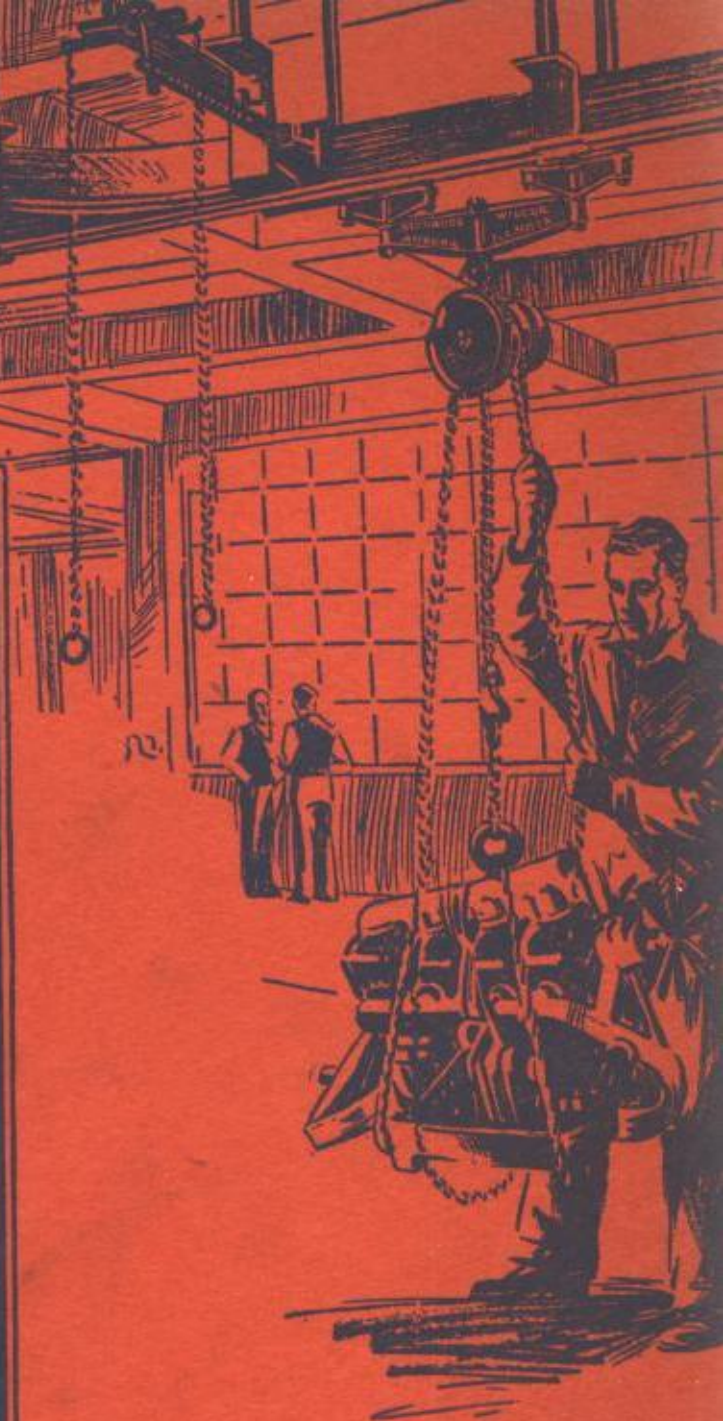


"A.L.A. File Number 35:1"



# Trolley Track Conveying Equipment

Catalog  
No. 82



ROBERT ABEL & CO., INC.  
610 Newbury Street  
BOSTON 15, MASS.



# Richards-Wilcox

## Trolley Track

# Over-Way Conveying Equipment

## CATALOG No. 82



**Largest Manufacturing Plant of its Kind in the World**

### COMPANY OFFICIALS

W. H. Fitch ..... President and General Manager  
 Lee Mighell ..... Vice-President

Milton D. Jones ..... Secretary and Treasurer  
 P. L. Hoffman ..... Superintendent

### BRANCH OFFICES

Atlanta.....1216 Mortgage Guarantee Bldg.  
 Boston.....124-126 Pearl Street  
 Chicago.....311 West Lake Street  
 Cincinnati.....511 Provident Bank Bldg.  
 Cleveland.....742 West Superior Ave.  
 Des Moines.....411 Hubbell Bldg.  
 Detroit.....2547 Woodward Ave.  
 Indianapolis.....18 W. 22nd Street  
 Kansas City.....206 Reliance Bldg.  
 Los Angeles.....909 Santa Fe Ave.

Minneapolis.....321 Plymouth Bldg.  
 New Orleans.....612 Gravier Street  
 New York.....79 Walker Street  
 Omaha.....1602 N. 11th Street  
 Philadelphia.....507 Arch Street  
 Pittsburgh.....316 Fourth Ave.  
 St. Louis.....2649 Washington Ave.  
 San Francisco.....343 Rialto Bldg.  
 Seattle.....8048 Eighteenth Ave., N. E.  
 Washington.....1427 I Street, N. W.

### Canadian Plant

Richards-Wilcox Canadian Co., Ltd.....London, Ont.  
 Branch Offices at Winnipeg and Montreal

### MAIN OFFICE AND WORKS

**Aurora, Illinois, U. S. A.**



# R-W

## Foreword

WE have manufactured Over-Way Conveying Equipment at Aurora, Illinois, for over fifty years.

Being jealous of our good reputation, the betterment of our products has always been our first consideration.

You will note various additions to our already comprehensive line of conveying equipment. We assure you that these new devices will give the same highly efficient service as the other R-W products have.

An experienced sales organization, correct engineering design, excellent materials, proper manufacturing facilities, plus a trained personnel, make it possible for us to suggest, layout and furnish just the particular equipment required for any situation, unusual or otherwise.

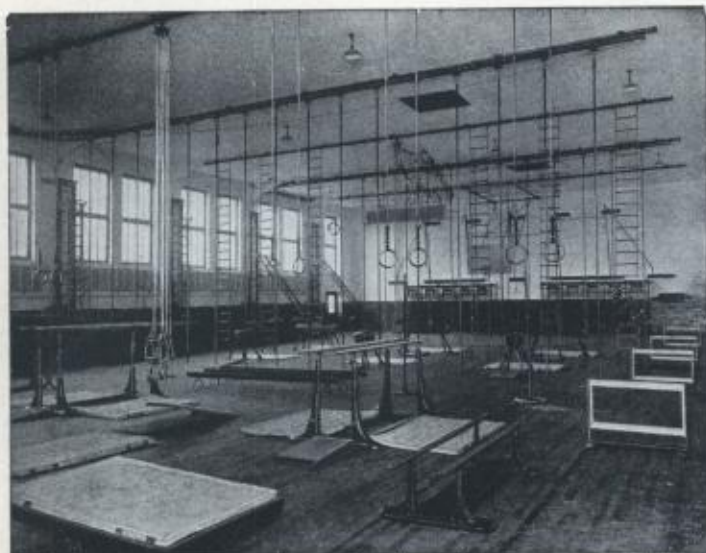
The knowledge and co-operation of our sales and engineering departments are yours to command, gratis.

We extend a cordial invitation to all of our friends to inspect our plant and equipment at any time.

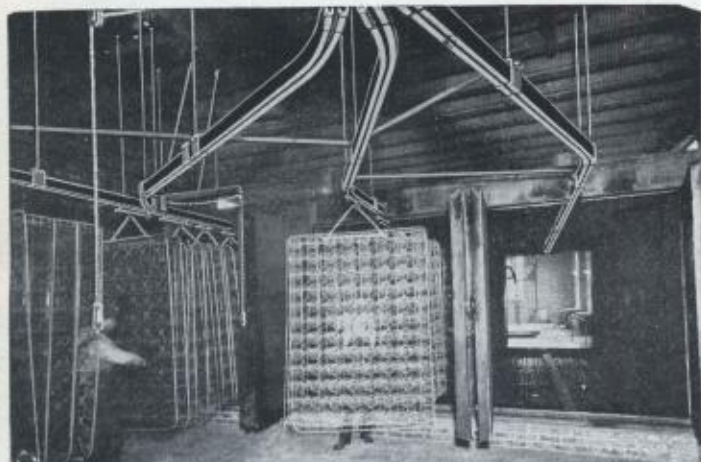


**Richards-Wilcox Manufacturing Company**  
**Aurora, Illinois, U. S. A.**

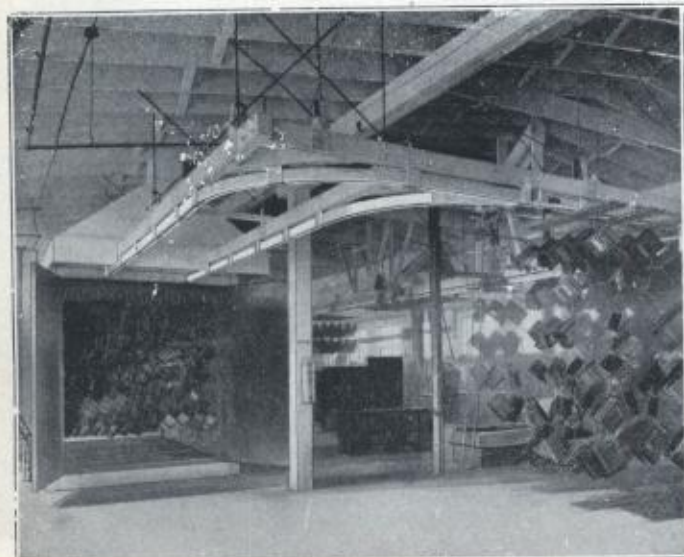




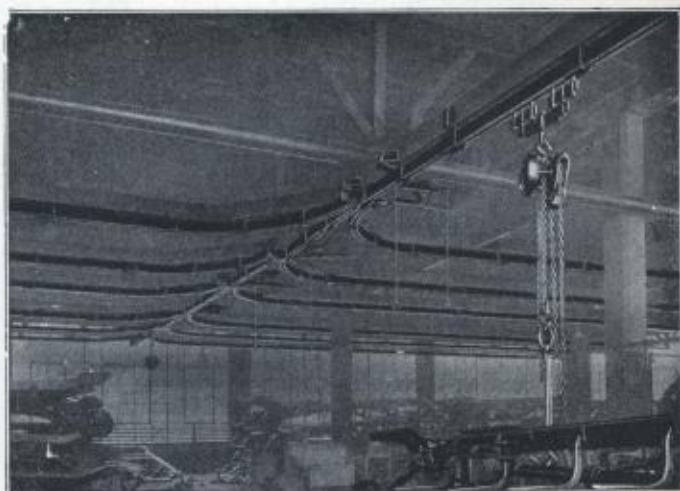
Gymnastic apparatus can be quickly changed in the American College of Physical Culture, Chicago, by means of R-W Overhead Conveying Equipment.



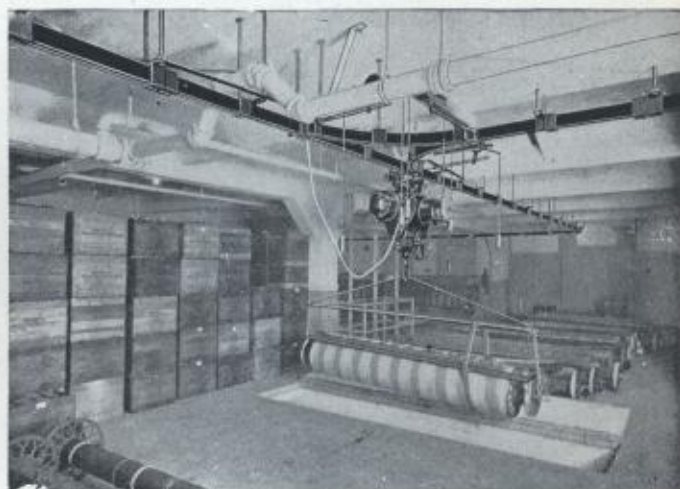
Green springs are shown here, entering the oven on the left, to be tempered. The second oven is being emptied of finished springs. The latter have been tempered, dipped and baked, and are now ready for shipment. Each of these ovens holds 36 springs at one baking.



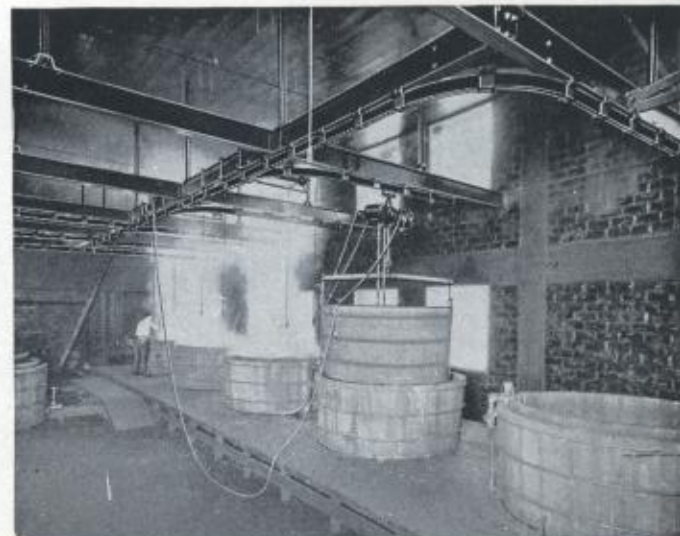
From assembling room to dip tank (at right), to bake oven (at left), to packing room, via R-W Over-Way Equipment.



Trolley-Track type Over-Way equipment used for lifting and carrying partial assemblies of autos.



Loaded warp spool being lowered through the floor of the warp room to the loom room below by means of R-W Over-Way Conveying Equipment.



Over-Way Conveying System in the dye room of the North Star Mills. Used for lifting tubs of wet wool from dye baths and transferring to centrifugal drying machines.



# Richards-Wilcox

## "For Example, One Man Could Do That Job!"



# Richards-Wilcox

## OveR-Way Conveying Systems

are proving their worth in hundreds of the world's foremost manufacturing plants. OveR-Way cuts overhead for the manufacturer, the warehouseman and the shipper. It speeds production, economizes on space.

There is no guess-work about the installation of an OveR-Way Conveying System. Every requirement of the plant where it is to be installed is thoroughly studied by our corps of engineers and the equipment planned accordingly.

If you have a conveying problem—tell us what it is—let us suggest a remedy, gratis.



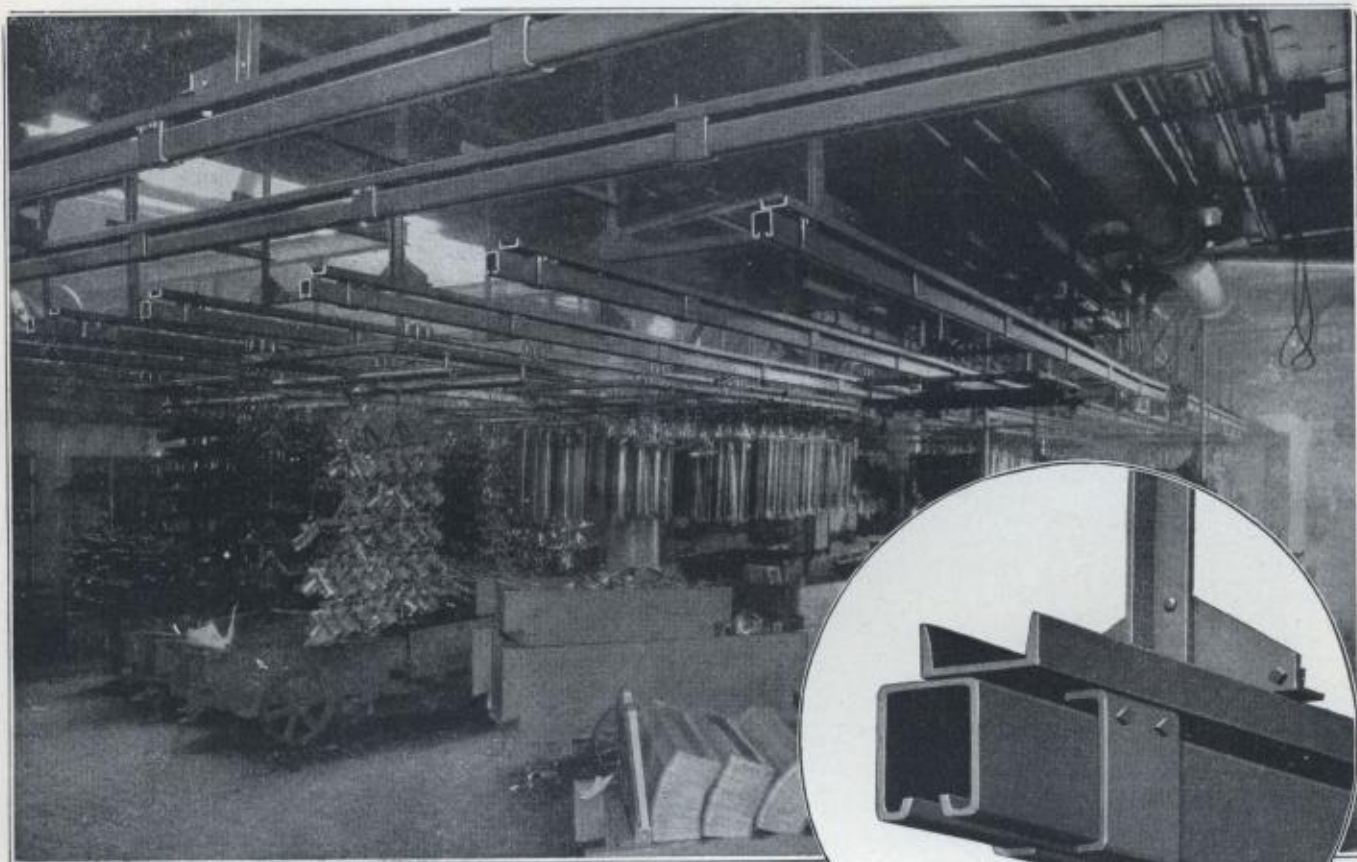
## Makes Heavy Loads Light

A man has just so much strength. Man-power used alone in the conveyance of materials and finished products about the plant is as unsatisfactory as it is costly. But give a man a Richards-Wilcox OveR-Way Conveying System, and he can do the work of six men.



"OveR-Way"





*View in Enameling Dept.*

**The perfect  
trolley track**

## Studebaker Efficiency Demands Over-Way

**So do the efficiency standards of leading manufacturers in most industries. Write for an R-W Engineer who will gladly demonstrate how Over-Way will add to the economy and efficiency of your manufacturing process.**

*Maintenance Engineer, Studebaker Corporation,  
South Bend, Ind., Says:*

"A total of 600 Richards-Wilcox Carriers running on R-W OverR-Way trolley systems have been installed at the South Bend plant of the Studebaker Company during the last five years. The biggest single installation is in our body enameling plant, which has eight lines of track running the entire length of the building—600 feet.

"The 300 R-W carriers in this system are subjected to very unfavorable operating conditions. Our open bodies are hung on the R-W carriers at one end of the building, and in traveling the 600 feet they pass through four enameling ovens, where they are subjected to a temperature of 350° F.

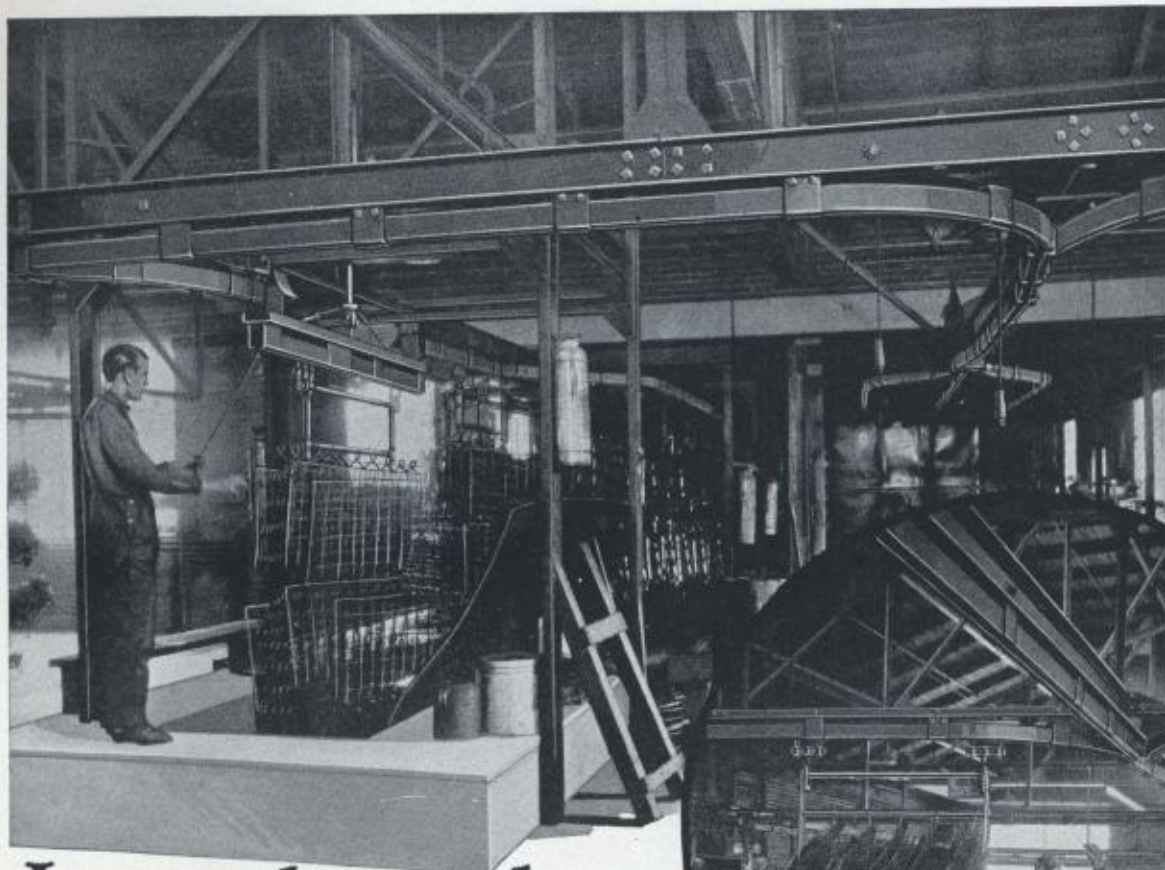
"As this heat burns off all the lubricating oil, we have

installed an automatic lubricator which oils the trolleys—four to a carrier—every time they make the circuit. In spite of this heat and being used every hour of the day, the system costs practically nothing for maintenance.

"The unique construction of the Over-Way trolley makes this system ideal where absolute cleanliness is essential, as in our enameling operations. The grooved construction of the Over-Way hanger makes it impossible for any dirt to drop from the trolley onto the work, where even a little dirt could do much damage.

"Our Richards-Wilcox equipment handles work quickly, saves labor, requires practically no maintenance, and generally improves working conditions."





**It used to take  
9 hours,  
Now done in 20 minutes**

**R-W OveR-Way System also saves  
2 men who formerly moved material**

*E. W. Greeno, President The C. L. Greeno Company,  
Cincinnati, Says:*

"The Richards-Wilcox OveR-Way System installed when our Cincinnati factory was built in 1921, has been added to so that at present we have over 1000 ft. of track, reaching every part of our factory and shipping room. As our springs and spring seat frames are made, they are hung on a hanging rack, suspended from two R-W Ball-Bearing Carriers, which they never leave until they reach the shipping room.

"Before the OveR-Way System was installed, enameling was such hard, dirty work that it was difficult to keep men on the job. In consequence, the enameling could not keep up with the manufacturing.

"Now one man sends the loaded racks through the tempering oven where they are heated to 600°, lowers track, carriers, hanging rack, and load into the dipping tank, and then puts them in the baking oven—doing in 20

minutes what it formerly took three men three hours to do. The R-W OveR-Way System also saves two men who formerly moved material.

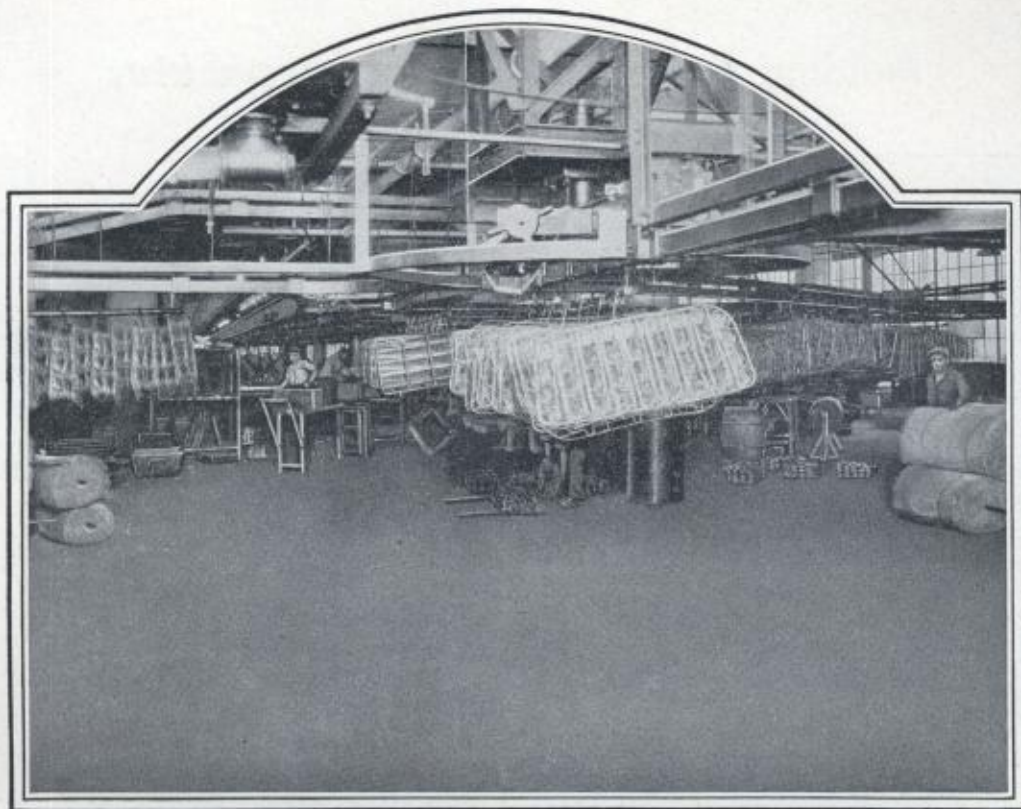
"The OveR-Way System, together with the efficient layout of the plant, has increased our capacity about 200%, with practically no extra machinery and less labor. It has made our work continuous instead of coming in batches, saved the cost of at least one additional oven, and reduced material handling to two operations.

"The OveR-Way System has given no mechanical trouble, required no replacements, and needed no maintenance except oiling carriers and switches.

"Saving four men—about \$5000 a year—as well as the investment and operating cost of another baking oven, the OveR-Way System pays for itself every two years. We feel that we could not operate without it."

**R-W Engineers are experts on industrial doorways and conveying systems. They will gladly make an analysis of your plant requirements without cost to you. Just write our nearest service branch**





## **\$50,000 to \$75,000 a year saved by Overhead Handling System**

*L. A. Young Industries, Inc., reports:*

"Since 1915, when we built the first unit of our present plant for producing automobile and truck seats and other wire products, we have used Richards-Wilcox OveR-Way systems. Approximately 2 miles of R-W track, with about 500 carriers, extend from assembly departments, through dipping tanks and ovens, to the shipping department.

"In our automobile seat department the length of material movement is about 1,000 ft. and the OveR-Way system comprises three main tracks. About 100 tons of product are moved over this one system daily, 12 or more seats to a carrier load, averaging three carrier loads per minute. One man moves 10 to 15 loaded carriers with no difficulty.

"The entire OveR-Way system requires about 25 men to move material, in addition to sections moved by power.

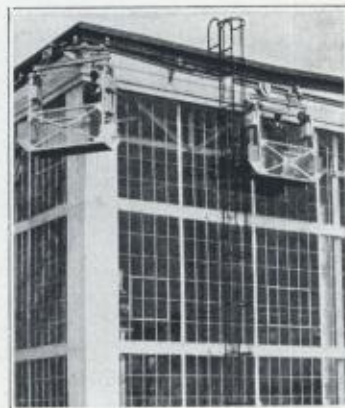
To move material by floor trucks would require at least 200 trucks and a total of 75 or 100 men, at an additional cost of \$50,000 to \$75,000 a year in labor. Trucks would also require wider aisles; and without some overhead method of handling, we should need double the floor space in our assembling and shipping departments.

"We are absolutely dependent on the OveR-Way system to maintain production, but in nearly 12 years' operation we have never been shut down an hour on account of conveyor failure. An average of 2 man-hours a day keeps our entire two miles of track oiled, tightened and repaired.

"Similar smaller OveR-Way systems are used in our Chicago, California and Canadian factories."



## Window Washing and Building Exterior Cleaning Apparatus



Washing the many windows of an office building or the annual cleaning of the building's exterior ordinarily is slow, costly and dangerous work.

With this apparatus installed the work can be done in a fraction of the time and at much less cost than is possible under the old method; the formerly ever-present element of danger is abolished when this newer method is used.

The apparatus consists of a track (either trolley track, or Steelbeam track) permanently attached to the outside of the building, as illustrated above. This track continues around to all sides of the building which contain windows to be washed.

A tandem ball-bearing carrier running in the trolley track or tandem ball-bearing trolleys running on the Steelbeam track have suspended from them steel cables.

These steel cables continue down to the window washing steel cage where they are wound up on steel drums.

The drums are operated by a manually operated chain block which raises or lowers the cage from floor to floor.

The cage is made of steel and of large enough proportions to permit two men to work swiftly and comfortably in it. Places for holding water pails, etc., are built in to suit requirements.

We do not attempt to standardize this apparatus as the conditions surrounding each installation vary so.

### *When Requesting Prices Give:*

Information concerning material of which the walls are made.

Thickness of walls.

Sketch of exterior of building.

Number of stories of building.

Distance from track to bottom of lowest windows to be serviced.

Approximate floor space desired in cab.

Whether it is desired to have one or more men work in the cab.

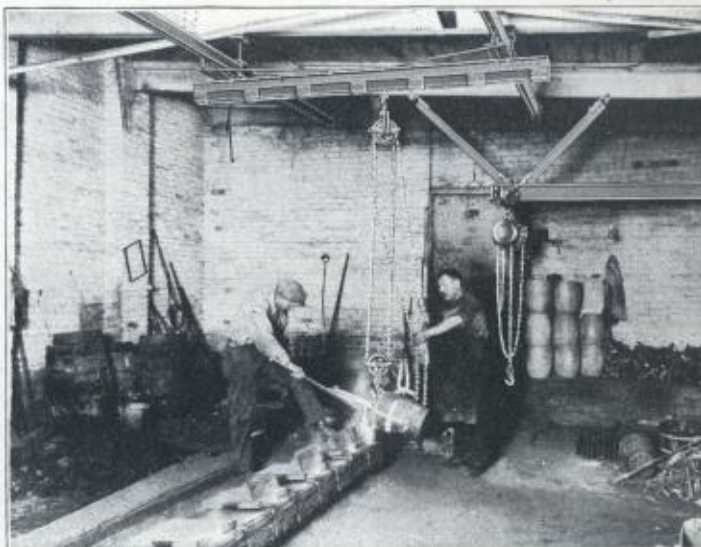
With this information we will submit sketches, specifications and prices to you and our doing so will not place you under any obligations to us.

**Prices On Application**





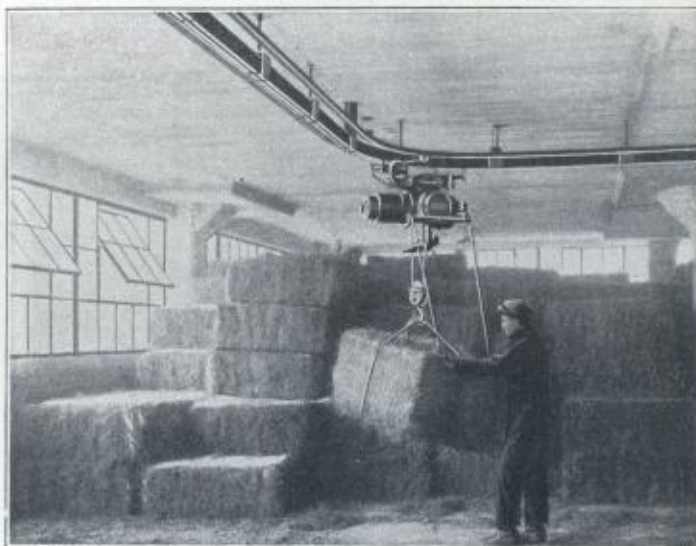
Over-Way facilitates handling heavy castings



No foundry is complete without Over-Way equipment



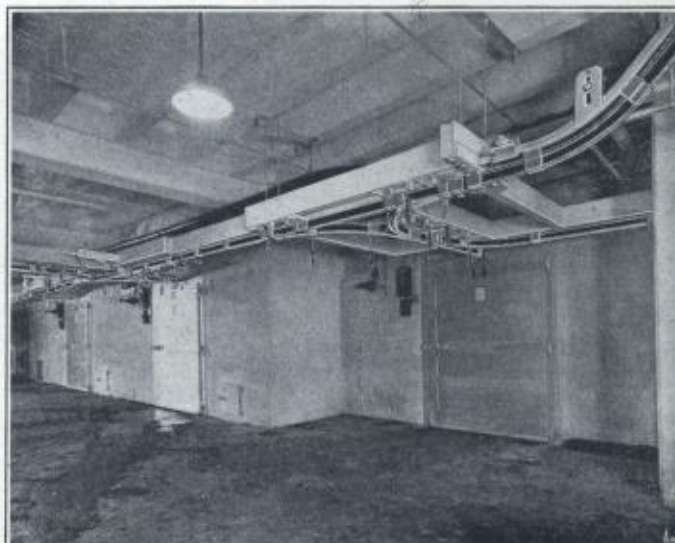
A crane and a trolley-block are almost indispensable in a storeroom



Over-Way electrical equipment soon pays for itself



There are many places where a jib crane is handy



All parts of the building conveniently reached



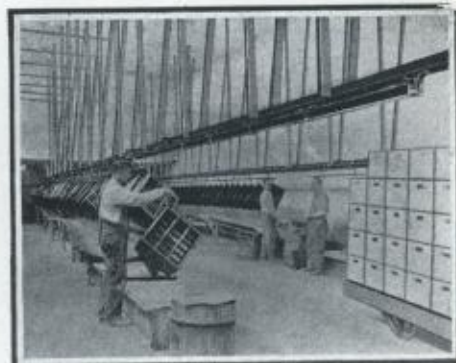
## Trolley Track Type of Over-Head Conveying Equipment



Handling crucible of molten brass



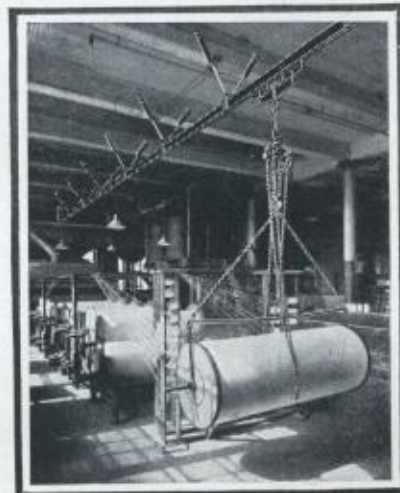
Furriers find R-W equipment indispensable



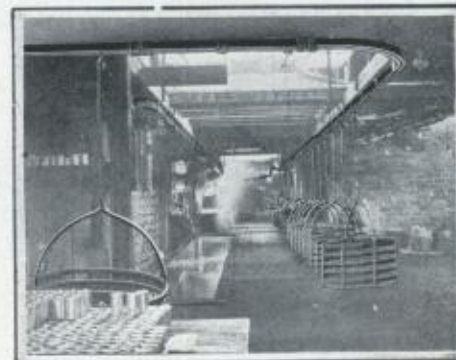
Dipping and drying room scene



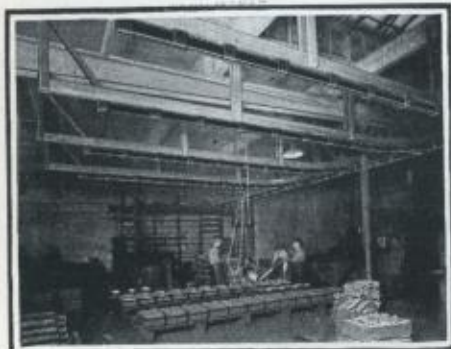
Moving small castings quickly



Handles beams in cotton mills



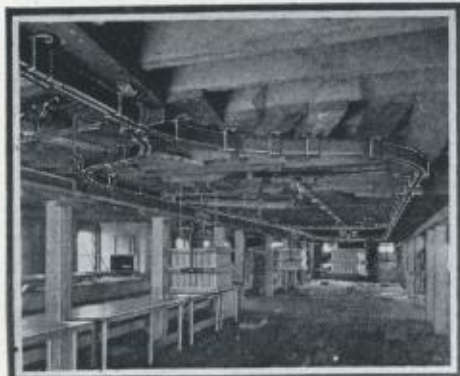
View in soup canning factory



"Pouring Off" greatly facilitated



Indispensable in machine shops



Fish cleaning room of a cannery

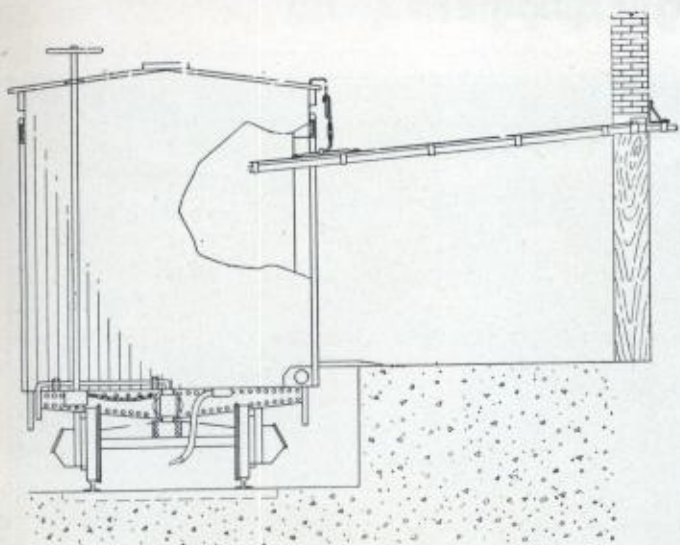


Heavy pump valves handled easily



The modern method of handling bananas





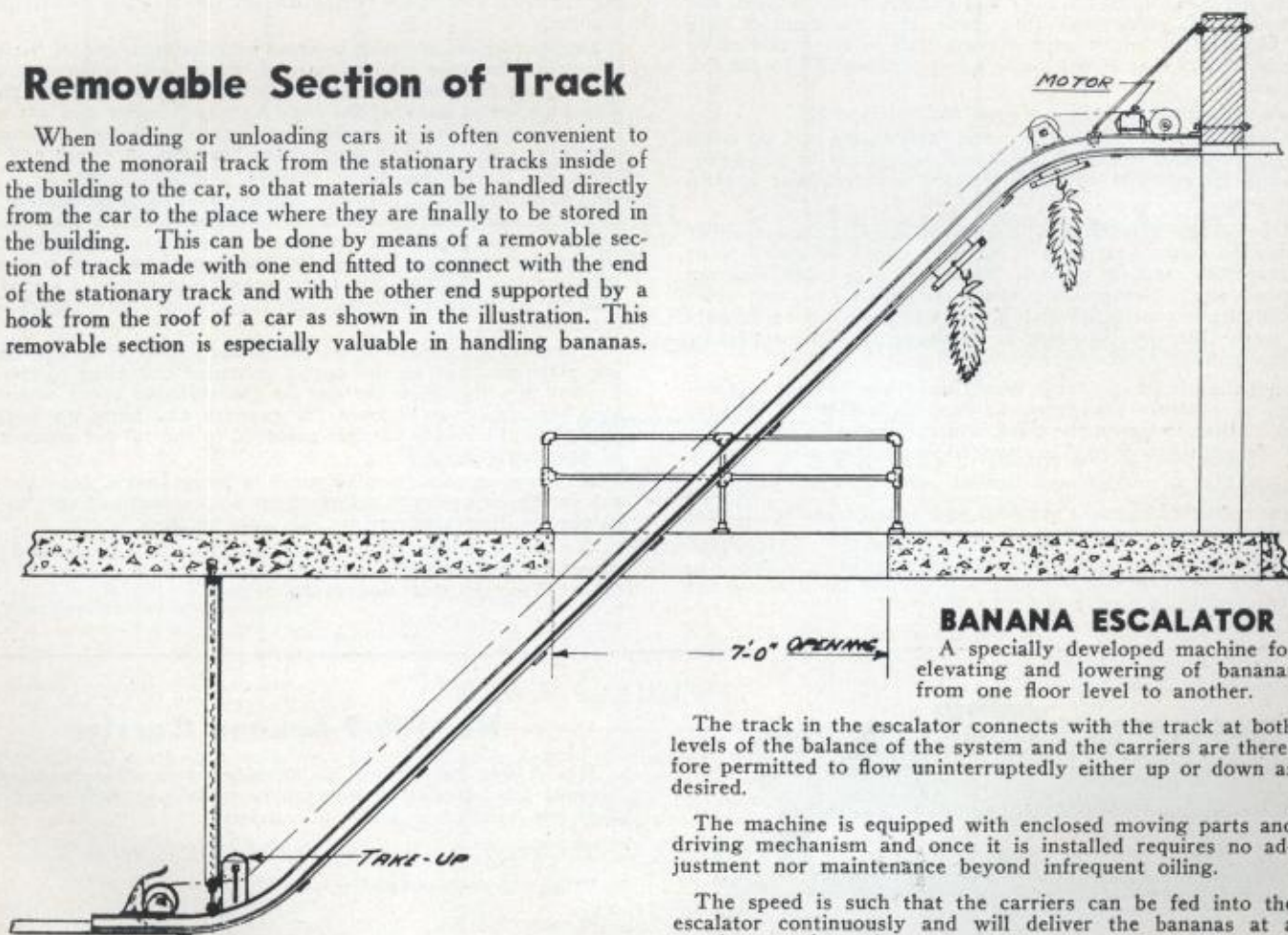
Removable Section of Track connecting interior of car with track system inside of building



Removable section of track with car hook hastens banana unloading

## Removable Section of Track

When loading or unloading cars it is often convenient to extend the monorail track from the stationary tracks inside of the building to the car, so that materials can be handled directly from the car to the place where they are finally to be stored in the building. This can be done by means of a removable section of track made with one end fitted to connect with the end of the stationary track and with the other end supported by a hook from the roof of a car as shown in the illustration. This removable section is especially valuable in handling bananas.



### BANANA ESCALATOR

A specially developed machine for elevating and lowering of bananas from one floor level to another.

The track in the escalator connects with the track at both levels of the balance of the system and the carriers are therefore permitted to flow uninterruptedly either up or down as desired.

The machine is equipped with enclosed moving parts and driving mechanism and once it is installed requires no adjustment nor maintenance beyond infrequent oiling.

The speed is such that the carriers can be fed into the escalator continuously and will deliver the bananas at a steady rate of speed.



## Banana Unloading Equipment



Fruit spoilage is the greatest bugaboo of the banana jobber. Let a few bunches slip to the floor and become badly bruised, and a real hole in his profits has been made. If a minimum of only 1 lb. of bananas per bunch were bruised (due to being carried on a man's shoulder) that would mean a loss of from 250 to 350 lbs. of fruit per car.

The above manual method is a slow and costly one.

The OveR-Way method is a fast and inexpensive one, so much so that the saving in time and the saving occasioned by not bruising the fruit has often more than paid for the OveR-Way System the first year.

The OveR-Way System may be small or large as the particular local situation dictates. It is very elastic and can be added to or subtracted from time to time if necessary. The plan showing the banana section of a produce house, on page 13, is fairly complete with the exception of the Escalator. This device is only needed when the ripening room is on the floor above or below the receiving floor as the case may be.

Through the use of an OveR-Way Conveying System it is unnecessary to touch the fruit from the time the bunches of bananas are lifted to the carriers in the track in the doorway of the car until they are removed from the carriers in the ripening room.

The procedure of unloading a banana car is as follows:

The car is spotted opposite the door to which the Banana Carrying OveR-Way System extends.

Then one end of the removable section of track is attached to the open end of the stationary track system, and the hook on the



other end of the track fastened to the top of the banana car, allowing the open end of the removable section of track to extend into the car.

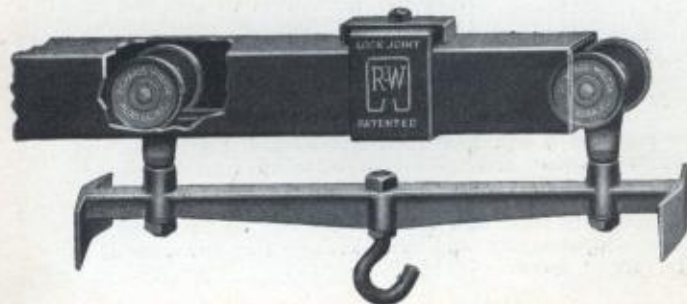
Empty carriers are then inserted into the open end of the track, a bunch of bananas attached to each carrier and, when several are loaded, one man moves them all by pushing on the last carrier. The bunches of bananas do not touch each other and are therefore not bruised due to the length and construction of the supporting bars of the carriers which have bumpers at either end.

As soon as one man leaves the car, pushing his train of carriers with their bunches of bananas, another man loads up another train of carriers and leaves with it. In like manner other men do likewise with the result that five or six men can unload and transfer to the ripening room 250 or 300 bunches of bananas in approximately thirty minutes. Thus it is possible to unload a car of fruit without seriously interfering with the general routine work of the establishment.

If the ripening room is on the same floor level as the unloading platform then as the car is unloaded the filled carriers are pushed directly from the car to the ripening room where the bunches are removed from the carriers and hung on hooks or cords and the empty carriers returned to the car for another load of bananas.

If, however, this ripening room is located on a floor above or below the unloading platform then we recommend that the Escalator as illustrated on previous page be used.

We will be glad to offer suggestions, furnish a layout and quote prices for whatever you may need in the way of equipment for an OveR-Way Banana Conveying System.



### No. 100-9 Banana Carrier

Has a long supporting bar with bumpers at each end which prevent the bunches of bananas from striking each other when they are handled in trains of carriers.

The length of each supporting bar is 16½ inches.

Wheels are roller-bearing.

Weight, 3½ lbs.

Finish, black japan.



## Over-Way System in Banana Warehouse

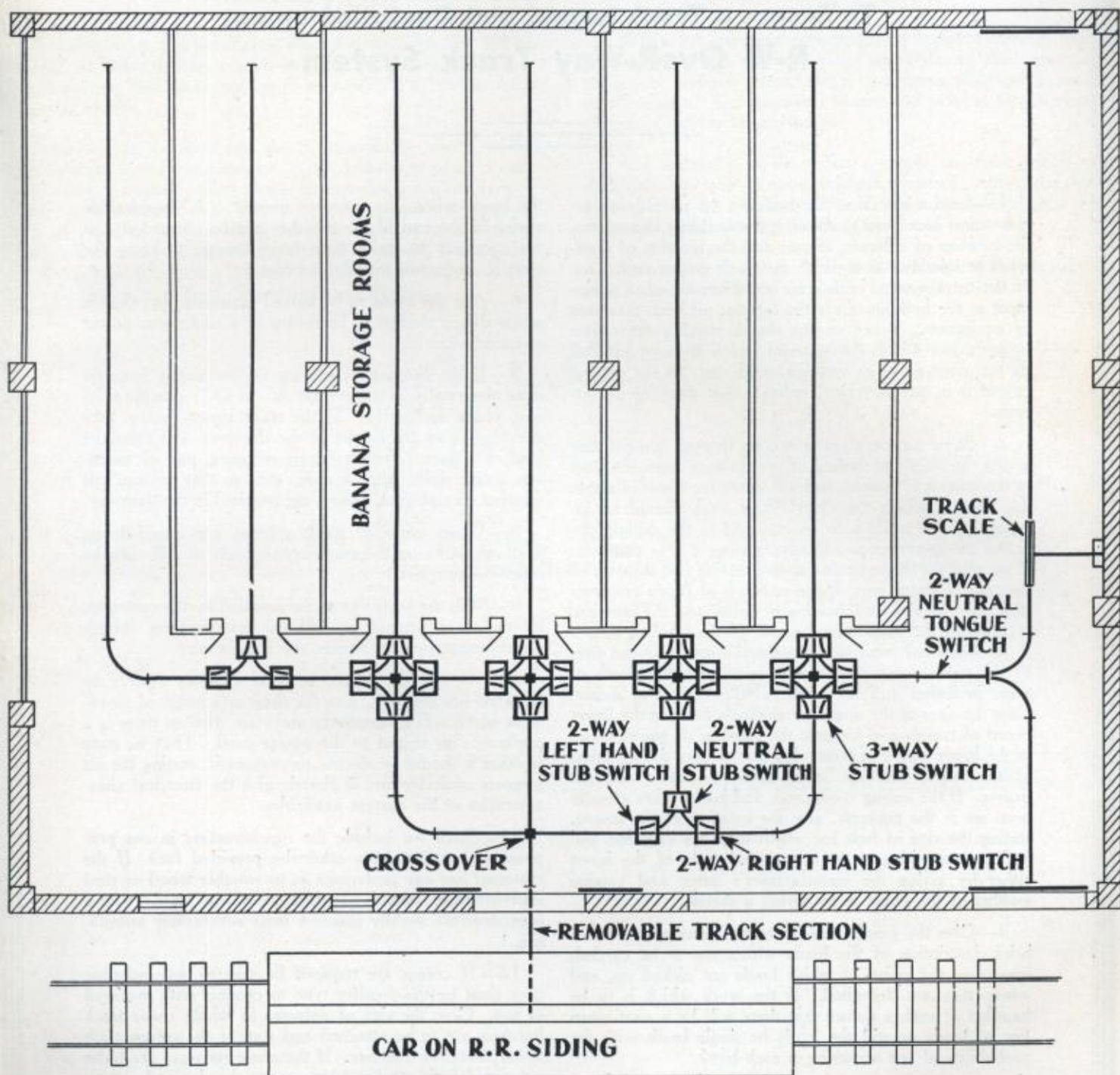


Illustration of a typical Over-Way Conveying System for the banana warehouse section of a Fruit and Produce Commission House.

A removable track section extends into the car to be unloaded. A No. 100-9 Banana Carrier is inserted into the open end of the track, a bunch of bananas attached to it and pushed along the track, out of the car into the building, thru the cross-over and 3-way stub switches into the particular banana storage room desired.

The bunch of bananas is detached from the carrier and hung on hooks suspended from the ceiling and left there to ripen. The carrier is detached, carried back to the car and the procedure repeated.

When the fruit is ripe a carrier is inserted in the open end of track in the banana room, a ripe bunch attached to it, run out of the room, through the series of 3-way stub switches, through the 2-way neutral tongue switch to the track scale where the bunch of bananas is weighed, thence to the

shipping department where it is packed in a crate, stenciled and is ready for retail delivery.

In actual practice instead of only one carrier being used many are used . . . the more carriers the quicker may a car be unloaded. One man may push several loaded carriers at one time.

If desired several runs of track may be run to the railroad siding so that more than one car may be unloaded at one time.



## To Secure a Track Layout and Quotation on an R-W Over-Way Track System

1—Send a sketch of the building (if possible an architectural blue print), showing the building dimensions, the location of columns, trusses and the location of doorways or windows thru which the track system must pass. If the track system is to serve machines or other equipment in the building show the location of such machines or equipment. Trace on the sketch roughly the course or path over which the material which is to be handled on the monorail track system should pass. If the general course is in one direction, indicate that direction by arrows.

2—Show an elevation or section through the building giving the height of ceiling or the distance from the floor to the bottom of trusses, and also show the distance above the floor at which the Over-Way track should be located. If the track is to be attached to the ceiling, describe the construction of same, stating if it is concrete; if so, give the thickness and show the size and location of concrete beams if any. If the ceiling is of frame construction give the size and spacing of joists and the size and location of the supporting beams. If the track system is to be supported from steel structural work, give the sizes of the steel beams or channels, specifying the depth of same in inches and the width of the flanges in inches. Give the sizes of the angles or channels forming the lower chord of trusses and indicate the location of gusset plates in the lower chord of truss. Be sure to give the thickness of the angles and the space between angles and the trusses. If the ceiling is concrete, and inserts have already been set in the concrete, give the location of the inserts, stating the size of bolt for which they are intended and indicate something as to the general style of the insert either by giving the manufacturer's name and catalog number of the insert or by giving a sketch.

3—Give the weight and the general dimensions and a brief description of the loads which are to be carried, specifying the points at which loads are picked up, and where they are deposited. Is the work which is to be handled of such a nature that there will be a continuous line of loads or will the loads be single loads with the probability of one occurring in each bay?

4—Have you any preference as to the use of Steel-beam track or trolley track?

5—Is the hoisting to be done electrically or manually? If electrically, is it essential to be able to raise or lower

the loads where the switches occur? (A considerable saving in the cost of the switches can be effected if it is not necessary to make them large enough to carry the electric conductors thru the switches.)

6—Are the loads to be moved manually, by electric motor driven trolleys or by means of a continuous power operated chain?

7—If the hoisting or moving of the trolley is to be done electrically, is the current AC or DC; give the voltage, phase and cycle? If the track system passes thru doorways give the height of the doorway and state the kind of a door. That is: single swinging, pair of swinging, single slide, pair of slide, etc., so that we can tell whether special track devices are required in the doorway.

8—When parts of track systems are out-of-doors, shall we figure on the necessary supports or will they be otherwise provided?

9—Will the track system be installed by the customer, by the manufacturer, or will the manufacturer furnish the superintendent to oversee the installation?

10—If special devices such as dipping devices or elevators are required, give the drop or amount of movement which will be necessary and state whether there is a preference in regard to the power used. That is, state whether it should be electric or pneumatic, stating the air pressure available and if electric give the electrical characteristics of the current available.

11—Shall we include the superstructure in our proposal or has that been otherwise provided for? If the customer has any preference as to whether wood or steel superstructure should be used please so state. (Steel superstructure usually makes a more satisfactory installation.)

12—If cranes are required be sure to state whether they must be the transfer type to connect with monorail or not. Give the size of columns to which crane track brackets are to be attached and state if the columns are wood, metal or concrete. If the crane runways are to be supported from overhead beams give the size and materials of same.

Unless the track system is a very small or simple one it is best to submit all of the information to us so that we can make a layout to accompany our proposal.



## Elementary Installation Plan and Bill of Material

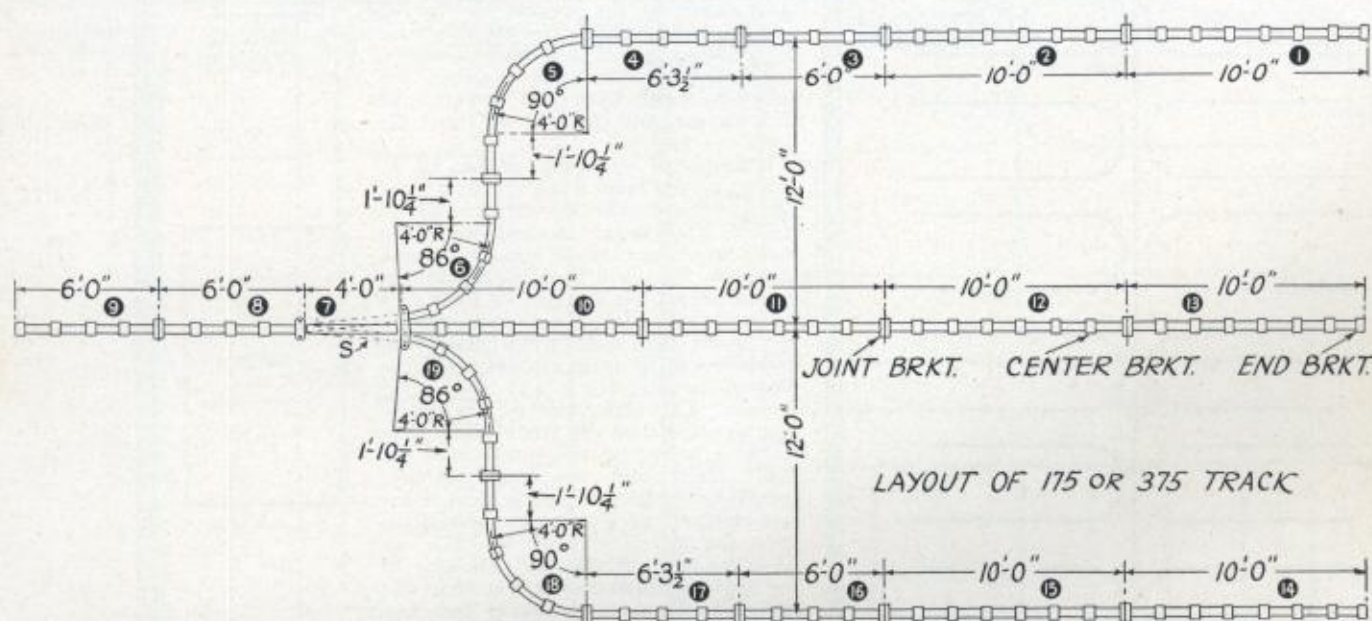
From studying the installation plan and its respective bill of material, as shown below, a good idea will be had of the various factors entering into the laying out of an Over-Way trolley track conveying system.

Inasmuch as the overhead construction in the rooms where an installation is to be made often varies, sometimes being a concrete, wood or beamed ceiling; other times being a roof of various pitches, or a combination of all; or the above plus one or more styles of wood or steel superstructure, no information concerning drop brackets or superstructure supports are given with this installation plan. Such information will be found further on in this catalog under the title of: Brackets; Superstructure Framing.

When the overhead structure and superstructure is known, the adding of the correct number and styles of drop brackets to the bill of material figured out in connection with any layout is a simple matter. The combined weight and price of all the material may then quickly be arrived at.

The following layout is but a simple one from which more elaborate ones may be easily laid out by simply adding the greater number of: runs of straight track, curves, brackets, cross-overs, turntables, tongue or stub switches required.

Such carriers, hoists, grab-hooks, lowering devices, cranes, etc., as may be required should be listed separately.



### Bill of Material

- |  |
|--|
| 4 pieces No. 175 Track, 10' 0" long (marked 2, 11, 12, 15)   |
| 2 pieces No. 175 Track, 6' 0" long (marked 3, 16)  |
| 2 pieces No. 175 Track, 6' 3 1/2" long (marked 4, 7)   |
| 3 pieces No. 175 Track, 10' 0" long, one end drilled for end bracket (marked 1, 13, 14)  |
| 1 piece No. 175 Track, 6' 0" long, one end drilled for end bracket (marked 9)  |
| 1 piece No. 175 Track, 10' 0" long, one end slotted for head end of switch (marked 10)   |
| 1 piece No. 175 Track, 6' 0" long, one end slotted for pivot end of switch (marked 8)  |
| 2 pieces No. 175 Track, curved 86°, 4' 0" radius with 1' 10 1/4" straight section one end, one end slotted for head end of switch (marked 6, 19) |
| 2 pieces No. 175 Track, curved 90°, 4' 0" radius with 1' 10 1/4" straight section one end (marked 5, 18)   |
| 1 No. 933x175 4' 0" 3-way tongue switch (marked 7)   |
| 82 No. 5x175 center brackets   |
| 14 No. 48x175 joint brackets   |
| 4 No. 43x175 end brackets  |
| 1 No. 100-36 16-wheel swivel ball bearing carrier  |

NOTE—Capacity of above system is 2000 lbs. when brackets are spaced on approximately 18" centers and when 16-Wheel Carriers are used. Maximum length of No. 175 Track is 10' 0". For table of correct spacing of Brackets see page 21.



## Typical Over-Way Installations

for:

### A Brass Foundry

The illustration to the left is almost self-explanatory.

Main line track is furnished with a trolley track carrier, hoist and ladle.

Each pouring-track (on the pouring floor) is furnished with a trolley track carrier and a hoist.

The procedure is as follows: The ladle is filled with molten brass at one of the furnaces. It is then run thru the switch and out upon the main line track to the first pouring-track. The ladle is quickly transferred by the hoist to the first pouring-track. The various flasks adjacent to the first pouring-track are then poured. When the ladle is empty, the process is reversed and the ladle returned for another load of metal to one of the brass furnaces.

To shorten the time required for pouring, more than one ladle, hoist and carrier unit (for use on the main line) can be used.

If desired, 3-way switches may be installed on the main track line and serve the pouring-tracks on either side of them. This latter method would do away with the carriers and hoists now required for each pouring-track. It would permit the ladle to be filled at a furnace, run thru the 2-way switch, out upon the main track line, thru a 3-way switch to any point upon the desired pouring-track and the flasks poured. This latter method is a quicker procedure than the one illustrated as no time is lost at the junction of the main track and the pouring-tracks transferring the ladle each time it enters or leaves each pouring-track. However, the transferring of the ladle can be done very quickly and the cost of the system illustrated is less than the one requiring so many 3-way switches.

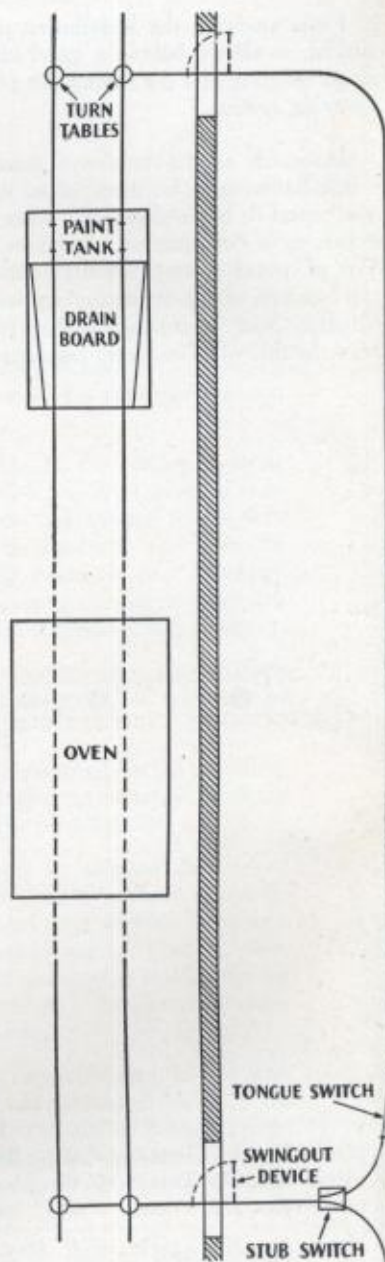
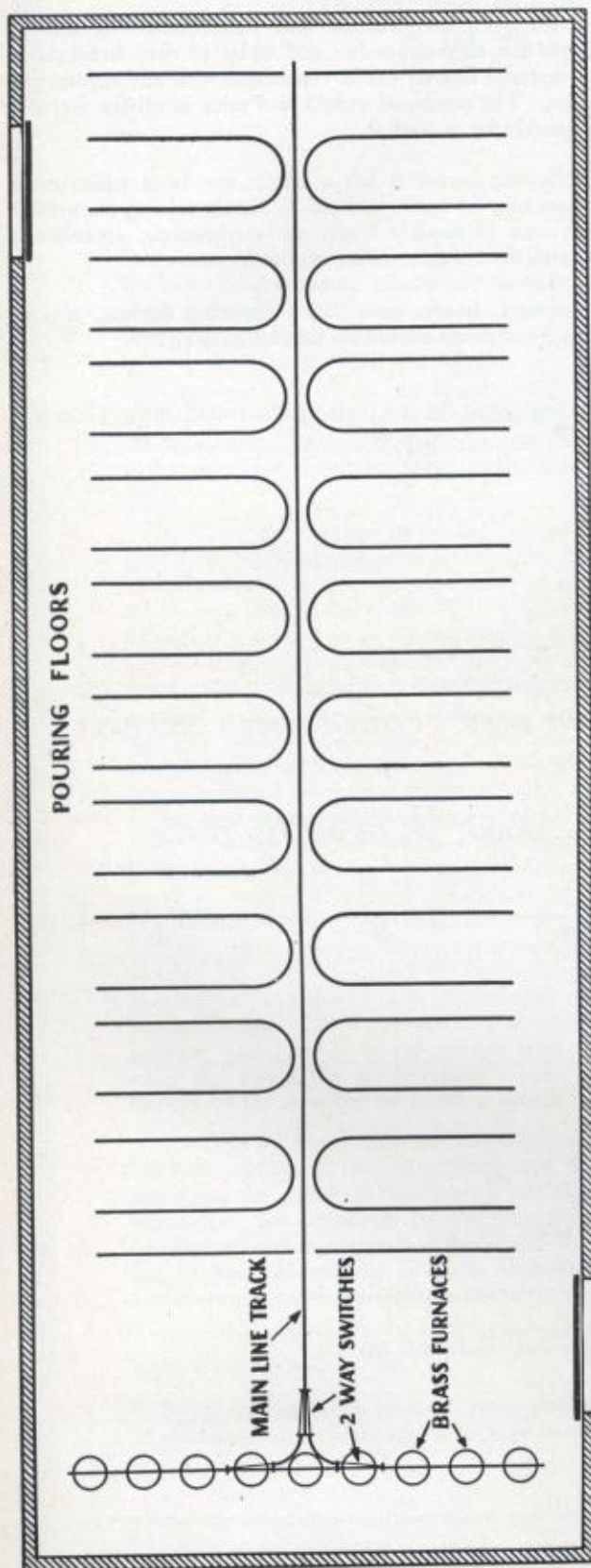
We are prepared to furnish full information, equipment and prices for either system upon short notice.

### A Painting System

The illustration at the right shows a plan of a simple Over-Way painting system.

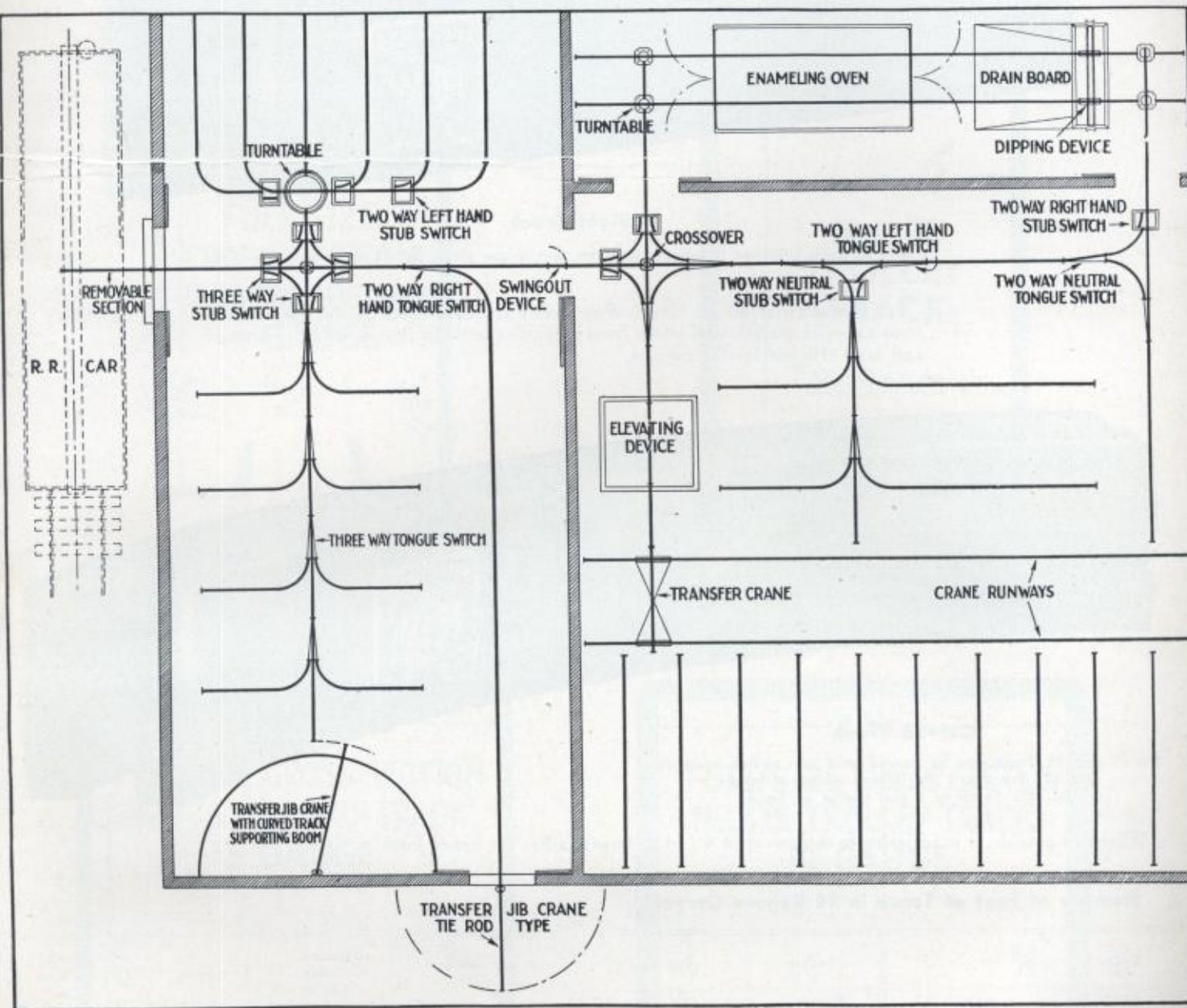
The material to be painted comes in on the main track (at the right hand bottom of the page), continues straight on and is stored on the long run of track till needed. It then passes thru the doorway, over the swing-out device (at the top of the page), thru the turntables, to the dipping-device (or lowerator) which lowers and completely submerges the load in the liquid of the paint tank. It is then raised, proceeds over the drain board to and into the oven where it is baked, thence to the assembling, packing or shipping department, as the case may be. The empty carriers and racks are then switched to the main track and ready for another trip.

Very much more elaborate systems than the above can be furnished by us. Systems can be of either the trolley track type or the Steelbeam or I-beam type.





## Application of Various Devices In Connection with an Over-Way Conveying System



A careful inspection of the above schematic plan will show you how various overhead conveying system devices are placed in connection with each other. Innumerable combinations of the above are of course possible.

We know of no business, no matter how large or small, where material or merchandise must be moved long or short distances, but that an installation of R-W Over-Way Conveying Equipment (either Trolley Track Type or Steelbeam Type) could and should be used to material advantage.

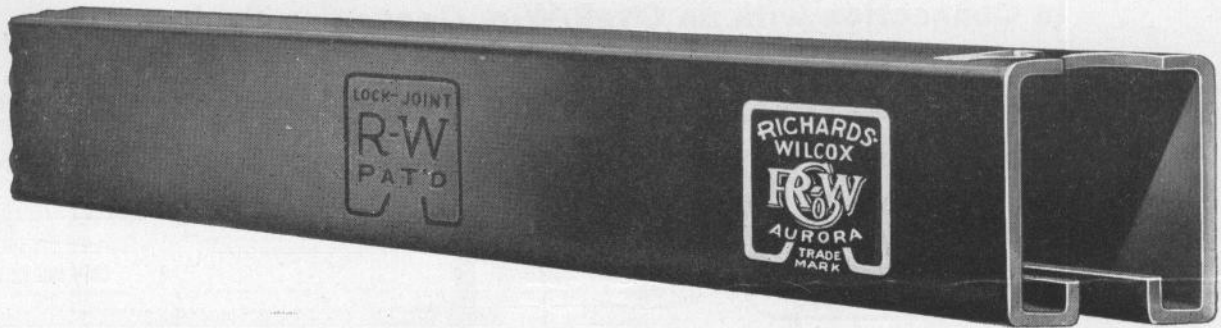
In furnishing thousands of overhead conveying systems, from

those requiring only one carrier or trolley and a few feet of track to very large and intricate systems requiring many switches, crossovers, turn-tables, lowering devices, cranes, hoists, hundreds of carriers or trolleys and miles of track, we have found that these systems have paid for themselves in less than a year; from then on the saving is clear profit.

R-W Over-Way Equipment reduces the number of men formerly required, takes conveying from the floor to the ceiling (leaving the aisles free) and makes possible the utilization of ceilings for storage space.



## Trolley Track for Conveying Equipment



### Straight Track

Straight track furnished in lengths up to ten feet in one piece. No. 75 made in 12' lengths.

The material for all Over-Way trolley tracks is made to our specifications from a special analysis steel which from exhaustive tests has proven to be the strongest and most efficient for the purpose.



### Curved Track

No. 75 and 32 Track can be curved to 2 foot radius or larger.  
No. 175 Track to 2 foot 6 inch radius or larger.  
No. 375 Track to 3 foot radius or larger.

Whenever possible, it is advisable to use curves of 4 feet or larger radius for heavy loads.

### Number of Feet of Track in 90 Degree Curve

Radius	Feet	Radius	Feet
2' 0"	3.14	8' 0"	12.56
2' 6"	3.92	8' 6"	13.35
3' 0"	4.71	9' 0"	14.13
3' 6"	5.49	10' 0"	15.70
4' 0"	6.28	11' 0"	17.26
4' 6"	7.07	12' 0"	18.84
5' 0"	7.85	13' 0"	20.62
5' 6"	8.63	14' 0"	21.98
6' 0"	9.42	15' 0"	23.56
6' 6"	10.31	16' 0"	25.12
7' 0"	10.99	17' 0"	26.70
7' 6"	11.78	18' 0"	28.26

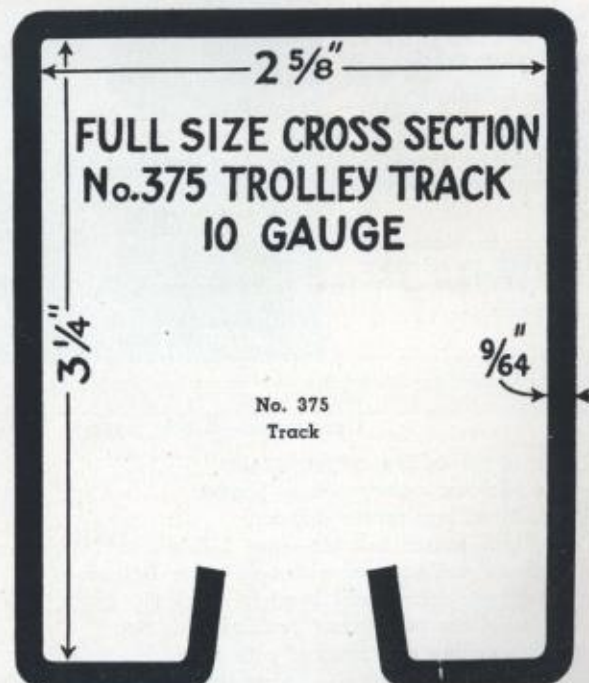
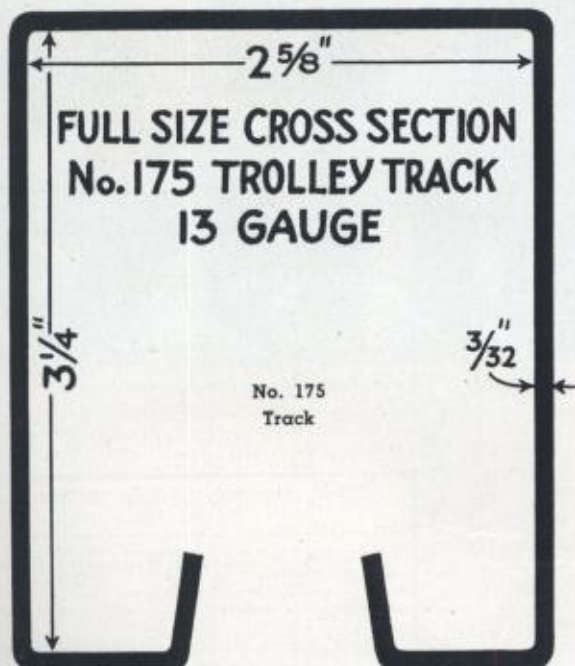
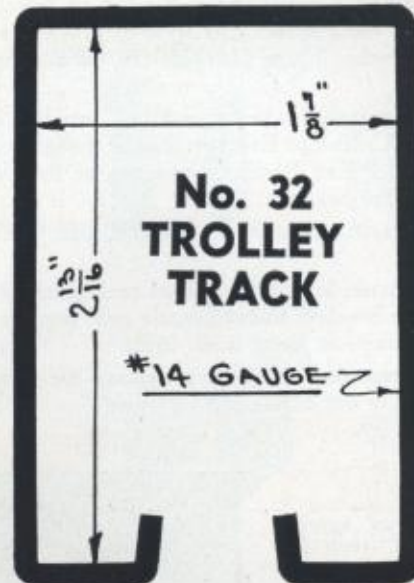
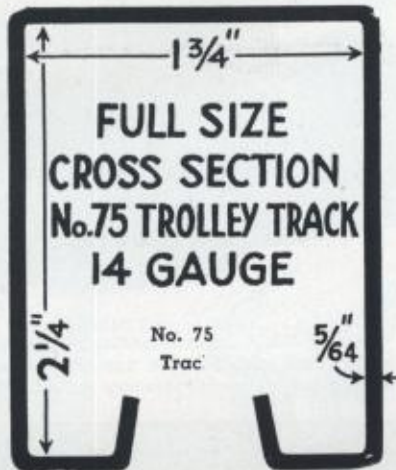
Track No.	Capacity of Track Lbs.	Gauge	Weight Per Foot Lbs.
75	500	14	2
32	600	14	2½
175	2000	13	4
375	3000	10	5¾



## Trolley Track

(Continued)

Made in Three Sizes and Three Gauges, Either Straight or Curved





## Trolley Track Brackets

There are four general types of brackets used to support Over-Head Trolley Track: Plain Ceiling Brackets; Parallel Ear Brackets; Cross-Ear Brackets; and Steelbeam Brackets.

Plain Ceiling Brackets should always be used when attaching to wood superstructure, the top of which is accessible for tightening the bolt. These brackets, which are of the No. 18, 45 and 50 styles, require but one bolt.

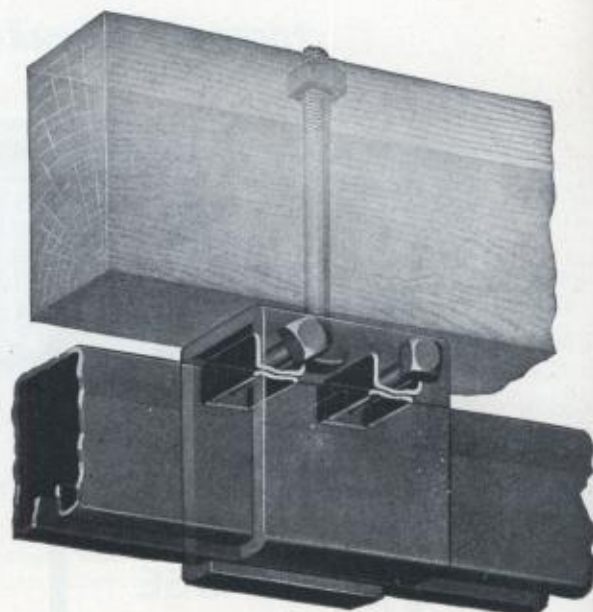
If track is attached to a wood beam, the top of which is not accessible for tightening the bolt, use the Parallel Ear style of brackets such as the No. 7, 44 and 49 for straight tracks. These brackets can be attached to a comparatively narrow beam.

If the beam is wide enough it is best to use the Cross-Ear Brackets of the No. 5, 43 and 48 styles. The Cross-Ear Brackets should always be used to support curves rather than the Parallel Ear Brackets, because of the difficulty of sliding the curved track through the brackets.

If the superstructure is composed of I-beams, use brackets of the styles 41, 42 and 47.

Joint Brackets are made to grip the end of each piece of track firmly and bind it to the bottom of the brackets so both tracks will line up perfectly at the joint. Always use Joint Brackets at every track joint.

End Brackets are provided with a bolt through the track and bracket to stop the carriers from running out of the end of track.



Patented  
Trolley Track Bracket, showing application of wedges which hold ends of track tightly against floor of bracket, making a smooth runway for wheels of carrier.

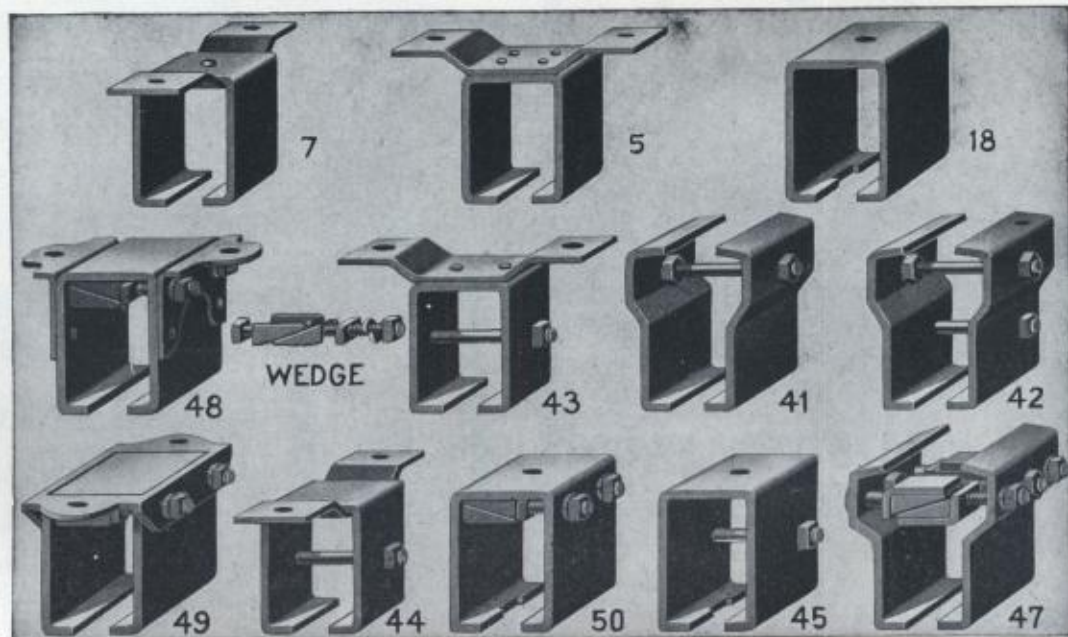
**Important** — Always specify catalog number of track for which brackets are desired and finish.

**Example** — If a No. 5 bracket for No. 75 track is wanted, show as follows: 5x75; for No. 175 track, show 5x175 bracket, etc.

Joint brackets with wedge should be used on every track joint to insure proper results.

When ordering I-Beam Brackets, always specify size and weight per foot of I-Beam. Unless otherwise specified, brackets for Standard Light Sections will be sent.

Special brackets to meet any conditions furnished on request.



Bracket  
No.

Description—Black Enamel Finish

- 5 Cross ear ceiling center bracket
- 7 Parallel ear ceiling center bracket
- 18 Plain ceiling center bracket
- 41 I-Beam center bracket—give I-Beam size
- 42 I-Beam end bracket with bolt—give I-Beam size
- 43 Cross ear ceiling end bracket with bolt
- 44 Parallel ear ceiling end bracket with bolt
- 45 Plain ceiling end bracket with bolt
- 47 I-Beam joint bracket with wedge—give I-Beam size
- 48 Cross ear ceiling joint bracket with wedge
- 49 Parallel ear ceiling joint bracket with wedge
- 50 Plain ceiling joint bracket with wedge

Table showing spacing of brackets  
for 32 track

Load on Carrier	4 wheel	8 wheel	16 wheel
150 lbs.	36"	42"	48"
300 lbs.		30"	36"
600 lbs.			24"



## Bracket Dimensions For Trolley Track

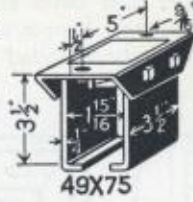
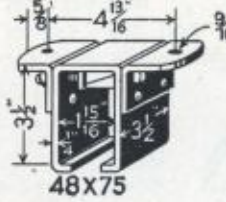
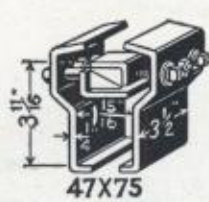
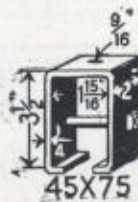
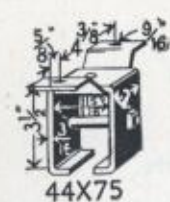
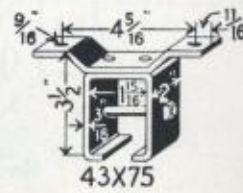
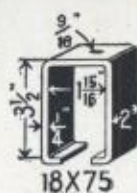
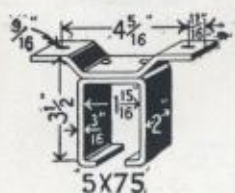
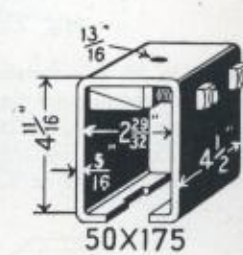
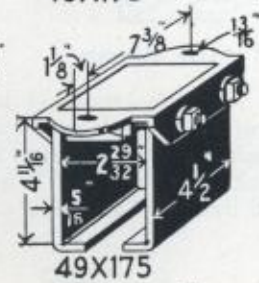
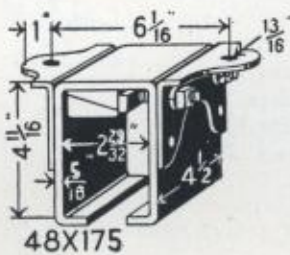
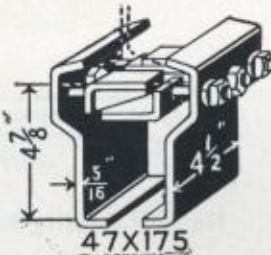
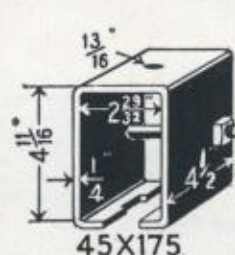
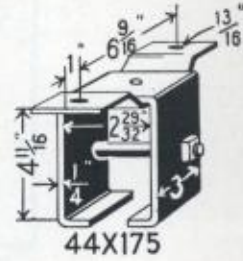
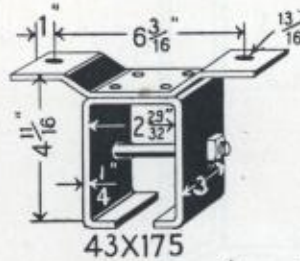
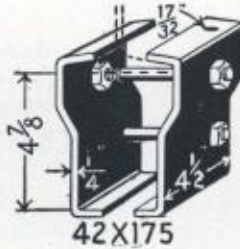
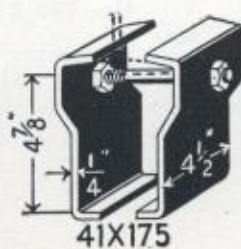
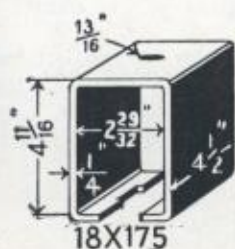
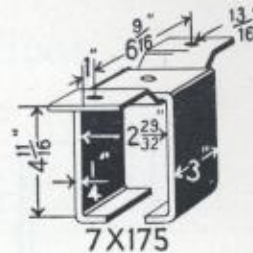
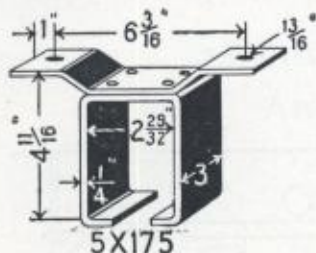


Table Showing Spacing of Brackets According to Load and Size of Carrier Used

Size of Carrier	Track No.	Load on Carrier									
		125 Lbs.	250 Lbs.	500 Lbs.	750 Lbs.	1000 Lbs.	1250 Lbs.	1500 Lbs.	2000 Lbs.	2500 Lbs.	3000 Lbs.
4 Wheel	75	36"	30"	24"	12"	12"	12"	12"	12"	12"	12"
8 Wheel	75	42"	36"	30"	24"	24"	24"	24"	24"	24"	24"
16 Wheel	75	48"	36"	24"	12"	12"	12"	12"	12"	12"	12"
4 Wheel	175	42"	36"	18"	12"	12"	12"	12"	12"	12"	12"
	375	60"	54"	30"	18"	18"	18"	18"	18"	18"	18"
8 Wheel	175	45"	27"	21"	17"	15"	12"	12"	12"	12"	12"
	375	60"	48"	32"	24"	21"	18"	18"	18"	18"	18"
16 Wheel	175	40"	34"	30"	27"	21"	18"	15"	12"	12"	12"
	375	54"	48"	42"	36"	30"	24"	21"	18"	15"	12"

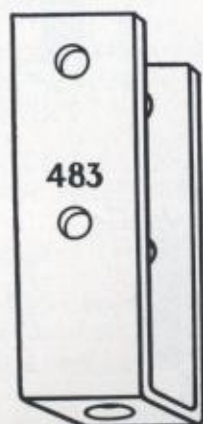
Note—Wedge joint brackets must be used at every joint. Bracket spacings in above table apply to "Over-Way" Systems under heavy or continuous service.

Dimensions of Brackets for use with No. 375 Track are the same as are the dimensions for Brackets for use with No. 175 Track except that the inside width of the former is 3 inches, while that of the latter is 2 29/32 inches as shown above.



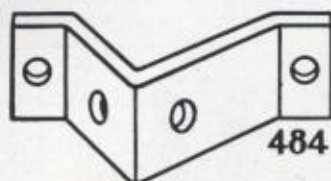
## Standard Bracket Fittings

(Carried in Stock)



**No. 483 Joist Clamp**

Made to fit 2" dressed joists, any width of joist from 6" upwards. Height of joist clamp is 8". Made in two sizes: Bottom hole in clamp for No. 75 track is  $\frac{9}{16}$ " in diameter; for No. 175 and No. 375 track  $\frac{11}{16}$ ". Bolt holes for No. 75 track are  $\frac{7}{8}$ " diameter; and for 175 or 375 track  $\frac{9}{8}$ " diameter.



**No. 484 V Clip**

Made in one size only. End holes are  $\frac{7}{8}$ " diameter and center holes are  $\frac{9}{16}$ " diameter. Supporting bolt hole centers measure  $4\frac{1}{2}$ " on centers. May be mounted horizontally as in the illustration or vertically.



**No. 485 U Clip**

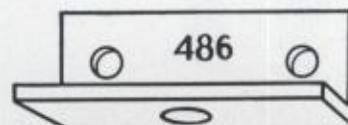
Made in two sizes. End bolt holes for No. 75 track are  $\frac{7}{8}$ " diameter,  $3\frac{3}{4}$ " centers; for No. 175 or 375 track, end holes are  $\frac{9}{16}$ " in diameter,  $4\frac{1}{2}$ " on centers. Center hole in clip for No. 75 track is  $\frac{9}{16}$ " in diameter; for No. 175 and No. 375 track  $\frac{11}{16}$ " in diameter.

The Standard Bracket Fittings illustrated above are designed for supporting trolley tracks from different kinds of overhead supports.

Rods of any length required may be used.

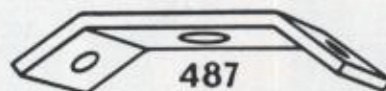
Brackets, Nos. 18, 45 and 50 are used.

See Combinations of the Above on Opposite Page



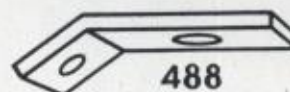
**No. 486 L Clip**

Made in two sizes. Supporting bolt holes for No. 75 track are  $\frac{7}{8}$ " diameter, 3" centers, and for No. 175 or 375 track supporting bolt holes are  $\frac{9}{16}$ " in diameter, 4" on centers. Center hole in clip for No. 75 track is  $\frac{9}{16}$ " in diameter; for No. 175 and No. 375 track  $\frac{11}{16}$ " in diameter.



**No. 487 Double Bracket Plate**

Made in two sizes. End holes are  $\frac{9}{16}$ " in diameter. Center hole for No. 75 track is  $\frac{9}{16}$ " in diameter; for No. 175 and No. 375 track  $\frac{11}{16}$ " in diameter.



**No. 488 Single Bracket Plate**

Made in two sizes. Bolt hole in bent end is  $\frac{9}{16}$ " in diameter. Hole in horizontal side for No. 75 track is  $\frac{9}{16}$ " in diameter; for No. 175 and No. 375 track  $\frac{11}{16}$ " in diameter.

### Rods

Rods threaded on both ends, with two nuts on each end, can be furnished of any desired length.



## Standard Drop Bracket Combinations

Assembled from fittings on previous page

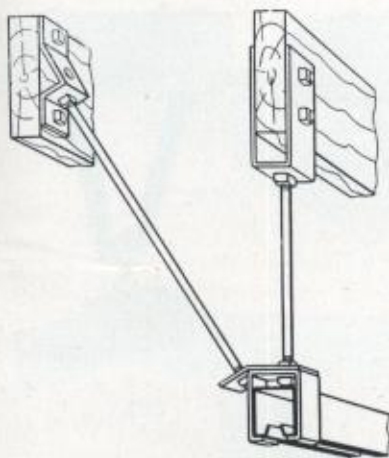


Fig. A-2074

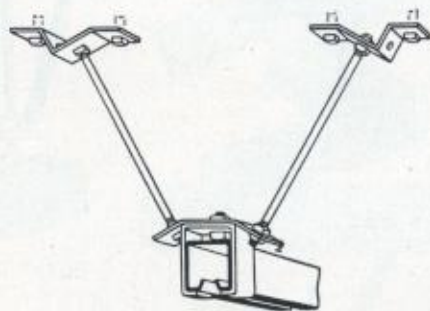


Fig. A-2077

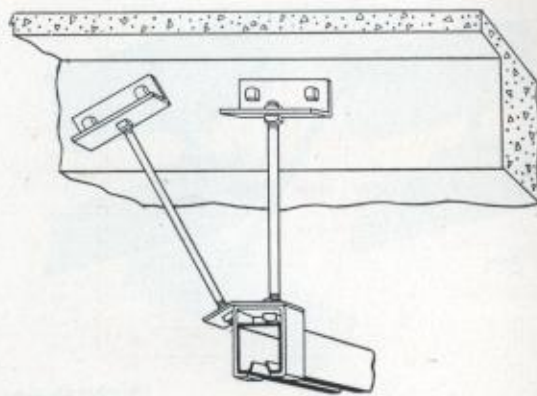


Fig. A-2080

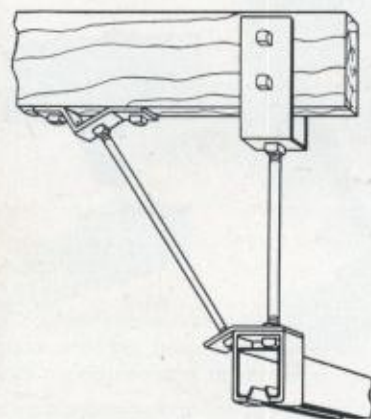


Fig. A-2075

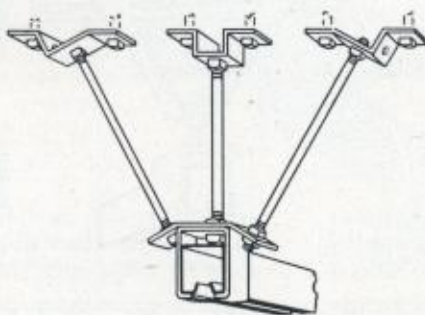


Fig. A-2078

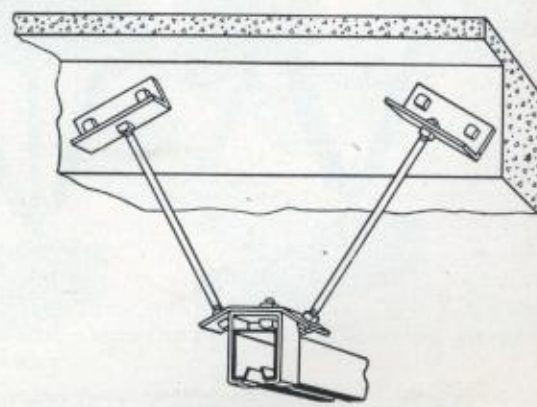


Fig. A-2081

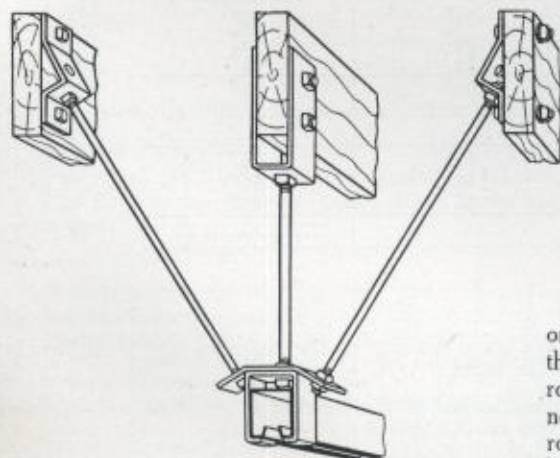


Fig. A-2076

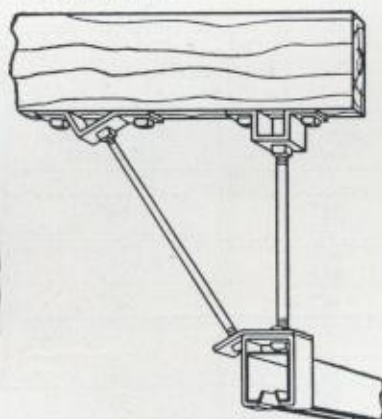


Fig. A-2079

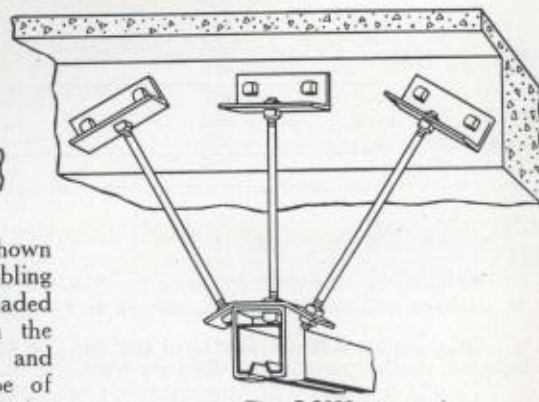


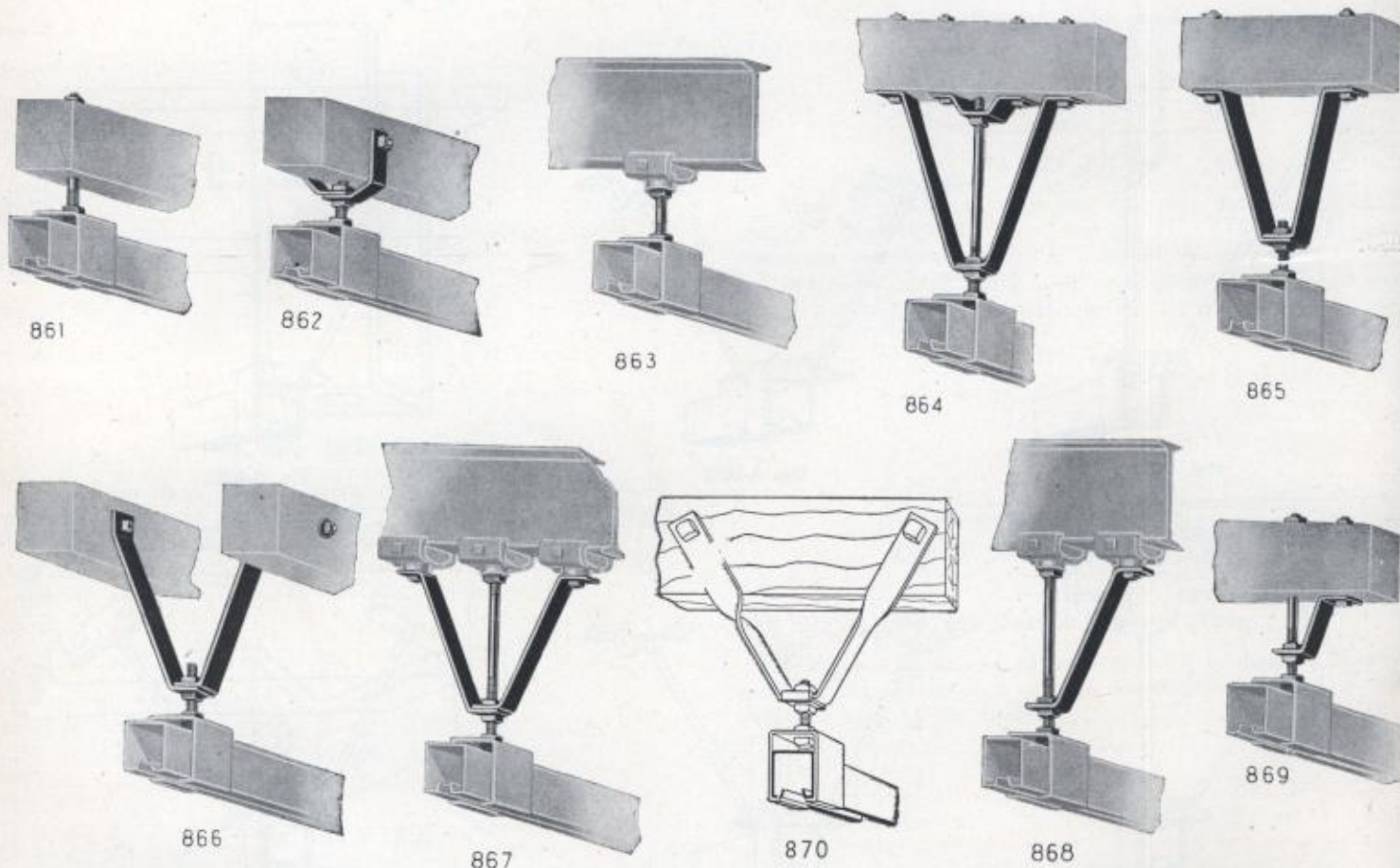
Fig. A-2082

The drop bracket combinations shown on this page are made up by assembling the standard bracket fittings with threaded rods in lengths required to obtain the necessary drop. Ceiling conditions and roof construction determine the type of bracket fitting to be used.



## Special Drop Brackets for Suspending Trolley Track

(Not Carried in Stock)



The Drop Brackets illustrated above will meet practically all conditions. We will gladly make erecting blue prints covering overhead carrying track upon application. Erecting blue prints of track and brackets always sent with material.

Bracket Number	Diameter of Attaching Bolts for		Diameter of Supporting Rods for	
	No. 75 Track	No. 175 or 375 Track	No. 75 Track	No. 175 or 375 Track
861	.....	.....	1/2"	3/4"
862	1/2"	5/8"	1/2"	3/4"
863	.....	.....	1/2"	3/4"
864	1/2"	1/2"	1/2"	3/4"
865	1/2"	1/2"	.....	.....
866	1/2"	1/2"	.....	.....
867	.....	.....	1/2"	3/4"
868	.....	.....	1/2"	3/4"
869	1/2"	1/2"	1/2"	3/4"
870	1/2"	1/2"	.....	.....

### Directions for Ordering

In ordering Drop Brackets of the No. 861, 862, 864, 865, 869 and 870 style, always state the size of the beam to which the bracket is attached and the distance from the bottom of the trolley track to the bottom of the beam.

In ordering Drop Brackets of the No. 866 style, always state the size of the beams to which the bracket is attached, the distance between the beams and the distance from the bottom of the trolley track to the bottom of the beams.

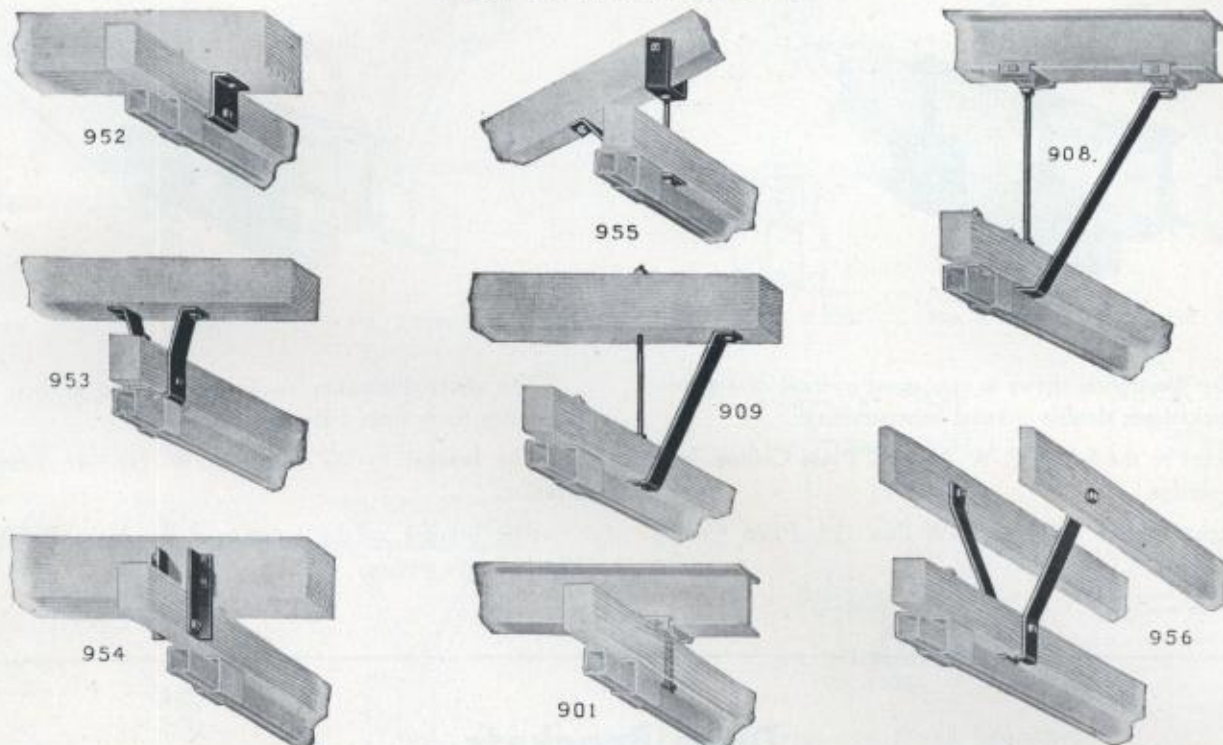
In ordering Drop Brackets of the No. 863, 867 and 868 styles, always state the size and weight of the I-Beam and the distance from the bottom of the trolley track to the bottom of the I-Beam.



## Drop Brackets

For Suspending Wooden Superstructure to which Trolley Track may be directly attached.

(Not Carried in Stock)



Illustrations will meet almost all conditions. We will gladly make erecting blue prints covering both overhead carrying track and superstructures on application. Erecting blue prints of track

and brackets always sent with material. No. 910 Universal I-Beam Clamps shown with Nos. 901 and 908 are not included in price of brackets.

Bracket Number	Diameter of Attaching Bolts					Diameter of Rod for Loads up to			
	500 Lbs.	1000 Lbs.	2000 Lbs.	3000 Lbs.		500 Lbs.	1000 Lbs.	2000 Lbs.	3000 Lbs.
901	.....	.....	.....	.....		5/8"	3/4"	7/8"	1 1/8"
908	.....	.....	.....	.....		5/8"	3/4"	7/8"	1 1/8"
909	1/2"	1/2"	5/8"	5/8"		5/8"	3/4"	7/8"	1 1/8"
952	1/2"	5/8"	5/8"	5/8"		.....	.....	.....	.....
953	1/2"	5/8"	3/4"	7/8"		.....	.....	.....	.....
954	1/2"	1/2"	5/8"	3/4"		.....	.....	.....	.....
955	1/2"	*3/4-1/2"	*7/8-5/8"	*7/8-5/8"		5/8"	3/4"	7/8"	1 1/8"
956	1/2"	3/4"	7/8"	1 1/8"		.....	.....	.....	.....

\*First figure is diameter of bolt through clip and beam and second figure is diameter of brace bolt.

†Two bolts are used through clip and beam.

The Drop is the distance between the under side of the track supporting beam and the under side of the beam from which it is suspended.

### Directions for Ordering

In ordering brackets of the Nos. 909, 953, 954 and 952 style, always state the size of the beam to which the support is attached and the distance from the bottom of the track beam to the bottom of the support beam.

In ordering brackets of the No. 956 style, always state the size of the beam to which the track is attached, the size of the beams to which the supports are attached, the distance between the support beams and the distance from the bottom of the track beam to the bottom of the support beams.

In ordering brackets of the No. 955 style always state the size of the beam to which the track is attached, the size of the beam to which the support is attached, the distance from the bottom of the track beam to the bottom of the support beam and state if the support beam is horizontal or at an angle as shown in the illustration. If at an angle send sketch fully dimensioned showing the angle.

In ordering brackets of the No. 901 and No. 908 styles, always state the size of the wood beam to which the track is attached, the size and weight of the I-Beam and the distance from the bottom of the track beam to the bottom of the I-Beam.



## Methods of Attaching Trolley Track To Steel Superstructure

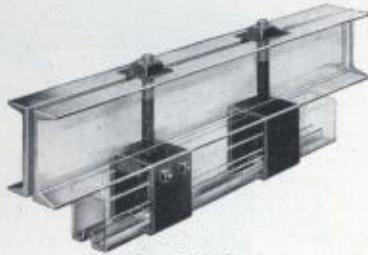


Fig. A-2083

The above illustration shows a very good method of supporting trolley tracks from double channel superstructure.

The bracket to the left is R-W No. 50 Plain Ceiling Joint Bracket with wedge.

The bracket to the right is R-W No. 18 Plain Ceiling Center Bracket.

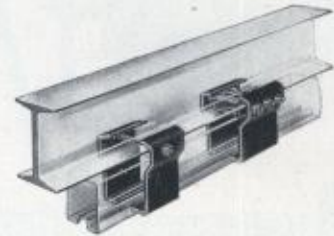


Fig. A-2084

The above illustration shows a very good method of supporting trolley track from I-Beam superstructure.

The bracket to the left is R-W No. 41 I-Beam Center Bracket.

The bracket to the right is R-W No. 47 I-Beam Joint Bracket with wedge.

## Drop Brackets for Supporting Steel Superstructure

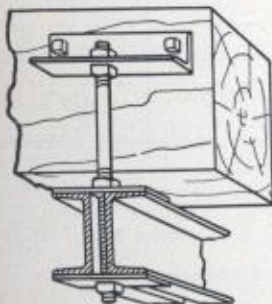


Fig. A-2085

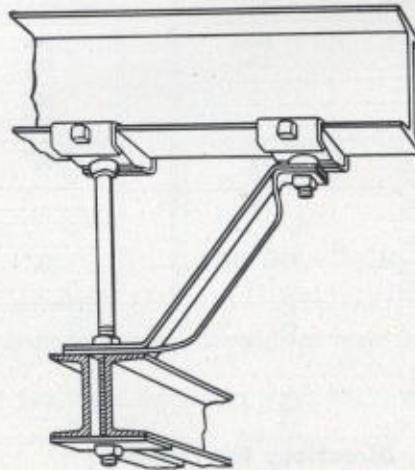


Fig. A-2086



Fig. A-2087

These three methods of supporting double channels used as superstructure are simple yet highly satisfactory.



## Suggestions for Supporting Trolley Track From Concrete Ceiling or Wood Joists

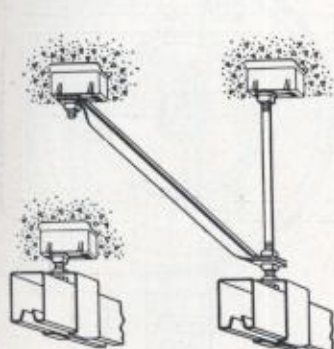


Fig. A-2088



Fig. A-2089

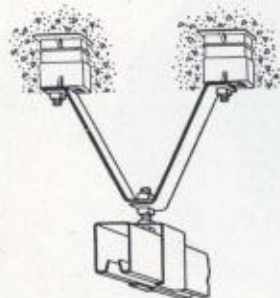


Fig. A-2090

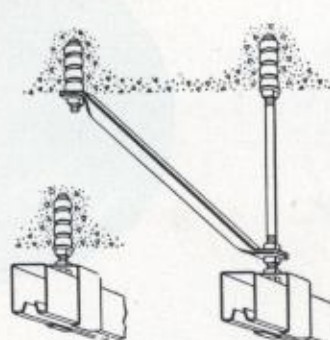


Fig. A-2091



Fig. A-2092

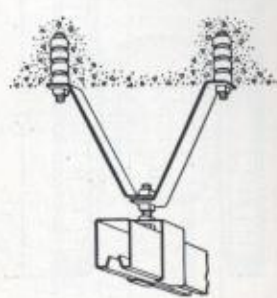


Fig. A-2093

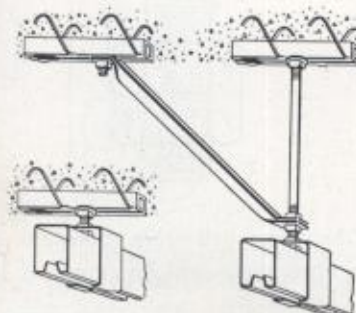


Fig. A-2094

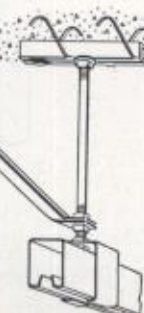


Fig. A-2095

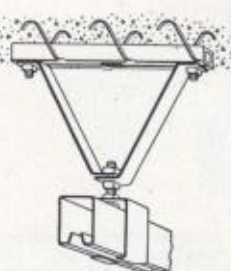


Fig. A-2096



Fig. A-2097



Fig. A-2098

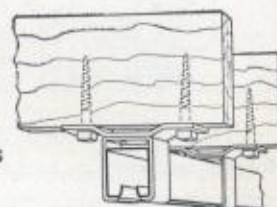


Fig. A-2099

For type of drop and track brackets used, see pages 20 and 24.

Fig. A-2088

Illustrates how trolley track bracket may be supported from concrete ceiling by attaching it to one of our No. 133 Concrete Inserts. The Drop Rod is our No. 861. The Trolley Track Bracket as shown is our No. 18, but Nos. 45 and 50 may also be used.

Fig. A-2089

Two No. 133 Concrete Inserts imbedded in the concrete ceiling here suspend Drop Bracket No. 868. Trolley Track Brackets Nos. 18, 45 and 50 may be used.

Fig. A-2090

Two No. 134 Concrete Inserts here support Drop Bracket No. 865 and Trolley Track Bracket No. 18, although Nos. 45 and 50 may also be used.

Fig. A-2091

One 4-Unit Cinch Anchor imbedded in a concrete ceiling here supports a trolley track bracket. The Drop Rod is our No. 861. The Trolley Track Bracket as shown is our No. 18, but Nos. 45 and 50 may also be used.

Fig. A-2092

Two 4-Unit Cinch Anchors here suspend Drop Bracket No. 868. Trolley Track Brackets Nos. 18, 45 and 50 may be used.

Fig. A-2093

Two 4-Unit Cinch Anchors here suspend Drop Bracket No. 865 and Trolley Track Bracket No. 18, although Nos. 45 and 50 may also be used.

Fig. A-2094

A small length of Truscon Slotted Insert placed in a concrete ceiling suspends our No. 861 Drop Rod which is connected to a No. 18 Trolley Track Bracket as illustrated; Nos. 45 and 50 may also be used.

Fig. A-2095

Two Truscon Slotted Inserts here suspend No. 868 Drop Bracket and No. 18 Trolley Track Bracket; Nos. 45 and 50 may be used as well as the No. 18.

Fig. A-2096

A Truscon Slotted Insert here suspends No. 865 Drop Bracket and Trolley Track Bracket No. 18, although Nos. 45 and 50 may also be used.

Fig. A-2097

Here a Truscon Slotted Insert supports a No. 5 Trolley Track Bracket, although Nos. 43 and 48 may also be used. Standard Drop Rods, incased in Pipe Separators with Cast Iron Washers next to the ceiling, may also be furnished.

Fig. A-2098

A Truscon Slotted Insert with 2 Bolts support a No. 5 Trolley Track Bracket, although Nos. 43 and 48 may also be used.

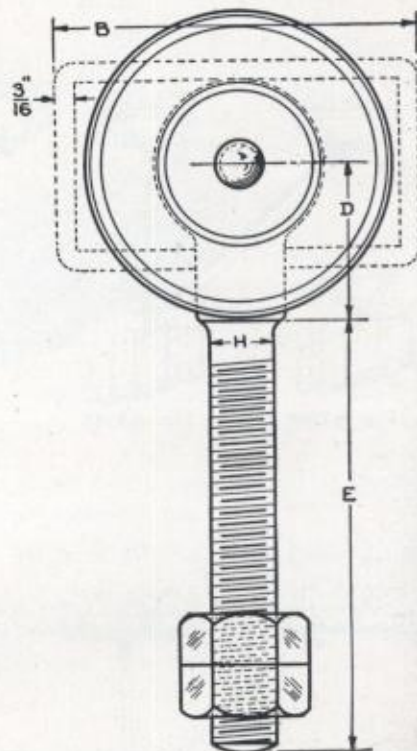
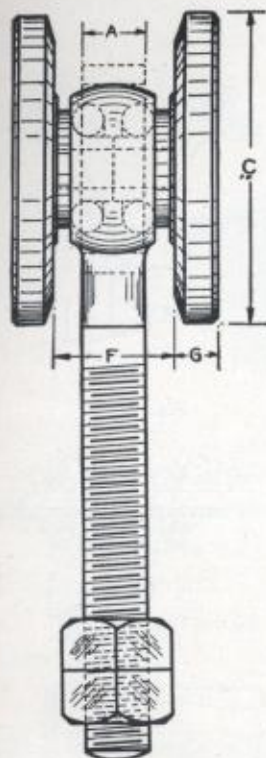
Fig. A-2099

This illustration shows two No. 5 Cross Ear Ceiling Center Brackets attached to wood superstructure by means of lag screws. No. 43 Cross Ear Ceiling End Bracket with Bolt may also be used.



## TWO WHEEL BALL BEARING CARRIERS

—030 SERIES—



Two-wheel carriers are used advantageously to make up storage and display racks, special carriers of all types, for low cost horizontal chain drive systems, for storage lines and for many other applications.

The No. 030 series carriers are equipped with ball bearings,

drop forged frames, wheels and hardened ball races. Bumpers as indicated by dotted lines in the illustrations will be furnished if specified, at extra cost.

The dimensions shown in the table are for standard carriers. Various fittings to meet practically any condition are illustrated.

Cat. No.	Track No.	Wt. Each	Cap., Lbs.	A	B	C	D	E	F	G	H	J	M	N
030-1	30	8 oz.	25	$\frac{5}{16}$ "	2"	$1\frac{1}{2}$ "	$\frac{3}{8}$ "	$3\frac{5}{8}$ "	$\frac{3}{4}$ "	$\frac{1}{8}$ "	$\frac{3}{8}$ "	$\frac{3}{4}$ "	$\frac{3}{8}$ "	$1\frac{1}{4}$ "
030-2	30½	10 oz.	50	$\frac{3}{8}$ "	$2\frac{1}{4}$ "	$1\frac{3}{4}$ "	$1\frac{1}{8}$ "	$2\frac{7}{8}$ "	$\frac{3}{4}$ "	$\frac{1}{8}$ "	$\frac{1}{8}$ "	$\frac{3}{4}$ "	$\frac{3}{8}$ "	$1\frac{1}{4}$ "
030-3	75	14 oz.	75	$\frac{1}{2}$ "	$2\frac{3}{8}$ "	$2\frac{1}{8}$ "	$1\frac{1}{2}$ "	$2\frac{1}{8}$ "	$\frac{7}{8}$ "	$\frac{3}{8}$ "	$\frac{1}{2}$ "	$1\frac{1}{2}$ "	$\frac{1}{2}$ "	$1\frac{1}{8}$ "
030-5	175-375	34 oz.	300	$\frac{5}{8}$ "	$3\frac{1}{2}$ "	3"	$1\frac{1}{2}$ "	$4\frac{1}{2}$ "	$1\frac{1}{4}$ "	$\frac{3}{8}$ "	$\frac{5}{8}$ "	$1\frac{1}{2}$ "	$\frac{1}{2}$ "	$1\frac{1}{8}$ "

### Special Fittings for No. 030 Carriers

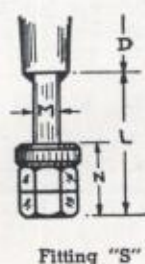
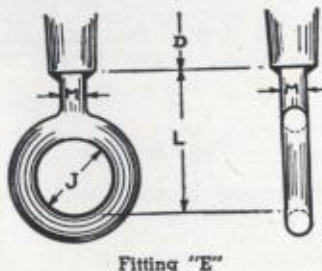
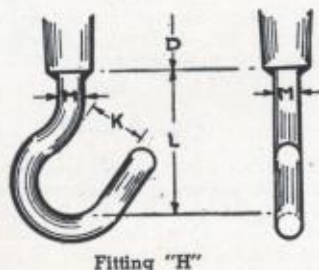
The fittings below have been developed to make it possible to apply trolley track carriers to almost any problems. They are made up on order and vary according to individual requirements.

Fittings are welded to the pendant just below the shoulder or "D" dimension. Be sure to specify "L" or length desired and

"K" dimension on fitting "H."

Also specify if eye or hook fittings "E" or "H" should be placed parallel or crosswise of track.

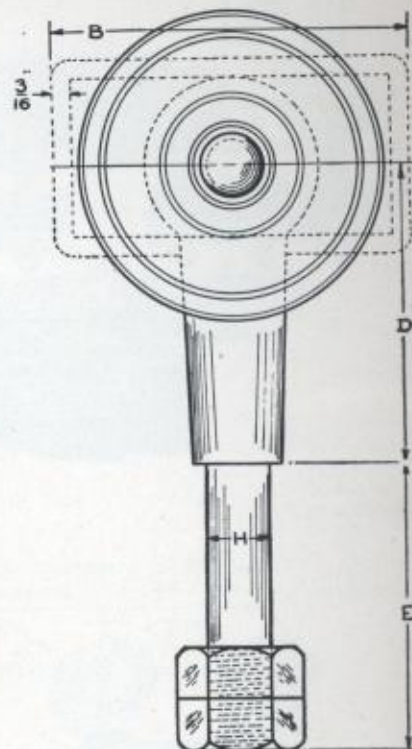
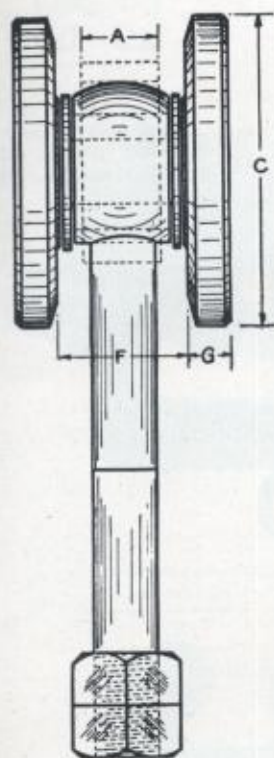
Illustration of fitting "S" shows hardened thrust washer just above the double nut. Ball thrust bearings instead of the washer can be furnished on the No. 030-3 and 5 carriers when specified.





## TWO WHEEL ROLLER BEARING CARRIERS

—040 SERIES—



The roller bearing carriers illustrated on this page are made up for applications similar to those described on the preceding page. Since these carriers take up very little space in the track, they are particularly desirable where it is necessary to space carriers closely in processing or storage of materials.

The No. 040 series carriers are equipped with roller bearings and drop forged pendants, wheels and bearing housings. The

shank of the carrier is of heavy design with substantial shoulder which readily permits the application to special carrier service or for attaching to light chain on horizontal chain drive systems.

Bumpers as indicated by dotted lines in the illustrations will be furnished if specified, at extra cost.

The dimensions shown in the table are for standard carriers. Various fittings to meet practically any condition are illustrated.

Cat. No.	Track No.	Wt. Each	Cap., Lbs.	A	B	C	D	E	F	G	H	J	M	N
040-3	75	12 oz.	75	$\frac{5}{8}$ "	$2\frac{3}{8}$ "	$2\frac{1}{8}$ "	$1\frac{1}{8}$ "	$2\frac{1}{8}$ "	$\frac{7}{8}$ "	$\frac{1}{2}$ "	$\frac{1}{2}$ "	$1\frac{1}{2}$ "	$\frac{1}{2}$ "	$1\frac{1}{8}$ "
040-5	175-375	35 oz.	300	$\frac{3}{4}$ "	$3\frac{1}{2}$ "	3"	$2\frac{3}{8}$ "	$2\frac{3}{4}$ "	$1\frac{1}{4}$ "	$\frac{1}{2}$ "	$\frac{5}{8}$ "	$1\frac{1}{2}$ "	$\frac{1}{2}$ "	$1\frac{1}{8}$ "

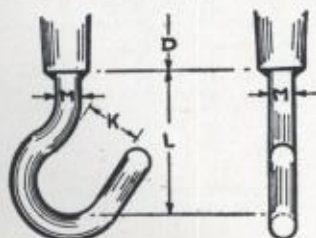
### Special Fittings for No. 040 Carriers

The fittings below have been developed to make it possible to apply trolley track carriers to almost any problems. They are made up on order and vary according to individual requirements.

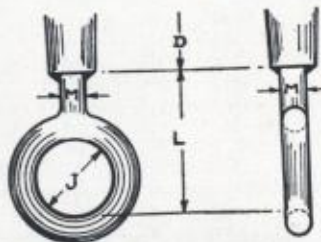
Fittings are welded to the pendant just below the shoulder or "D" dimension. Be sure to specify "L" or length desired and "K" dimension on fitting "H."

Also specify if eye or hook fittings "E" or "H" should be placed parallel or crosswise of track.

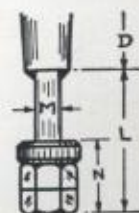
Illustration of fitting "S" shows hardened thrust washer just above the double nut. Ball thrust bearings instead of the washer can be furnished when specified.



Fitting "H"



Fitting "E"



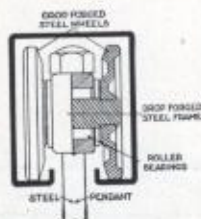
Fitting "S"



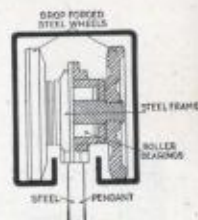
## Roller Bearing Carriers

### Rigid Frame Type

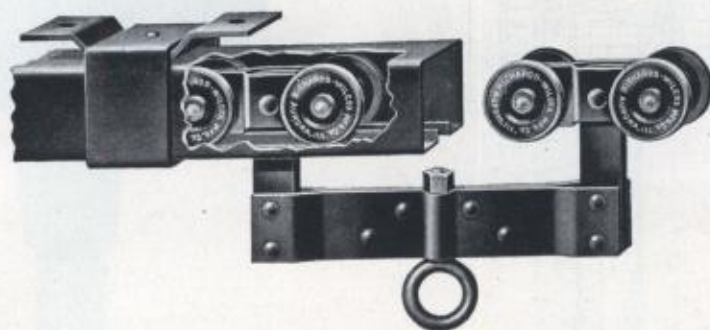
For Straight Trolley Track Systems Only



Cross Section of  
Track and Carriers  
No. 100-1 and No. 100-4

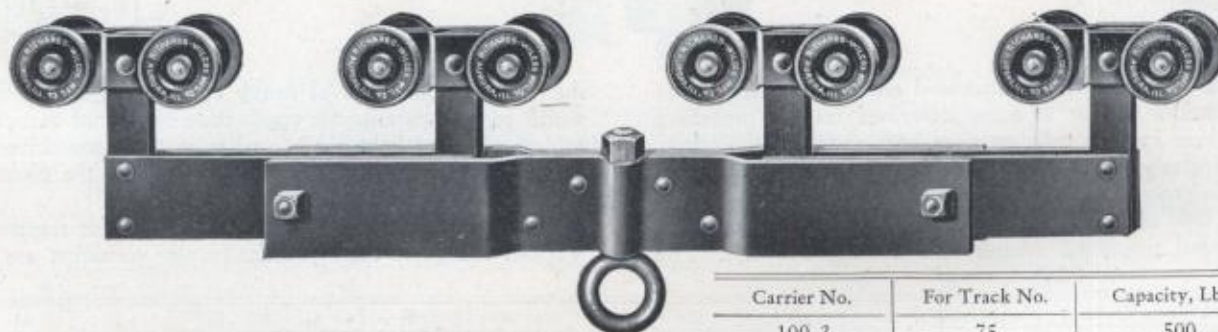


Cross Section of  
Track and Carriers  
No. 100-2 and No. 100-5  
No. 100-3 and No. 100-6



Carrier No.	For Track No.	Capacity, Lbs.
100-1	75	125
100-4	175-375	600

Carrier No.	For Track No.	Capacity, Lbs.
100-2	75	250
100-5	175-375	1500



Carrier No.	For Track No.	Capacity, Lbs.
100-3	75	500
100-6	175-375	3000

Wheels, drop-forged steel. (For diameter, see table below.)  
Bearings, hardened steel rollers. Constructed of heavy steel frames  
and connecting bars. Eye bolt, drop-forged and heat-treated. Fin-

ish, black japan. Packed in bulk. The capacity specified below  
is figured to allow a liberal factor of safety.

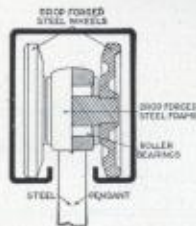
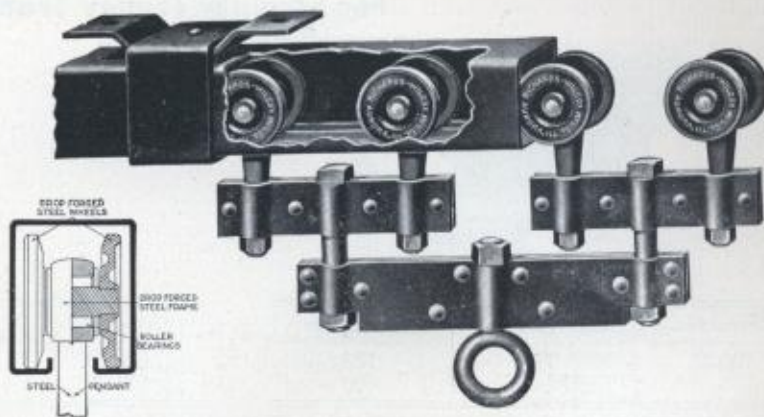
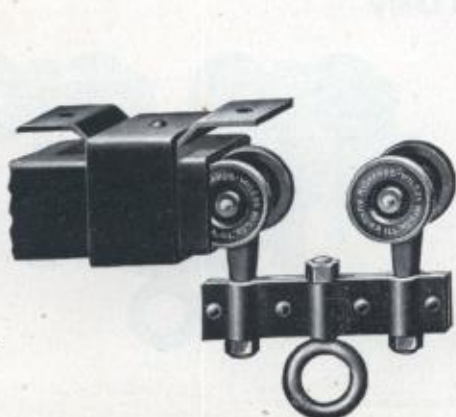
Carrier	For Track No.	Capacity in Lbs.	Effort Required to Start Fully Loaded Carrier Lbs.	Diameter Wheels Inches	Length Over All Inches	Bottom of Track to Bottom of Eye, Inches	EYE BOLT		Weight Lbs.
							Diameter Stem, In.	Diameter Eye, In.	
100-1	75	125	4	2 $\frac{3}{8}$	5	3 $\frac{3}{8}$	$\frac{1}{2}$	1 $\frac{1}{2}$	1 $\frac{1}{2}$
100-2	75	250	6	2 $\frac{3}{8}$	14	5 $\frac{3}{4}$	$\frac{1}{2}$	1 $\frac{1}{2}$	5 $\frac{1}{2}$
100-3	75	500	12	2 $\frac{3}{8}$	30	6 $\frac{1}{2}$	$\frac{5}{8}$	1 $\frac{1}{2}$	16
100-4	175	600	14	3	7	3 $\frac{3}{8}$	$\frac{1}{2}$	1 $\frac{1}{2}$	4 $\frac{1}{2}$
100-5	or	1500	35	3	20	6 $\frac{1}{2}$	$\frac{5}{8}$	1 $\frac{1}{2}$	13
100-6	375	3000	70	3	44	8	$\frac{7}{8}$	1 $\frac{3}{4}$	50

#### Directions for Ordering

State weight of maximum load and whether for constant or occasional use.



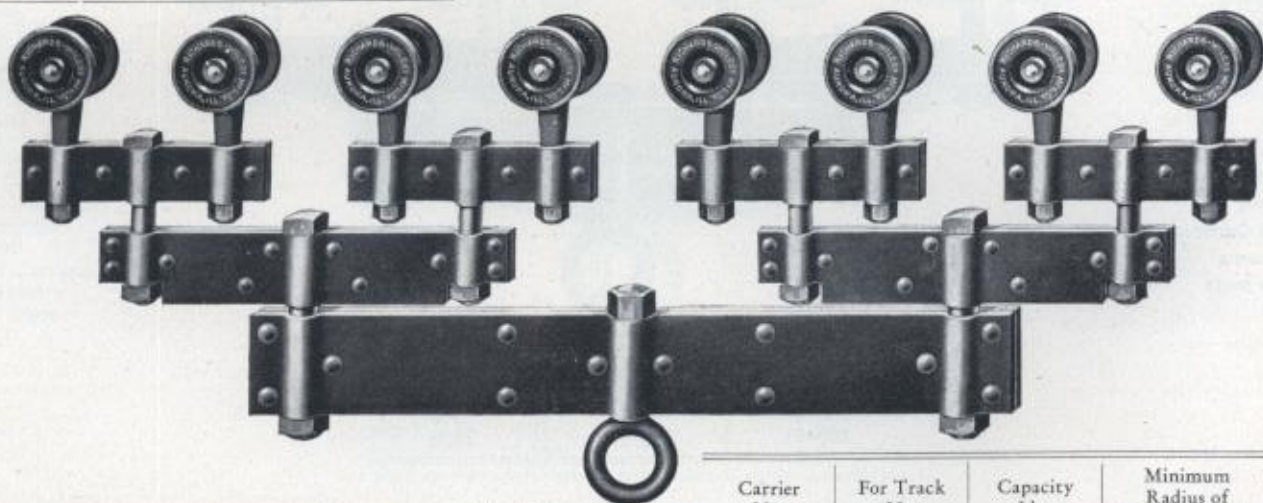
## Roller Bearing Carriers Swivel Frame Type For Trolley Track Systems Using Straight and Curved Track



Cross Section  
of all  
Track and Carriers  
as shown  
on this page

Carrier No.	For Track No.	Capacity Lbs.	Minimum Radius of Curved Track
100-14	75	125	24"
100-15	175	750	24"
100-15	375	750	30"

Carrier No.	For Track No.	Capacity Lbs.	Minimum Radius of Curved Track
100-13	75	250	24"
100-11	175-375	1500	30"



Wheels, drop forged steel. (For diameter see table below.) Bearings, hardened steel rollers. Pendants, drop forged; each set (two wheels and pendant) forms a complete unit which swivels independently, permitting carrier to operate in either straight or curved track. Frames and connecting bars of heavy steel construction. Eye bolt, drop-forged and heat-treated. Finish, black japan.

Carrier No.	For Track No.	Capacity Lbs.	Minimum Radius of Curved Track
100-12	75	500	36"
100-10	175-375	3000	42"

Packed in bulk. The capacity specified below is figured to allow a liberal factor of safety.

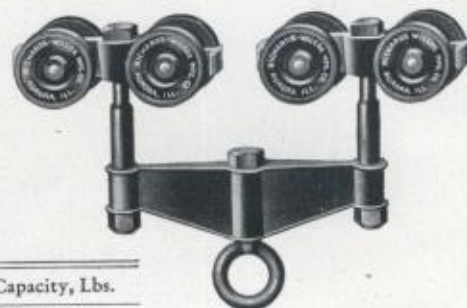
Carrier No.	For Track No.	Capacity in Lbs.	Effort Required To Start Fully Loaded Carrier Lbs.	Diameter Wheels Inches	Length over all Inches	Bottom of Track to Bottom of Eye, Inches	EYE BOLT		Weight Lbs.
							Diameter Stem, In.	Diameter Eye, In.	
100-14	75	125	4	2½	7	5½	½	1½	3
100-13	75	250	6	2½	14	7½	½	1½	9
100-12	75	500	12	2½	31	10½	¾	1½	23
100-15	175	750	14	3	9	6¼	¾	1½	7
100-11	or	1500	35	3	21	9¼	¾	1¾	20
100-10	375	3000	70	3	44	13¼	¾	1¾	56

### Directions for Ordering

State weight of maximum load and whether for constant or occasional use.



## Ball Bearing Carriers Rigid Frame Type For Straight Trolley Track Systems Only



Carrier No.	For Track No.	Capacity, Lbs.
100-25	75	125
100-28	175-375	600

Carrier No.	For Track No.	Capacity, Lbs.
100-26	75	250
100-29	175-375	1250

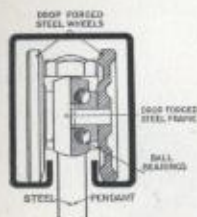
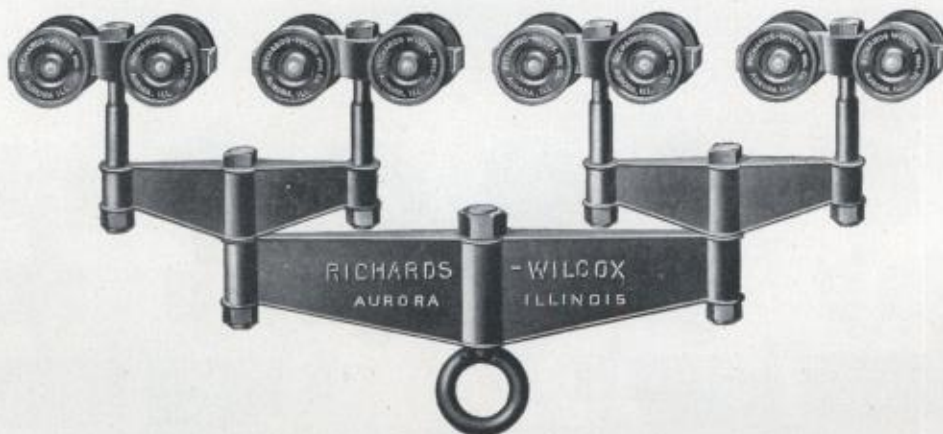


Fig. A-2016  
Cross Section  
of all  
Track and Carriers  
as shown  
on this page



Carrier No.	For Track No.	Capacity, Lbs.
100-27	75	500
100-30	175-375	2500

Wheels are of drop-forged steel. (For diameter—see table below.) Bearings, high duty steel balls. Frames, drop-forged with bumpers to prevent wheels from striking together when several carriers run in the same track. Heavy steel pendants. Connecting

bars, malleable iron. Eye bolt, drop-forged and heat-treated. Finish, black japan. Packed in bulk. The capacity specified below is figured to allow a liberal factor of safety.

Carrier No.	For Track No.	Capacity in Lbs.	Effort Required To Start Fully Loaded Carrier Lbs.	Diameter Wheels Inches	Length over all Inches	Bottom of Track to Bottom of Eye, Inches	EYE BOLT		Weight Lbs.
							Diameter Stem, In.	Diameter Eye, In.	
100-25	75	125	2½	2⅝	5	3¼	½	1½	2
100-26	75	250	5	2⅝	12	6½	¾	1½	5
100-27	75	500	9	2⅝	27	9	¾	1½	14
100-28	175	600	11	3	7	3	¾	1½	5
100-29	or	1250	23	3	16	7	¾	1½	12
100-30	375	2500	46	3	34	10¾	¾	1¾	37

### Directions for Ordering

State weight of maximum load and whether for constant or occasional use.

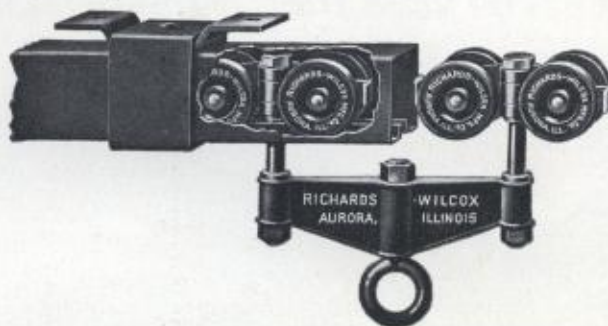


# Richards-Wilcox

## Ball Bearing Carriers

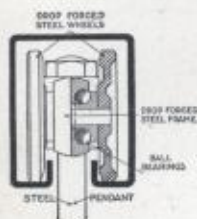
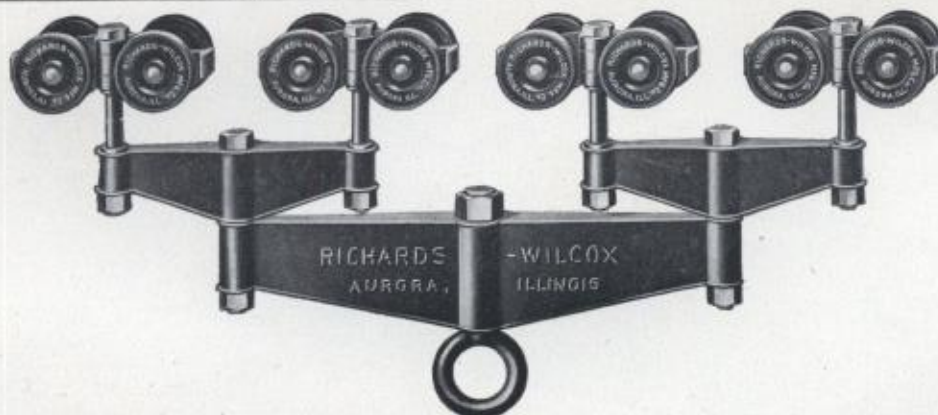
### Swivel Frame Type

For Trolley Track Systems with Straight and Curved Track



Carrier No.	For Track No.	Capacity Lbs.	Minimum Radius of Curved Track
100-31	75	125	24"
100-34	175	600	24"
100-34	375	600	30"

Carrier No.	For Track No.	Capacity Lbs.	Minimum Radius of Curved Track
100-32	75	250	24"
100-35	175-375	1250	30"



Cross Section of all Track and Carriers as shown on this page

Carrier No.	For Track No.	Capacity Lbs.	Minimum Radius of Curved Track
100-33	75	500	36"
100-36	175-375	2500	42"

Wheels are of drop-forged steel. (For diameter, see table below.) Bearings, high duty steel balls. Frames, drop-forged, knuckle jointed with bumpers to prevent wheels from striking together when several carriers run in the same track. Heavy steel pendants. Each set (four wheels and pendant), built with knuckle-

jointed frame which permits carrier to operate in either straight or curved track. Connecting bars, malleable iron. Eye bolt, drop-forged and heat-treated. Finish, black japan. Packed in bulk. The capacity specified below is figured to allow a liberal factor of safety.

Carrier No.	For Track No.	Capacity in Lbs.	Effort Required to Start Fully Loaded Carrier Lbs.	Diameter Wheels Inches	Length Over All Inches	Bottom of Track to Bottom of Eye, Inches	EYE BOLT		Weight Lbs.
							Diameter Stem, In.	Diameter Eye, In.	
100-31	75	125	2½	2⅝	5	3¼	½	1½	2
100-32	75	250	5	2⅝	12	6⅝	¾	1½	5
100-33	75	500	9	2⅝	27	8⅞	¾	1½	14
100-34	175	600	11	3	7	2⅞	¾	1½	5
100-35	or	1250	23	3	16	7	¾	1½	12
100-36	375	2500	46	3	34	11⅞	¾	1½	36

Sixteen wheel carriers for No. 175 or 375 tracks should not be used on curves of less than 42-inch radius.

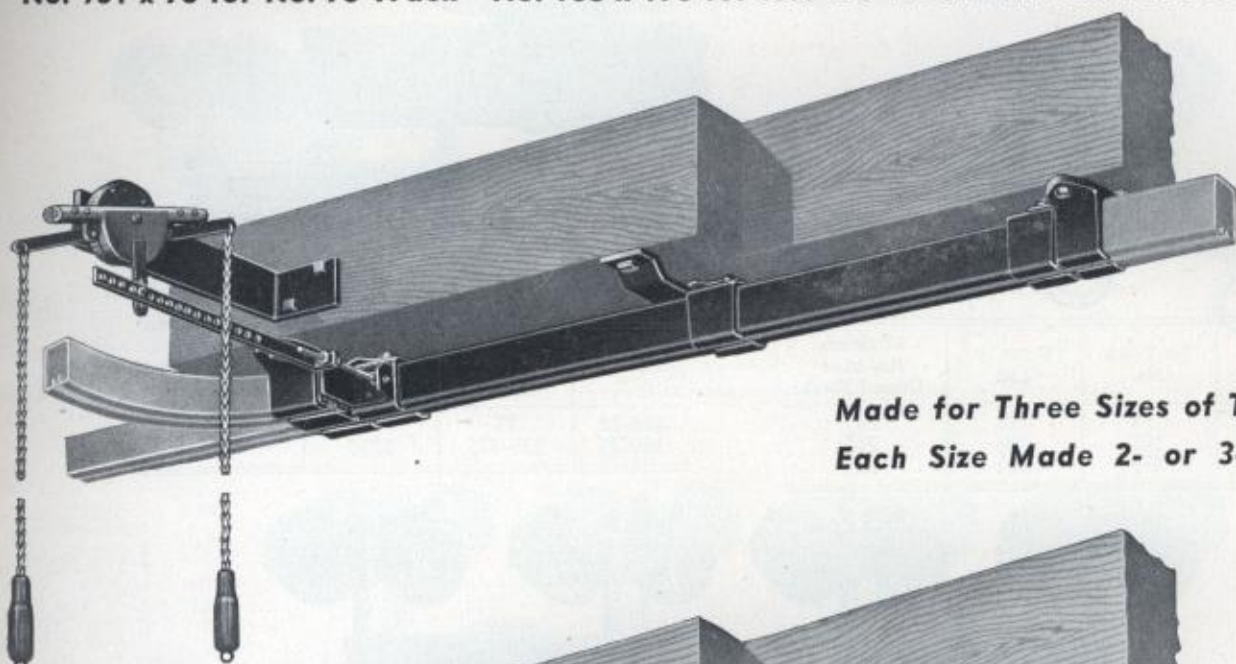
#### Directions for Ordering

State weight of maximum load and whether for constant or occasional use.

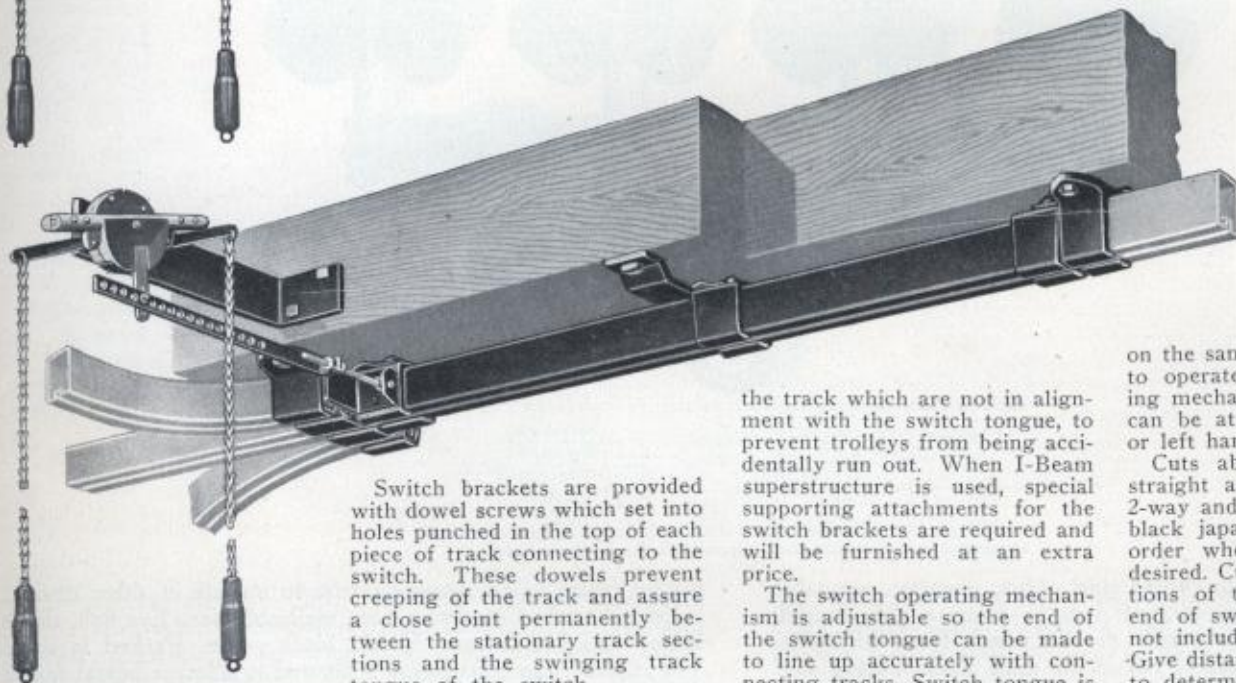


## Nos. 931 and 933 Tongue Switches

No. 931 x 75 for No. 75 Track    No. 933 x 175 for No. 175 Track    No. 933 x 375 for No. 375 Track



Made for Three Sizes of Track  
Each Size Made 2- or 3-Way



Switch brackets are provided with dowel screws which set into holes punched in the top of each piece of track connecting to the switch. These dowels prevent creeping of the track and assure a close joint permanently between the stationary track sections and the swinging track tongue of the switch.

Switches are provided with blinds for closing up the ends of

the track which are not in alignment with the switch tongue, to prevent trolleys from being accidentally run out. When I-Beam superstructure is used, special supporting attachments for the switch brackets are required and will be furnished at an extra price.

The switch operating mechanism is adjustable so the end of the switch tongue can be made to line up accurately with connecting tracks. Switch tongue is positively locked in final position. Lock is released by pulling

on the same chain which is used to operate the switch. Operating mechanism is reversible and can be attached to either right or left hand side of the switch.

Cuts above show section of straight and curved track with 2-way and 3-way switch. Finish, black japan. Always specify on order whether 2- or 3-way is desired. Curved and straight sections of track shown at either end of switch in illustration are not included in price of switch. Give distance from floor to track to determine chain length.

Bolt hole templates are shown on page 38.

Switch No.	Track No.	Length Over All Feet	Height Over All Inches	Space Throw Requires Above Bottom of Track Inches	Weight Each Lbs.
No. 931x 75—2-way.....	75	4	3½	11	65
No. 931x 75—3-way.....	75	4	3½	11	70
No. 933x175—2-way.....	175	4	4¾	11	90
No. 933x175—3-way.....	175	4	4¾	11	96
No. 933x375—2-way.....	375	4	4¾	11	98
No. 933x375—3-way.....	375	4	4¾	11	106

**Note**—If heavy track is desired specify No. 375 instead of No. 175.  
Parts for above switches are illustrated on page 37.



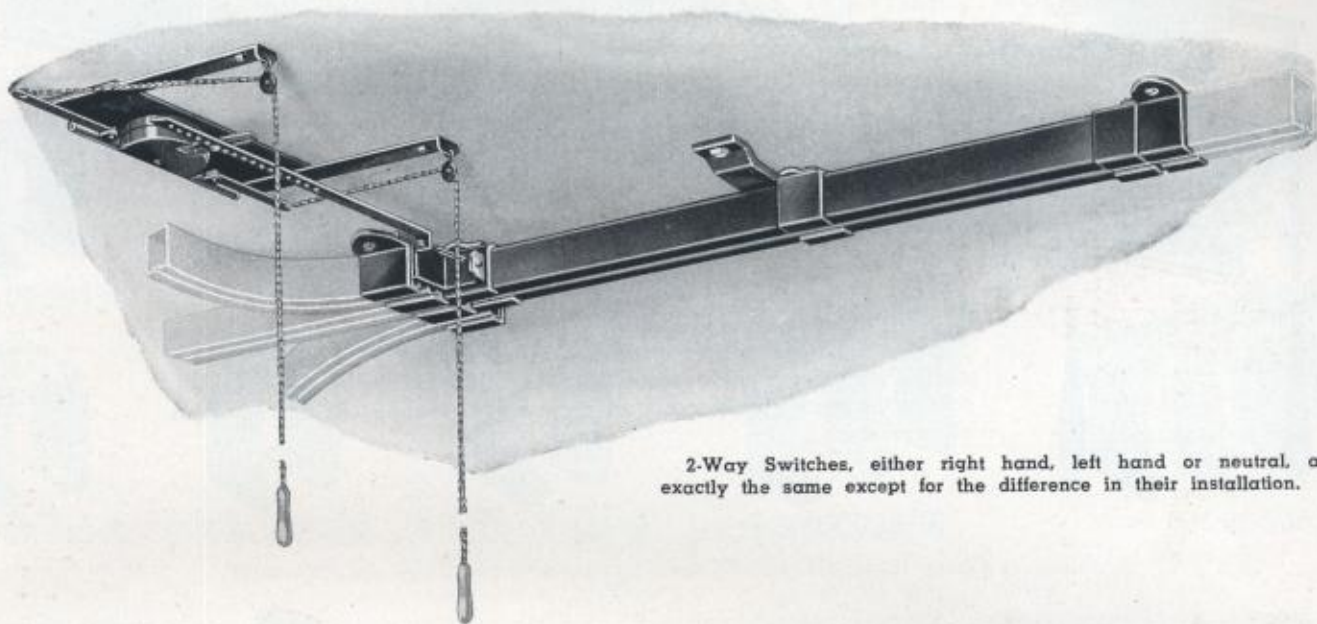
**No. 975**  
(For No. 75 Track)

**No. 9175**  
(For No. 175 Track)

**No. 9375**  
(For No. 375 Track)

## Tongue Switches

For Attachment to Flat Ceilings



2-Way Switches, either right hand, left hand or neutral, are exactly the same except for the difference in their installation.

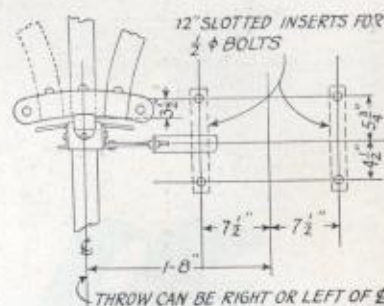
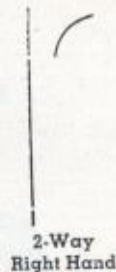
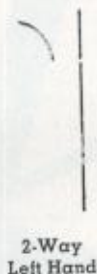
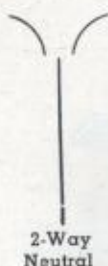


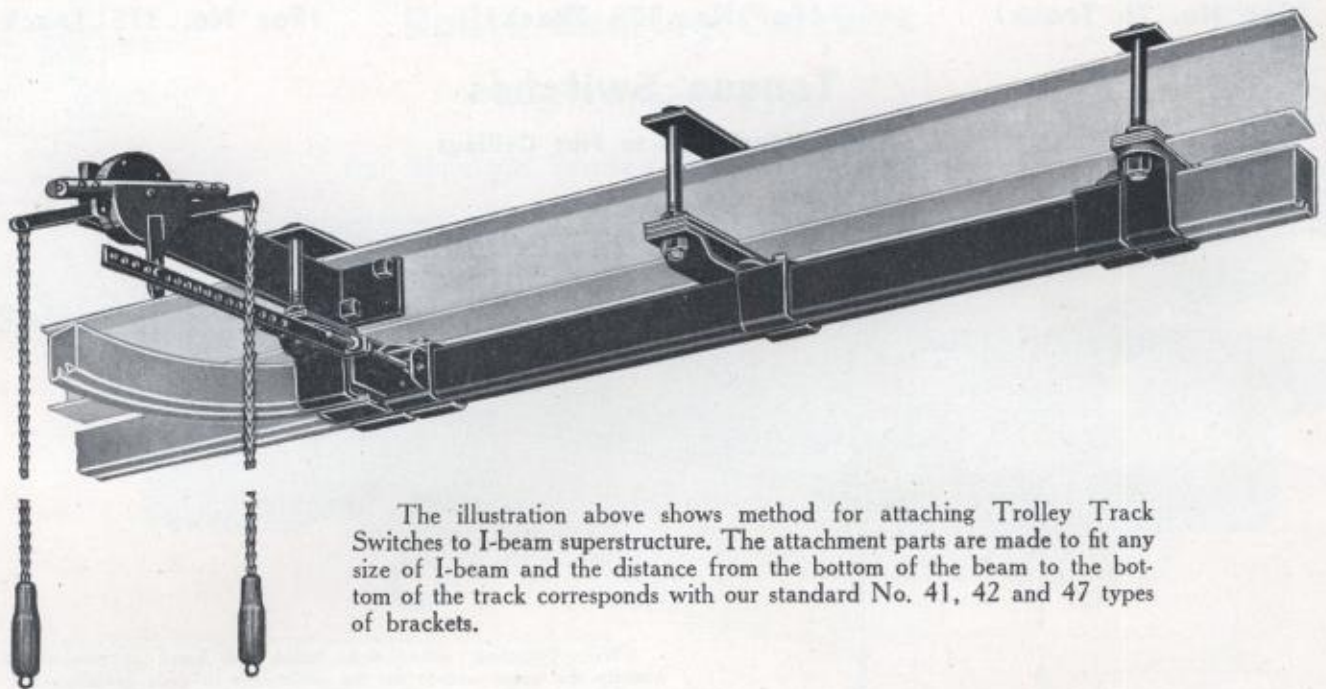
Diagram giving bolt hole dimensions of the operating device.

These switches are the same as the No. 931 and No. 933 described on preceding page except the operating devices of the former are made for attaching to a flat ceiling.

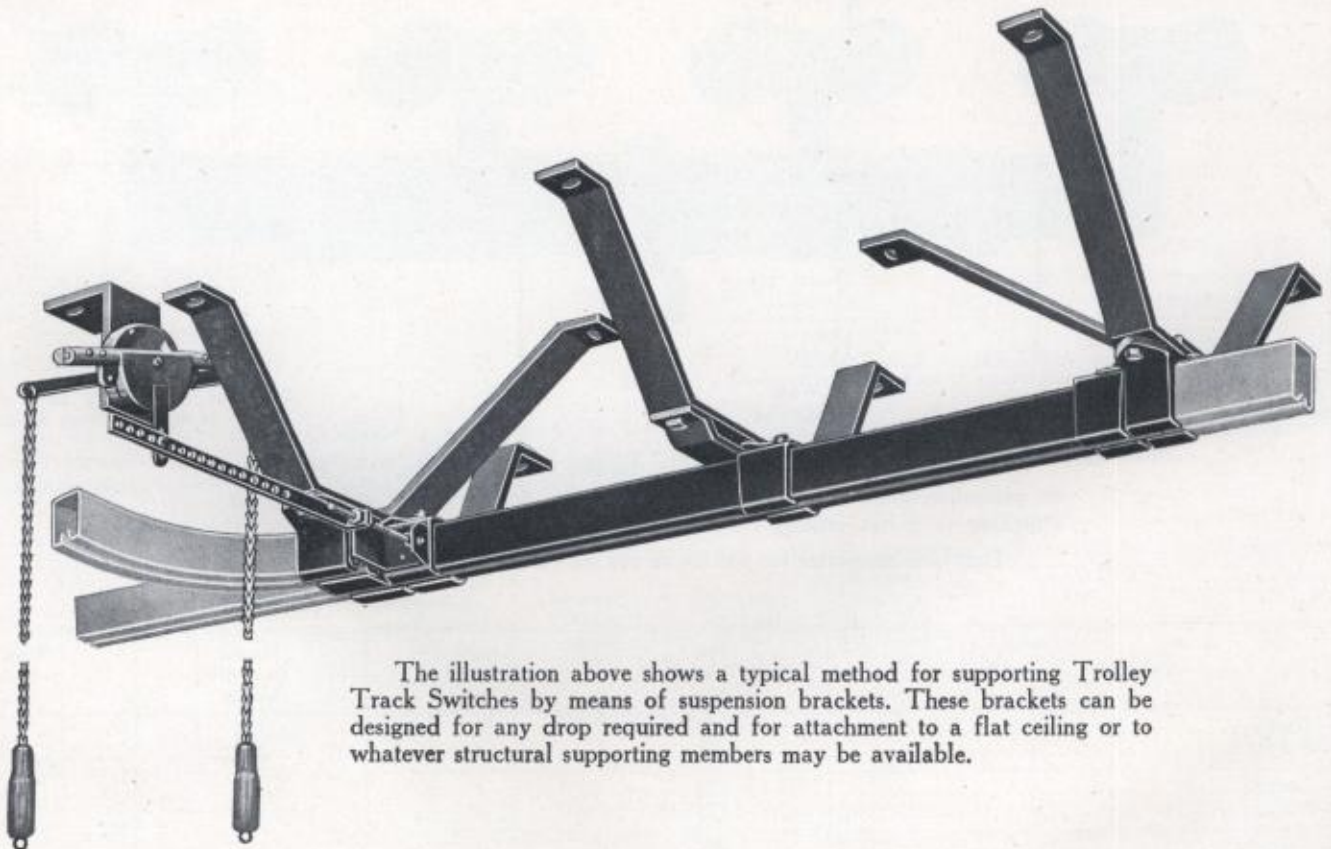
Bolt hole templates for the above are shown on page 38.

Switch No.	For Track No.	Length Over All Feet	Height Over All Inches	Weight Each Lbs.
975—2-way.....	75	4	3½	65
975—3-way.....	75	4	3½	70
9175—2-way.....	175	4	4¾	90
9175—3-way.....	175	4	4¾	96
9375—2-way.....	375	4	4¾	98
9375—3-way.....	375	4	4¾	106





The illustration above shows method for attaching Trolley Track Switches to I-beam superstructure. The attachment parts are made to fit any size of I-beam and the distance from the bottom of the beam to the bottom of the track corresponds with our standard No. 41, 42 and 47 types of brackets.



The illustration above shows a typical method for supporting Trolley Track Switches by means of suspension brackets. These brackets can be designed for any drop required and for attachment to a flat ceiling or to whatever structural supporting members may be available.



## Detail of Parts

For

## Trolley Track Tongue Switches

No. 931 x 75 Switches Are for No. 75 Trolley Track

No. 933 x 175 Switches Are for No. 175 Trolley Track

No. 933 x 375 Switches Are for No. 375 Trolley Track



931 OR 933-11



931 OR 933-16



931 OR 933-17



931 OR 933-13



931 OR 933-14



933-20



931 OR 933-15



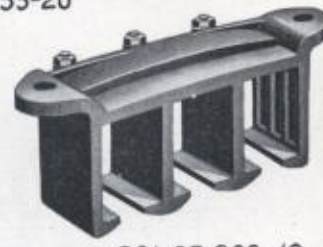
931 OR 933-12



931 OR 933-10



931 OR 933-18



931 OR 933-19

Note—Always specify by number and state whether for 2-way or 3-way switch

Name of Part	Parts for Switches Using No. 75 Track	Parts for Switches Using No. 175 Track
	Part No.	Part No.
Pivot Bracket.....	931-10x75	933-10x175
Moving Bracket.....	931-11x75	933-11x175
Center Bracket.....	931-12x75	933-12x175
2-Way Switch Center Support.....	931-13x75	.....
3-Way Switch Center Support.....	931-14x75	.....
End Bracket.....	931-15x75	933-15x175
2-Way Switch Blind.....	931-16x75	.....
3-Way Switch Blind.....	931-17x75	.....
2-Way Head Bracket.....	931-18x75	933-18x175
3-Way Head Bracket.....	931-19x75	933-19x175

Name of Part	Parts for Switches Using Nos. 175 and 375 Track	Parts for Switches Using No. 375 Track
	Part No.	Part No.
Pivot Bracket.....	.....	933-10x375
Moving Bracket.....	.....	933-11x375
Center Bracket.....	.....	933-12x375
2-Way Switch Center Support.....	933-13x175 or x375	.....
3-Way Switch Center Support.....	933-14x175 or x375	.....
End Bracket.....	.....	933-15x375
2-Way Switch Blind.....	933-16x175 or x375	.....
3-Way Switch Blind.....	933-17x175 or x375	.....
2-Way Head Bracket.....	.....	933-18x375
3-Way Head Bracket.....	.....	933-19x375
Dowel Screw.....	933-20x175 or x375	.....

Note—Parts listed as No. 931 are used on No. 931x75 Switches.

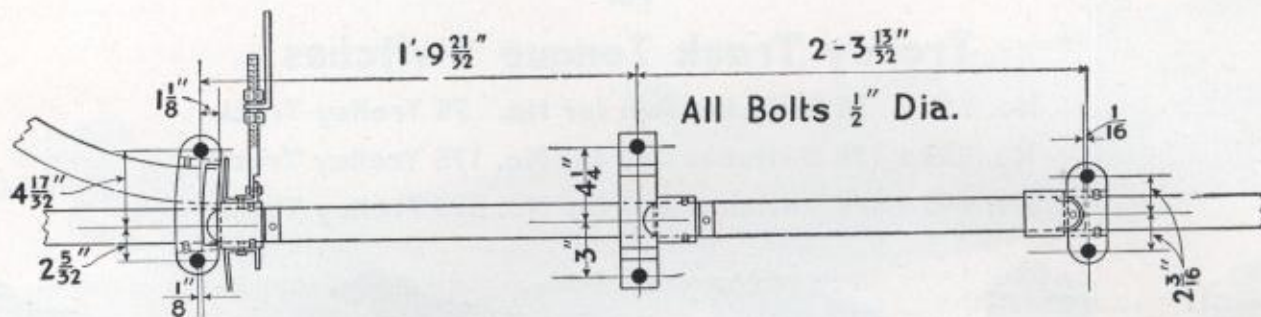
Parts listed as No. 933x175 are used on No. 933x175 Switches.

Parts listed as No. 933x375 are used on No. 933x375 Switches.

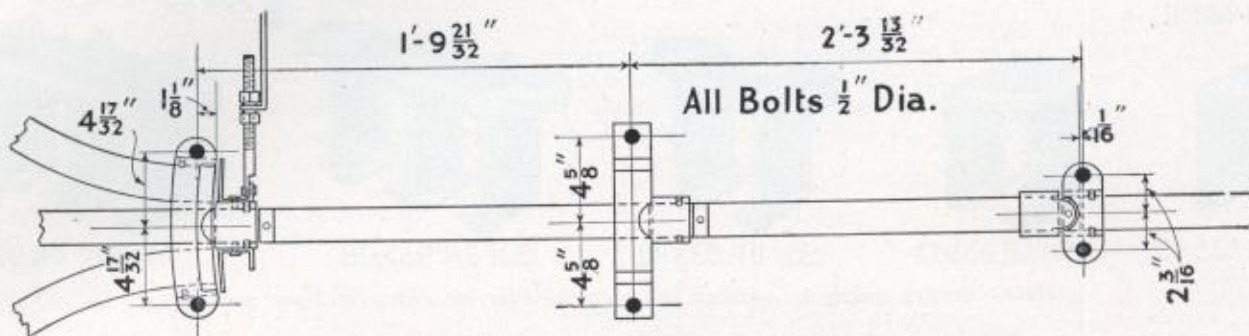
Parts numbered: 933-13, 933-14, 933-16, 933-17 and 933-20 are used on No. 933x175, 933x375, 9175 and 9375 Switches.



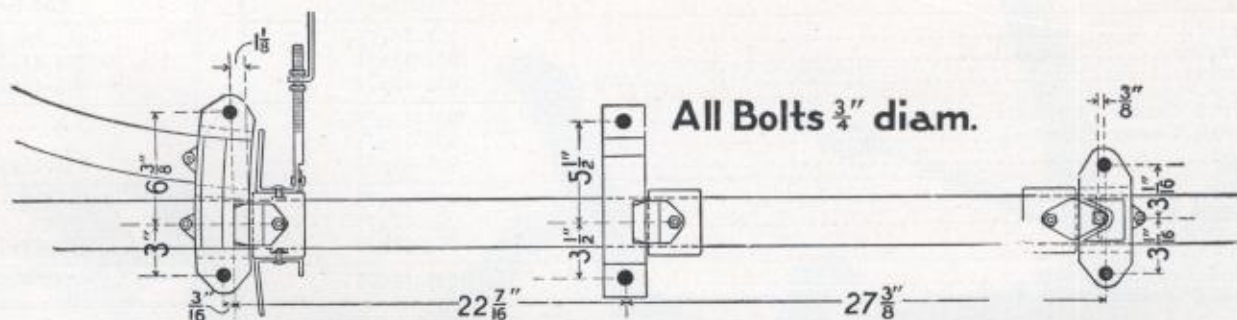
## Plans and Bolt Hole Diagrams



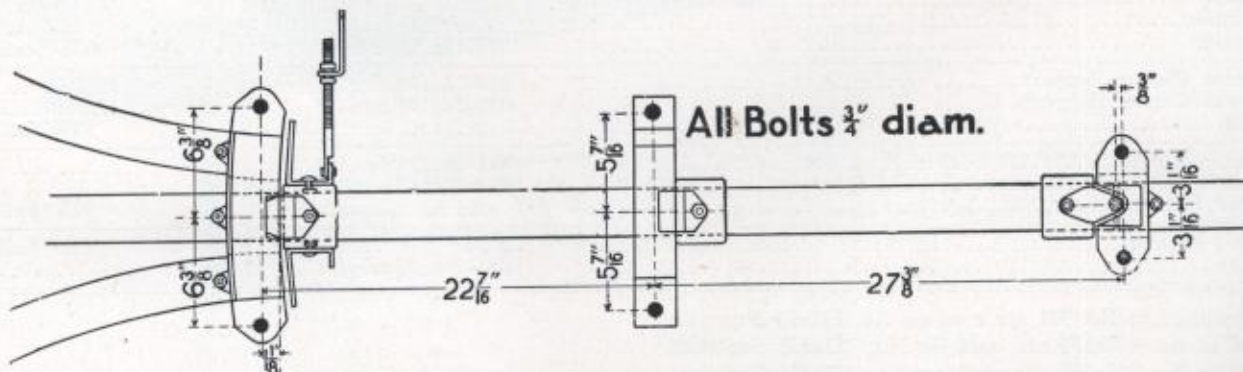
Plan and bolt template diagram of a 2-Way Right Hand No. 931x75 Trolley Track Tongue Switch. A Left Hand Switch is just the same as the above except that the curve is on the opposite side.



Plan and bolt diagram of 3-Way No. 931x75 Trolley Track Tongue Switch.



Plan and bolt diagram for 2-Way Right Hand Nos. 933x175 or 933x375 Trolley Track Tongue Switch. Left Hand Switch is exactly the same as the above except that the curve will be on the opposite side of the straight track.



Plan and bolt hole diagram of 3-Way Nos. 933x175 or 933x375 Trolley Track Tongue Switches.



## Wood Superstructure Framing for Tongue Switches

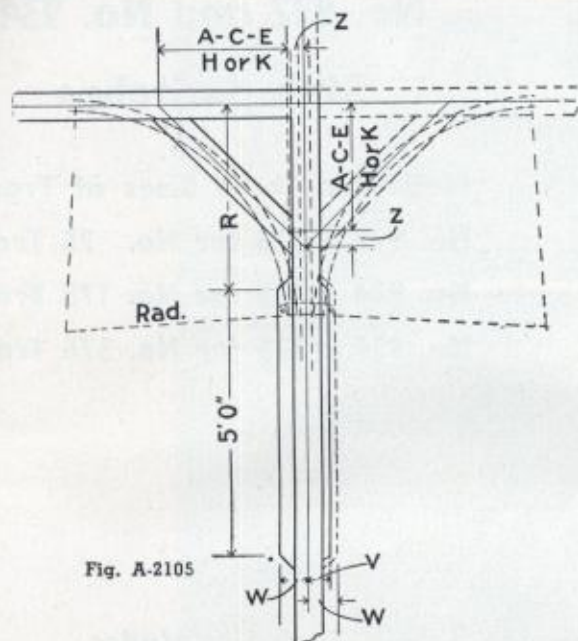


Fig. A-2105

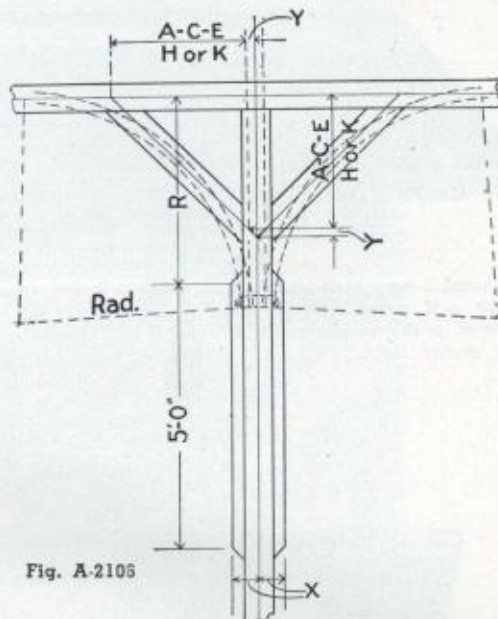


Fig. A-2106

This illustration shows timber framing for 2-way switch connecting with two curved tracks only.

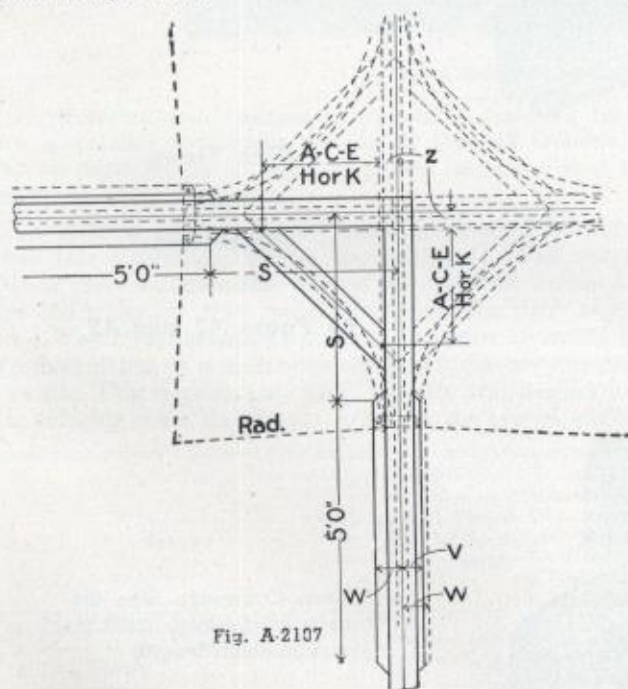


Fig. A-2107

The full lines show timber framing for two 2-way switches, each connecting with one curved track and one straight track.

The dotted lines in connection with the full lines show the timber framing for two 3-way switches, each connecting with two curved tracks and one straight track.

**NOTE**—From the above diagrams the timber framing for any combination of switches and curves can be worked out. Where the letters "A"—"C"—"E"—"H" or "K" are shown, use the dimensions given in the table on page 45 corresponding with the number of brackets which are to be used to support the curve as shown on the diagrams on page 45.

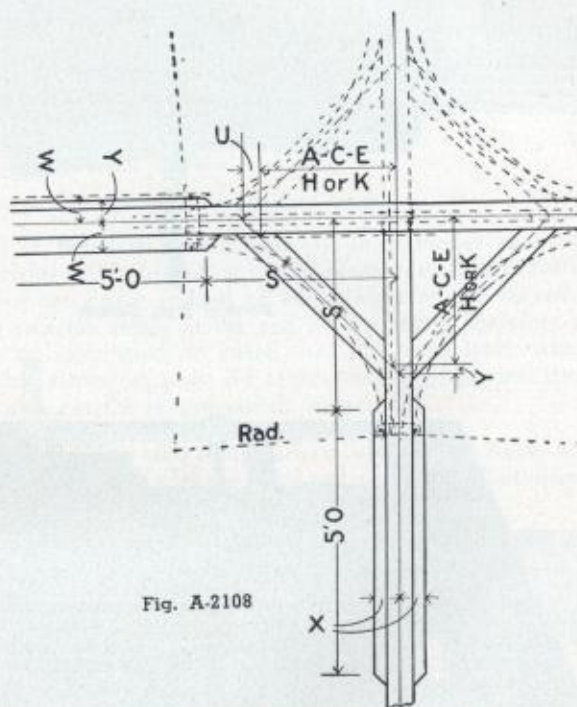
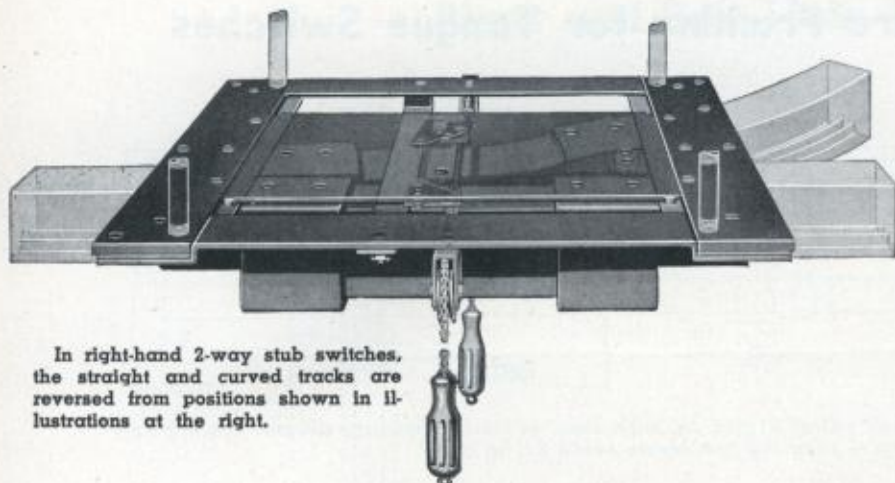


Fig. A-2108

The full lines show timber framing for one 2-way switch connecting with two curved tracks and one 2-way switch connecting with one curved track and one straight track.

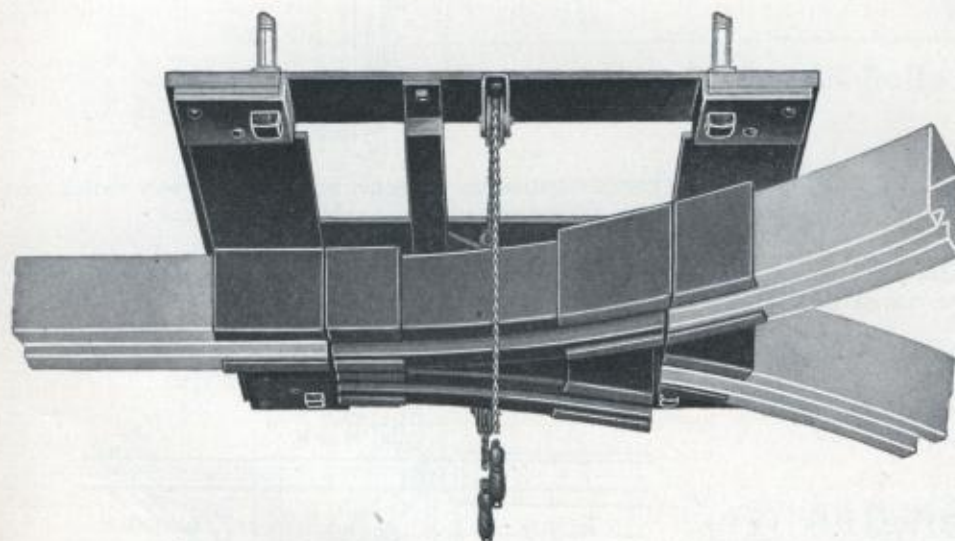
The dotted lines in connection with the full lines show the timber framing for one 2-way switch connecting with two curved tracks and one 3-way switch connecting with two curved tracks and one straight track.



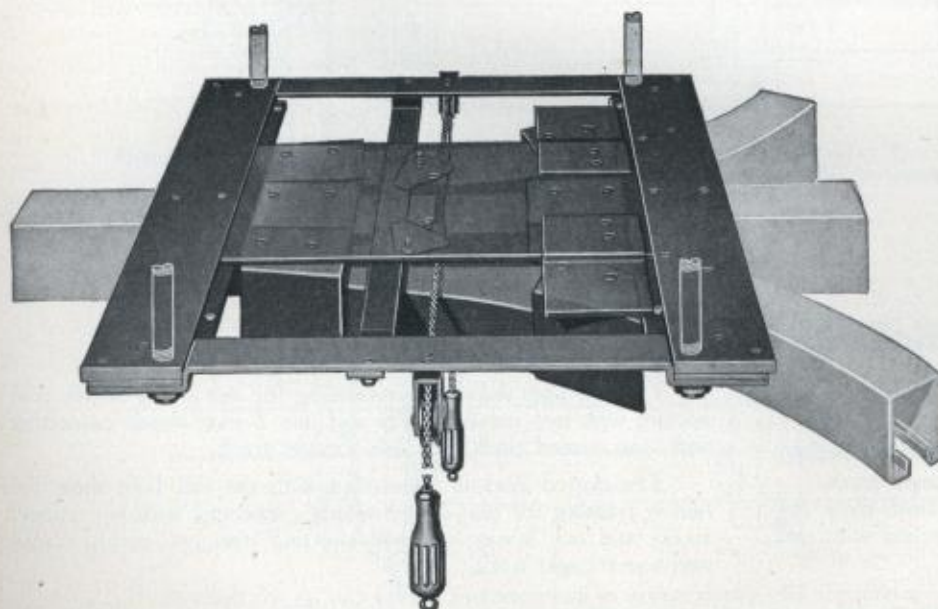


In right-hand 2-way stub switches, the straight and curved tracks are reversed from positions shown in illustrations at the right.

Left-Hand 2-Way Stub Switch



Neutral Stub Switch



3-Way Stub Switch

## No. 932 and No. 934 Stub Switches

Made for Three Sizes of Track:  
No. 932 x 75 for No. 75 Track  
No. 934 x 175 for No. 175 Track  
No. 934 x 375 for No. 375 Track

Each Size Made:  
Neutral;  
2-Way Right or Left Hand;  
or 3-Way

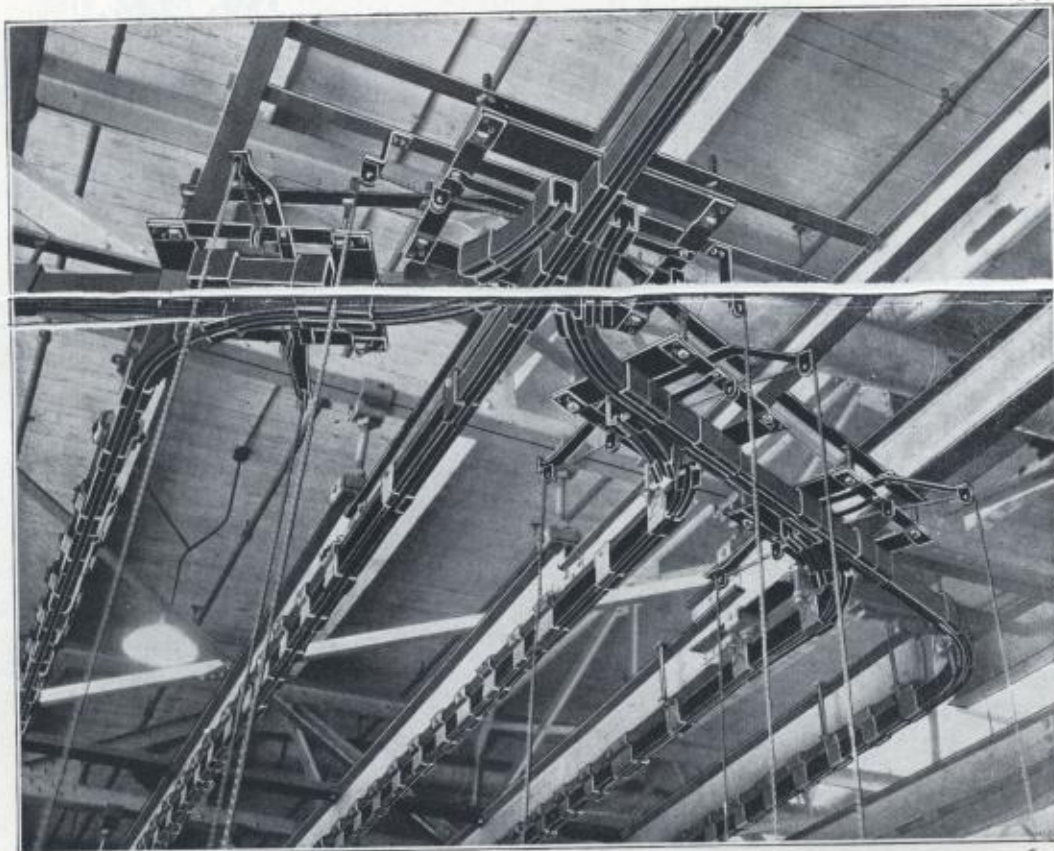
Plan Views  
and  
Dimensions  
Shown  
on Pages 42 and 43

When Ordering: Give distance from floor to track to determine chain length.

Continued on Next Page



## No. 932 and No. 934 Stub Switches



Notice that stub switches may be placed very closely together

These sliding stub switches are especially designed for use where space does not permit the regular type of switches (as shown on page 34) to be used. These can be placed very close together, see above illustration.

The **2-Way** stub switches are made right-hand, left-hand and neutral (see illustrations on the opposite page). The minimum radius of curve which can be used in the No. 932 Switch is 24 inches and in the No. 934 Switch 36 inches. The right- and left-hand 2-Way Switches each have one short section of curved track and a short section of straight track attached to the movable part of the switch. This movable part slides laterally with respect to the track, bringing either the straight section or the curved section in

line with the ends of the stationary tracks.

The **Neutral** switch operates in a similar manner except that right- and left-hand curved tracks are attached to the movable part of the switch instead of one straight or one curved section. Stub switches begin at the end of the curve, therefore they require no more space to install than the curve itself, whereas the switches shown on page 34 require four feet beyond the end of the curve for the hinged switch tongue.

The **3-Way** stub switches have one straight track, one right-hand curved track and one left-hand curved track attached to the sliding member of the switch.

Switch	Track No.	Height Over All Inches	Weights					*Switches, Less Curved Tracks Wt. Lbs.
			Switches Including 90° Curved Tracks					
			2' Radius	2' 6" Radius	3' Radius	3' 6" Radius	4' Radius	
			Wt. Lbs.	Wt. Lbs.	Wt. Lbs.	Wt. Lbs.	Wt. Lbs.	
932 x 75—2-Way, Right or Left..	75	3½	76	78	79	81	82	70
932 x 75—2-Way, Neutral .....	75	3½	82	85	89	92	95	70
932 x 75—3-Way .....	75	3½	116	119	122	125	128	100
934 x 175—2-Way, Right or Left..	175	4¾	.....	.....	109	112	115	90
934 x 175—2-Way, Neutral .....	175	4¾	.....	.....	128	134	140	90
934 x 175—3-Way .....	175	4¾	.....	.....	164	170	177	120
934 x 375—2-Way, Right or Left..	375	4¾	.....	.....	121	125	130	94
934 x 375—2-Way, Neutral .....	375	4¾	.....	.....	148	157	166	94
934 x 375—3-Way .....	375	4¾	.....	.....	189	198	207	126



**No. 932**

## Stub Switches

Plans and Elevations

showing

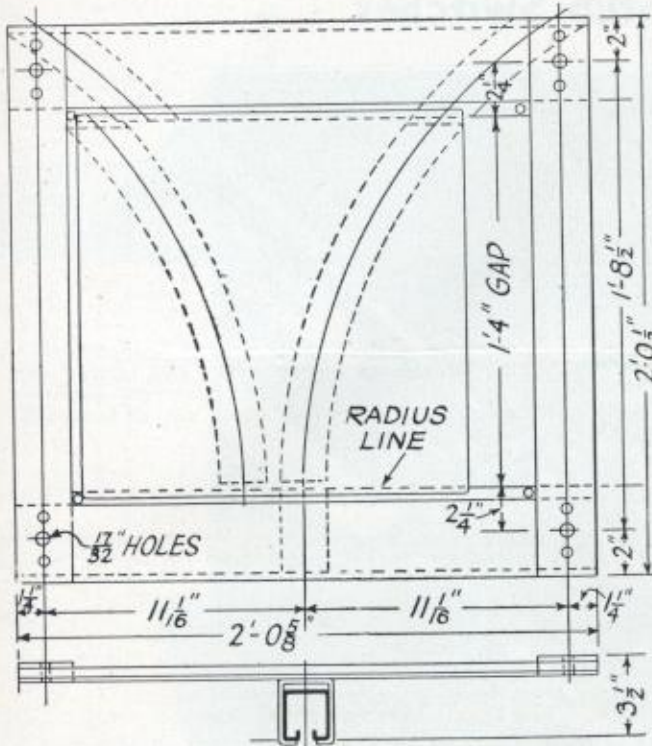
Bolt Hole Locations

and

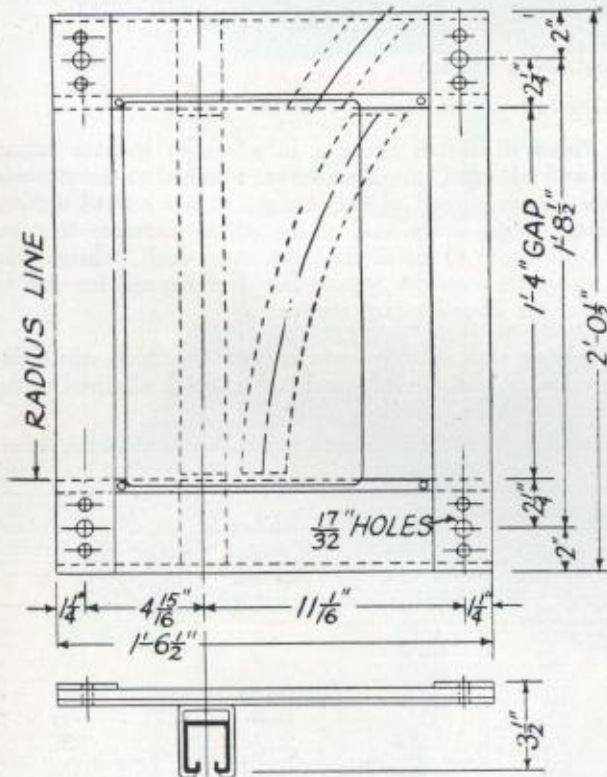
Clearance Dimensions



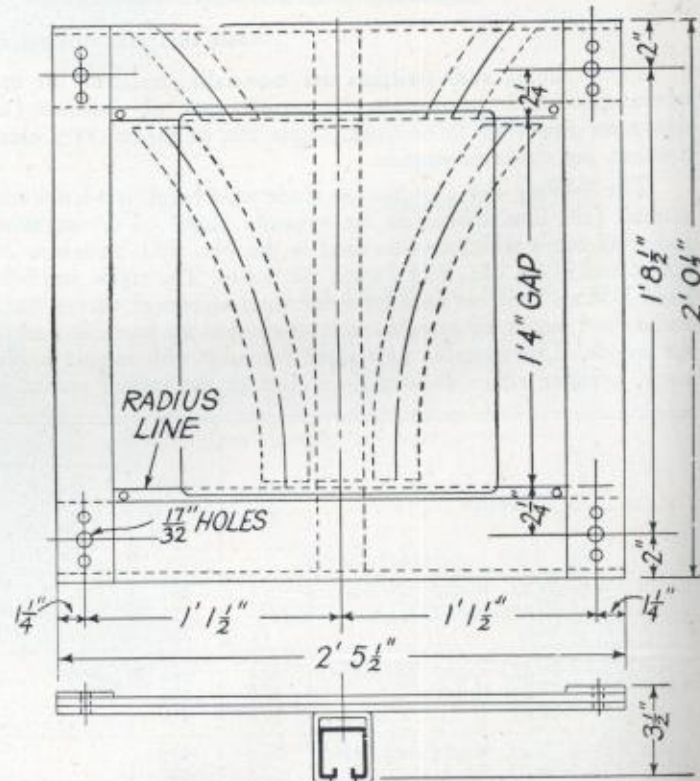
"Gang-Way"



**No 932-75 NEUTRAL STUB SWITCH**  
FOR 2'-0", 2'-6", 3'-0", 3'-6" & 4'-0" RAD. CURVES



**No 932-75 TWO WAY STUB SWITCH**  
FOR 2'-0", 2'-6", 3'-0", 3'-6" & 4'-0" RAD. CURVES  
RIGHT HAND SWITCH SHOWN- LEFT HAND SWITCH IS OPPOSITE



**No 932-75 THREE WAY STUB SWITCH**  
FOR 2'-0", 2'-6", 3'-0", 3'-6" & 4'-0" RAD. CURVES



**No. 934**

## Stub Switches

**Plans and Elevations**

showing

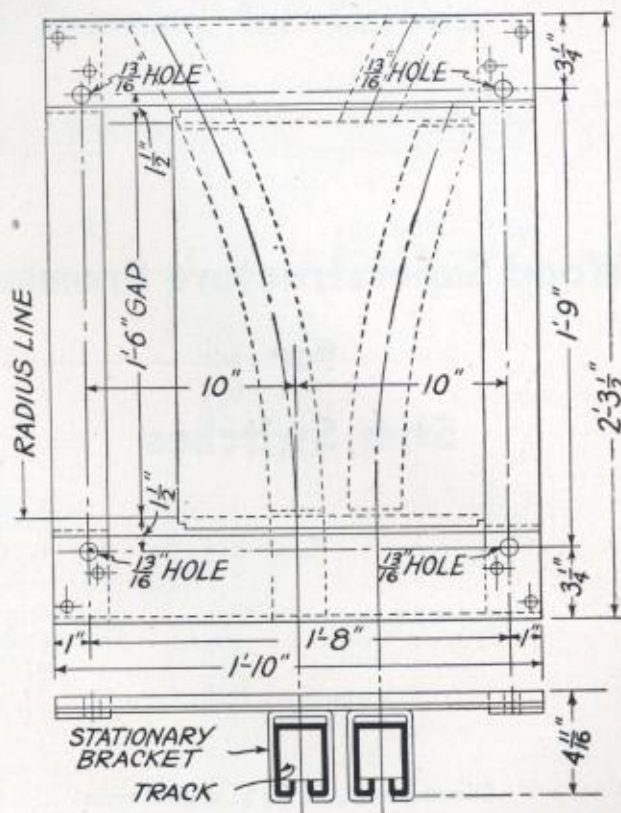
**Bolt Hole Locations**

and

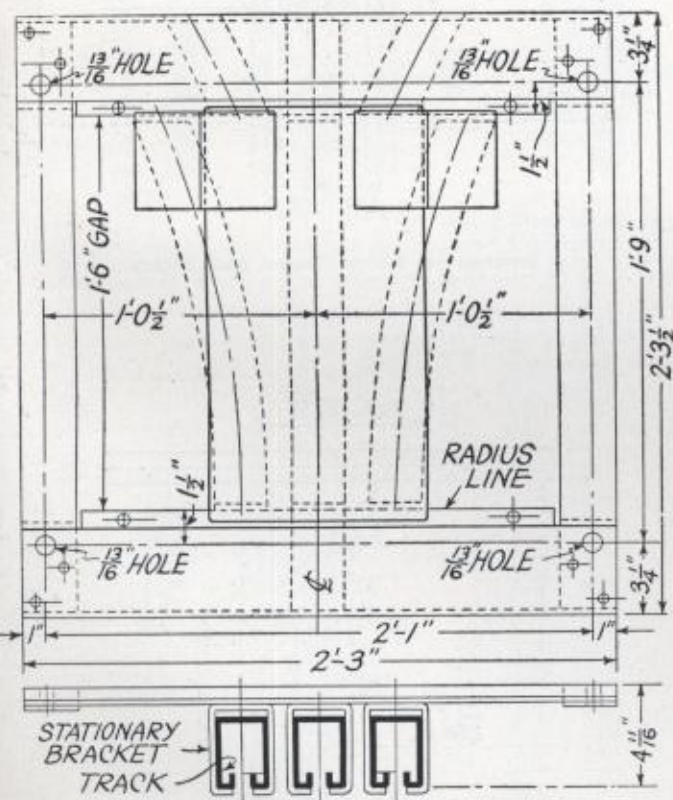
**Clearance Dimensions**



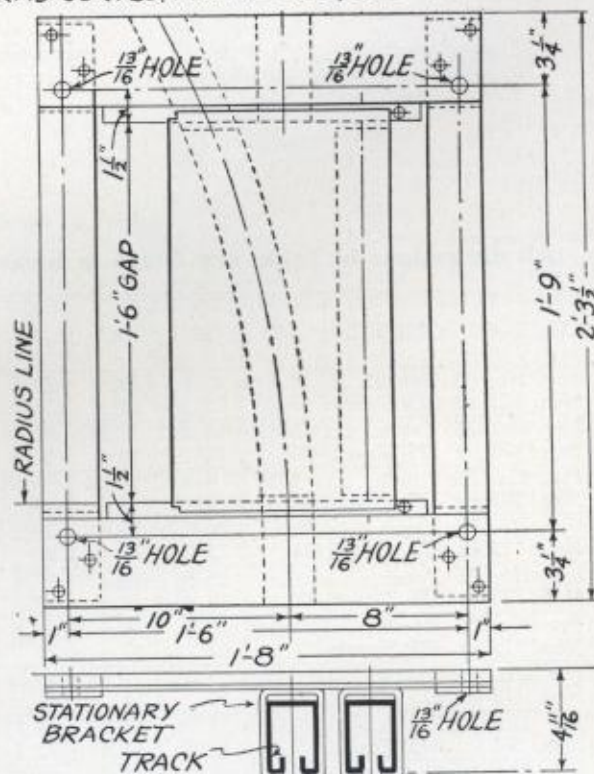
"Over-Way"



**№ 934 NEUTRAL STUB SWITCH FOR 3'-0", 3'-6", & 4'-0" RAD CURVES, FOR NOS 175 & 375 TRACK ONLY**



**№ 934 THREE WAY STUB SWITCH FOR 3'-0", 3'-6", & 4'-0" RAD. CURVES, FOR NOS 175 & 375 TRACK ONLY**



**№ 934 TWO WAY STUB SWITCH FOR 3'-0", 3'-6", & 4'-0" RAD CURVES, FOR NOS 175 & 375 TRACK ONLY**  
RIGHT HAND SWITCH SHOWN-LEFT HAND SWITCH IS OPPOSITE



## Wood Superstructure Framing for Stub Switches

Dimensions A, C, E, H depend upon the number of brackets used for supporting the curved track. See page 45.

All dimensions in Table are Given in Inches

RADIUS OF CURVE		24"	30"	36"	42"	48"
AA	For No. 75 Track....	20.5	20.5	20.5	20.5	20.5
	Nos. 175 or 375 Track	17	18	21	21	21
AB	For No. 75 Track....	10.81	10.81	10.81	10.81	10.81
	Nos. 175 or 375 Track	10	10	10	10	10
AC	For No. 75 Track....	4.68	4.68	4.68	4.68	4.68
	Nos. 175 or 375 Track	8	8	8	8	8
AD	For No. 75 Track....	20.5	20.5	20.5	20.5	20.5
	Nos. 175 or 375 Track	21	21	21	21	21
AE	For No. 75 Track....	13.5	13.5	13.5	13.5	13.5
	Nos. 175 or 375 Track	12.5	12.5	12.5	12.5	12.5
AF	For No. 75 Track....	20.5	20.5	20.5	20.5	20.5
	Nos. 175 or 375 Track	21	21	21	21	21
AG	For No. 75 Track....	11.06	11.06	11.06	11.06	11.06
	Nos. 175 or 375 Track	10	10	10	10	10
AH	For No. 75 Track....	5.75	11.75	17.75	23.75	29.75
	Nos. 175 or 375 Track	8.5	13.5	16.5	22.5	28.5
AI	For No. 75 Track....	5.75	11.75	17.75	23.75	29.75
	Nos. 175 or 375 Track	4.5	10.5	16.5	22.5	28.5
AJ	For No. 75 Track....	5.75	11.75	17.75	23.75	29.75
	Nos. 175 or 375 Track	4.5	10.5	16.5	22.5	28.5

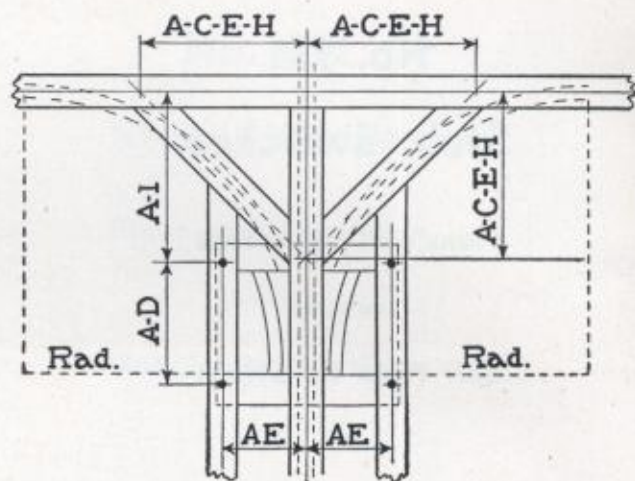


Diagram showing supports for 3-Way Stub Switch

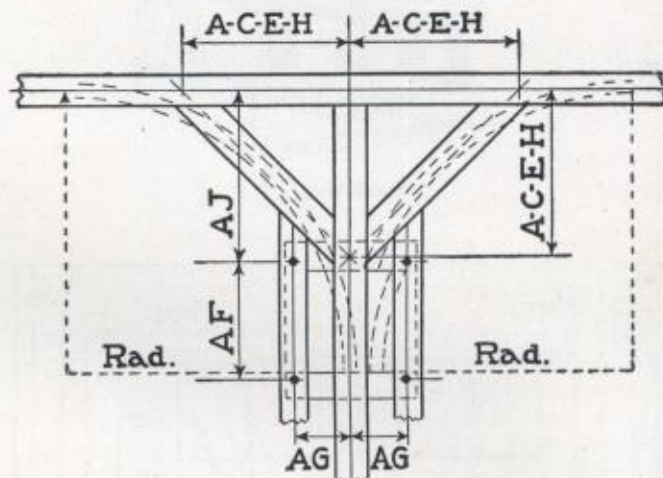


Diagram for 2-Way Neutral Stub Switch

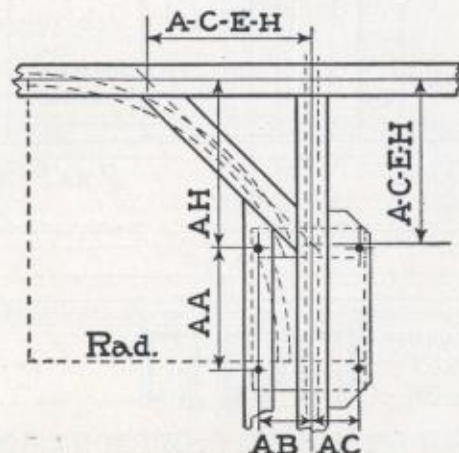
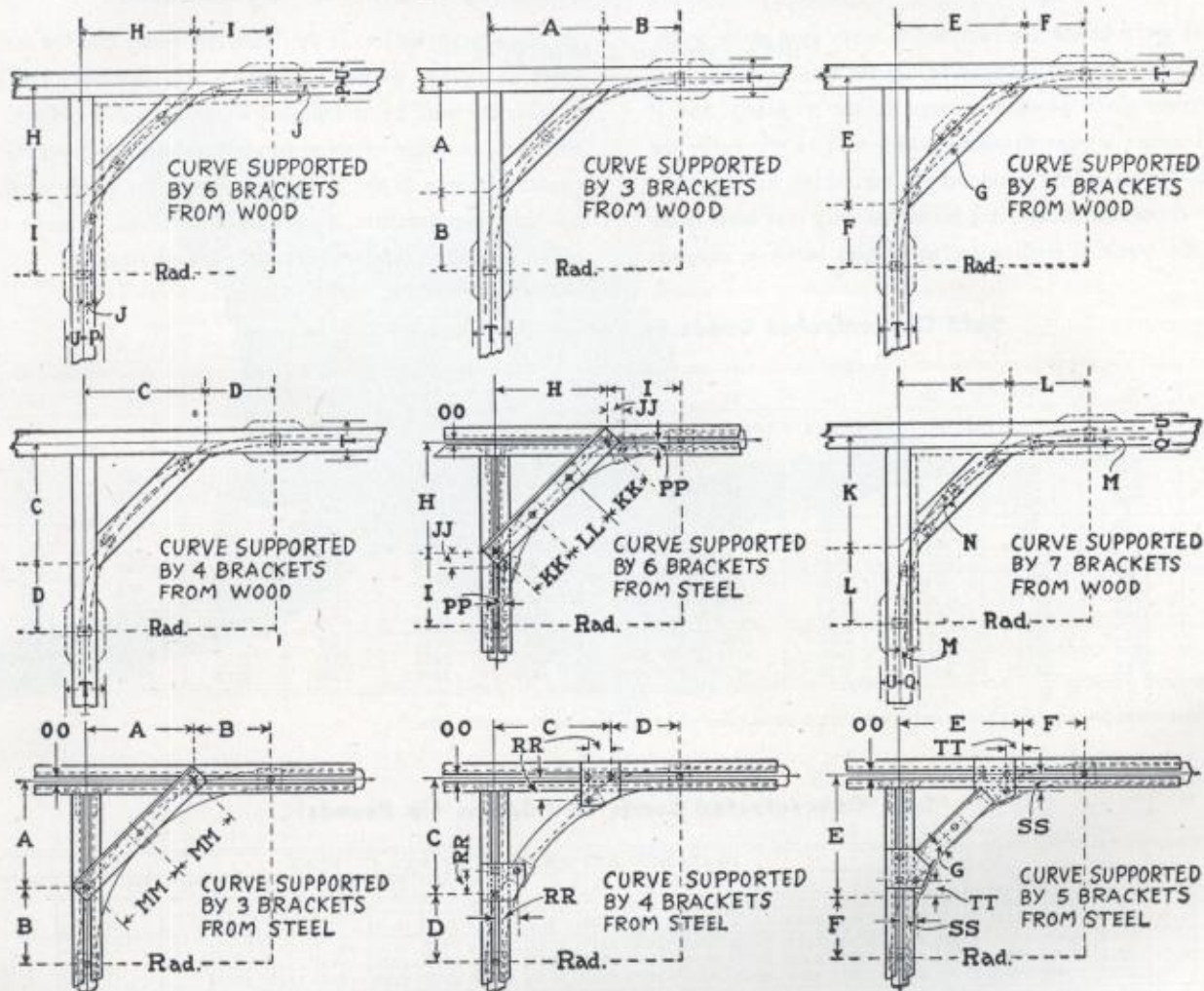


Diagram for 2-Way Left Hand Stub Switch, Right Hand will be just opposite



## Trolley Track Superstructure Framing for Curves



All Dimensions in Table are Given in Inches

RADIUS OF CURVE	24"	30"	36"	42"	48"	54"	60"	66"	72"	78"	84"	90"	96"	102"	108"	114"	120"
A	14.06	17.58	21.09	24.61	28.12												
B	9.94	12.42	14.91	17.39	19.88												
C	15.22	19.02	22.83	26.63	30.44	34.24	38.04	41.85									
D	8.78	10.98	13.17	15.37	17.56	19.76	21.96	24.15									
E		20.81	24.97	29.13	33.29	37.45	41.61	45.77	49.93	54.09	58.25	62.41					
F		9.19	11.03	12.87	14.71	16.55	18.39	20.23	22.07	23.91	25.75	27.59					
G		2.28	2.74	3.19	3.65	4.11	4.56	5.02	5.48	5.93	6.39	6.85					
H			21.65	25.26	28.87	32.48	36.09	39.69	43.30	46.91	50.52	54.13	57.74	61.34	64.95	68.56	
I			14.35	16.74	19.13	21.52	23.91	26.31	28.70	31.09	33.48	35.87	38.26	40.66	43.05	45.44	
J			1.76	2.05	2.34	2.64	2.93	3.23	3.52	3.81	4.11	4.40	4.69	4.99	5.28	5.57	
K					29.28	32.94	36.60	40.26	43.92	47.58	51.23	54.89	58.55	62.21	65.87	69.53	73.19
L					18.72	21.06	23.40	25.74	28.08	30.42	32.77	35.11	37.45	39.79	42.13	44.47	46.81
M					1.63	1.83	2.04	2.24	2.45	2.65	2.86	3.06	3.27	3.47	3.67	3.88	4.08
N					.81	.91	1.02	1.12	1.22	1.32	1.43	1.53	1.63	1.73	1.83	1.94	2.04
P	No. 18		2.75	3	3.5	3.75	4	4.25	4.5	5	5.25	5.5	5.75	6	6.25	6.5	
Min. for brackets	No. 5 x 75		4.75	5	5.5	5.75	6	6.25	6.5	7	7.25	7.5	7.75	8	8.25	8.5	
Q	No. 18			6	6.25	6.75	7	7.25	7.50	7.75	8.25	8.5	8.75	9	9.25	9.5	
Min. for brackets	No. 5 x 75					2.75	3	3.25	3.5	3.75	4	4.25	4.5	4.75	5	5.25	
JJ	No. 5 x 175 or 375					4.50	4.75	5	5.25	5.5	5.75	6	6.25	6.5	6.75	7	
KK	No. 5 x 175 or 375					5.75	6	6.25	6.50	6.75	7	7.25	7.5	7.75	8	8.25	
LL		3.25	3.75	4.31	4.81	5.37	5.93	6.5	7	7.55	8.06	8.56	9.12	9.68	10.18		
MM		9.68	10.93	12.93	14.57	16.18	17.62	19.37	20.93	22.56	24.12	25.75	27.5	29	30.62		
PP		11.25	13.93	15	16.87	18.75	20.68	22.5	24.5	26.25	28.25	30.12	31.87	33.87	35.75		
RR		9.93	12.43	14.93	17.43	19.87											
SS		1.75	2.06	2.34	2.65	2.93	3.23	3.52	3.81	4.12	4.40	4.68	5	5.28	5.56		
TT		4.81	5.62	6.40	7.25	8	8.87										
		2.75	3.19	3.66	4.13	4.56	5	5.5	5.93	6.37	6.87						
		2.75	3.31	3.66	4.13	4.62	5	5.5	5.93	6.37	7						

OO = .56" for No. 75 track and .81" for Nos. 175 and 375 track.

T min. = 6" for No. 5x75 bracket and 9.0" for Nos. 5x175 and 5x375 brackets.

U min. = 3" for No. 5x75 bracket and 4.5" for Nos. 5x175 and 5x375 brackets.

Note—Main steel supports are channels back to back with space between for bracket bolts, 1/4" bolts for No. 75 track and 3/4" bolts for Nos. 175 or 375 tracks.

Diagonal members shown are angles.



## Superstructure for Over-Way Track Systems

The tables given below are intended to serve as a guide in determining the proper sizes of material to use for this superstructure. All of the figures given provide a large factor of safety and if followed will assure a superstructure which will safely carry the specified loads for an indefinite period. In the tables, all loads are considered as concentrated and are based on only one load being supported in the track in each span, or section between supports

for the superstructure. If the loads are small and the track is to be used for storage purposes in such a way so that a continuous line of carriers will be distributed over the entire section of superstructure, or space between two superstructural supports, twice the capacities given in the tables below may be safely used. In erecting this superstructure, care should be taken to make the bottom of all superstructural members flush and straight.

### Safe Concentrated Loads on Yellow Pine Beams (in Pounds)

Span in feet	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Size of Beam in inches	Safe concentrated load in pounds at 1000 pounds per square inch maximum fibre stress, beams set with longest side vertical													
2x6	400	350	305	275	255	225	205	190	175	160	150	135	125	115
2x8	740	645	570	510	460	420	385	355	330	300	285	265	245	230
2x10	1185	1030	915	815	740	675	620	570	525	490	460	430	405	375
4x4	365	320	280	250	220	200	185	165	150	140	125	115	105	95
4x6	895	775	685	610	555	500	460	420	385	360	330	310	285	270
4x8	1645	1440	1270	1135	1030	935	855	785	730	675	625	585	550	515
6x6	1385	1205	1065	945	850	775	710	650	600	550	510	475	445	415
6x8	2560	2225	1970	1760	1590	1450	1325	1220	1115	1045	975	910	850	795
6x10	4085	3560	3155	2825	2555	2325	2135	1965	1825	1700	1580	1480	1385	1305
8x8	3465	3015	2675	2385	2160	1960	1800	1655	1530	1420	1315	1230	1150	1080
8x10	5540	4830	4275	3830	3460	3155	2890	2670	2475	2300	2150	2010	1885	1770
8x12	8095	7065	6255	5610	5080	4635	4255	3930	3640	3390	3170	2970	2790	2630

Note—Above figures allow for weight of beam and are based on actual size of beams instead of nominal size.

### \*Safe Concentrated Loads on I-Beams (in Pounds)

Size of I-Beam	DISTANCE BETWEEN SUPPORTS IN FEET																												
	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29					
4" 7.7#	2360	1790	1560	1200	1070	970	750	685	515	475	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
5" 10.0#	3840	3280	2540	2245	2015	1585	1445	1125	1035	960	725	675	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
6" 12.5#	5770	4940	4305	3390	3035	2745	2185	2005	1570	1455	1350	1035	965	905	....	....	....	....	....	....	....	....	....	....	....	....	....	....	
7" 15.3#	8235	7045	6150	5455	4340	3935	3590	2875	2655	2465	1950	1820	1705	1310	1230	1155	....	....	....	....	....	....	....	....	....	....	....	....	
8" 18.4#	12585	9690	8460	7500	6735	5415	4950	4550	4205	3410	3180	2530	2370	2230	2100	1620	1530	1445	....	....	....	....	....	....	....	....	....	....	
9" 21.8#	16735	14325	11215	9970	8955	8120	6580	6055	5605	4540	4235	3965	3725	2975	2810	2655	2515	1955	1845	1750	....	....	....	....	....	....	....	....	
10" 25.4#	21625	18510	14570	12890	11600	10520	8535	7855	7265	6755	5500	5150	4840	4560	3655	3455	3275	3110	2410	2290	2180	2075	....	....	....	....	....	....	
12" 31.8#	31855	25240	22075	17590	17110	15525	14200	11600	10740	9995	9340	7630	7165	6760	6390	5140	4875	4630	4410	4200	3270	3115	2975	2840	....	....	....	....	

Figures allow for weight of beams and are based on a maximum fibre stress of 16,000 lbs. per sq. in. for spans up to 20 times the flange width. Suitable reductions have been made as the spans increase, to guard against sidewise deflection. Length of span has been extended to 70 times the flange width. Use twice the quantities given above for uniformly distributed loads.

\*For electric systems reduce safe loads about 22%.

### Safe Concentrated Loads on Double Channels (in Pounds)

Size and Weight of Channels	Distance between Channels *	DISTANCE BETWEEN SUPPORTS IN FEET																											
		4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
		†Safe load in pounds at center. Use twice the amounts given below for uniformly distributed loads																											
3"- 4.1#	1 1/2"	2915	2325	1930	1580	1330	1125	965	830	725	625	550	480	410	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
4"- 5.4#	1 1/2"	5045	4025	3345	2830	2365	2025	1750	1525	1335	1175	1025	910	790	685	625	550	481	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
5"- 6.7#	1 1/2"	7975	6370	5295	4525	3825	3280	2845	2515	2215	1900	1735	1545	1375	1225	1090	985	880	780	685	600	525	.....	.....	.....	.....	.....	.....	.....
6"- 8.2#	1 1/2"	11465	9135	7595	6495	5610	4870	4230	3705	3305	2965	2640	2355	2135	1940	1740	1560	1400	1275	1135	1030	915	825	725	650	.....	.....	.....	.....
7"- 9.8#	1 1/2"	.....	12750	10610	9075	7925	6880	6050	5360	4735	4255	3795	3435	3125	2810	2560	2310	2110	1930	1735	1585	1420	1295	1175	1040	940	820	.....	.....
8"- 11.5#	1 1/2"	.....	.....	.....	12265	10710	9500	8355	7415	6635	5900	5335	4845	4410	4025	3640	3330	3060	2810	2580	2330	2140	1965	1800	1650	1475	1340	1220	.....
9"- 13.4#	1 1/2"	.....	.....	.....	.....	13895	12325	11070	9830	8800	7925	7175	6520	5950	5440	4985	4580	4215	3880	3575	3300	3040	2805	2585	2380	2190	2010	1845	.....
10"- 15.3#	1 1/2"	.....	.....	.....	.....	.....	.....	14145	12700	11370	10330	9385	8440	7800	7145	6560	6035	5560	5130	4800	4440	4110	3800	3510	3250	3000	2770	2600	.....
12"- 20.7#	1 1/2"	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	15525	14150	12940	12005	11045	10185	9520	8810	8160	7765	7115	6610	6225	5785	5375	5075	4710

Note—Figures allow for weight of channels and are based on a maximum fibre stress of 16,000 lbs. per sq. in. for spans up to 20 times the flange width, which is suitable for manually operated track systems.

†For electric systems reduce safe loads about 22%.

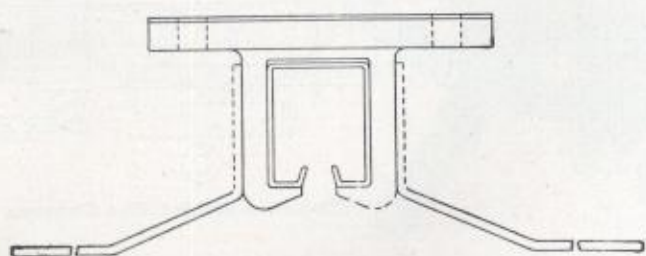
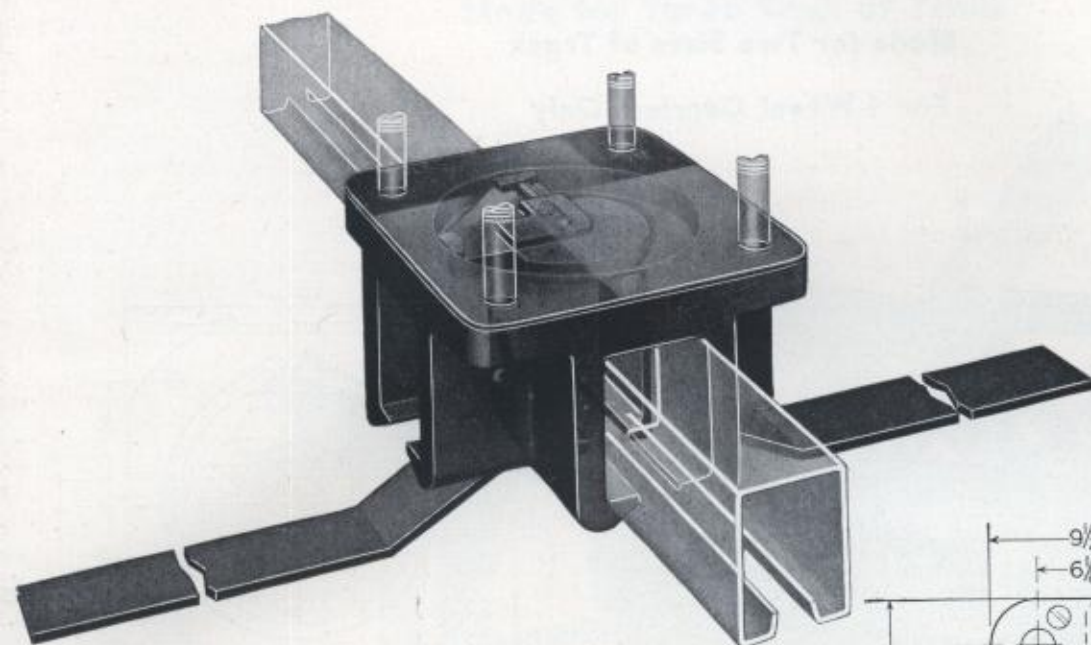
Suitable reductions have been made as the spans increase to guard against sidewise deflection.

\*A greater distance between channels is permissible.

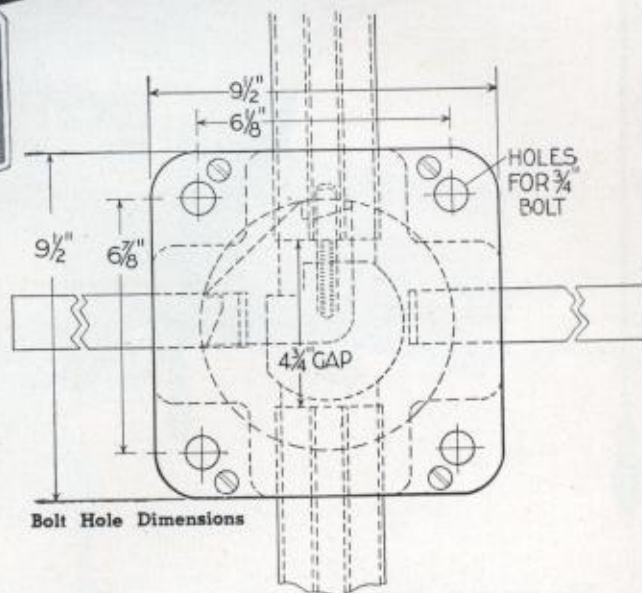


## No. 942 Turntable

For 2-Wheel Carriers Only



Clearance Diagram



Bolt Hole Dimensions

This turntable is similar to the No. 941 turntable illustrated on page 48, except that the revolving center portion is shorter, being only long enough to take a 2-wheel carrier. Instead of being revolved only thru an arc of 90° by chain, this turntable is revolved thru a full circle by pushing on extended levers which project from two sides of the movable part. It is intended primarily for use in paint or spray booths where it is necessary to revolve the part which is being painted or sprayed. When the center part is

in line with the runway track it is held in place by spring latches. In order to release the latches it is only necessary to push on the lever. Made for either 75, 175 or 375 track. Finish, black japan. As shown in the illustration, the turntable is made to connect with one continuous run of track only, but if preferred it can also be made to connect with tracks running at right angles. Other turntables shown on pages 48 and 49.

No.	For Track No.	*Height, Inches	Gap, Inches	Weight, Lbs.
942x 75.....	75	3 1/2	5	25
942x175.....	175	4 3/4	4 3/4	55
942x375.....	375	4 3/4	4 3/4	55

\*Same height as the track brackets.

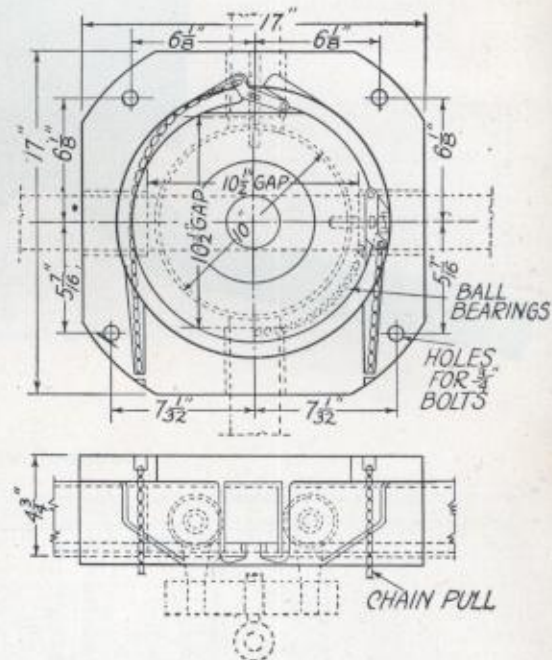
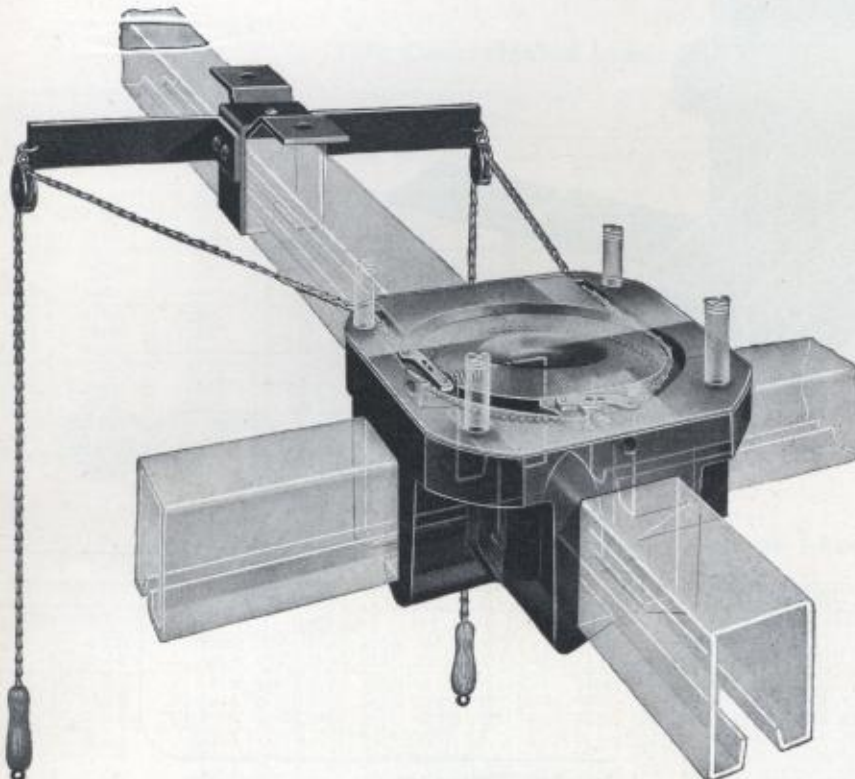


## No. 941

### Turntables

Made for Two Sizes of Track

For 4-Wheel Carriers Only



Clearance and Bolt Hole Diagrams

The turntable illustrated on this page is different from the cross-over illustrated on page 50 in that the turntable is designed to turn the carrier with its load. It is made entirely of heavy cast iron and the center part revolves on ball bearings made to fit 4-wheel carriers only, such as No. 100-4, No. 100-15, No. 100-28, No. 100-34. Capacity 750 lbs. Made for tracks crossing each other at right angles only.

The bracket supporting the chain sheaves is included with

the cross-over. A joint bracket will be supplied in place of the No. 7 bracket, as shown, where it is not possible to use a supporting bracket for taking care of the control arms. In ordering give the distance from floor to track so the proper length of chain can be furnished. For larger turntables see page 49. Height from bottom of track to top of turntable  $4\frac{1}{4}$  inches. Length of revolving part 10 inches. Positively locked in each final position. Distance between the ends of the fixed tracks  $10\frac{1}{2}$  inches.

Turntable No.	For Track No.	*Height, Inches	Gap, Inches	Weight, Lbs.
941x 75.....	75	$4\frac{3}{4}$	$10\frac{1}{2}$	130
941x175.....	175	$4\frac{3}{4}$	$10\frac{1}{2}$	130
941x375.....	375	$4\frac{3}{4}$	$10\frac{1}{2}$	130

\*Same height as the track brackets.

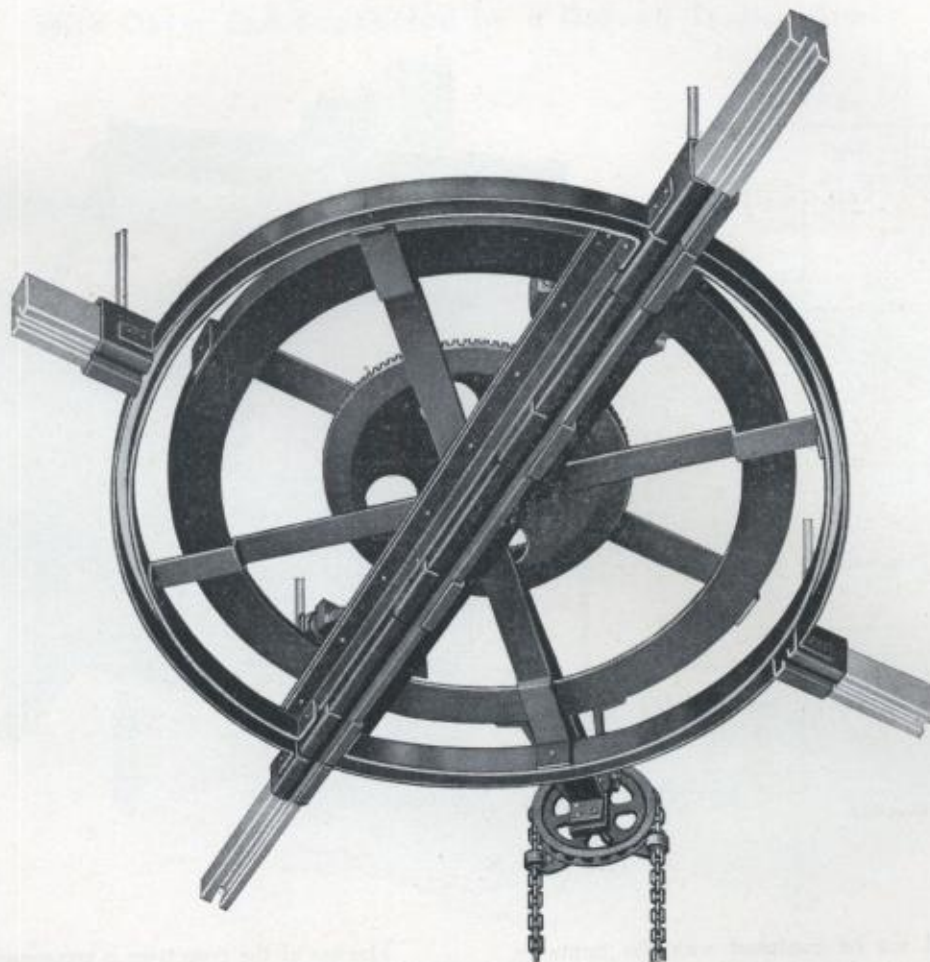


# Richards-Wilcox

Nos. 937 and 938

Turntables

Made for Three Sizes of Track



The "Over-Way" turntable, trolley-track type, illustrated here, is operated by a continuous hand chain and sprocket which turns the track section through a series of spur and bevel gears. Turntables are built regularly to turn through an angle of 90°. When tracks are brought into alignment, spring actuated plungers

engage notches in the frame to hold the turntable in position. In order to release the catch it is only necessary to give an extra pull on the hand chain. No extra tripping device is required. The ends of the revolving section of the turntable are supported by roller-bearing wheels.

Turntable No. and Diameter	For Track No.	Capacity Lbs.	Height Over All Inches	Height Above Top of Track Brackets	Weight Lbs.
937-12 inches .....	75	125	15½	12"	125
937-21 inches .....	75	250	15½	12"	225
937-38 inches .....	75	500	15½	12"	375
938-15 inches .....	175 or 375	750	16½	11¾"	175
938-27 inches .....	175 or 375	1500	16½	11¾"	275
938-50 inches .....	175 or 375	3000	16½	11¾"	450

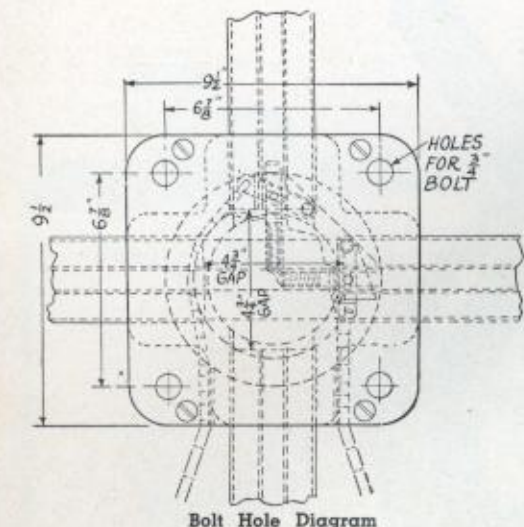
**Note**—When ordering specify diameter, length of carrier used, weight of load to be handled, how many runs of track are to be served and give distance from floor to track to determine chain length.



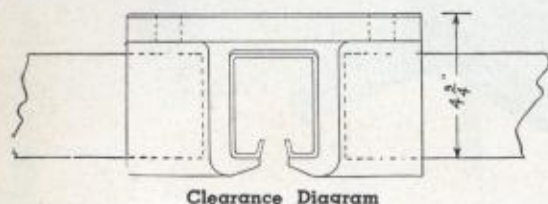
## Nos. 935 and 936

### Cross-Overs

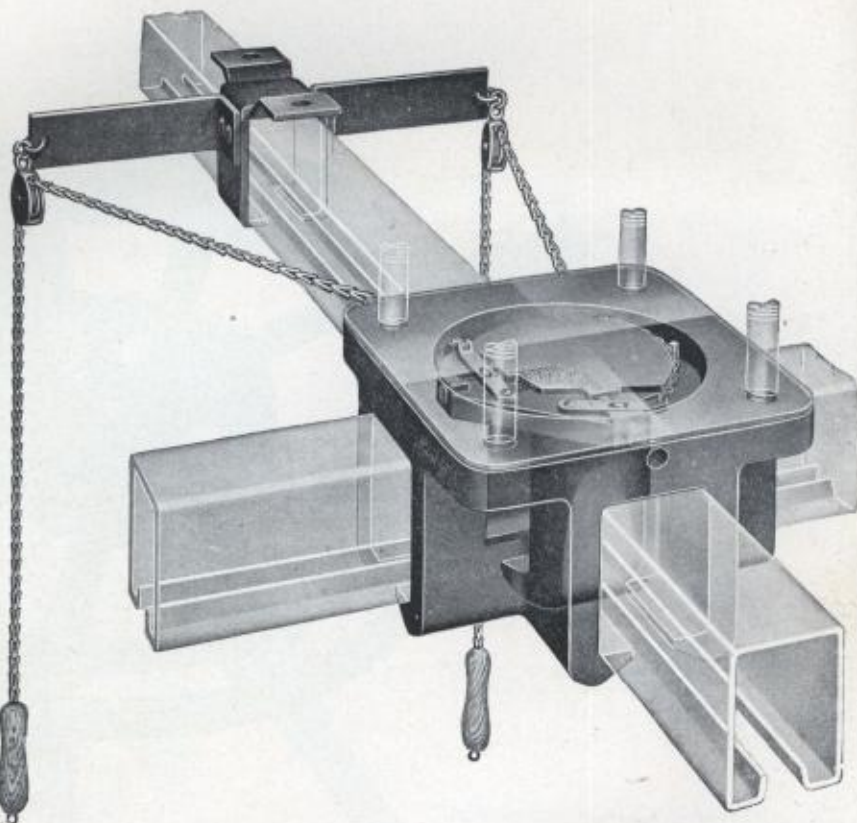
Made for Three Sizes of Track



Bolt Hole Diagram



Clearance Diagram



The cross-over should not be confused with the turntable, the difference being that a turntable is used to turn the load, but in a cross-over only a very short section of track is turned at the point of intersection between the four tracks. The cross-over must always be brought into alignment with the track on which the trolley is running before the trolley can enter the cross-over.

The bracket supporting the chain sheaves is included with the cross-over.

The use of the cross-over is recommended as the proper method for connecting tracks crossing one another at right angles. A continuous run of track insures easy operation of carrier under load. Positive stop closes track not in use. Made of heavy gray and malleable iron. Finish, black japan. Furnished complete with chain and wood handle grips for operating. Give distance from floor to track to determine chain length. Distance between ends of fixed track is 5 inches for the 935 and 4 3/4 inches for the 936 cross-over.

Cross-Over No.	For Track No.	*Height, Inches	Gap, Inches	Weight, Lbs.
935x 75.....	75	3 1/2	5	25
936x175.....	175	4 3/4	4 3/4	55
936x375.....	375	4 3/4	4 3/4	55

Only made for tracks crossing at right angles.

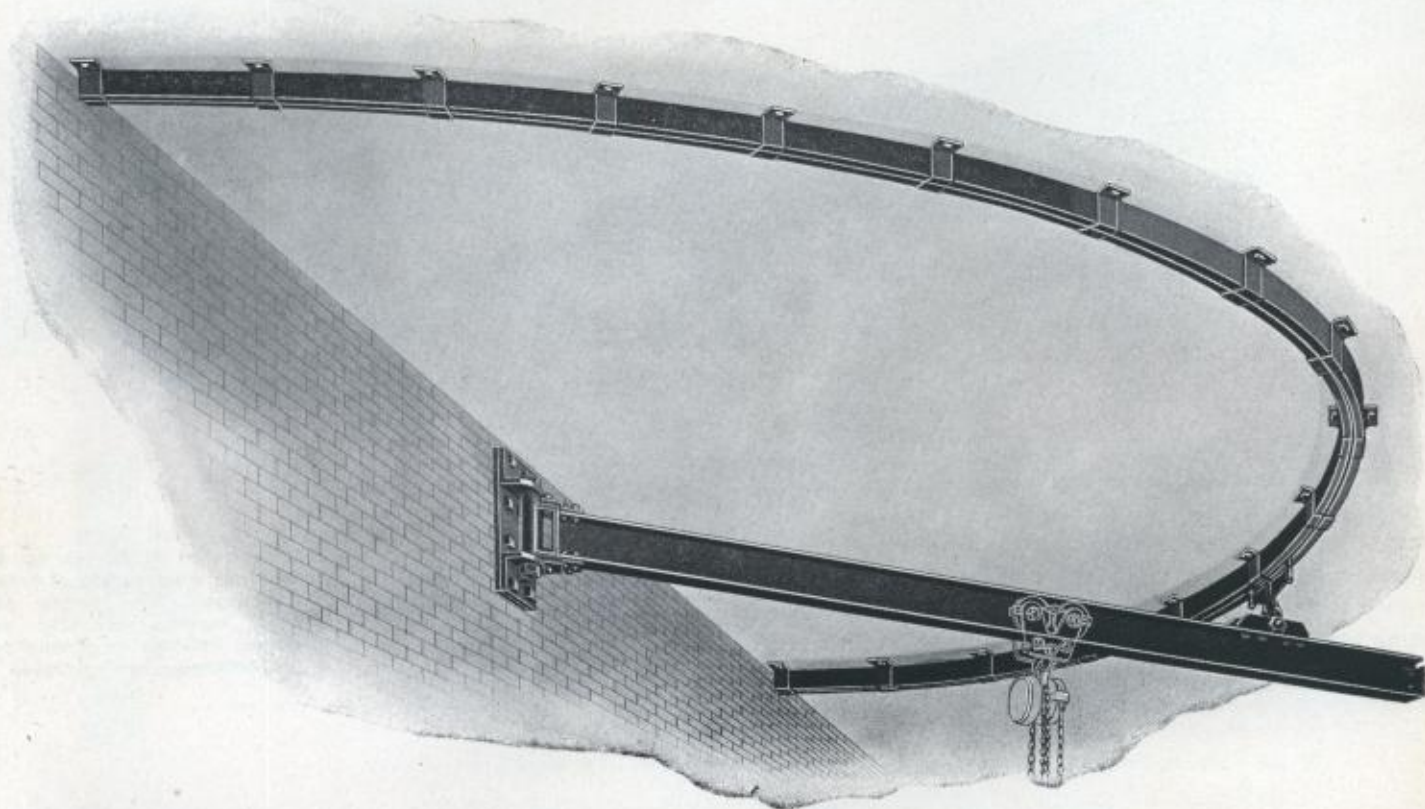
\*Same height as the track brackets.



No. 967

## Jib Crane

With Outer End Supported by a Curved Trolley Track



For Loads Weighing up to 2,000 lbs.

These jib cranes are used for so many different purposes, by so many different kinds of concerns, that space will not permit of listing the different sizes manufactured.

In fact every crane is made to order, the sizes and lengths of its various parts varying to suit the particular requirements of the individual installation.

The pintle or pivot plate can be attached to either a column or wall.

The Steelbeam from which the boom is made, can be furnished in any size or length. Its swinging end has stops attached to each side to prevent trolley from running off the boom.

Curved trolley track varies in size and radius according to conditions as does the carrier which runs in it.

Track brackets are furnished as will best suit the style of ceiling construction or superstructure used.

### *When Ordering State:*

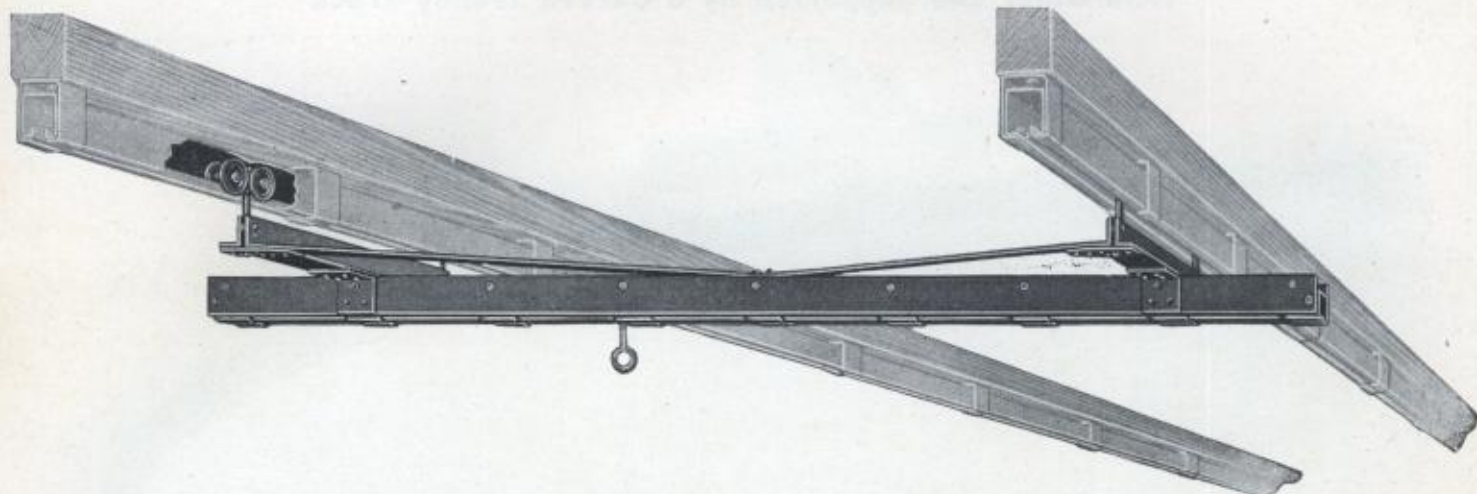
- 1—Kind of objects to be handled.
  - 2—Maximum weight of objects to be handled.
  - 3—Length of Steelbeam boom.
  - 4—Size of Steelbeam boom.
  - 5—Radius of curved trolley track and number of degrees.
  - 6—Style of superstructure curved track is to be supported from.
  - 7—Distance from floor to bottom of boom.
  - 8—Distance from top of boom to support for curved track.
- Send Sketch of Conditions if Possible.



### Traveling Cranes

Hand Operated, Push Type

These ARE NOT Transfer Cranes



The crane illustrated above is a low-priced crane especially designed for use where loads do not exceed 1000 lbs. and the distance between the runway tracks does not exceed ten feet. The track on the bottom of the cross-member of the crane can be made to extend about one foot beyond the craneway tracks, providing a working area twelve feet wide. Always send sketch showing the width of crane desired, points at which the track can be located, and state maximum load to be carried.

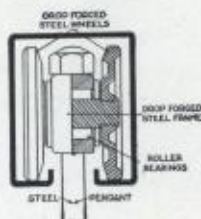


Illustration at left shows details and cross section of trolley track and roller-bearing end track carriers regularly furnished. Ball-bearing carriers can be furnished when specified.

#### Used in connection with runways of Nos. 175 and 375 tracks

Capacity of Crane	Bridge Made of No. 75 Track			
	*6 ft. Bridge	*8 ft. Bridge	*10 ft. Bridge	*12 ft. Bridge
	Weight	Weight	Weight	Weight
250 lbs. ....	75 lbs.	90 lbs.	105 lbs.	130 lbs.
500 lbs. ....	82 lbs.	95 lbs.	112 lbs.	150 lbs.

Capacity of Crane	Bridge Made of Nos. 175 or 375 Track			
	*6 ft. Bridge	*8 ft. Bridge	*10 ft. Bridge	*12 ft. Bridge
	Weight	Weight	Weight	Weight
250 lbs. ....	85 lbs.	105 lbs.	115 lbs.	145 lbs.
500 lbs. ....	100 lbs.	120 lbs.	130 lbs.	160 lbs.
750 lbs. ....	115 lbs.	135 lbs.	145 lbs.	175 lbs.
1000 lbs. ....	130 lbs.	150 lbs.	160 lbs.	190 lbs.

\*Bridge is the length of track on the crane.

Runways can be No. 75 track for loads up to 500 lbs.

Center distances between runway tracks can be varied to suit requirements.

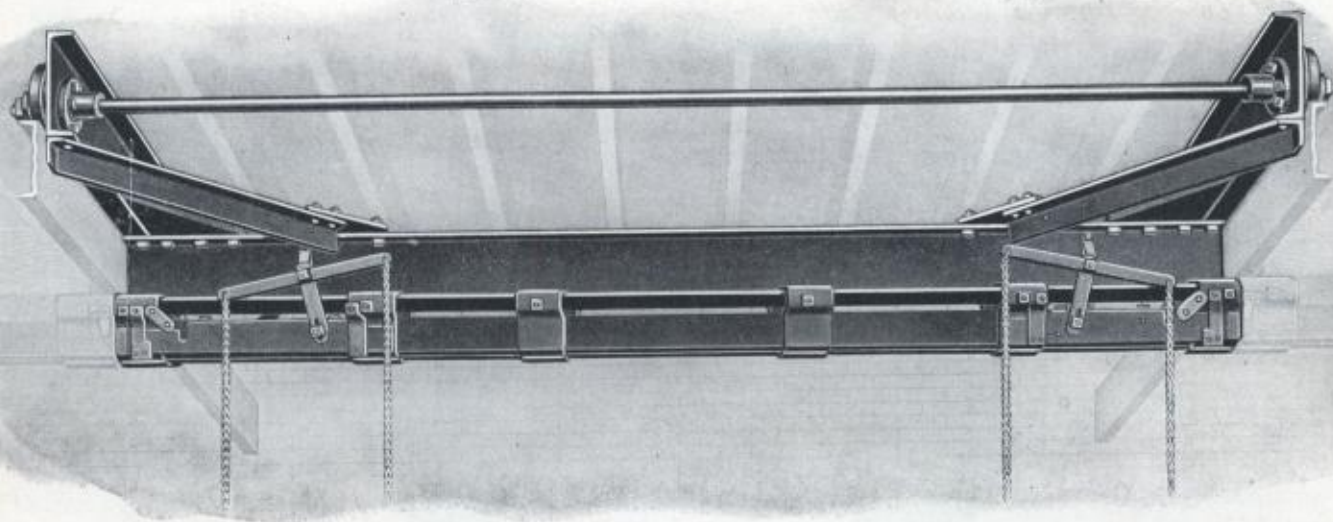
Transfer cranes with interlocks on ends of crane bridge are illustrated under the catalog number 978 on page 55.



## No. 972 Transfer Crane

Hand Operated

Push Type



Especially designed for use where a crane of this style is desired in connection with an Over-Way trolley track carrying system and where conditions do not permit or warrant of many runs of trolley track being erected in a certain area, all of which nevertheless must be quickly reached with the load.

Loads can be transferred from either side of the crane to any track desired. The ends of the trolley track, which are attached to the crane, are fitted with latches to hold the crane in line with the stationary tracks when loads are being transferred and are fitted with automatic stops which prevent the carriers from running out of the ends of the track when crane is not in line with the stationary tracks. Ends of stationary tracks are also fitted with automatic stops to prevent carriers from being accidentally run off the track when the crane is not in position.

Cross Section thru Crane Wheel. Note ball-bearings, felt washers, dust caps and other important items of this excellent wheel.

### Used in connection with Channel Iron Runways

Bridge Made of No. 175 or 375 Track

Capacity of Crane in Lbs.	*10 ft. Bridge	*12 ft. Bridge	*14 ft. Bridge	*16 ft. Bridge	*18 ft. Bridge	*20 ft. Bridge	*22 ft. Bridge	*24 ft. Bridge
	Weight, Lbs.	Weight, Lbs.	Weight, Lbs.	Weight, Lbs.	Weight, Lbs.	Weight, Lbs.	Weight, Lbs.	Weight, Lbs.
1,000	560	570	585	595	610	620	635	645
2,000	570	580	595	605	620	630	645	655
3,000	590	600	615	625	640	650	665	675

Note—\*Bridge is the length of track on the crane.

Give distance from floor to bottom of bridge so that length of bridge lock control chain may be determined.

Always send sketch showing lay-out, giving all details and dimensions.

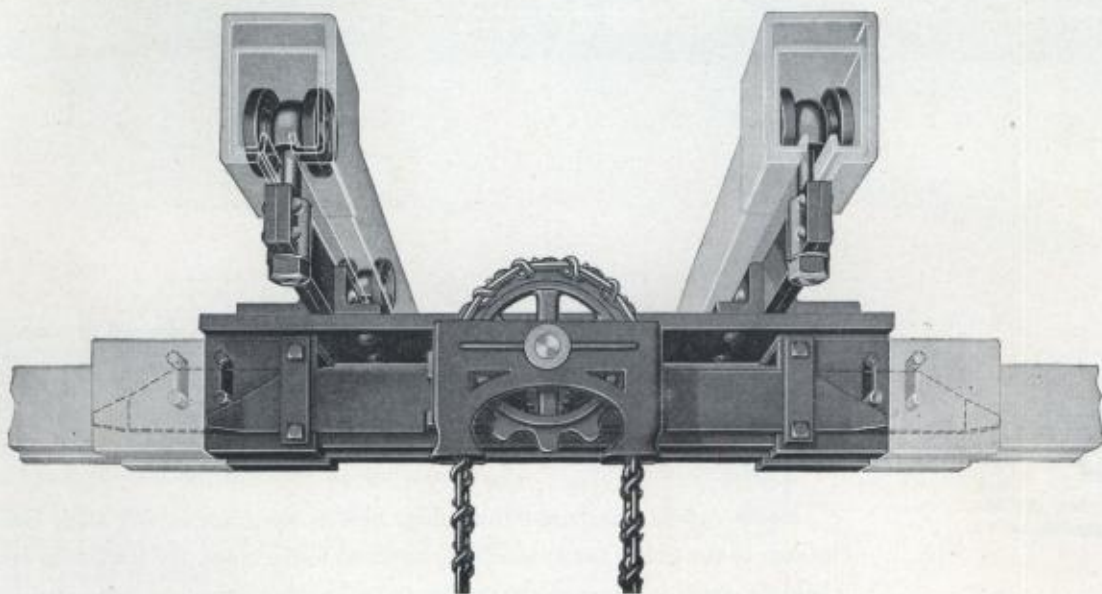


**No. 974**

**Transfer Cranes**

**Hand Operated**

**Push Type**



This short trolley track transfer crane is long enough to accommodate one carrier.

It is designed especially for use where branch tracks are so close together that it would be difficult to install curves and switches or where the expense of a large number of cranes and switches would make their use prohibitive.

The interlocks on both ends of the crane are operated simultaneously by the hand chain shown in the foreground. This hand chain may be set close to the crane bridge or may be extended a

considerable distance away from it in order to clear wide loads which may be handled on the carrier.

When the cranes are located so high that they can not be conveniently lined up with the branch tracks, spring latches operated by a pull chain or cord can be ordered.

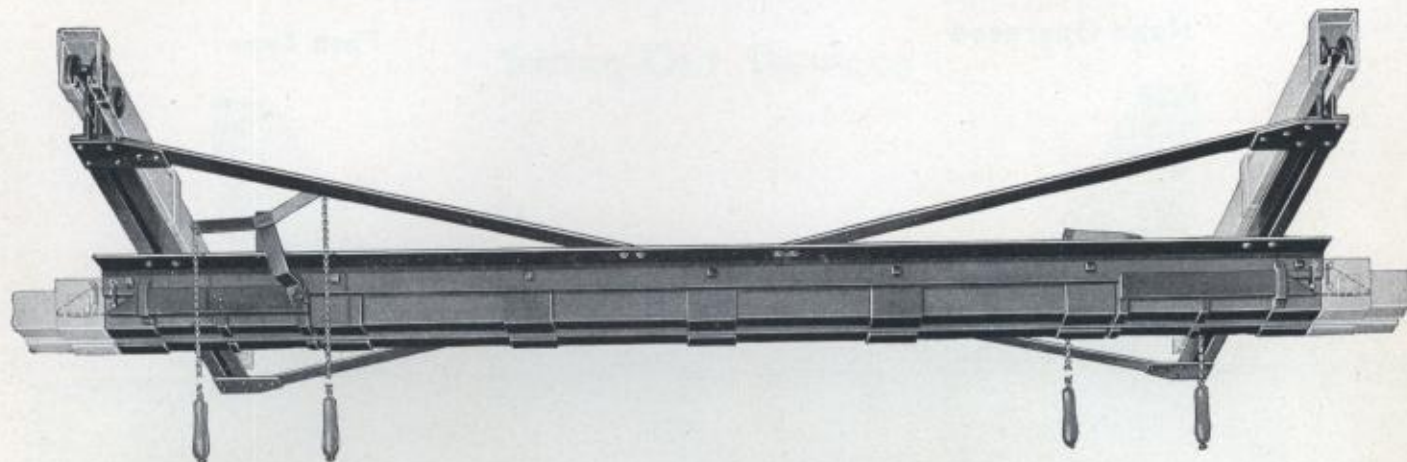
*When Ordering or Requesting Prices Give:*  
Weight and nature of the load to be handled.  
Length of runway required.  
Number of branch tracks on each side.



## No. 978 Transfer Cranes

Hand Operated

Push Type



This crane is similar to the No. 973 (on page 52) except that it is designed for use as a transfer crane.

Maximum capacity is 1,000 pounds and the longest length of bridge recommended is 12 feet.

Interlocks may be used on one or both ends. Each interlock is operated independently and the interlock controls may be extended away from the crane bridge at least 18 inches so that it will not interfere with the load.

When the cranes are too high to be conveniently lined up by hand with the stationary tracks, spring latches, controlled by pull cords or chain, can be furnished.

The end truck carriers are regularly furnished with roller-bearings but ball-bearing carriers may be furnished if specified.

### When Ordering Give:

Weight and character of load to be carried.

Width of load so we can determine how far the interlock operating chains must extend from the crane in order to clear the load.

Distance from crane to floor.

Length of the bridge.

Number of branch tracks with which the crane must connect on each end.

### Used in connection with runways of Nos. 175 and 375 tracks

Capacity of Crane	Bridge Made of No. 75 Track			
	*6 ft. Bridge	*8 ft. Bridge	*10 ft. Bridge	*12 ft. Bridge
	Weight	Weight	Weight	Weight
250 lbs. ....	125 lbs.	140 lbs.	155 lbs.	180 lbs.
500 lbs. ....	132 lbs.	145 lbs.	162 lbs.	200 lbs.
Capacity of Crane	Bridge Made of Nos. 175 or 375 Track			
	250 lbs. ....	135 lbs.	155 lbs.	165 lbs.
	500 lbs. ....	150 lbs.	170 lbs.	180 lbs.
	750 lbs. ....	165 lbs.	185 lbs.	195 lbs.
	1000 lbs. ....	180 lbs.	200 lbs.	210 lbs.
				195 lbs.
				210 lbs.
				225 lbs.
				240 lbs.

\*Bridge is the length of track on the crane.

Runways can be No. 75 track for loads up to 500 lbs.

Center distances between runway tracks can be varied to suit requirements.

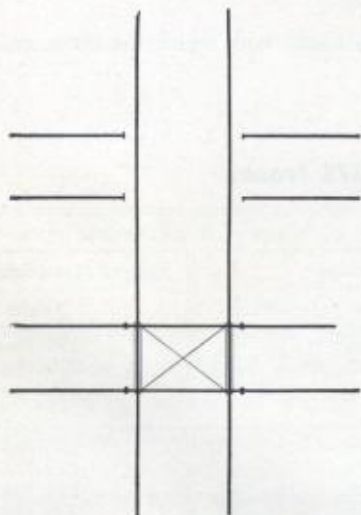
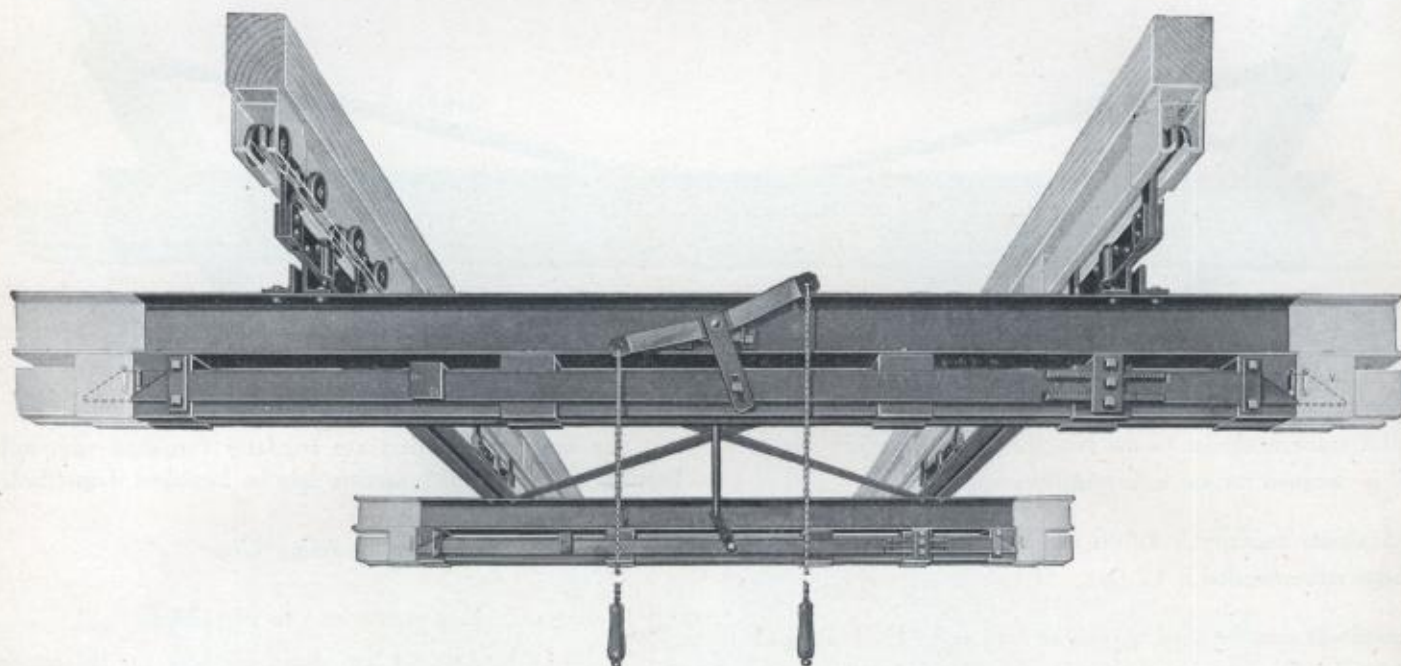


No. 979

## Double Bridge Transfer Crane

Hand Operated

Push Type



Schematic Plan showing a No. 979 Crane on its runway and serving two parallel runways. Any number of runways can be served, of course.

This is a special purpose crane which must be designed to meet the individual conditions prevailing at each installation.

Crane has two bridges and is intended for use in transferring racks of material which are carried on two parallel runs of track. Such racks are used for handling cores, pottery, tile, clay products and other similar material.

Distance between the bridges can be made whatever is required and the length of the bridges likewise.

All of the interlocks are operated by one set of pull chains. Spring latches are not usually furnished but they may be built into the frame if required.

Prices and designs will be furnished upon receipt of full information.

### *When Ordering Give:*

Weight and character of load to be carried.

Width of load so we can determine how far the interlock operating chains must extend from the crane in order to clear the load.

Distance from crane to floor.

Length of the bridge.

Number of branch tracks with which the crane must connect on each end.



## No. 980 (Automatic) and No. 981 (Non-Automatic)

### Swing-Out Devices



When tracks go through door openings it is best to build the doors in pairs, one door opening to the right and the other to the left. The doors should be notched at the center of the opening to fit around the tracks.

When it is impossible to make the doors in pairs and a single door must be used, swing-out devices as shown in the illustration can be furnished. The swing-out device No. 980 as shown in the illustration is intended for use with automatic closing sliding fire doors. The device is arranged so that the door in closing, trips a lever which is attached to the weight cord. When the lever is tripped, the weights release a latch on the top of the swinging section of track and pull the track open. In the illustration above a swing-out device is shown, in dark, on the nearer side of the wall and another swing-out device, in lighter color, on the farther side of

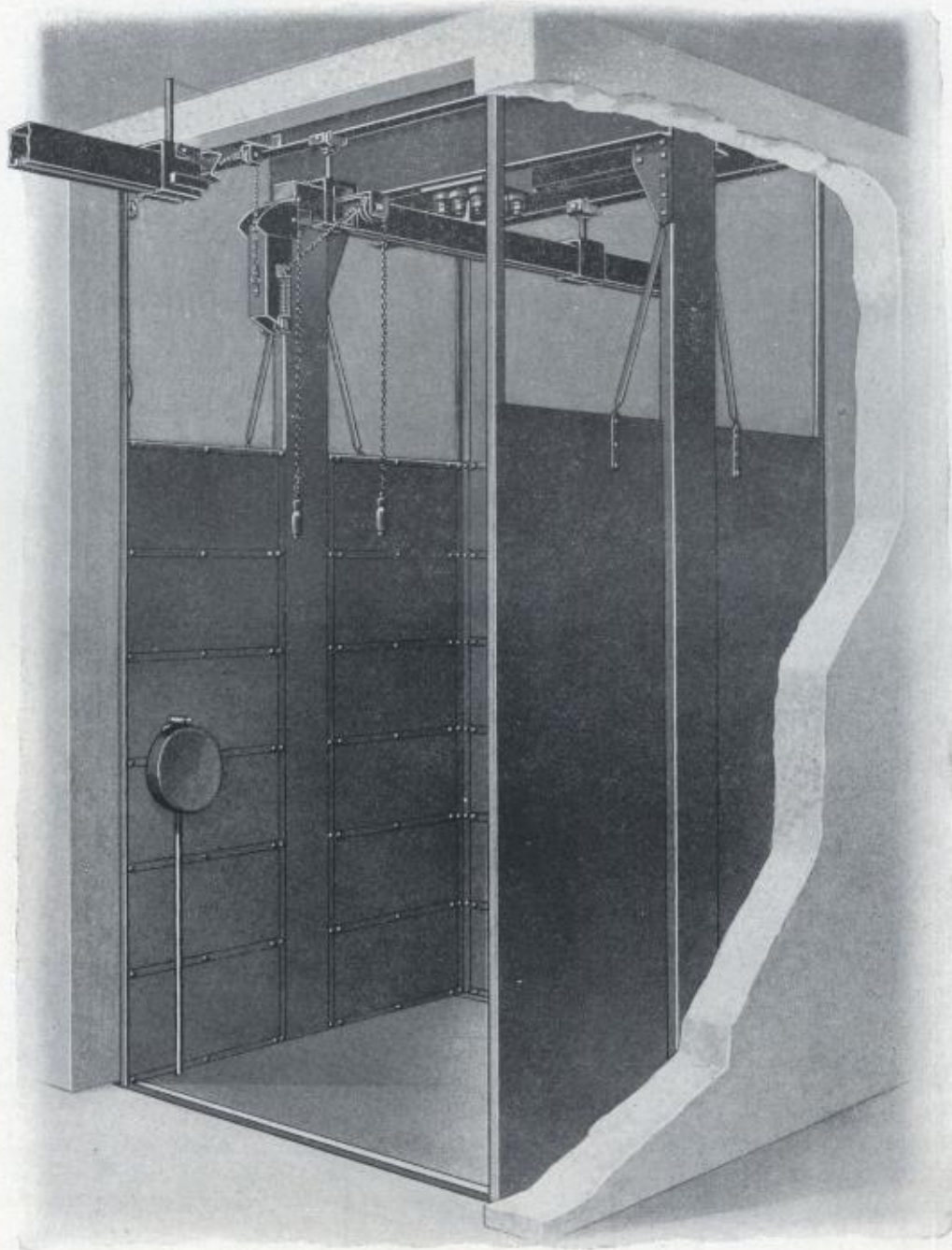
the wall, but if the fire door is on one side of the wall only, it is only necessary to use the swing-out device on one side of the wall. When the swing-out section of the track is open, a stop closes the main line of track to prevent the carriers from being run out of the opening.

The No. 981 Non-Automatic Swing-Out Device is built similar to the above except that the weights and trip are omitted, and a hand-chain with pull substituted to release the latch.

Swing-Out devices are made right- or left-hand. A sketch should be furnished with each order showing the way the door or doors slide, also the distance from the top of the opening to the top of the track (minimum distance: non-automatic type  $3\frac{1}{4}$  inches, automatic type 6 inches).



## Trolley Track Equipment on Freight Elevators



When track systems are used on two or more floors of a building it is sometimes convenient to have a section of track mounted on an elevator so that material can be transferred from the track on one floor to the track on another floor. The illustration shows such an arrangement with the track attached to the upper members of a freight elevator and with a drop section of track

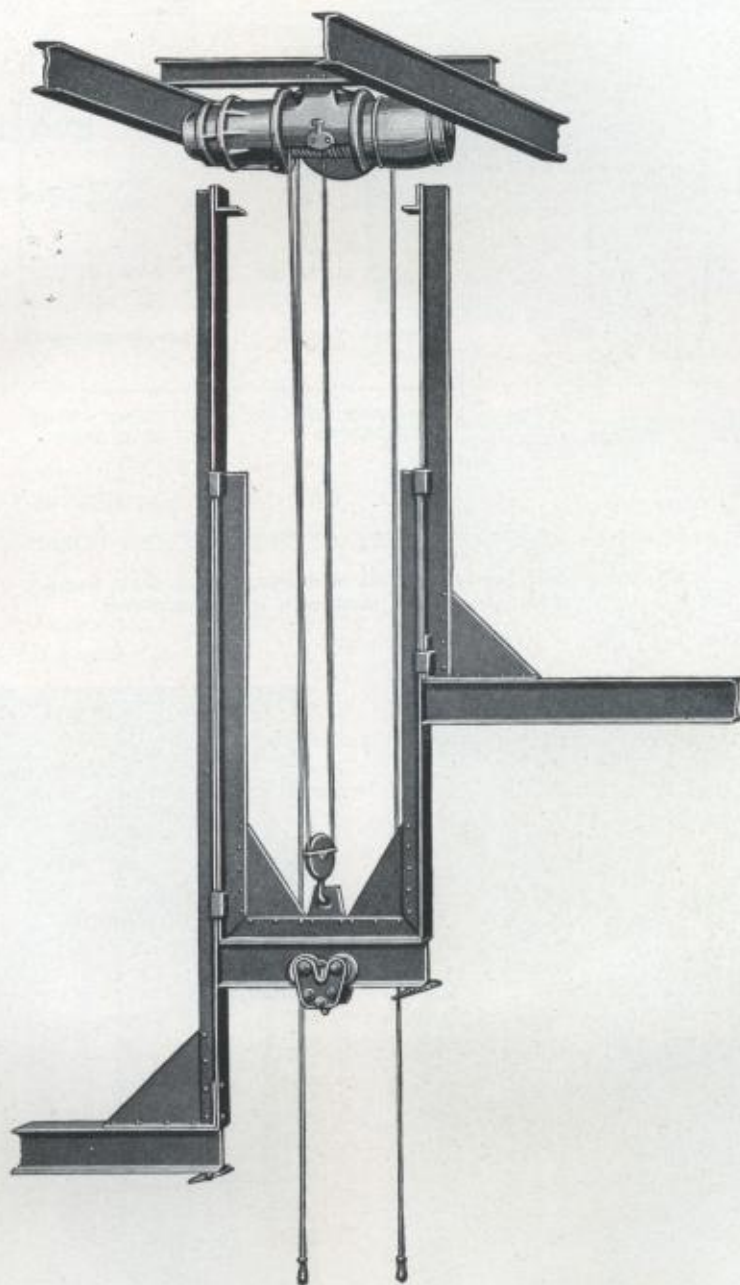
designed to connect the stationary track at any floor with the track on the elevator.

The drop section of track is hinged to the track on the elevator. In all cases the open ends of track are protected so that carriers cannot be run out accidentally.



## No. 984 Elevating Device

For Either Trolley Track or Steelbeam Track



Sometimes, due to different floor levels, the overhead conveying track is at different heights throughout its course. When such is the case, this Elevating Device can often be used to advantage as it will lift a trolley and its load from the lower run of track to the upper run of track, or vice versa.

The open ends of the stationary track and of the drop section of track are always protected so that it is impossible for a trolley and its load to run off the ends accidentally.

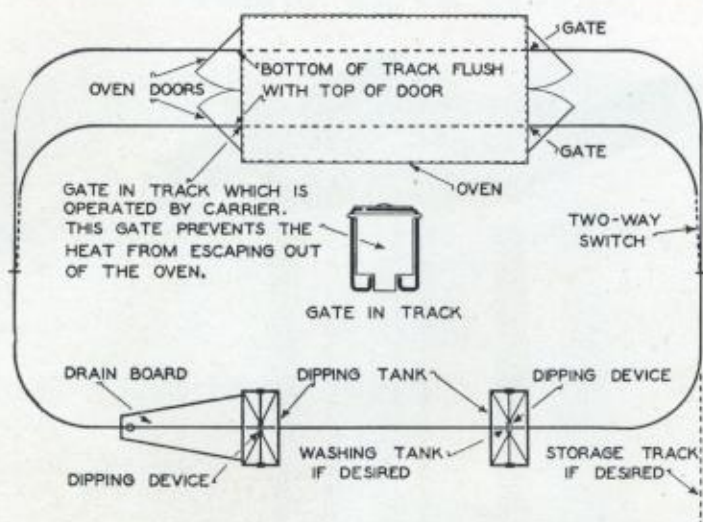
Any length of rise as well as amount of capacity that is desired can be furnished.

Device can be made to operate with any size of Trolley or of Steelbeam Track.

When requesting prices give us all the information possible.

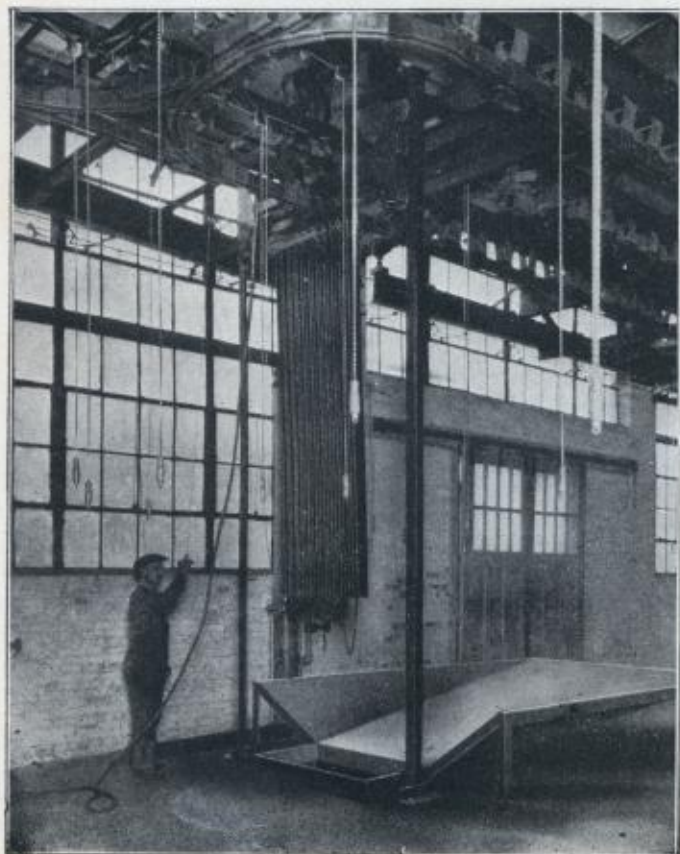


## No. 982 Dipping Devices or Lowerators (With Guides)

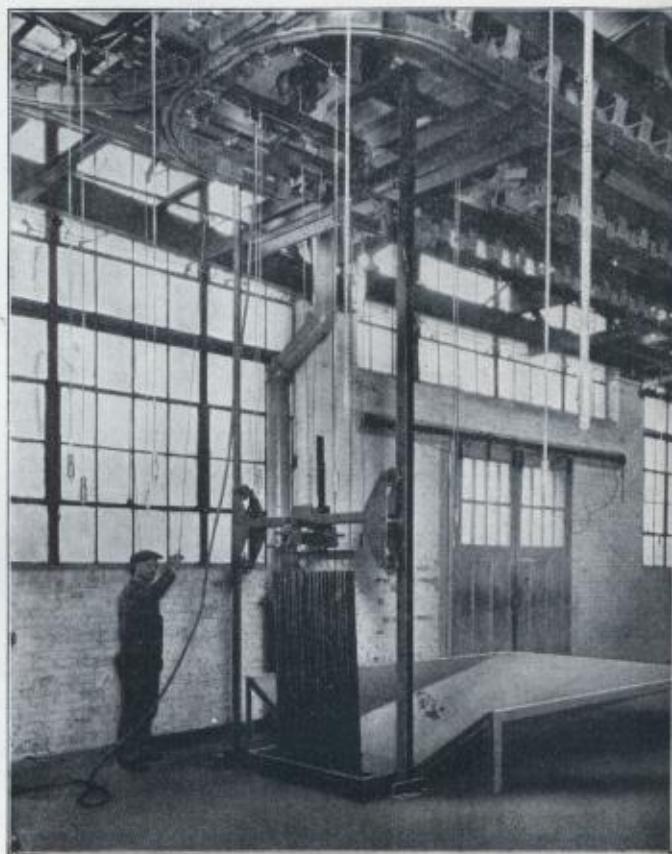


PLAN OF OVERWAY SYSTEM FOR ENAMELING ROOM

Schematic plan showing location of dipping device, drain board, bake oven, and storage track of a small installation.



10-foot lengths of trolley track about to be lowered into the dip tank.



Track partly submerged. Notice drain board in the rear.



## No. 982

### Dipping Devices

or

### Lowerators

(With Guides)

A Dipping Device is used for dipping material of various sorts into a tank containing: cleaning solution; pickling bath; or paint. (See illustrations on this and opposite page.)

Another use of this device is that of a Lowerator; permitting a load to be lowered to the floor; also raising a load from the floor to the overhead conveying level.

These devices are of two types: One to be used in connection with Trolley Track; the other to be used in connection with Steelbeam Track.

These types are furnished with vertical guide rails so that the load will always move in exactly the same path.

Especially suitable for use over narrow dip tanks. (See illustrations on these two pages.)

When the drop section of the track is more than 3 feet in length it is customary to use 4 guide rails to steady the load.

When the drop section of the track is short it is often practical to use 2 guide rails.

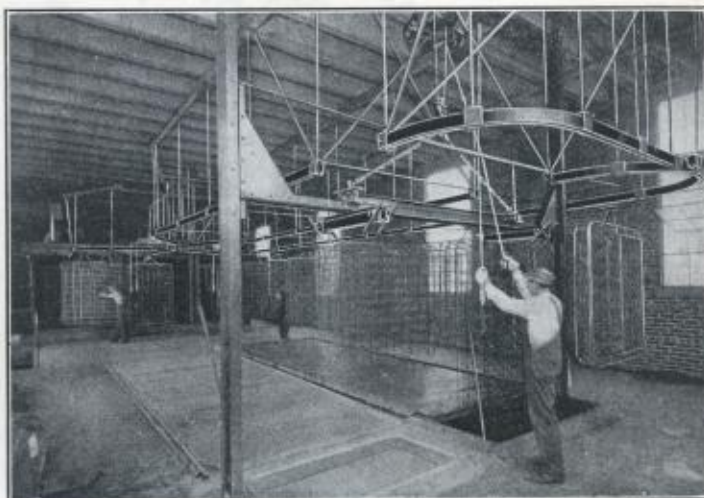
In either case open ends of all tracks are protected by interlocks, thus making it impossible for carriers with their loads of material to run off an open end and be damaged.

The motive power for operating the device, that of lowering and raising the load, may be either electric or pneumatic, depending upon the customer's desires. (Suggestive applications are illustrated on page 63.)

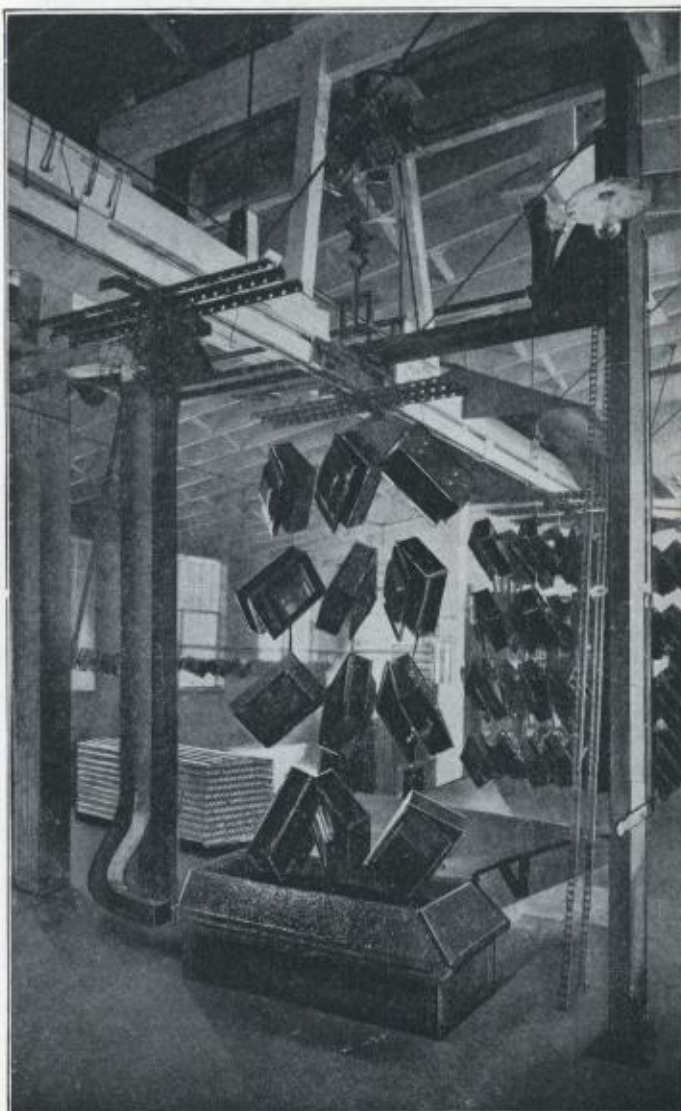
As all devices must be built to meet special conditions it is not practical to standardize their designs.

Our engineering department has had much experience with dipping and lowering devices. We stand ready and willing at all times to prepare layouts, specifications and prices, gratis, for an installation of the kind you may have in mind.

Other types of dipping devices and lowerators are shown on the following pages.



Dipping Device serving two dipping tanks at one time; one tank containing a light colored paint, the other a dark paint



Twelve Steel Boxes dipped at one time speeds up production at this plant



## No. 983 Dipping Devices or Lowerators (Without Guides)

The Dipping Devices illustrated on this and the opposite page are used when the loads are fairly well balanced so that they will drop straight down but where they do not have to be dropped into a very narrow dipping tank; for instance such as are illustrated on the two preceding pages.

These devices are also used as Lowerators for lowering material from the conveying level to the floor or vice versa.

Although the illustrations on these two pages show the devices using Steelbeam Track yet they are also made to use Trolley Track. They are made to fit any size of Steelbeam or Trolley Track desired.

Different kinds of power can be used for operating these devices, as pictured on the opposite page.

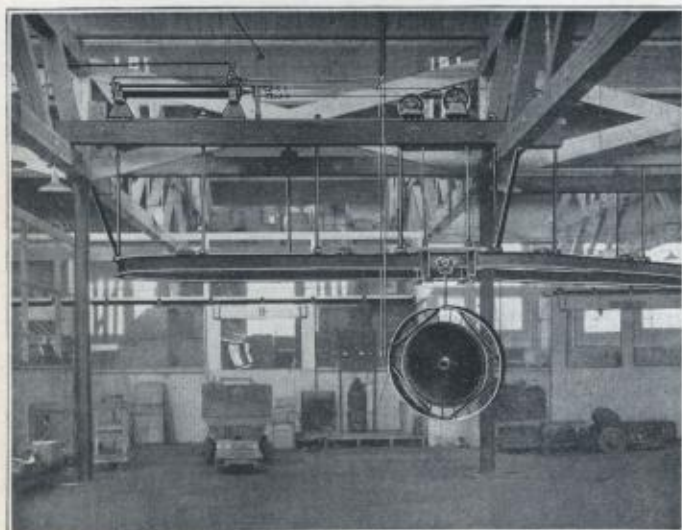
The length of the drop section can be varied to suit requirements but is usually made long enough to conveniently take one trolley or carrier.

The open ends of the stationary track and of the drop section are protected by interlocks.

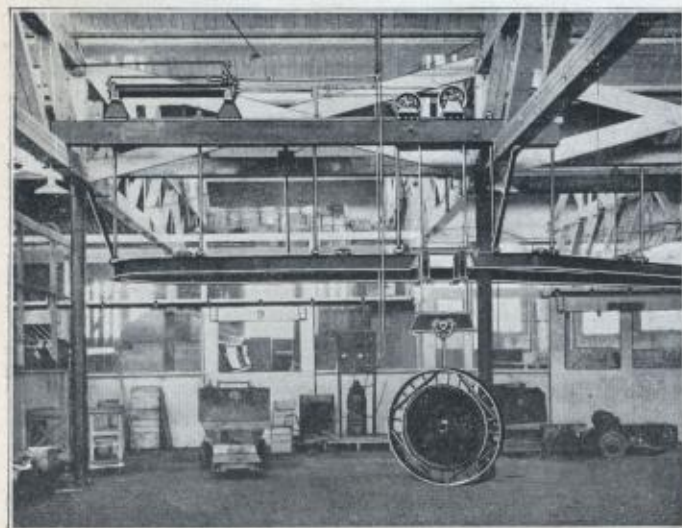
As all devices must be built to meet special conditions it is impractical to standardize their designs.

Our engineering department has had much experience with dipping and lowering devices. We stand ready and willing at all times to prepare layouts, specifications and prices, gratis, for an installation of the kind you may have in mind.

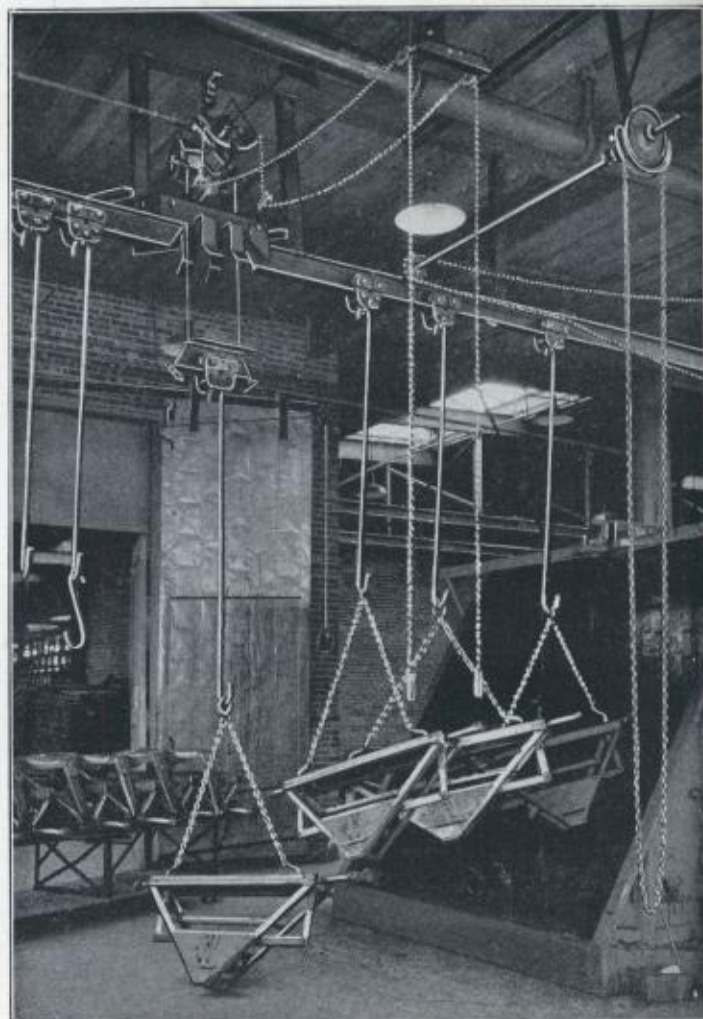
Other types of dipping devices and lowerators are shown on the preceding pages.



Drop section of track in closed position, permitting trolley and its load to proceed



Drop section of track in open position showing how load is raised from floor level to conveying level

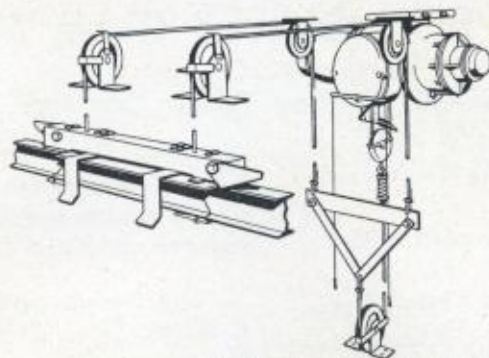


Material to be painted is brought by truck to the Lowerator. Lowerator raises it to the conveying level. Material proceeds by trolley to paint spraying booth, then to bake oven and on to storage room or assembly department

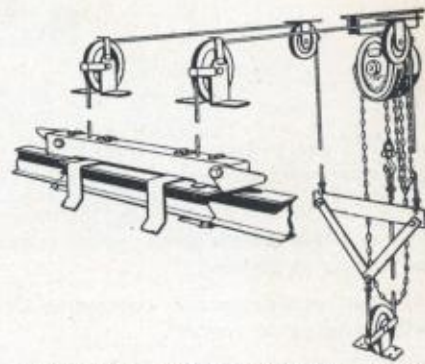




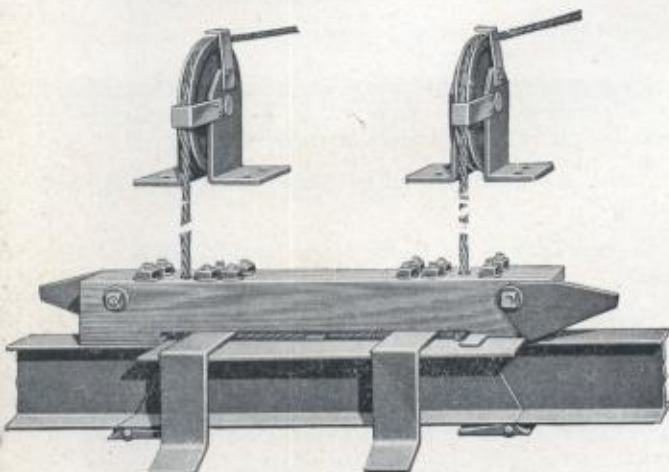
Lowerator powered with a vertical electric hoist.



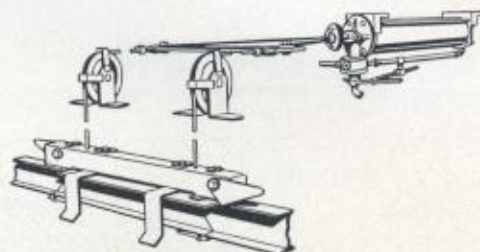
When headroom is limited the electric hoist can be placed to one side.



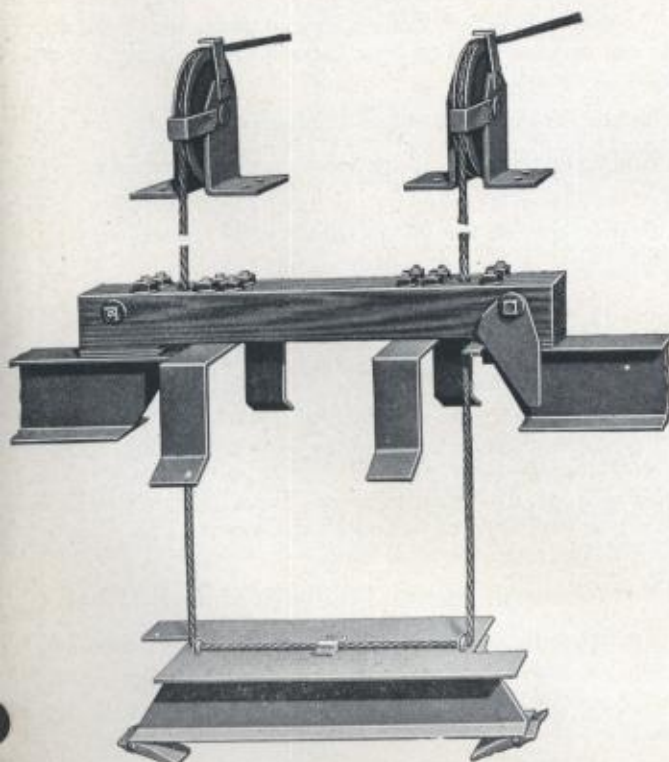
Lowerator manually operated by means of a chain block.



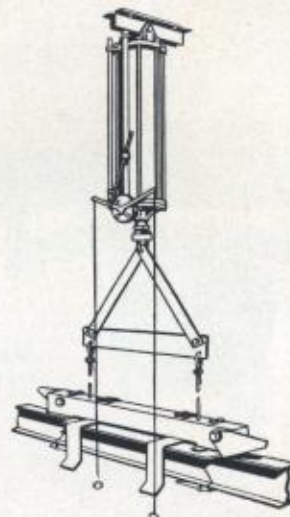
Drop Section of Track in Closed Position.



Horizontal air hoist requires little headroom.



Drop Section of Track in Open Position.



Lowerator powered with a vertical air hoist.

## No. 983 Devices

When there is ample headroom an Electric Hoist or a Vertical Air Hoist may be used.

When the headroom is short, cables are carried off to the side in a special arrangement to an Electric Hoist or to a Horizontal Air Hoist.

In rare cases where the device is not frequently operated or where the movement is very short a Chain Block may be used.



## No. 1001 Spur Geared Chain Blocks

### With R-W Trolley Track Carriers

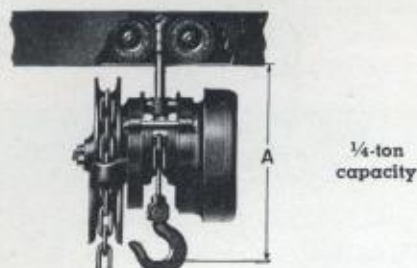
We are prepared to furnish Spur Geared Chain Blocks of any standard make attached to our Trolley Track Carriers and Carrier Units, as illustrated below.

The information given applies in general to one make of block as well as to another.

Further information concerning Spur Geared Chain Blocks will be given on request.

**When Ordering State:** R-W Catalog number; manufacturer's name of block desired; for straight or curved track; whether Carrier and Yoke only is desired or whether the same complete with Chain Block is desired.

The Carriers mentioned below are only suitable for use in R-W No. 175 or R-W No. 375 Trolley Tracks.



1/4-ton capacity

#### No. 1001-1/4

Consists of 4-Wheel Trolley Track Carrier, Bolt Clevis Connection attached to any make of 1/4-Ton Spur Geared Chain Block, for use in either straight or curved track.

Notice the small amount of headroom required ( $A=11\frac{1}{2}$  inches).

Bracket spacing for 1/4-ton loads for 175 track must be 18 inches.

Bracket spacing for 1/4-ton loads for 375 track must be 30 inches.



1/2-ton capacity

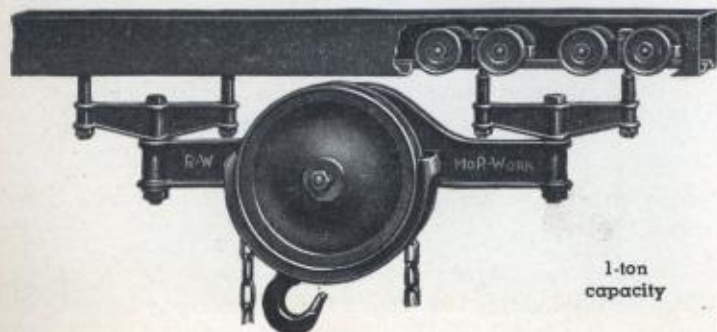
#### No. 1001-1/2

Consists of 8-Wheel Trolley Track Carrier and Yoke attached to any make of 1/2-Ton Spur Geared Chain Block, for use in straight or curved track.

Notice the small amount of headroom required, 12 inches.

Bracket spacing for 1/2-ton loads for 175 track must be 24 inches.

Bracket spacing for 1/2-ton loads for 375 track must be 30 inches.



1-ton capacity

#### No. 1001-1

Consists of 16-Wheel Trolley Track Carrier and Yoke attached to any make of 1-Ton Spur Geared Chain Block, for use in either straight or curved tracks.

Notice the small amount of headroom required, 15 inches.

Bracket spacing for 1-ton load for 175 track must be 18 inches.

Bracket spacing for 1-ton load for 375 track must be 24 inches.



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Quality leaves its imprint