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PARALLEL STRAIGHT EDGE

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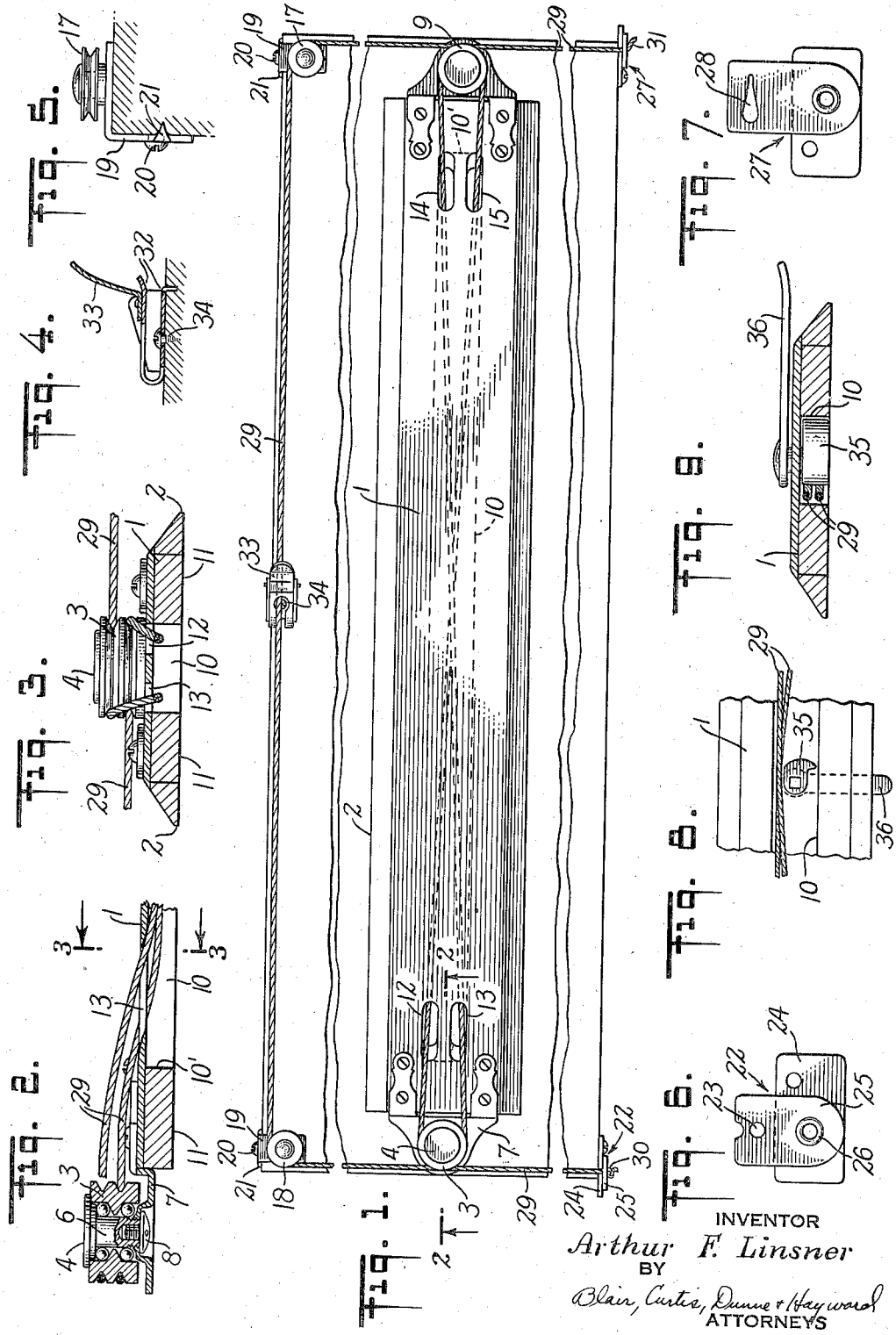


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

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PARALLEL STRAIGHT EDGE

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3 Claims. (Cl. 33—80)

This invention relates to a parallel straight edge.

An object of the invention resides in the provision of a parallel straight edge wherein the entire upper surface of the instrument is unobstructed so that it will present the minimum interference to the draftsman.

It is a further object of the invention to so construct the device that the minimum friction between the instrument and the drawing board or paper will be present.

As a further object, the invention seeks to provide a simplified construction attaining the above objects and which may be moved across the drafting paper with the minimum exertion and without necessitating the application of pressure by both hands of the draftsman.

A further object of the invention resides in the provision of means for locking the device in a definite position on the drawing board.

In the drawing I have illustrated an embodiment of my invention but it is to be understood that I am not to be limited to the details of construction therein shown except insofar as this limitation is necessitated by the claims.

In the drawing:

Figure 1 is a plan view of the device showing the same located upon a drawing board, the drawing board being broken away for the sake of convenience;

Figure 2 is a sectional view on line 2—2 of Figure 1;

Figure 3 is a sectional view on line 3—3 of Figure 2;

Figure 4 is a detailed sectional view of the lock for securing the guide cord to the board.

Figure 5 is a detail of one of the guide pulleys that is attached to one corner of the board;

Figure 6 is a detail of the means for securing the guide cord at one corner of the board;

Figure 7 is a detail of the means for securing the guide cord to the other corner of the board;

Figure 8 is a detail of a modification disclosing a lock for securing the straight edge in a definite position on the board; and

Figure 9 is a sectional view disclosing the position of the lock in the straight edge.

Referring now to the drawing wherein like reference characters indicate like parts, the straight edge consists of a relatively flat elongated body portion 1 having ruling edges 2, the body portion and the edges being made of the desired material.

A double pulley 3 is mounted on a shaft 4 for rotation, there being ball bearings interposed between the pulley and the shaft. The shaft is made, preferably, of two parts as indicated in Figure 2, one of which, 6, is in screw threaded engagement with a bracket 7 and the other of which, 8, acts as a locking nut to secure the shaft element 6 to the bracket 7.

This bracket 7 is attached to the upper face of one end of the body portion 1 of the straight edge.

A similar pulley 9 is attached to the other end of the body portion 1 of the straight edge in a similar manner.

The body portion of the straight edge is provided with a longitudinally extending channel 10 that is laterally relatively wide, which results in the reduction of the surface contact between the lower face of the straight edge and the paper and consequently, in the reduction of friction between the two. In other words, this channel 10 reduces the extent of the lower surface 11 of the straight edge and consequently reduces the area of surface contact between the lower surface of the body of the straight edge and the drafting paper. This channel 10 is closed at its ends, as at 10' so that it forms, in effect, when the straight edge is in contact with the paper, a chamber.

At the ends of the straight edge longitudinal elongated openings 12, 13, 14 and 15 extend through the body of the straight edge and establish communication between the channel 10 and the upper face of the straight edge adjacent the pulleys 3 and 9 and permit the guide cord to extend through the straight edge from the supper surface to the channel.

At two of the corners of the drawing board 16, pulleys 17 and 18 are attached, these pulleys being carried by brackets 19 which are attached to the drawing board by screws 20 and which carry prongs 21 that penetrate the edge of the board to maintain the pivot on which the pulleys rotate at right angles to the upper surface of the board.

At one of the opposite corners of the board, a bracket 22 is attached which bracket is disclosed clearly in Figure 6 of the drawing and which is provided with an opening 23. This bracket is formed of two parts, one of which, 24, is directly attached to the board and the other of which, 25, is pivoted 26 on the part 24. At the remaining corner of the board a similar bracket 27 is attached to the edge of the board but this bracket is provided with a key hole slot 28.

The guide cord 29 in being placed is inserted

through the opening 23 of the bracket 22 and knotted as at 30 to maintain this end of the guide cord in engagement with the bracket. The cord then passes around the pulley 3 and through the opening 12 in the body of the straight edge. It then passes through the opening 15 and around the opposite side of the pulley 9 and then around the pulley 17. From the pulley 17 the cord extends to and around the pulley 18 and then again around the double pulley 3 through the opening 13 and, crossing itself, through the opening 14 and around the double pulley 9. Its end is then inserted in the key hole slot 27. By means of this end 31 the cord may be pulled taut and then engaged in the reduced end of the key hole slot 28 to maintain it in this condition.

In order that the cord 29 may be secured in relation to the board I have provided a clamp disclosed in Figure 4, which includes spring jaws 32 and a cam 33, for forcing the jaws together. This clamp is attached to the board by suitable means such as a screw 34 and through the clamp the cord 29 passes. Thus, after the straight edge has been adjusted into the position that it is desired that it should occupy, the clamp may be actuated to insure the maintaining of the cord stationary with the consequent travel of the straight edge in parallelism.

It will be realized that with this construction, when the straight edge is set in its proper position with its edge either horizontal or in angular relation to the board and the clamp disclosed in Figure 4 in its clamping condition, the straight edge may be moved across the board so that its leading edge will be always parallel with the positions that it previously occupied. In other words, if the straight edge is set so that horizontal lines may be ruled as it is moved from position to position, each succeeding line will be parallel with the preceding one, or if it is set for the ruling of angular lines, such as cross hatching, each succeeding line will, nevertheless, be parallel with the preceding ones. When the clamp shown in Figure 4 is loosened the straight edge, of course, may be shifted to any of the other desired positions.

In Figures 8 and 9 of the drawing I have disclosed a modification of the invention. This includes a locking cam 35 that is provided with an actuating handle 36. The cam 35 is located within the channel 10 and the actuating handle 36 on the upper surface of the body of the straight edge. The two reaches of the cord 29 that pass through the channel 10 of the body of the straight edge pass between one wall of the channel 10 and the cam 35 so that when the cam is actuated these reaches of the cord are locked between the cam and the wall. The purpose of this locking is to maintain the straight edge in any given position, or in other words, to prevent its being shifted across the board, in which event it may be used as a base for other ruling instruments.

Of course were there no means for escape of the air from the channel 10 there would be a tendency to set up a suction as the straight edge is moved across the paper and this would interfere with the free movement. However, the provisions of the openings 12, 13, 14, and 15 which serve to permit the guide cord to pass from the upper to the lower surface of the straight edge insures the escape of the air from the channel and the destruction of the suction with the consequent ease of movement of the straight edge.

It will be realized that certain modifications in the details of construction that I have above described may be made without departing from the spirit of the invention or existing scope of the claims.

I claim:

1. A parallel straight edge including an elongated relatively thin body portion having a relatively wide longitudinal channel in the lower face thereof and closed at its ends; a pulley carried by each end of the straight edge adjacent and above its upper face and said body portion having a pair of slots adjacent each pulley and establishing communication between the channel and the pulley through the upper face of the straight edge.

2. A parallel straight edge including an elongated relatively thin body portion having on its lower face a relatively wide longitudinal channel to reduce friction as the straight edge is moved, a pulley carried by each end of the straight edge and substantially in the plane of the upper face, said upper face having slots therein adjacent the pulleys, and cords passing about the pulleys and through the slots to said longitudinal channel.

3. A straight edge of the character set forth in claim 2, in which a locking device for the cords is located within said channel.

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