W. DOUGLAS.

TRAMMEL.

APPLICATION FILED MAR. 7, 1921.

1,422,345. Patented July 11, 1922.

Fig. 1.

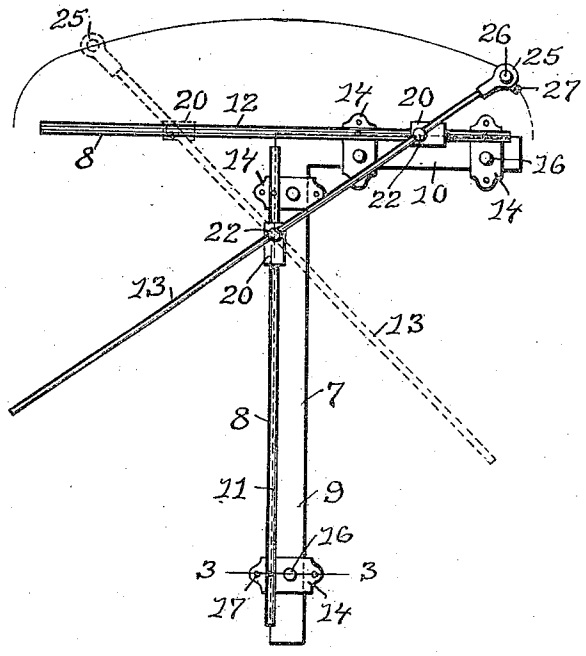


Fig. 2.

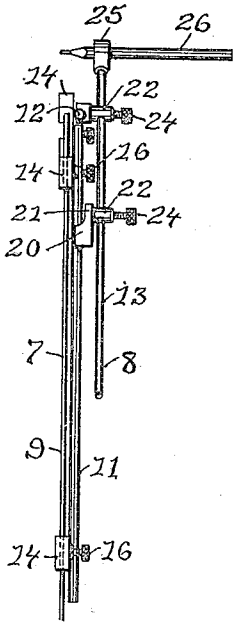


Fig. 3.

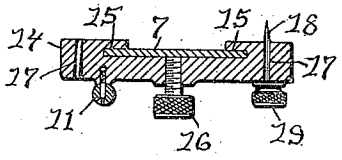


Fig. 5.



Fig. 4.

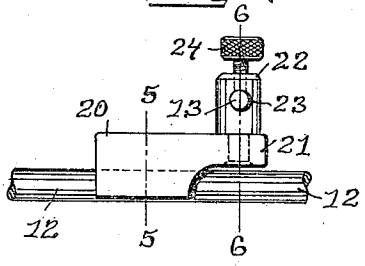
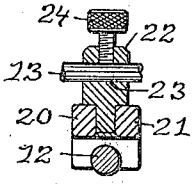


Fig. 6.



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TRAMMEL.

1,422,345. Specification of Letters Patent. Patented July 11, 1922.

Application filed March 7, 1921. Serial No. 450,132.

To all whom it may concern:

Be it known that I, WILLIAM DOUGLAS, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Trammels, of which the following is a specification.

My invention has reference to an improvement in trammels or ellipsographs and more particularly to an improvement in a combined trammel and square, such as a carpenter's square.

The object of my invention is to improve the construction of a trammel so that the trammel may be detachably secured to a square, thereby producing a practical trammel, which in various sizes may be used by draftsman, stair builders, carpenters, boat builders and machinists for laying out an ellipse for innumerable purposes.

My invention consists in the peculiar and novel construction of a trammel adapted to be detachably secured to a carpenter's or similar square and the combination of the trammel and square, said trammel having details of construction, as will be more fully set forth hereinafter and claimed.

Figure 1 is a face view of my improved combined trammel and square and showing the traverse bar to the right in full lines and to the left in dotted lines.

Figure 2 is an edge view of Figure 1.

Figure 3 is an enlarged transverse sectional view take on line 3, 3 of Figure 1, showing the means for detachably securing the trammel to the arms of the square.

Figure 4 is an enlarged detail side view of one of the traverse bar slides, which slides on one of the relatively fixed guide bars of the trammel.

Figure 5 is an enlarged detail transverse sectional view through one of the slides, taken on line 5, 5 of Figure 4, and

Figure 6 is an enlarged sectional view through one of the traverse bar slides, taken on line 6, 6 of Figure 4.

In the drawing 7 indicates a steel square, such as or similar to a carpenter's square and 8 my improved trammel. The square 7 has the usual flat long arm 9 and flat short arm 10 at right angles to the long arm, as shown in Figure 1.

My improved trammel 8 consists principally of a guide bar 11 detachably secured to the long arm 9 of the square 7, a guide bar 12 detachably secured to the short arm 10 of the square 7 and a traverse bar 13 slidably and adjustably secured to the guide bars 11 and 12. The center line of the guide bars 11 and 12 are on a line with the outer edges of the arms of the square, as shown in Figure 1.

Fixed to the guide bars 11 and 12 are clamping slides 14, 14. These slides 14, 14 are positioned on the guide bars, as shown in Figure 1 and are identical in construction. Each clamping slide 14 is constructed to have guide-ways 15, 15 into which the arms of the square have a sliding fit, a thumb-screw 16 screw-threaded through the slide and bearing against the arm of the square, whereby the slide is detachably secured to the square, and holes 17, 17 through which a needle point 18 is inserted to hold the trammel in place on paper or wood. The needle point 18 has a knurled head 19 for convenience in handling the same. Slidably secured to each of the guide bars 11 and 12 is a traverse bar slide 20 and these traverse bar slides are identical in construction. Each traverse bar slide 20 has a sliding fit on its guide bar, an overhanging end 21 to which is pivotally secured a stud 22 having a transverse hole 23 through which the traverse bar 13 extends and in which it is adjustably secured by a thumb-screw 24, screw-threaded through the end of the stud and bearing against the traverse bar, as shown in Figure 6. The traverse bar 13 extends through the holes in both of the studs 22, 22 on the traverse bar slides 20, 20, as shown in Figure 1 and has on its working end a pencil holder 25 in which a pencil is secured by a thumb-screw 27.

When in use the thumb-screws 24, 24 are loosened, the traverse bar 13 adjusted through the holes in the studs 22, 22 and the traverse bar slides 20, 20 adjusted on the guide bars 11 and 12 to the size and shape of the ellipse desired. The thumb-screws 24, 24 are now tightened and one half of the ellipse laid out, on the paper or wood, as shown in Figure 1. If the other half of the ellipse is required, the trammel is reversed. The traverse bar slides 20, 20 move on the guide bars 11 and 12 and control the movement of the pencil 26, on the same principle as the usual form of trammel.

In use I find that my improved trammel can be used for innumerable purposes, such as laying out arches, ribs in boat building, ramps of stairways or for any purpose for

which an ellipse or part of an ellipse is used, also the trammel can be made to fit any standard size carpenter's square and sold either with or without the square.

Having thus described my invention I claim as new:—

1. The combination with a square, of a trammel having a guide bar on one arm of the square, a guide bar on the other arm of the square, a slide on each guide bar, a traverse bar and means for adjustably securing the traverse bar to the slides.

2. A trammel having a guide bar, a guide bar adapted to be arranged at right angles to the first guide bar, a slide on each guide bar, a traverse bar, means for adjustably securing the traverse bar to the slides and means for detachably securing the guide bars to the arms of a square.

3. A trammel having a guide bar, a guide bar adapted to be arranged at right angles to the first guide bar, a slide on each guide bar, a traverse bar, means for pivotally and adjustably securing the traverse bar to the slides and means for detachably securing the guide bars to the arms of a square.

4. A trammel having a square with long and short arms, a guide bar for the long arm of the square, a guide bar for the short arm of the square, clamps on the guide bars adapted to go over the arms of the square, means for detachably securing the clamps to the arms of the square, a slide on each guide bar, each slide having an overhanging end, a stud pivotally secured to the overhanging end and having a transverse hole, a traverse rod through the transverse holes in the studs, means for adjustably securing the traverse rod to the studs, the working end of the traverse rod having a marker, for the purpose as described.

5. A trammel attachment for carpenters' or similar squares having a long and a short arm, said trammel attachment having a guide bar for the long arm of the square, a guide bar for the short arm of the square, clamps on the guide bars adapted to go over the arms of the square, means for detachably securing the clamps to the arms of the square, a slide on each guide bar, a stud pivotally secured to each slide and having a transverse hole, a traverse rod through the transverse holes in the studs, means for adjustably securing the traverse rod to the studs and a marker on the working end of the traverse bar, for the purpose as described.

In testimony whereof, I have signed my name to this specification.

WILLIAM DOUGLAS.