Nov. 9, 1937. R. H. CUTTING 2,098,616

DRAFTING INSTRUMENT

Filed Oct. 18, 1935

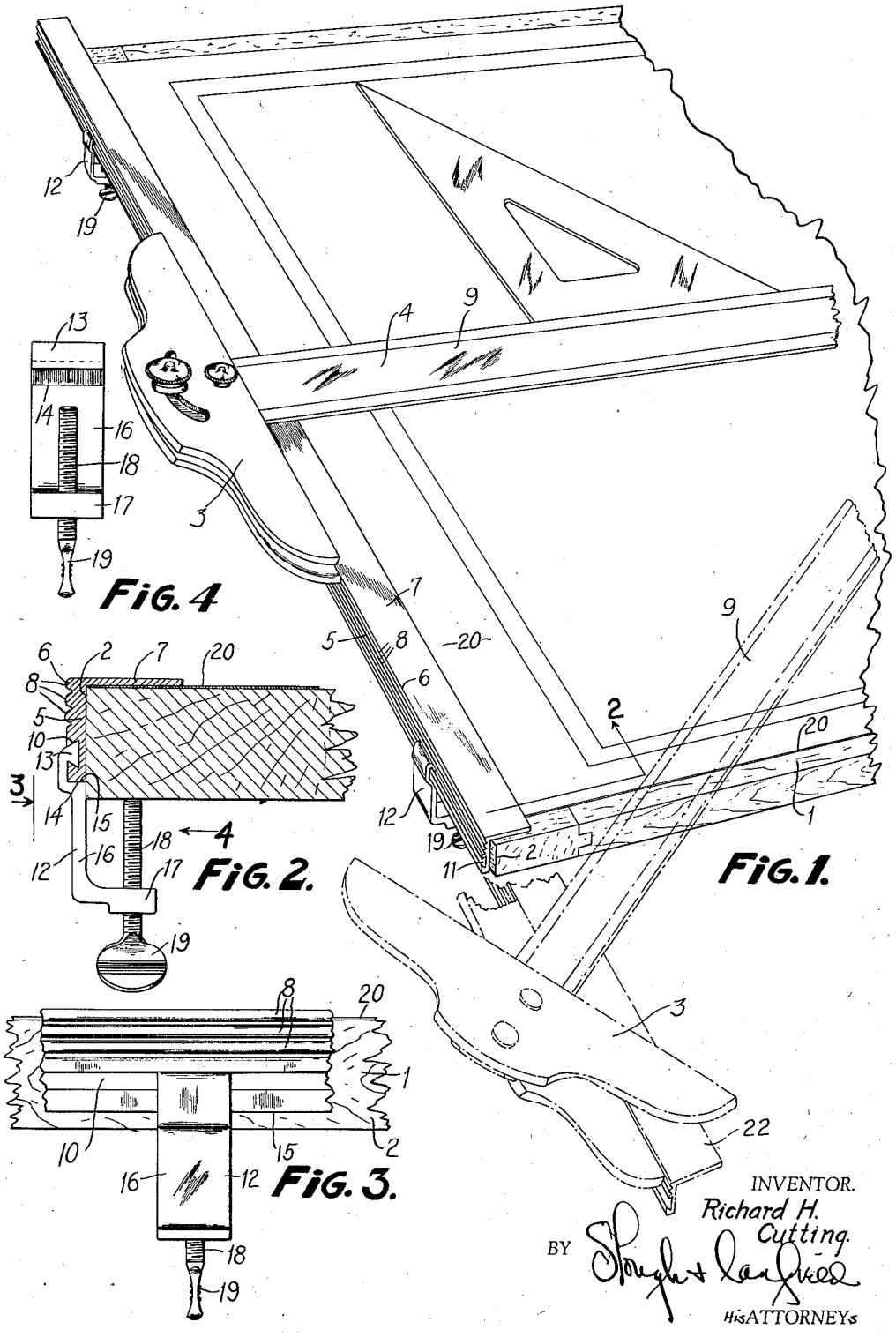


FIG. 4

FIG. 1.

FIG. 2.

FIG. 3.

INVENTOR.
Richard H. Cutting.

BY Stoughton & Lankford

HIS ATTORNEYS

Patented Nov. 9, 1937 2,098,616

UNITED STATES PATENT OFFICE

2,098,616

DRAFTING INSTRUMENT

Richard H. Cutting, Cleveland, Ohio

Application October 18, 1935, Serial No. 45,627

10 Claims. (Cl. 33—76)

This invention relates generally to geometrical instruments and particularly to instruments or implements employed in drafting.

In the prior practice of making drawings with drawing instruments, it is customary to attach a sheet of drawing paper upon which the drawing is to be made directly to the drawing board with thumb tacks or other securing means; and to use the edge of the board as a guide for the head of a T-square.

A number of disadvantages result from this practice among which may be mentioned that: the board is usually made of wood and the straight edge which guides the T-square head becomes rough and out of rectilinear line after a relatively short period of use or other handling; the edge of the board is in many instances too short to guide the head of a T-square of the pivoted straight edge type when said straight edge is set at an angle; it is difficult to replace a drawing on the board in its original relation to the straight edge of the board for additional work or changes, after it has once been removed.

It is an object of the present invention to provide a drafting instrument or implement by which the above-named disadvantages of prior practice may be obviated.

Another object is to provide an improved detachable T-square guiding straight edge implement for drawing boards.

Another object is to provide a drawing implement of the straight edge type adapted to be detachably secured to a drawing board edge for guiding the usual T-square head and having improved means whereby it may be extended beyond the limits of the board for guiding T-squares of the pivoted straight edge type.

Another object is to provide a T-square head straight edge guide implement of the class referred to having improved means for detachably securing it to a drawing board.

Another object is to provide an improved means or implement for attaching a sheet of drawing paper to a drawing board.

Another object is to provide, in a single implement, an improved drawing board straight edge and improved means for securing a sheet of drawing paper to a drawing board.

Other objects will be apparent to those skilled in the art to which my invention appertains.

My invention is fully disclosed in the following description taken in connection with the accompanying drawing, in which:

Fig. 1 is a perspective view illustrating a fragment of a drawing board and an embodiment of my invention associated therewith, the view showing in solid lines the normal disposition and use of the invention embodiment and showing also in broken lines another disposition and use thereof;

Fig. 2 is a cross-sectional view to a larger scale taken from the plane 2 of Fig. 1;

Fig. 3 is an elevational fragmentary view taken from the plane 3 of Fig. 2;

Fig. 4 is a view showing separately an element shown in assembled relation with other elements in the other figures, the view being considered as taken in the direction of the arrow 4 of Fig. 2.

Referring to the drawing, I have shown generally at 1 a drafting or drawing board of the usual construction. Such boards are ordinarily of substantial thickness and the edges of the board, particularly the left-hand edge 2 is ordinarily used as a straight edge to guide the head 3 of a T-square such as that shown generally at 4.

In the practice of my invention, however, the edge 2 (or any of the other edges of the board) is covered by a detachable metal strip 5 upon which the T-square head 3 is guided. The strip 5 is preferably made to constitute one flange of an angle section strip shown generally at 6, the other flange 7 of which lies upon the upper side of the drawing board 1.

Preferably the flange 5 of the angle section strip 6 is relatively thick and is provided with longitudinally extending beads 8—8 upon which the head 3 of the T-square may slide and the flange 7 is preferably made relatively thin so that it will not hold the straight edge portion 9 of the T-square 4 upwardly away from the drawing paper.

A dovetail groove 10 is provided in the flange 5 below the beads 8—8 extending longitudinally of the flange and open at the opposite ends thereof as shown at 11, Fig. 1.

A plurality of clamp devices 12—12 is provided to clamp the angle section strip 6 upon the board, and in the preferred construction, these clamp devices comprise dovetail portions 13 fitting but slidable longitudinally in the dovetailed groove 10, and shoulder portions 14 engaging the lower edge 15 of the flange 5, and depending body portions 16 terminating each in a foot 17 threaded to receive a thumb screw 18 having a head 19.

It is contemplated that a swivable head might be placed on the end of the screw 18 to attain a more secure grip upon the board.

Preferably two or more such devices 12 are used for each strip 6 and are assembled there-

with by sliding the dovetail portion 13 of the devices into the dovetail groove 10 of the strip and disposing the several devices in spaced relation at suitable points along the strip. The strip with the devices assembled therewith is then placed upon the board with the flange 7 on top of the board and the flange 5 engaging an edge such as the edge 2, and the screws 18 are then screwed inwardly to engage the underside of the board 1 inwardly of the edge 2, and the strip 6 is thus clamped rigidly upon the board.

The upper flange 7 may be employed to attach a sheet of paper to the board simply by sliding the edge of the paper under the flange 7 and when the screw 18 is turned to tighten it, the paper is clamped on the board under the flange 7. This use of the device is illustrated in Fig. 2 wherein a sheet of paper 20 is clamped between the board 1 and the flange 7; and, as illustrated, the edge 21 of the paper may abut the inner face of the flange 5 to position it. By this means, if the paper is removed and it is later desired to perform additional drafting work thereon, the paper may again be placed under the flange 7 with the edge 21 abutting the flange 5 and it will again be positioned with relation to the strip 6 so that when the T-square is moved over the strip guided by the beads 8—8, the straight edge portion 9 thereof will be parallel to the horizontal lines on the drawing and further adjustment of the paper on the board will be unnecessary, and the drawing work may be continued as if the paper had not been removed.

When a T-square of the pivoted edge type is used such as that illustrated, and it is desired to place the straight edge 9 thereof at an angle, it sometimes becomes necessary to dispose the head 3 of the T-square at a point below the lower edge of the board as illustrated in Fig. 1 in broken lines. With the device above described, the T-square may be accurately used in such positions by loosening the thumb screw 19 and sliding the strip 6 downwardly to some such position as that illustrated at 22 and then clamping the strip 6 to the board by means of the devices 12 and by means of that portion of the strip which is still overlapping the edge 2 of the board.

The strip 6 being of angle section, provides the maximum of strength for the minimum of material and therefore can readily be made stiff enough so as to remain perfectly rectilinear through continued handling, and for these purposes the strip is preferably made from metal.

I have found that a convenient and inexpensive method of making the angle-form strip 6 and the devices 12 is to extrude metal in the form of bars having the cross-sectional shape of the strip 6 or the device 12 as viewed in Fig. 2 and then to cut the bar transversely to provide strips 6 and devices 12. The strips 6 may be cut into relatively great lengths such as 18" up to several feet in length, whereas the devices 12 will be made, as will be understood, by cutting short pieces such as ½" long from said extruded bars.

The strips 6 will be completely finished after being extruded and cut to the desired length, and the devices 12 will be completely finished when cut from the extruded bar except for threading the hole in the foot 17 for the screw 18 and providing the screw.

Although I have shown and described a modification of my invention, I contemplate that numerous and extensive departures may be made therefrom without departing from the spirit of my invention and the scope of the appended claims.

I claim:

1. A straight edge type drawing implement comprising a strip of metal of angle cross-section, one flange adapted to abut the vertical edge of a drawing board or the like slidably supporting clamping means movable toward and from the other flange for clamping the edge portion of a drawing board therebetween, and the strip having a planar portion for guiding the head of a T-square.

2. A straight edge type drawing implement comprising a strip of metal of angle cross-section, one flange having a longitudinal groove therein, clamping means comprising an element having a tongue portion slidable longitudinally in the groove and supporting clamping means movable toward and from the other flange for clamping the edge portion of a drawing board therebetween and the strip having a planar portion for guiding the head of a T-square.

3. An implement as described in claim 2 and in which the groove and tongue are of interlocking dovetail form.

4. A straight edge type drawing implement comprising a strip of metal of angle cross-section, one flange having a longitudinal groove therein, clamping means comprising an element having a tongue slidable in the groove and comprising a foot spaced from the other flange and a screw threaded into the foot and the end of the screw being movable toward and from the other flange to clamp the edge portion of a drawing board therebetween and the strip having a planar portion for guiding the head of a T-square.

5. An implement as described in claim 4 and in which the tongue and groove are of dovetail interlocking form.

6. In a straight edge type drawing implement, an elongated body element having a planar portion adapted to lie along the edge of a drafting board to guide the head of a T-square, and having a plurality of longitudinally spaced clamping means slidably interlocked with the body element for clampingly detachably securing the body element to the board.

7. In a straight edge type drawing implement, a strip of angle section metal, one flange of the angle being relatively thin and adapted to lie upon the upper side of the drafting board and the other flange being relatively thick and adapted to lie along the edge of the board, and provided on its exterior surface with a longitudinally extending bead, a longitudinally extending dovetail groove on the outer surface of the relatively thick flange disposed below the said bead, an attaching device comprising a body portion provided with a dovetail tongue interlockingly assembled in the said dovetail groove and slidable longitudinally therein and having a foot extending inwardly under the relatively thin flange and a screw threaded through the foot and having an end portion screwingly movable toward and from the thin flange to clamp the edge portion of the drawing board between the screw and the said flange.

8. An implement as described in claim 6 and in which the clamping means are longitudinally movable along the elongated body element.

9. A straight edge type drawing instrument comprising a strip of metal providing a horizontally extending flange adapted to abut the top surface of a drawing board or the like, and a depending flange having a longitudinally ex-

tending portion for guiding the head of a T-square, clamping means supported by the depending flange beneath said guiding portion and movable toward the horizontal flange to clamp the edge of a drawing board therebetween, and said clamping means being longitudinally adjustable relative to the strip.

10. A straight edge type drawing instrument comprising a strip of metal formed to lie adjacent to the vertical edge of a drawing board having a longitudinally extending portion for guiding the head of a T-square, means integrally joined to the strip and overlapping the upper surface of the board adjacent the edge thereof, clamping means mounted on the strip and comprising a plurality of movable clamping elements adapted to clamp the edge of the board between the clamping elements and the said overlapping means, and the strip being longitudinally adjustable relative to the clamping means whereby the strip may extend beyond the drawing board and support the T-square head outwardly of the board.

RICHARD H. CUTTING.