

June 24, 1930.

C. E. STEVENS

1,768,427

CLAMP FOR SEAT CONSTRUCTION

Original Filed Feb. 14, 1927

Fig. 1.

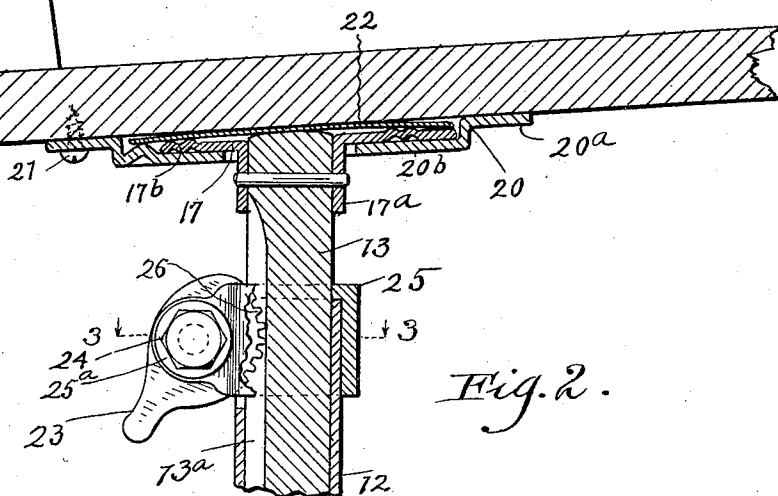
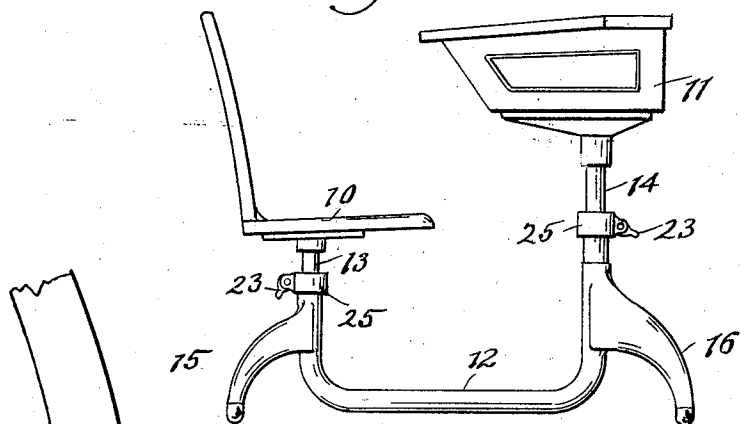
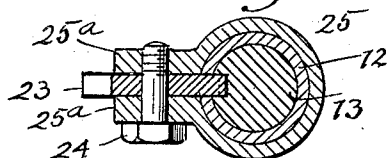


Fig. 2.

Fig. 3.



Inventor

Clarence E. Stevens

By

Kenn Hudson & Kent

Attorneys

UNITED STATES PATENT OFFICE

CLARENCE E. STEVENS, OF CLEVELAND, OHIO, ASSIGNOR TO WHITE SEWING MACHINE CORPORATION, OF CLEVELAND, OHIO, A CORPORATION OF DELAWARE

CLAMP FOR SEAT CONSTRUCTION

Original application filed February 14, 1927, Serial No. 167,882. Divided and this application filed February 6, 1928. Serial No. 252,105.

This invention relates to a clamp for seat structures particularly, although it has utility in adjustable standards or posts for other articles of furniture, being designed particularly for school seats and desks.

The present invention is a division of my copending application Serial No. 167,882, filed February 14, 1927.

One of the objects of the invention is the provision of automatic locking means for holding the seat post or the like in adjusted position.

Another object is the provision of a combined locking and rotation preventing means for the seat or desk post.

The above objects are attained very effectively by my invention which may be here briefly summarized as consisting in certain novel details of construction and combinations and arrangements of parts which will be described in the specification and set forth in the appended claims.

In the accompanying sheet of drawings, Fig. 1 is a side view of a seat and desk unit; Fig. 2 is a vertical sectional view on an enlarged scale showing the means which I employ for locking the posts in adjusted position as well as for preventing their rotation; and Fig. 3 is a transverse sectional view taken substantially upon the line 3—3 of Fig. 2.

In Fig. 1, the seat 10 is a part of a unit which includes also a desk 11, the seat and desk being joined by a U-shaped tubular standard 12 with upstanding ends which receive, respectively, a seat supporting post 13 and a desk supporting post 14, which posts slidably engage the ends of the tube and are adapted to be held at any desired elevation therein. The lower and horizontal portion of the tube is held slightly above the floor level by legs 15 and 16 which are secured to the upper portions of the tube and project laterally therefrom. It should be here stated that my invention is not confined to a seat and desk unit but may be employed equally well in seats and desks as separate units.

The seat 10 is swivelled to turn upon the post 13, the latter remaining fixed. While the particular means illustrated for provid-

ing this swivel mounting constitutes no part of my present invention, being covered in the application above referred to, it may be stated that at the top of the post 13 a laterally projecting, hardened disk 17 is provided having at its center a tubular boss or bushing 17^a which is fitted over the end of the post and is secured thereto by a pin 19. The plane of the disk 17 is preferably slightly inclined with respect to the axis of the post 13 so as to coincide with the inclination of the seat 10.

On the under side of the seat there is secured a plate 20 having a circular marginal flange 20^a which is secured to the seat by screws 21, and inside of this flange the plate has a circular portion 20^b which is offset with respect to the flange away from the seat so as to form an annular pocket which receives the disk 17. At the center of the offset portion 20^b of the plate 20 there is an opening through which the tubular portion 17^a of the disk projects.

The weight of the occupant of seat 10 is transmitted to the upper end of the post 13 and the disk 17, and to prevent undue wear between these parts there is interposed above the post 13 and disk 17 a hardened wear-resisting disk 22, this being immediately beneath the seat 10, as illustrated in Fig. 2.

It will be observed that disk 17 is provided with annular corrugations 17^b so as to reduce the wear-resisting surface between the disk 17 and the disk 22, and also between the disk 17 and the offset portion 20^b of the plate 20.

The means which I have provided for permitting the easy adjustment of the height of the desk or seat and for holding the same in various positions of adjustment consists of a dog 23 pivotally supported by a screw 24 between a pair of laterally projecting ears 25^a of a sleeve or collar 25 which is fitted onto the end of the tube 12. The inner edge of this dog engages in a spline groove 13^a of the post 13, and this portion of the dog is provided with the equivalent of teeth, indicated at 26 in Fig. 2, which are adapted to engage the back wall of the groove, as illustrated in that figure. Furthermore, the groove engaging portion of the

dog is somewhat cam-shaped so that by depressing the outer end of the dog the post 13 or 14, as the case may be, will be released from the tube, allowing the post to be moved
 5 up or down. Furthermore, the dog is so shaped that when it is released it will swing by gravity into locking engagement with the post so as to grip it, the whole being so constructed that the weight of the seat and
 10 of the occupant on it, or the weight of the desk, has a tendency to increase the gripping engagement between the dog and post so as to prevent accidental or unintentional lowering of the seat or desk.

15 When an adjustment is to be made, the screw 24 is first loosened with a wrench. If an upward adjustment is to be made, a lifting effort may be exerted upon the seat or desk, thereby automatically disengaging the
 20 cam surface of dog 23. Further lifting effort will raise the seat or desk to the desired height, whereupon it may be released. The post with its load will then settle back slightly, causing the teeth of the dog to
 25 again grip the wood at the base of the groove in the post and thereby lock the post in its new position. The screw 24 is then again tightened to prevent accidental or unauthorized operation of the adjusting means.
 30 When a downward adjustment is desired, the same procedure is followed, except that it is then necessary to hold the dog 23 out of contact with the post.

Having thus described my invention, I
 35 claim:

1. In an article of furniture, a tubular standard, a vertically grooved post mounted for vertical adjustment in said standard, said standard having a collar attached there-
 40 to at the upper end thereof, said collar having a lug extending outwardly therefrom, a dog pivotally connected with said lug outside said standard, said standard having a slot therethrough through which said dog
 45 extends into said groove, whereby the dog is adapted to engage said post to support the latter in any adjusted position.

2. In an article of furniture, a tubular standard, a vertically grooved post mounted
 50 for vertical adjustment in said standard, said standard having a collar attached thereto at the upper end thereof said collar having a pair of spaced ears extending outwardly therefrom, and a dog pivotally sup-
 55 ported between said ears outside said standard and having a cam portion extending into the standard and into said groove and frictionally engaging the post to support it in any adjusted position.

60 3. In an article of furniture, a tubular standard, a vertically grooved post mounted for vertical adjustment in said standard, said standard having a collar attached there-
 65 to at the upper end thereof, said collar having a pair of spaced ears extending out-

wardly therefrom, a dog pivotally supported between said ears outside said stand-
 ard and having a cam portion extending into the standard and into said groove and fric-
 tionally engaging the post to support it in
 70 any adjusted position, and means for clamp-
 ing said dog between said ears to prevent
 accidental movement of the dog.

In testimony whereof, I hereunto affix my
 signature.

CLARENCE E. STEVENS.

75

80

85

90

95

100

105

110

115

120

125

130