

March 3, 1942.

H. L. DE LISLE

2,275,251

PARALLEL STRAIGHTEDGE DEVICE

Filed April 19, 1940

2 Sheets-Sheet 1

Fig. 1

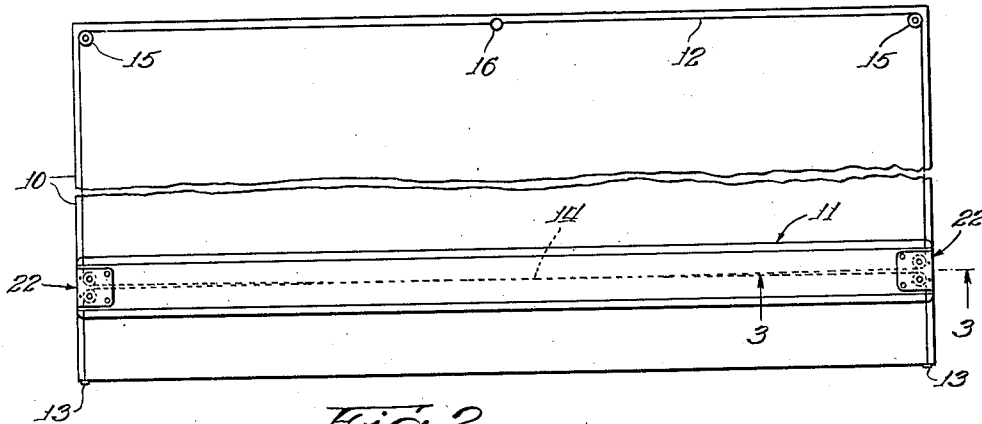


Fig. 2

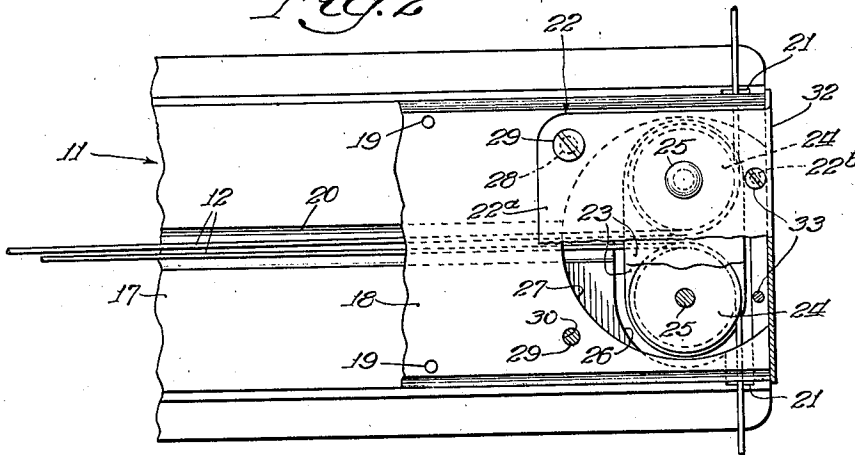


Fig. 3

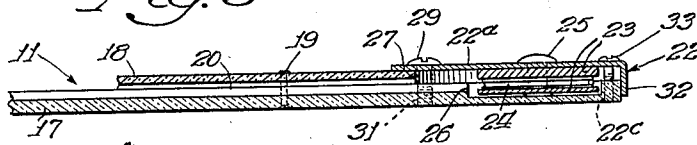
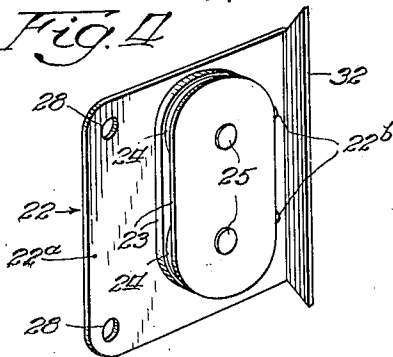


Fig. 4



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PARALLEL-STRAIGHTEDGE DEVICE

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Fig. 5

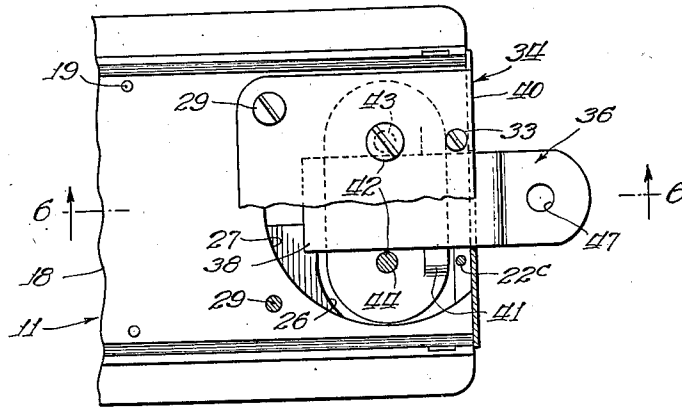


Fig. 6

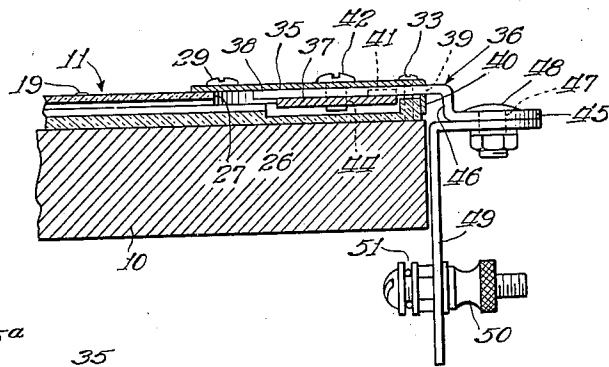
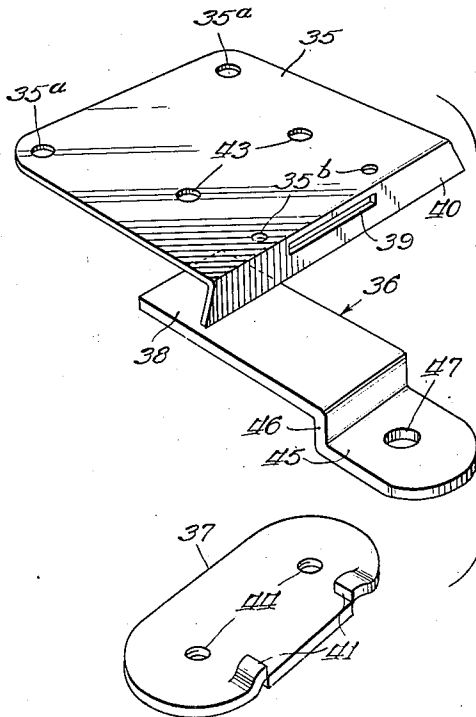


Fig. 7

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UNITED STATES PATENT OFFICE

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PARALLEL STRAIGHTEDGE DEVICE

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Application April 19, 1940, Serial No. 330,593

3 Claims. (Cl. 33—80)

This invention relates to parallel straightedge device and aims to provide an improved and simplified device of the type in which the drawing board has superimposed thereon a slidable straightedge blade, the blade being connected with a cable mounted either above or below the top surface of the board for maintaining the blade in successive parallel positions.

It is desirable to have a single blade which is adaptable for association with drawing boards in which, in some cases, the cable is above the top surface of the board, and, in other cases, in which the cable is below the top surface of the board. Heretofore it has been found necessary for such a double-use blade, even when the blade is used with a cable above the top surface of the board, to be longer than the board so as to overhang the ends thereof so as to provide means thereon for attaching thereto a cable which may be below the top surface of the board. Customarily, in the first instance the cable is stationary and the blade moves relatively thereto, while, in the second instance, the cable and blade both move together.

The present invention aims to provide a device in which the blade has no overhanging ends and yet is readily convertible for engagement with a cable either above or below the top surface of the board.

The invention is desirably inclusive of the device in combination with a drawing board and a blade adapted for interchangeable cable engaging units, as well as of the respective units themselves.

Other objects and advantages will be apparent from the following description, taken together with the accompanying drawings, in which—

Figure 1 is a plan view of a board having a cable above the top surface of the board and with which one aspect of my present invention is associated;

Figure 2 is an enlarged end portion of my improved blade as shown in Fig. 1 with parts in plan broken away for clearness of description;

Figure 3 is an enlarged longitudinal section on the scale of Fig. 2 and taken on the line 3—3 of Fig. 1;

Figure 4 is a perspective view of one of the cable engaging units for association with the blade of the previous figures;

Figure 5 is a view similar to Fig. 2, but showing the blade associated with another interchangeable cable engaging unit of my invention;

Figure 6 is a longitudinal section on the line 6—6 of Fig. 5; and

Figure 7 is a perspective view of the cable engaging unit shown associated with the blade in Figs. 5 and 6, the parts of the unit being shown in this figure in temporary separated or exploded relation for clearness of description.

Referring in detail to the illustrative construction shown in the drawings, 10 is a conventional drawing board usually several feet long and which is generally supported upon legs or other pedestal means not necessary to be here shown. The straightedge blade 11 is superimposed thereon to move toward or away from the draftsman for the purpose of drawing successive parallel lines in various positions of the blade.

As shown in Figures 1, 2 and 3, for maintaining the blade 11 in successive parallel positions as it is moved on the board, the conventional cable 12 is provided which is arranged above the top surface of the board about its two end margins and its rear margin. As is well known with such an expedient, the cable 12 is anchored at 13, 13 at the forward corners of the board and then passes up to the blade 11 where it is entrained through the blade as at 14, the cable runs crossing in opposite directions and then emerging from the blade to pass up around the idler pulleys 15 at the rear corners of the board. A clamp 16 medially of the rear margin of the board prevents movement of the cable with respect to the board. When thus clamped the blade 11 will move into successive parallel positions, and if the angle of the blade is desired to be altered the clamp 16 is loosened, the cable permitted to move with respect to the board to accommodate the changed angle of the blade, after which the clamp 16 being tightened the blade will again move into successive parallel positions at the new angle.

In order to avoid interference, it is desirable to conceal the cable runs which pass through the blade, and this is accomplished in this instance by making my blade of superimposed laminations 17 and 18, both formed desirably of a nonwarping phenolic condensation material secured together as by drive-pins 19. As here shown, the laminations 17 and 18 are each grooved longitudinally to jointly form a channel 20 for the cable 12, one of the laminations, in this instance 17, being notched laterally as at 21 to provide entrance passages for the cable into the blade.

Since the cable 12 and blade move relatively it is desirable to provide anti-friction cable engaging means adjacent the turns of the cable within the blade, and in accordance with my

present invention I may provide the cable engaging unit 22 shown in perspective in Fig. 4 and in association with the blade in Figs. 1, 2 and 3, this unit being readily separable from the blade as will next be described.

My improved cable engaging unit 22 shown in Figs. 1 to 4 inclusive comprises a metallic cover plate 22a from and beneath which is suspended a pair of pulley plates 23 between which are inserted the pulley wheels 24 advantageously formed of grooved fiber disks for movement of the cable thereon, the pulley plates with the pulley wheels therebetween being secured together and to the cover plate 22a as by the rivets 25, upon which also the pulley wheels 24 may rotate.

For the reception of the unit 22 the blade laminations 17 and 18 are cut away as at 26 and 27 respectively, thus forming a recess which communicates both with the entrance passages 21 and the channel 20 and into which the pulley plates and wheels 23—24 are inserted, the pulley wheels substantially coinciding with the cut-out 26 in the lower lamination 17 so as to be in the plane of the cable as it enters through the passages 21 and turns into the channel 20, the cable runs being entrained by the pulleys 24 as best shown in Fig. 2.

For ready attachment of the unit 22 to the blade, the cover plate 22a overlaps the recessed portions of the blade laminations and I have shown holes 28 at the inner end of the unit through which may pass clamping screws 29 through perforations 30 in the upper lamination 18 and threadedly received in screw sockets 31 in the lower blade lamination 17. In this position the unit 22 desirably has a depending flange 32 which laps the end of the blade, closing the recess in the blade at this point and providing a desirable finish and protection for the end of the blade. For further securement, somewhat smaller clamping screws 33 may be provided similar to the screws 29 at the outer end of the unit. The screws 33 here pass through openings 22b in the cover plate and 22a and are received in the screw sockets 22c in the blade. Thus the unit 22 may be readily assembled with or removed from the blade 11 by simply loosening the clamping screws 29 and 33.

Turning now to Figs. 5 to 7 of the drawings and as best seen particularly from Fig. 7, I have shown another cable engaging unit 34 which may be readily used with the straightedge blade 11 where the blade is associated with the drawing board 10 and with a cable which is below the top surface of the board.

The cable engaging unit 34 comprises in this instance a cover plate 35, slidable finger-piece 36, and a keeper plate 37. The finger-piece 36 may be assembled with the cover plate 35 by having its shank 38 passed through a slot 39 in the depending flange 40 of the cover plate. The shank lies in the plane of two offset lugs 41 on the keeper plate. Clamping screws 42 pass through perforations 43 in the cover plate and are threadedly received in screw holes 44 in the keeper plate at each side of the finger-piece shank.

The same screws 29 and 33 which were used with the interchangeable unit 22 may then be used to clamp the unit 34 into the blade at its recessed portion 26, 27. The screws 29 pass through the screw openings 35a in the cover plate 35 which register with the screw sockets 31 in the blade. Similarly the screws 33 pass through screw openings 35b in the cover plate

35 and which register with the screw sockets 22c in the blade. The larger recessed portion 27 of the blade affords room for movement of the finger-piece, the smaller recessed portion receiving the keeper plate which is substantially of the size and shape of the pulley plate 23 of the unit 22.

By loosening the screws 42 the position of the finger-piece may be adjusted longitudinally of the blade to have its outer end 45 extend more or less from the blade, overhanging the edge of the drawing board, the screws being then tightened to maintain the desired position by clamping the finger-piece shank between the cover and keeper plates. To limit retractive movement of the finger-piece, the latter desirably has a downward bend 46 therein which also places its outer end 45 advantageously below the upper surface of the blade.

The finger-piece outer end 45 may have a perforation 47 therein for a bolt 48 to which may be fastened either the cable itself or an adapter such as shown at 49, the latter in turn carrying a clamping device such as 50 for engagement with the cable, as at 51, where the cable is entirely beneath the board 10.

It will be understood that there are a pair of each of the units 22 and 34 for the blade 11, and that the construction of the blade is similar at each end to receive either of the units of either pair and so as to be completely interchangeable.

Thus the blade may be sold with the units 22 assembled therewith, for example, and the purchaser may also purchase a set of the units 34 for future use with the blade, or he may purchase such units 34 after he has been using the blade for some time with the units 22. In either case the ready convertibility of the blade for use with either type of cable will be apparent and its many advantages manifest in reducing the equipment which the draftsman must have on hand and simplifying its use.

The invention is not limited to details of construction shown for purposes of exemplification. Also, it is not essential that all features of the invention be used conjointly, as various combinations and sub-combinations may be advantageously employed.

I claim:

1. A parallel straightedge device embodying a blade having a recess at its end including a cable engaging unit for assembly with the blade of the device and comprising a cover plate completely covering said recess, a cable engaging member carried by and movable in said recess beneath said cover plate, said cover plate having a depending flange adapted to lap the end of the blade and being provided with holes about its margin thereof for reception of attachment screws, and passages in the cover plate for the reception of attachment elements for the cable engaging member.

2. A parallel straightedge device including a cable engaging unit for assembly with the blade of the device and comprising a cover plate, said cover plate having a depending flange adapted to lap the end of the blade and being provided with holes about the margin thereof for reception of attachment screws, a slot in said flange, a finger-piece movable in said slot longitudinally of the blade, and clamping means carried by the cover plate for fixing the longitudinal position of the finger-piece, said clamping means comprising a keeper suspended by screws from and beneath said cover plate, the screws being

adapted to be tightened to clamp the shank of the finger-piece between the keeper and the cover plate.

3. A parallel straightedge device including a cable engaging unit for assembly with a blade having an end recess, said cable engaging unit comprising a metallic cover plate, said cover plate having a depending flange adapted to lap the end of the blade and being provided with fasten-

ing means about its margin for attachment to the blade, a pair of spaced apart pulley plates carried by and suspended from said cover plate, and a pair of pulley wheels rotatably carried between said pulley plates, said pulley plates and pulley wheels being adapted to be received in the recess in the blade and said depending flange lapping the end of the blade to close said recess.

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