

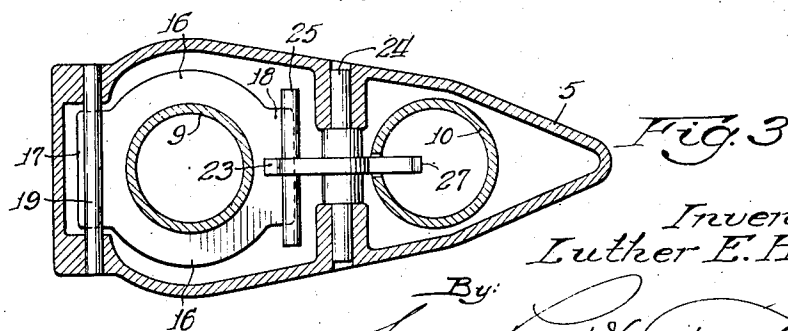
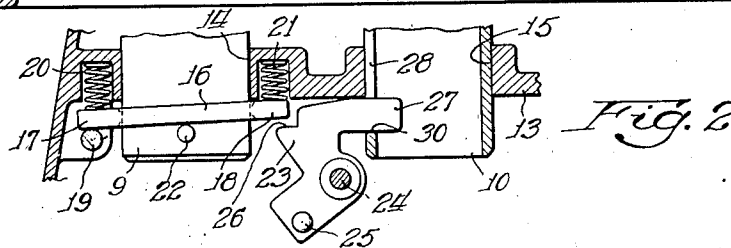
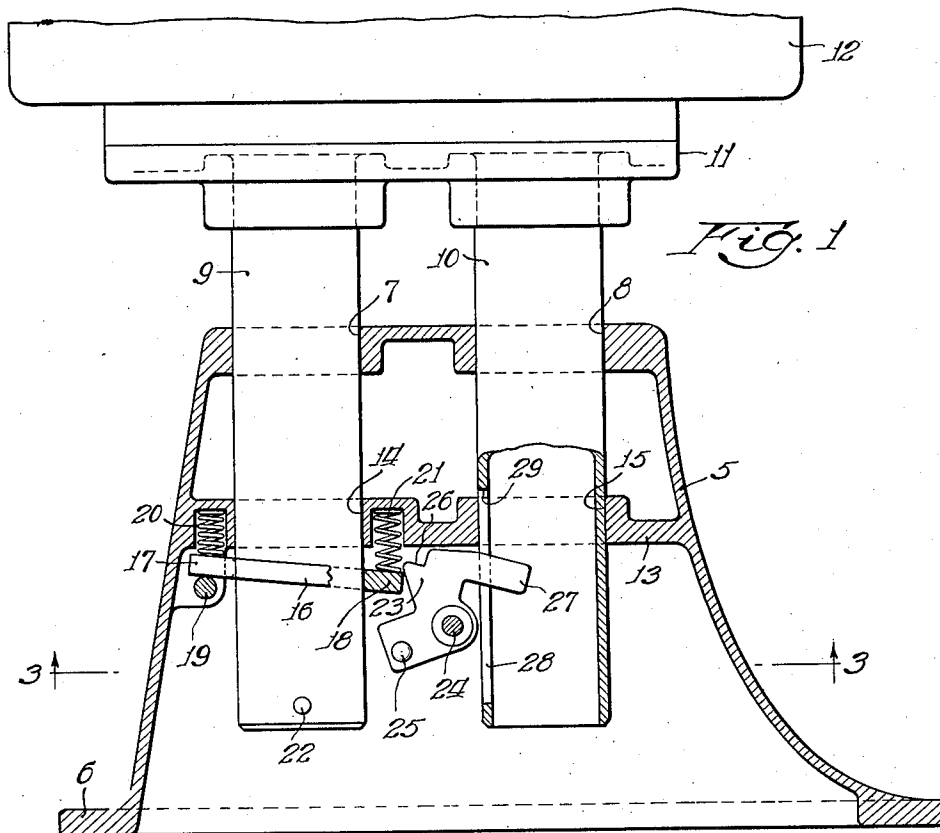
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ADJUSTABLE SEAT BASE

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ADJUSTABLE SEAT BASE

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6 Claims. (Cl. 155—94)

This invention relates to improvements in adjustable seat bases and more particularly to a seat base which permits adjustment of the seat vertically whereby the seat may be adjusted to the most comfortable position for persons of different height.

The main objects of the invention are to provide a structure of the character indicated which will be of very strong but simple construction and which will be easily adjustable to any selected height within a considerable range; to provide a structure of the character indicated which will effectively lock itself in adjusted position against downward movement but which may nevertheless be easily adjusted both upwardly and downwardly when so desired; and in general, it is the object of the invention to provide an improved vertically adjustable seat base structure of the character indicated.

Other objects and advantages of the invention will be understood by reference to the following specification and accompanying drawing wherein there is illustrated an adjustable seat base structure embodying a selected form of the invention.

In the drawing:

Fig. 1 is a vertical sectional view through the improved structure.

Fig. 2 is a fragmentary section corresponding to a portion of Figure 1 but showing a changed position.

Fig. 3 is a section on the line 3—3 of Fig. 1.

The improved seat base structure shown in the drawing comprises a main base member 5 here shown in the form of a cast metal member but obviously adapted to be otherwise made or fabricated if preferred. The lower end of the base is suitably flanged and reinforced as indicated at 6 to facilitate mounting of the structure on a floor, the flange 6 being adapted to have anchoring bolts or the like passed therethrough. The upper end of the base 5 is provided with a pair of openings 7 and 8 for vertically slidably receiving a pair of round tubular posts 9 and 10 which depend from a seat frame 11 having a suitably cushioned seat structure 12 secured thereon. The posts 9 and 10 are preferably rigidly secured to the seat frame 11 so that the seat structure and the posts move as one.

The base 5 is provided intermediate its upper and lower ends with a transverse web 13 preferably formed integral with the base as shown and said web is provided with a pair of openings 14 and 15 which are respectively axially aligned with the openings 7 and 8 in the upper end of the base. The posts 9 and 10 are each slidable through a

vertically spaced pair of openings whereby normal verticality of the posts with reference to the base 5 is effectively maintained.

Means for locking the seat structure including the posts 9 and 10 in any selected upwardly adjusted position comprises, in this instance, a cramping member or ring 16 which is provided with an opening of slightly larger diameter than the diameter of the post 9 which passes through said ring. The ring 16 is equipped with diametrically oppositely extending ears or lugs 17 and 18, the lug 17 extending into overlying relation to a pin or rod 19 which is carried by the base 5. As shown, the base is suitably shaped to enclose the posts 9 and 10 and the cramping ring 16 and suitable strengthening bosses are provided for supporting the pin 19.

Coil springs 20 and 21 are seated in suitable recesses provided in the web 13 and exert downwardly directed pressure on the opposite ends of the ring 16. The spring 20 serves to hold the ear 17 of the ring in bearing engagement with the pin 19 and the spring 21 exerts a downward pressure on the ear 18 of the ring so as to rock the ring downwardly about the supporting pin 19 as a fulcrum. The ring 16 is thus caused to assume a cramping position about the post 9 which will normally prevent the post from moving downwardly. It will, however, be apparent that upward movement of the seat and the post 9 (and post 10) may be effected by merely lifting the seat upwardly.

The post 9 is provided adjacent its lower end with an outwardly extending pin 22 which is adapted to engage the under side of the ring 16 to lift the same to a position relative to the post 9 wherein the cramping effect of the ring is eliminated. When the cramping ring 16 is adjusted to its disabled position as shown in Figure 2, the seat structure, including the posts 9 and 10, may be moved downwardly. The fit of the posts in the openings wherein the posts are slidably disposed may be such as to require a slight force to move the seat downwardly or, if preferred, the fit may be sufficiently loose to permit the seat structure to drop downwardly of its own weight when the cramping effect of the ring 16 is eliminated in the manner explained.

For holding the ring 16 in its disabled position, there is provided a dog or pawl 23 which is pivotally mounted as indicated at 24 on a pin or shaft suitably supported in the base structure as shown. Said dog 23 is counter-weighted by means of a transverse pin 25 so as to cause the same to normally rest against the adjacent edge

of the ring 16 as shown in Figure 1 and to rock to the position shown in Figure 2 wherein the nose part or seat 26 of the dog underlies the adjacent end portion 18 of the ring and will be operative to arrest downward rocking of the ring in a position in which the ring is inoperative to lock the post 9 against downward movement. Downward rocking movement of the dog may be limited by engagement of its tail piece 27 with the underlying portion of the web 13. Said tail piece 27 extends through a slot 28 in the post 10 so that when the seat structure is lowered to its lowermost position, the upper end wall 29 of the slot 28 will engage said tail piece 27 to rock the dog upwardly past said cramping ring 16 to permit the ring to resume its operative or cramping position as shown in Figure 1. Such rocking movement of the dog upwardly past the ring is of course permitted incident to the space between the upper face of the ring 16 and the bottom face of the web 13 which permits the ring to be adjusted to the upwardly inclined position shown in Figure 2 in which the dog may freely pass the adjacent end of the ring.

The bottom end 30 of the slot 28 may be relied upon to insure movement of the pawl from the position shown in Figure 1 to the position shown in Figure 2 when the seat is adjusted to its uppermost limit of movement. Hence any sticking of the dog or other interference with its rocking movement as influenced by the counter-weight 25 will be effectively overcome.

From the foregoing explanation, it will be seen that the seat structure may be adjusted upwardly to any given point within the range of its adjustability without manipulating any levers, screws or other clamping or other devices. It is merely necessary to lift the seat to the desired position where it will automatically be locked. In the event that it is desired to lower the seat from some previously adjusted position, the seat structure is raised to its highest position to disable the cramping ring 16 whereupon the seat structure is permitted to drop or is lowered to its lowermost position wherein the cramping ring is restored to operativeness. Thereupon the seat may be again lifted to the desired position of adjustment which may be lower than the position in which it was initially found.

The described structure is especially adaptable to the driver's seat in various types of vehicles such as busses, trucks and other forms of conveyances and it may of course be employed wherever a vertically adjustable seat is desired. The operation of adjusting the seat requires no special equipment and it may of course be effected by any properly instructed person. The structure is of simple and durable character having no complicated or critical adjustments.

Changes in the described structure may be made without departing from the spirit of the invention, the scope of which should be determined by reference to the following claims, the same being construed as broadly as possible consistent with the state of the art.

I claim:

1. A seat structure of the class described comprising a normally stationary base, a seat frame, a horizontally spaced, relatively fixed pair of posts extending from said seat frame into said base and slidably supported therein, means carried by said base for automatically locking one of said posts against downward movement while permitting upward movement thereof, thereby to support the seat frame in selected position of ad-

justment relative to the base, means carried by one of said posts for automatically engaging and disabling said locking means when the seat is raised to its upper limit of adjustment to thereafter permit lowering of the seat, a latch carried by said base for retaining said locking means in disabled condition during the downward adjustment of said posts, and means carried by the other of said posts for automatically engaging and releasing said latch when the seat is adjusted to its limit of downward movement, thereby to restore said locking means to operative condition.

2. A seat structure of the class described comprising a normally stationary base, a seat frame, a pair of relatively fixed, transversely spaced parallel posts depending from said seat frame into said base and slidably supported therein, a cramping ring disposed around one of said posts and supported adjacent one side of such post by said base, means normally urging said ring into downwardly inclined cramping engagement with the embraced post to lock the same against downward movement, an abutment carried by said embraced post for engaging said cramping ring upon upward movement of said seat frame and posts to their upper limit of movement to automatically disable said ring so as to permit free downward movement of said posts and seat frame to their limit of movement, a latch carried by said base for retaining said cramping ring in disabled position during said downward movement of the seat frame and posts, and the other of said posts being provided with an abutment for engaging said latch to release the same when said seat frame and posts reach their said lower limit of movement, thereby to restore said cramping ring to operative condition.

3. A structure according to claim 2 wherein the base is provided with vertically spaced bearing openings for slidably receiving the posts.

4. A seat structure according to claim 2 wherein the latch is provided with a tail portion and the other of the posts is slotted to permit passage of said tail portion into such post, and wherein the upper end of the slot constitutes the abutment for engaging the latch to release said cramping ring.

5. A seat structure of the class described comprising a normally stationary base, a seat frame, a post extending from said seat frame into said base and slidably supported thereby, means on said base engageable with said post for automatically locking said post against downward movement in said base while permitting upward movement thereof thereby to support the seat frame in selected position of adjustment relative to said base, means carried by said post for disabling said locking means automatically when the seat is raised to its upper limit of adjustment thereafter to permit downward adjustment of the seat, a latch on said base engageable with said locking means for retaining said locking means in disabled condition during the downward movement of said seat and post, a vertical slotted member fixed to said seat frame for unison movement with said post within said base, and a finger on said latch extending into said slot for engagement with the upper end thereof whereby said latch is actuated to release said locking means when said seat reaches the limit of its downward movement.

6. A seat structure of the class described comprising a normally stationary base, a seat frame, a post extending from said seat frame into said

base and slidably supported thereby, a cramping ring disposed around said post and supported adjacent to one side thereof by said base, means normally urging said ring into downwardly cramping engagement with the embraced post to lock the same against downward movement, an abutment carried by said embraced post for engaging said cramping ring upon upward movement of said seat frame and post to their upper limit of movement to automatically disable said

ring so as to permit free downward movement of said post and said frame to the limit of their movement, a latch carried by said base for retaining said cramping ring in its disabled position during said downward movement of said seat frame and post, and means fixed for unison movement with said post for releasing said latch when said seat reaches the limit of its downward movement.

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