

1,023,242.

WITNESSES

Ed Williams
E. A. Bakley

INVENTOR

Earl J. Childs
Richard D. Harrison
att'y

UNITED STATES PATENT OFFICE.

EARL T. CHILDS, OF CORAOPOLIS, PENNSYLVANIA.

DRAWING INSTRUMENT.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EARL T. CHILDS, a citizen of the United States, residing at Coraopolis, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Drawing Instruments, of which the following is a specification.

This invention relates to drawing instruments, and more particularly relates to that class of tools known as a draftsman's T-square, and it comprises a T-square proper, for ordinary use; a supplemental head pivoted thereto and having a protractor thereon, adapted to be adjusted with respect to the blade for lines of various angles, and adjustable working edges upon the blade, each of said edges having a scale thereon and adapted to be adjusted to or from a fixed point or line from which the measurements are to be taken in laying out the work, by means of which combination the draftsman's work may be simplified and expedited, giving him the use of several tools or instruments combined into one, which usually are separate and not always within reach, and the invention consists in the novel arrangement and combination of parts as will be fully described hereinafter, reference being had to the accompanying drawings, forming part hereof, in which—

Figure 1 is a plan view of my improved drawing instruments, the same being constructed and arranged in accordance with my invention. Fig. 2 is a central sectional elevation of the same. Fig. 3 is a sectional elevation on the line *x. x.* Fig. 4 is a similar view on the line *y. y.*

To construct a T-square in accordance with my invention, I form from wood or other suitable material a double head 1. and the one part fixed at right angles to a thin blade 7 and the other to a fixed pivot 8, whereby said head may be made rigid with the blade at any angle desired. The fixed head 5 is under cut (6) to permit the blade to move about the pivotal point 8, and may be clamped at any point within a specific limit, by a clamp screw which comprises a threaded bolt 12, projecting through a circular slot 3, formed in the movable head 1, and a large thumb nut 13. At the extreme end of the blade 7 is a pointer 7' which is in close contact with a spaced

arc 2, which will indicate to the operator the exact number of degrees at which the blade 7 is set, thereby forming a protractor.

The working edges of the square consists of a rectangular frame 20, slidably mounted upon the blade 7. in such manner that the said frame may be moved along the length of the blade 7. These working edges 20 are suitably graduated, indicating inches and fractions thereof, and are connected the one with the other by thin metal strips 21 and 21' operating within reduced parts 22 and 22' formed transversely with the blade 7. The outer extremities of the working edges are attached, the one with the other, by a thin metallic strip 24, passing through a mortise or slot 23, formed across the blade 7.

To afford a means of moving the graduated working edges 20, a microscopic distance or to any fractional part of an inch to the desired point and maintaining the same thereat the said working frame 20 is attached to a threaded bar 15, placed in a slot 14 formed in the blade 7, the threaded portion of the bar being connected with a vertically arranged thumb nut 18, the said nut being mounted and held in its normal position by bearings 17 supported by a bridge-piece 16, said bridge being arranged over the slot 14 and attached to or integral with the movable blade 7.

The pivot which attaches the blade to the movable head 1, comprises an enlarged head 8 (see Fig. 2) a large shank 9 through which is passed the adjusting screw 15, and reduced integral threaded shank 10 to which a thumb nut 11 is attached. By this construction of the pivot for the blade 7 it is possible to operate the adjusting screw directly through the longitudinal center of the blade, which will prevent binding of the working frame 20, and at the same time with the aid of the clamp screw 13, rigidly attach the blade to the movable head 1 at two widely separated points, which is obviously an advantage, making the blade 7 as firm with said head as if it were permanently secured.

In operation, both of the working edges 20 are graduated, and the square turned up side down using either the movable or fixed head. The blade 7 may be turned in either direction to the limit of the arc 3, and fixed

at any angle with the movable head 1 by the thumb screws 8 and 13, as will be best seen by dotted lines, at Fig. 1 of the drawings.

In order to shift the working edges 20 in either direction along the length of the blade 7, and maintain the same in adjusted position it is only necessary to operate the thumb nut 18 in the proper direction. This movement may be accomplished regardless of the position of the blade 7 with reference to the movable head 1.

The practical operator will recognize the useful combinations of the above described tool or implement, which includes an adjustable scale, a protractor, an adjustable head for angular work and an ordinary T square.

Having thus described my invention, I claim:—

1. A combination tool comprising a T square having a blade and head, movable working edges adapted to move along the length of said blade and the means for adjusting said working edges and maintaining the same in adjusted position.

2. A combination tool comprising a T square having a blade and fixed head, working edges along the length of said blade and

an adjusting screw for moving said working edges relative to the blade length.

3. A combination tool comprising a T square having a blade and fixed head, working edges along the length of said blade, an adjusting screw for moving said edges in either direction relative to the blade length, a movable head fixed to said blade by a pivot whereby said head may be turned at various angles with said blade and working edges.

4. A combination tool comprising a T square having a blade and fixed head, graduated working edges along the length of said blade, means for moving said edges along the length of said blade, a pivoted head connected to said blade, a protractor or spaced arc formed on said movable head and a pointer in line with the longitudinal center of the blade.

In testimony whereof, I have hereunto signed my name in the presence of two subscribing witnesses.

EARL T. CHILDS.

In the presence of—

CLARENCE A. WILLIAMS,

E. J. R. BLAKELY.