Feb. 3, 1953 C. O. LARSON 2,627,323

T SQUARE AND PARALLEL STRAIGHTEDGE COMBINATION

Filed Oct. 11, 1949

Fig. 1

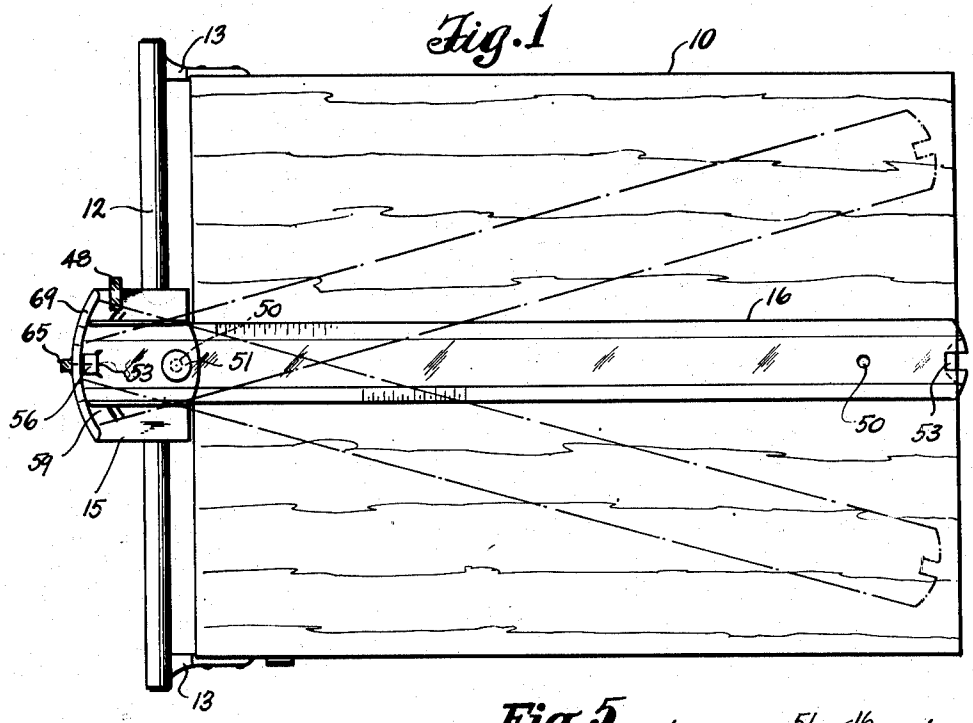


Fig. 5

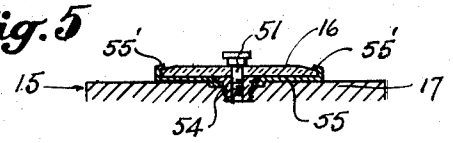


Fig. 2

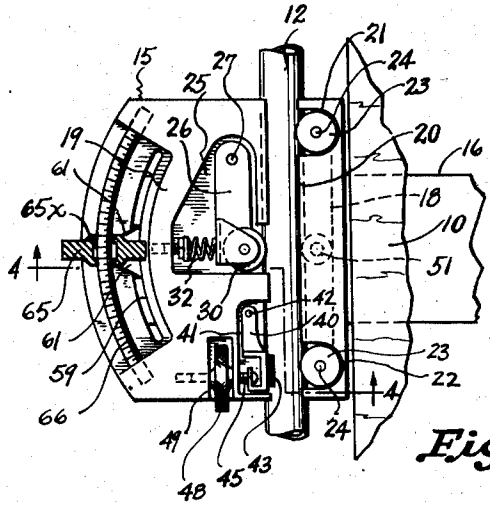


Fig. 3

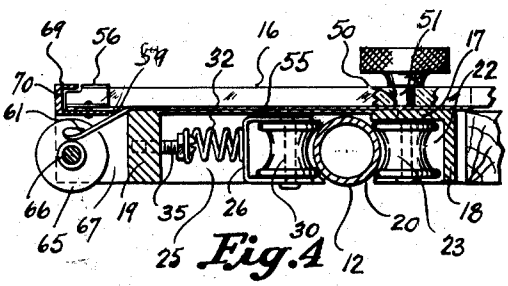


Fig. 4

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T-SQUARE AND PARALLEL STRAIGHTEDGE COMBINATION

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2 Claims. (Cl. 188—67)

1

This invention relates to improvements in drafting equipment, and it has reference more particularly to the novel features of a T-square and parallel straight edge combination comprising a guide rod that is designed to be fixed along the edge of a drafting table or the like, and a mounting head for the straight edge blade that is movable along the rod.

It is the principal object of this invention to provide a combination of the above kind wherein the straight edge blade is pivotally attached to the head for adjustment to and securement at different angular positions, and wherein the head is adapted for movement along the guide rod and also rotatable about the axial line thereof to permit the blade to be swung from a position lying upon the table or board to a position in the clear and to the side thereof, but without dismounting the head from the guide rail.

Further objects and advantages of the invention reside in the details of construction and combination of the various parts, and in their mode of use, as will hereinafter be fully described.

In accomplishing these and other objects of the invention, I have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein—

Fig. 1 is a plan, or top view of a drafting board and straight edge combination embodying the novel features of the present invention therein.

Fig. 2 is a lower edge view of the same, showing the supporting legs applied to the top edge of the board.

Fig. 3 is an underside view of the head portion of the device, shown somewhat enlarged.

Fig. 4 is a cross-sectional view taken on the line 4—4 in Fig. 3.

Fig. 5 is a sectional view of a detail of construction of the blade mounting.

Referring more in detail to the drawings—

10 designates a rectangular drafting board of typical form, along one edge of which a round bar or rod 12 is rigidly fixed by means of brackets 13—13 that are attached by screw or by other suitable means, to the board at top and lower edges thereof. The rod 12 is straight and truly cylindrical from end to end and is spaced from and is parallel to the adjacent edge of the board as best seen in Fig. 1.

The T-square comprises a head portion, designated in its entirety by reference numeral 15, and a straight edge blade that is designated by reference numeral 16. The head preferably would be cast in block form from any suitable pot metal.

2

As shown in Fig. 4, it comprises a flat top plate portion 17 with integral and downwardly extending inner and outer edge flanges 18 and 19. Between the flanges the block is recessed to provide a through passage, designated at 20, for passage of the guide rod 12 therethrough.

At that side of this passage that is nearest the board 10, the block is formed near top and lower edges with recesses 21 and 22 in which rollers 23—23 are mounted on pivot studs 24. The rollers have opposite edge flanges designed for rolling contact with the guide rod 12 as shown best in Fig. 4. At the other side of the rod passage is a central recess or pocket 25 in which a lever arm 26 is located. At one end, this arm is pivotally mounted by a pivot pin 27, permitting its other end to swing directly toward and from the guide rod, and on the swinging end of this arm a roller 30, like those at the other side, is mounted and adapted to have rolling contact with the rod 12 at a point midway of the rollers 23—23 and at the opposite side of the rod. A coiled spring 32 is located in the pocket 25 and at its inner end bears against the arm 26 to press it yieldingly toward the rod. At its outer end the spring 32 is mounted upon the head of a screw bolt 35 that is adjustably threaded into a wall of the pocket to provide for adjusting the tension of the roller against the rod.

The block or head 15 is thus mounted for easy travel along the guide rod 12, and at the same time it can be easily, and readily rotated axially thereabout, for example, to the position in which it is shown in dotted lines in Fig. 2, thus to swing the blade away from the board surface and out of the way for the placing of paper on or for removing it from the board. The yieldable tension applied through the lever arm results in an easy action in the up and down adjustment of the blade, and its automatic return to a normal working position under the pressure of spring 32.

The head 15 is also provided with a brake whereby it may be held against free running on the guide rod or held at a set position. This brake, as shown in Fig. 3, comprises a lever arm 40 located in a pocket 41 formed in the underside of the block at one side of the rod passage. At one end the lever arm is secured by a pivot pin 42 and at its other end has a friction pad 43 of rubber or the like, fixed thereto to engage against the rod. Also, an adjusting shaft 45 is slidable in the block and fixed at one end to arm 40. The shaft has a turning wheel 48 threaded thereon and confined in a recess 49 in a manner whereby the turning of the wheel will

shift the shaft to press the pad 43 against the rod with more or less pressure as may be required or desired. Thus, by applying proper pressure, slight holding friction can be maintained to keep the square from free running and with more pressure, it can be locked at a set position.

The blade 16 may be of wood but preferably is of a transparent plastic material and beveled along its opposite edges in the usual form and these edges can be graduated in different scales. To provide for reversible use, the blade is equipped near each of its opposite ends with a hole 50 adapted to receive a holding screw 51. Also, at each of its ends and in the central line thereof, the blade is formed with a square cut notch 53.

Flatly overlying the top surface of the block 15 for mounting the end portion of the blade thereon, as shown in Figs. 4 and 5, is a flat metal plate 55. This is secured for pivotal swinging on the block by pivot screw 54. At top and bottom edges, the plate is formed with upwardly and inwardly turned flanges 55'—55', and at its outer edge and top side is a block 56. In applying the blade to the head, the end portion is inserted between the flanges 55' of the plate and the notch 53 seated about the block. The holding screw 51 is applied through hole 50 and threaded axially into the pivot screw 54 as in Fig. 5.

Extending downwardly from the outer edge portion of the plate 55 and movable along an arcuate slot 59 in the top plate of the head or block, are paired fingers 61—61 that engage against the opposite sides of a blade adjusting wheel 65 that is threaded for movement along a rod 66 that is fixed within an outer edge recess 67 on the underside of the block. The rod 66 is arcuately curved about the axial line of pivot screw 54. Therefore, by adjusting the wheel 65 along the threaded rod, the blade will be swung pivotally about screw 54 to various angular positions, for example, as to the dotted line positions in which it is shown in Fig. 1. The outer arcuate edge portion of the block is formed with an upwardly and inwardly turned flange 69 forming a guide channel 70 in which the end of the blade is movably contained. This flange may be graduated in degrees to indicate the angle of the blade relative to the perpendicular position of the blade as shown in full lines in Fig. 1.

To permit the easy travel of the wheel on the threaded shaft 66, it is desirable that the hub portion of the wheel be internally recessed as at 65*x* in Fig. 3 and that the extent of the threaded portions at opposite sides of the recess be short.

For more practical use on top of a flat or horizontal surface the drafting board can be equipped at its top edge with supporting legs 75 as has been shown in Fig. 2. These legs preferably would be adapted to be folded flatly against the under side of the board when not in use.

With the parts so constructed and assembled, use of the device will be as follows:

Normal setting of the blade of the T-square is as shown in Fig. 1. When the tension of spring 32 is properly adjusted, the head 15 may be easily moved up or down the guide rod and held properly in positions. Light tension applied to brake lever 40 will hold the head against free running and a tighter setting will hold it against movement.

Should it be desired to set the blade at an angle, it is only required that the wheel 65 be rotated to shift its position up or down along the arcuate rod 66, and this movement swings the blade carrying plate 55 about its pivot 54 and adjusts the blade accordingly. To get the blade out of the way, it can be swung upwardly and to the left as to the dotted line position in Fig. 2.

To reverse the position of the blade, the screw 51 is removed and the blade pulled out from between its holding flanges 55'. It is then applied in reverse position, and the screw 51 is applied.

Having thus described my invention, what I claim as new therein and desire to secure by Letters Patent, is:

1. In combination, a guide rod, a straight edge mounting block mounted for adjustment along and rotation about the guide rod, a lever arm extended along the rod and pivoted at one end in the block to permit its other end to be adjusted from and toward the said rod, means for effecting such adjustment and for securing it, and a resilient friction block mounted on the lever arm at its adjustable end in contact with the rod and adapted to be pressed more or less tightly thereagainst by said adjusting means.

2. A combination as recited in claim 1 wherein the adjusting means for the said lever arm comprises a threaded shaft that is fixed at one end to the movable end of the arm and extends in the direction of its movement and an adjusting nut is threaded on the said shaft and means in the head holding the nut against shifting in its axial direction when turned on the shaft.

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