.00

Packed one in a pasteboard box,  $13\frac{1}{2} \times 4\frac{1}{4} \times 4$  inches. Weight,  $2\frac{1}{8}$  pounds.



### Universal Surface Gauge with Micrometer Adjustment



PAGE

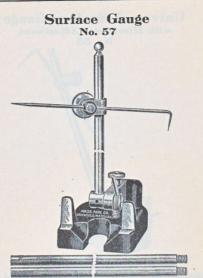
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Designed especially to meet the demands of the most critical mechanics, its range of capabilities is almost limitless. It is at once within itself a Surface Gauge, Depth Gauge, Marking Gauge, Trammel Points, Set or Height Gauge. The small base of this gauge permits accurate work at close quarters otherwise impossible and at the same time decreases the weight and space occupied.

At whatever angle the standard is set, the adjustment of the scriber is always vertical when used as a Surface Gauge, or horizontal when used as a Marking Gauge. Adjustment is by means of a slide (with compensating take-up for any wear) fed by a screw graduated to read to .001 inch. This screw is parallel with one base face and at 90 degrees with the other, making a Micrometer Surface, Depth, or Height Gauge. By removing the standard and spindle from the base, and using the two scribers with them, a most convenient set of Trammel Points is arranged. For low work remove the standard from base and use scriber in slide spindle. Has V-slot in one base for cylindrical work. Extra length standards (jointed for folding) can be furnished at small cost, so that circles of almost any diameter may be described to a nicety by means of the Micrometer Adjustment. Furnished as shown above, with two standards, 5 inches and 10 inches long, and two scribers. Net weight, 2\(\frac{1}{2}\) pounds.

Price, each......\$12.00

Packed one in a pasteboard box,  $10\frac{3}{4} \times 3 \times 2\frac{1}{2}$  inches. Weight,  $2\frac{3}{8}$  pounds.



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This large Surface Gauge with a solid Base is one of the best ever offered to mechanics for large or heavy duty, both on account of its range of work and its practical uses.

The Spindle has a movement of 180 degrees with a fine adjustment. After tightening the slide on the spindle, close adjustment is made by turning the knurled head nut on the Screw through the long lever.

The tool can also be used as a Depth Gauge. By removing the spindle and inserting the Scriber in the clamping stud it makes

a satisfactory Scratch Gauge.

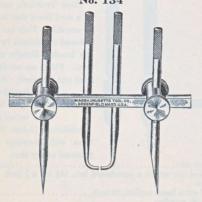
The angle milled on top of the base is of great convenience in working against a surface plate or planer bed. The Base is 4 x 5 inches, all finished in black enamel except the wearing surfaces, which are polished.

Three 12-inch jointed standards, that can be screwed together for large work, are furnished with each tool. Net weight, 6½ pounds.

Price, each......(YAHEZ) \$16.00

Packed one in a pasteboard box,  $13\frac{1}{2} \times 4\frac{3}{4} \times 4$  inches. Weight, 7 pounds.

# Precision Extension Steel Beam Trammels



PAGE 435

This tool consists of a polished steel Beam 16 inches long, flattened on one side, two movable Clamping Heads, and a pair of Dividers made of the best quality cast steel with hardened points. A fine adjustment is secured by rotating the divider points, which are made slightly eccentric.

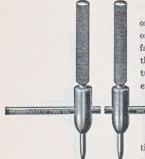
Each Clamping Head has two knurled-headed Thumb Screws. The Divider Point passes through the Heads and is held lightly by a friction spring or locked fast by turning the screw. The other screw fastens the head securely to the beam. This allows the Clamping Heads to be moved freely along the Beam without interfering with the adjustment of the Divider Points, a valuable feature that is not found on any other similar tool.

Please note that the Caliper Legs illustrated above are not regularly furnished with the tool, but may be obtained for a slight additional charge.

One Beam Section, with Divider Points(YECOC)	Price \$3.00
Packed in a pastaboard how 161 - 11 - 1 in 1 W : 1. 5	

proceeding son, 102 x 14 x 1 mcm. Weight, g pt	Junus.
Extra Beams, 16-inch.	\$0.40
Couplings, each.	.40

# Extension Beam Trammels



These Trammels move freely on a steel Beam that is flattened on one side. They are instantly fastened or released by rotating the knurled Handle part of a turn. Points are carefully hardened and tempered. Each set is

furnished with one beam 13 inches long.

Additional 13-inch Beam sections with couplings may be procured at any time.

Price of extra beam section, 13 inch. \$0.40
Price, each coupling 40

# Parallel Dividers

This tool has a Beam and Points made of the best quality drill rod. The points are carefully tempered. The Beam will extend from 0 to 3½ inches, or to describe a 7-inch circle. A Pump Center is furnished for use with holes of large diameter.



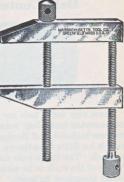
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# Precision Parallel Steel Clamps

These Clamps are made eatirely of steel, case hardened, and nicely finished, and are designed especially for accurate work.

The larger sizes have pivot bearings for eliminating all frictional strain, and screw heads of equal diameter drilled for tightening bars.



	Length	Opening	F	rice, Each	PAG
No. 91	1 inch	5 inch	(YAUSP)	\$0.90	
No. 92	1½ inches	1 inch	(YAVAM)	1.10	43
No. 93	2 inches	1½ inches	(YAVIP)	1.15	
No. 94	2½ inches	13 inches	(YAVNE)	1.35	
No. 95	3 inches	2 inches	(YAVUR)	2.20	
No. 96	4 inches	2½ inches	(YAWAN)	2.80	

Packed one pair (2 clamps like illustration) in a pasteboard box.

### Tool Wrenches



These Tool Wrenches are so constructed that they will hold any small tools, round, square, or oval, that can be put into them. They are made entirely of case-hardened steel, and have hardened cast steel Screws.

	Length	Capacities	Price, Each		
No. 66	3 <sup>3</sup> / <sub>8</sub> inches	Up to $\frac{7}{32}$ inch	(YALAC)	\$1.20	
No. 157	6 inches	Up to 5 inch	(YEFOF)	2.40	

Packed one in a pasteboard box.

## Bell Centering Punches



These very useful tools are so designed that they will quickly and accurately center both round and square stock. Each tool has four case-hardened steel Bearings against which the work rests to make it less liable to be thrown out of center by any unevenness of the stock. The Punch runs through a Guide which rests against the end of the stock to be centered, giving the Punch an accurate bearing throughout its length. The Punch is made of <sup>5</sup>/<sub>15</sub>-inch tool steel, hardened and tempered. The entire tool is polished.

PAGE 438

 No. 529.
 Centers up to 1 inch.
 (YUDAP)
 \$2.10

 No. 534.
 Centers up to 1½ inches.
 (YUDYY)
 2.50

Packed one in a pasteboard box.

### Drill and Reamer Holders



These little tools are always very convenient, particularly for holding small stock or small tools in a Lathe or Drill Press. They are made entirely of steel with case-hardened Bodies and hardened Screws.

	Length	Diameter of Handle	Extreme Capacity		Price,
No. 67	3½ inches	1 inch	$\frac{5}{32}$ inch	(YALCA)	\$0.90
No. 68	4½ inches	3 inch	$\frac{7}{32}$ inch	(YALGO)	1.10
No. 69	5½ inches	½ inch	5 inch	(YALOG)	1.80

Packed one in a pasteboard box.

### Tool Makers' Punch No. 65

This little tool is of great convenience in laying out precision work, particularly in centering for fine drilling. It has a slot and a hole milled and drilled so that the Punch can be brought to the exact center and its setting verified; at the same time the Punch is always exactly perpendicular to the surface of the work, an absolute necessity for the finest class of work.

The tool is made entirely of steel, well finished. The Punch is made from the best quality cast steel, properly tempered.

Price, each.

(YAJYG) Packed one in a box, 21 x 11 x 11 inches. Weight, 2 ounces.



# Double Centering Punch

No. 97

This tool was designed to facilitate the marking of holes directly opposite each other in round or square stock, This makes it particularly useful for laying out precision work for drilling from two sides. The use of this device insures accuracy and rapidity on a class of work that has previously

A hole is first made by the Top Punch, then the work is reversed and the Bottom Punch is placed in the hole previously made by the Top Punch, where it is held by a spring. If another hole is now made by the Top Punch, the two will come directly

The V-Block is removable when it is desired to use the Punch on flat

This device will punch round stock up to 1 inch in diameter, and square stock, 11 inches thick, 11 inches from the edge.

Price, each. . (YAWEP) \$9.00 Packed one in a pasteboard box, 41 x 3 x 11 inches. Weight, 1½ pounds.

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caused much bother and delay. opposite each other. work.



PAGE

### **Precision Center Punches** No. 140

RODY SIZES

This Set consists of nine Center Punches 1.  $\frac{5}{16}$ ,  $\frac{11}{32}$ ,  $\frac{3}{8}$ ,  $\frac{13}{32}$ ,  $\frac{7}{16}$ ,  $\frac{15}{32}$ , and  $\frac{1}{2}$  inch in diameter. put up in a handy

wooden box.

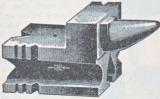
The Punches are made of a fine grade of cast steel, 4 inches long. hardened, tempered. and polished. are accurately ground to standard body sizes in order that they may be used for accurately centering the bottom of holes for drilling or for transferring from one

piece of work to another. For such classes of work they will be greatly appreciated, as there are no other similar tools designed 440 for this purpose. In addition to these special uses, they will do the work of ordinary Center Punches.

Price, per set, complete..........(YEDGY) \$5.00 Packed one set in a box, 5½ x 3½ x 3 inches.

Weight, 13 pounds.

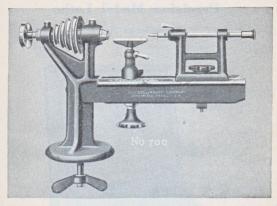
### Universal Bench Anvils



These little Anvils will be found very convenient and practical for use upon any toolmaker's bench; they have planed and squared surfaces, milled grooves and slots; in fact, the faces of the tool are sufficiently accurate to admit of its being used as a surface plate for laying out small work.

No. 110. Size,  $4\frac{3}{4} \times 2\frac{1}{4} \times 2\frac{1}{4}$  inches. Price, each...(YAYVY) \$4.00 Weight, 2 pounds.

No. 111. Size, 6 x 3 x 3 inches. Price, each . . . . . (YAZER) 6.00 Weight, 5 pounds.



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# Precision Model Lathe

Skilled mechanics, watchmakers, and experimenters who desire a Lathe of moderate price that will handle small, delicate work will find that this machine fulfills their requirements. It is thoroughly practicable in every way, and capable of all classes of work within its capacity, yet all unnecessary expense has been eliminated in its construction.

It is thoroughly well made, and in perfect alignment. The Bed is carefully scraped by hand. All iron parts except the polished bearing surfaces are finished in black enamel; steel parts are polished.

The Lathe has a 12-inch Bed, an extreme distance between centers of  $3\frac{1}{2}$  inches, and swings 5 inches. It is furnished complete with a draw-in Spindle with a  $\frac{3}{16}$ -inch hole clear through. A Hand Rest and a Tail Stock are also provided. The Pulley has four steps for  $\frac{1}{4}$ -inch round belt.

Height above bench, 8½ inches. Net weight, 9¾ pounds.

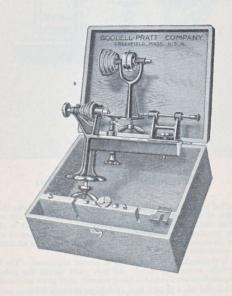
Packed one in a pasteboard box,  $13\frac{3}{4} \times 8\frac{3}{4} \times 4\frac{1}{4}$  inches.

Weight, 10½ pounds.

Attachments and accessories for use in connection with this Lathe are shown on pages 443 to 448. We can also recommend the No. 180 and No. 180½ Scroll Chucks on page 145.

## Precision Model Lathe

Assortment No. 1



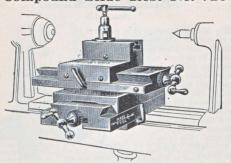
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This Set consists of 1 No. 700 Precision Model Lathe; 1 Fig. Z Countershaft; 1 Fig. G Table Rest; 1 Fig. D Saw Arbor (without saw); 1 Fig. V Step Chuck; 4 Fig. A Round Wire Chucks to hold  $\frac{1}{16}$ ,  $\frac{1}{5}$ ,  $\frac{2}{3}$ , and  $\frac{1}{4}$  inch. The Lathe and Attachments are put up in a nicely finished Hard-wood case, as shown in the illustration.

Price, per set, complete in case..... (WYBFO) \$70.00

Size,  $14\frac{1}{2} \times 11\frac{3}{4} \times 5\frac{1}{2}$  inches. Weight, 17 pounds.

# Compound Slide Rest No. 710



Our Compound Slide Rest has a double micrometer adjustment, exceptionally wide bearing surfaces, is solid and perfectly adapted for all possible requirements of one of its size. It clamps directly to the lathe bed, being held firmly. It may be to the or its size. It cleams infectly to the latter ed. being set unity. It may we set to turn at any angle, the whole circle being graduated in degrees. Its tool post takes a latthe tool  $\frac{1}{Y} \times \frac{1}{2}$  inch. It has micrometer lead screw. Gibs are provided to take up all wear of the slides. Bearing surfaces are scraped to a perfect fit. It has 21-inch movement on bottom slides and ways: 22-inch cross feed: 22-inch longitudinal feed.

6.00

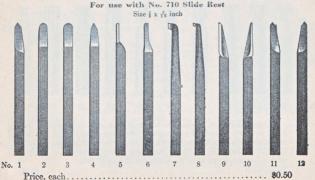
... (ZAREF)

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Price, each.....(ZAPOF) \$90.00 Packed one in a pasteboard box, 10 x 63 x 31 inches. Weight, 34 pounds.

### Lathe Tools No. 714

For use with No. 710 Slide Rest

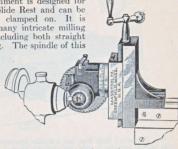


Price, per set.

# Milling Attachment

This Milling Attachment is designed for use on our No. 710 Slide Rest and can be instantly and firmly clamped on. It is possible to perform many intricate milling operations with it, including both straight and bevel gear cutting. The spindle of this Attachment will hold any of the regular Chucks made for the No. 700 Lathe. The Screw has a fine adjustment reading to .001 inch. The Spindle swivels 90° Each

attachment is furnished with one 48-



tooth Index Plate.
Interchangeable Index
Price of Attachment,

No.

Interchangeable Index Plates can be furnished to order

Price of Attachment, complete . . . . . (ZARHO) \$65.00

Packed one in a pasteboard box,  $7\frac{1}{4}$  x  $3\frac{3}{8}$  x  $3\frac{1}{4}$  inches. Weight, 2 pounds.

### Milling Cutters

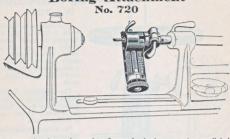
For use with No. 715 Attachment Shanks ½ inch diameter



These Milling Cutters are made of the best grade of cutter steel, properly tempered and capable of giving good service. They are made with 4-inch round shanks to fit our No. 715 Milling Attachment, but they will be found extremely useful in any shop for use with other machines in doing many small special jobs.

Price, each ...... \$3.00

# Boring Attachment



This comprehensive and complete fixture for boring or truing small holes can be instantly clamped to the Tail Stock and is then ready for work, no matter at what angle the Slide is set. The tool has a 3-inch movement off center by turning the screw It can also be set to bore the smallest hole with almost absolute trueness. The Disc on the Screw is graduated with a vernier to .000125. Gibs are provided to take up all wear on the slides

Price, complete with \(\frac{3}{16}\)-inch Boring Tool fitting Spindle (ZASEG) \$40.00

We also make 15-inch and 15-inch Chucks for holding Bering Tools. The Boring Tools are made 32 and 18 inch to fit the 16-inch Chuck; and 3 and 18 inch fitting the 1-inch Chuck.

\$2.00 Chucks. Price, each ... 2.00



### Countershafts

This Countershaft is adapted for use when driving the No. 700 Lathe by Foot Power. It is also a convenient tool for many other

The Cone Pulley has four steps from 2 to 3 inches in diameter for d-inch round belt. The Receiving Pulley is 21 inches in diameter with a ½-inch face grooved so that either ½-inch round or 1-inch flat belt may he used.

Fig. Z. Price, each.(ZANUF) \$8.00 This Wall Countershaft is designed for driving the No. 700 Lathe

by steam or electric power. It is, however, solid and well made so that it can be used for any other small machine.

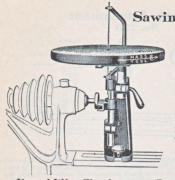
The Cone Pulley has four steps 2 to 3 inches in diameter for 2-inch round belt. The Tight and Loose Pulleys are 2 inches by 1 inch for 1-inch flat belt.

Fig. PZ. Price, each.....(ZANYG) \$10.00

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Sawing Attachment No. 725

> This useful attachment adds quite a little to the Lathe's capacity for small pattern or model work, as well as for many intricate parts. It is easily attached to the Lathe, making a well made and serviceable Saw for light wood work.

The adjustable Table is 4 inches in diameter. The Saw Frame holds 4-inch Saws and has a 5-inch Throat. Length of stroke, 1 inch.

We do not furnish Saws for this attachment.

Price, each (ZASYL) \$20.00

\$2.00

### Round Wire Chuck Figure A

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Regular Sizes

18, 32, 18, 52, 76, 32, 4 inch. .5, 1, 1.5, 2, 2.5, 3.5, 4.5, 5. 6 mm. Metric. 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60 Twist Drill Sizes Price, each ..... \$1.40

Other standard sizes \(\frac{1}{32}\)" to \(\frac{1}{4}\)", each.....

Special dimensions, prices on application. Expansion Chuck

# Figure B

1" 5" 3" 7" 1" Price, each.....

Block Holder Chuck Figure X



Price, each ... \$4.80

### Square Wire Chuck Figure 0



5 Sizes 1" 3" 1" 5" 3" 16, 32, 8, 32, 16 Price, each.....

### Right Angle Chuck Figure N



5 Sizes Price, each.....

### Three Jaw Chuck Figure C



0-5" Capacity Price, each ... \$4.00

### Shoulder Chucks



3", each..... Fis. H. \$2.20 Fig. P. Special sizes to order.

### Saw Arbor Figure D



Diameter, 1 inch. Price, each ..... \$1.50

#### Saws

Thickness, .021, .032, or .050. Hole, & inch. Diameter, 7", each ..... \$0.60

### V-Center for Tail Stock



Fig. K. Price, each .... \$1.00

### Center Face Plate



Fig. F.

### Sten Chucks



Fig. V. 11" diam., each. \$4.00 Fig. Q. 13" diam., each. \$3.00

### Cement Chucks



Fig. I. 1 diam., each. \$0.80 Fig. J. 3" diam., each... 1.20

#### Tail Stock Center 447

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# Fig. W. Price, each .... \$1.00

#### Center Holder Figure E



For live spindle, each .... \$2.00

### Screw Center Face Plate



11, price, each ... \$4.40 Fig. Y. Price, each ... \$4.00

### Clamp Face Plate



4" Price, each..... Fig. U.

### Screw Face Plate



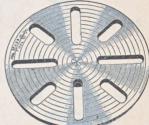
Fig. L. 2" Price, each. \$6.00 Fig. S. 4" Price, each. 10.00

### \$10.00 Slotted Face Plate



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Fig. M. Price, each .. \$3.00



4" Price, each.... \$10.00 Fig. T.

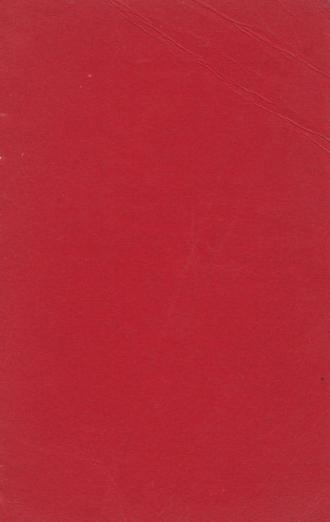
### V-Slot Clamp Plate



### Table Rest



Fig. R. 14" Price, each. \$3.50 Fig. G. Price, each....\$4.00



# GOODELZ-PRATT COMPANY GREENEGED, MASSACHUSETTS, U. S. A.

COMPLEXE 5 CATALOG