

Sept. 30, 1941.

A. W. CLARKE ET AL

2,257,156

RECLINING SEAT

Filed June 13, 1939

3 Sheets-Sheet 2

Fig. 5.

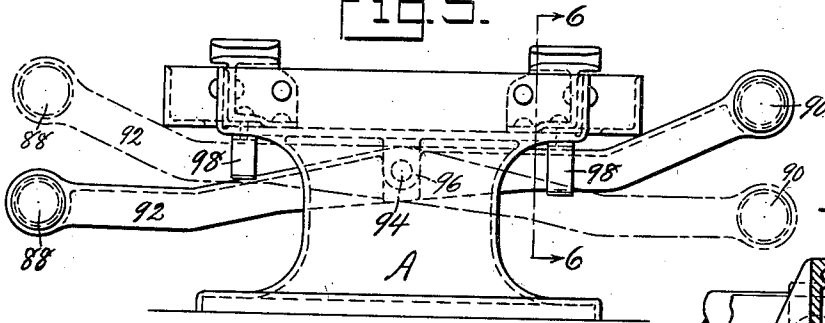


Fig. 6.

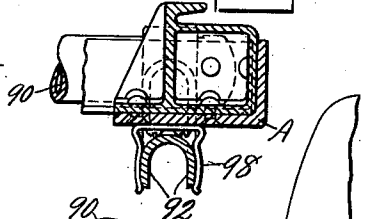


Fig. 7.

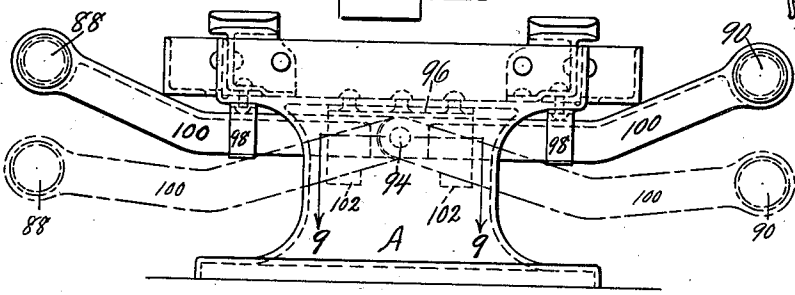


Fig. 2.

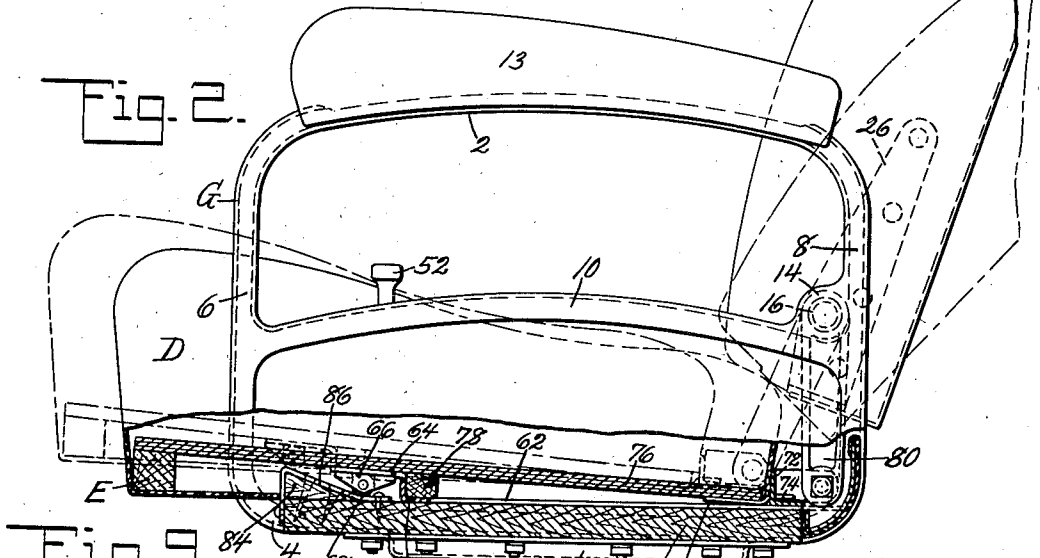
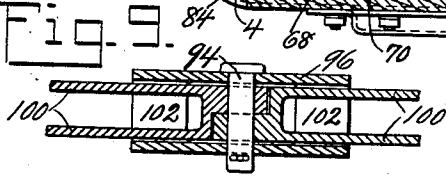


Fig. 9.



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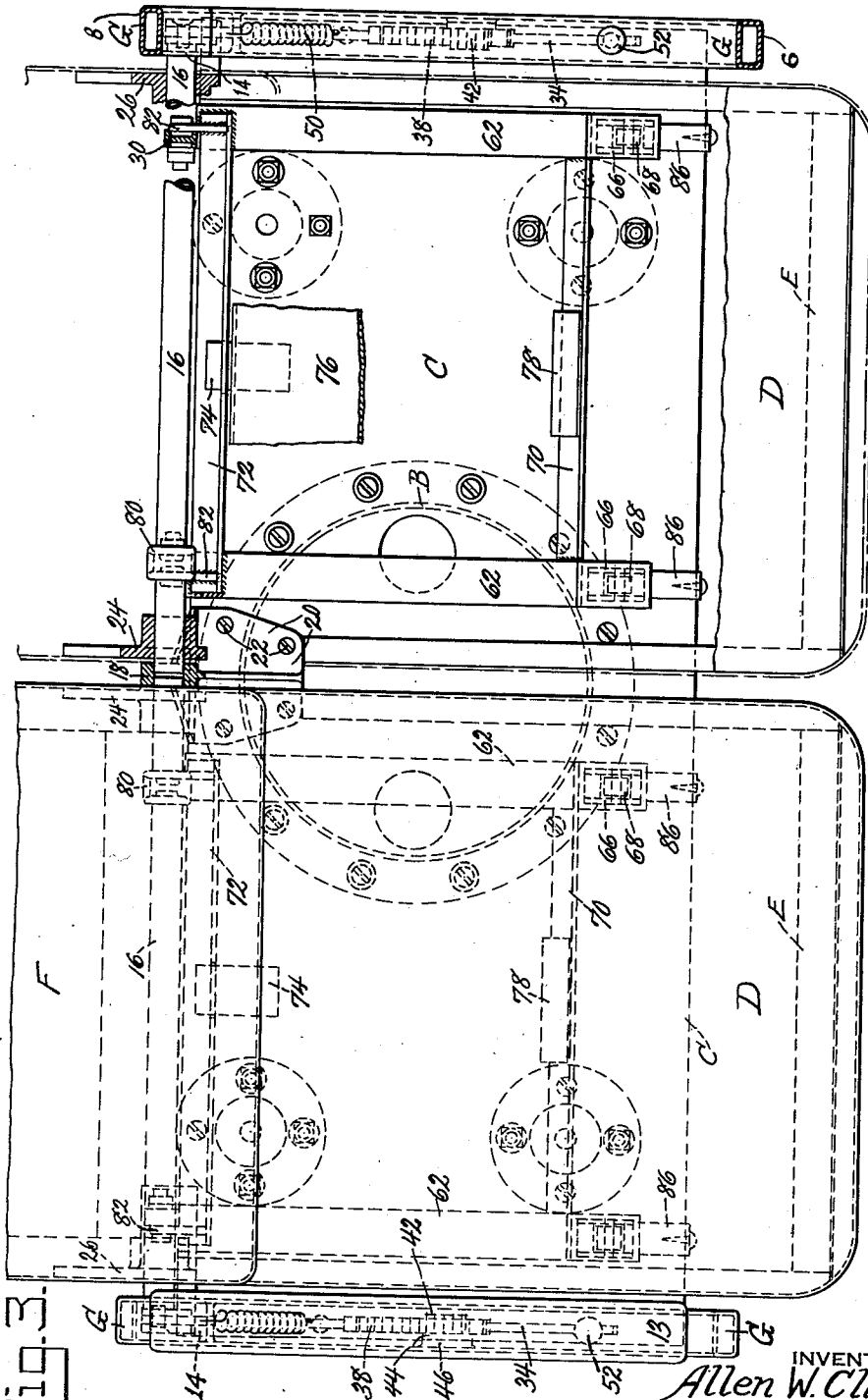


FIG. 3.

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RECLINING SEAT

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2 Claims. (Cl. 155—116)

This invention relates generally to seats and more particularly to reclining seats for railway cars, buses and the like of the type provided with a reclining back and having an automatically adjustable seat cushion.

Various types of reclining seats are now in general use but in a majority of them the seat back only is adjustable. While such seats provide a certain amount of comfort for the passenger and reduce to some extent the fatigue of travel, they do not permit as complete relaxation as in the case where the position of the seat cushion is also adjustable. Accordingly, it is an object of the present invention to provide a reclining back seat in which the seat cushion is automatically slidable into adjusted position upon inclination of the seat back.

Another object of the invention is the provision of a reclining seat having a back which may be easily shifted by the occupant into a plurality of inclined positions and in which the inclination of the seat cushion is automatically adjusted to conform with the inclination of the back.

A further object of the invention is the provision of an improved common control mechanism for the seat back and seat cushion which is readily accessible to the occupant of the seat and easy to operate.

These and other objects of the invention will be more clearly understood by reference to the following description and accompanying drawings, in which:

Figure 1 is a side elevation view of the seat with portions thereof broken away to more clearly show the back reclining mechanism, the positions of the mechanism and back in reclined position being shown in dotted lines;

Fig. 2 is a view similar to Fig. 1 but showing the seat cushion adjusting mechanism;

Fig. 3 is a top plan view of a double seat arrangement with certain parts removed to better disclose other parts;

Fig. 4 is a rear elevation view of the seat with portions thereof broken away to better disclose the adjusting mechanism and its connection with the seat back and cushion;

Fig. 5 is a side elevation view showing one form of foot rest arrangement which may be used for the seat;

Fig. 6 is a sectional view taken on the line 6—6, Fig. 5;

Fig. 7 is a sectional view showing the manner in which the foot rest is supported by the seat pedestal and base frame;

Fig. 8 is a view similar to Fig. 5 but showing a modified form of foot rest arrangement;

Fig. 9 is a view taken on the line 9—9, Fig. 8;

Fig. 10 is a sectional view showing the manner in which the modified form of foot rest is supported, and

Fig. 11 shows the center post casting and its attachment to the seat base frame panel.

Referring now more particularly to the drawings, the invention is shown as embodied in a double seat, which may be either of the revolving or stationary type, supported upon pedestals A and base frame B, or in any other suitable manner, and provided with a base frame panel C. The panel C is shown as made of wood but obviously may be formed of any other suitable material such, for example, as pressed steel. The seat comprises a pair of cushions D having seat frames E slidably supported on the base panel C, reclining backs F and side frames G, one at each side of the seat. As clearly shown in Figs. 1 and 2, the side frame G is generally rectangular in form and comprises top and bottom members 2 and 4, substantially upright members 6 and 8, intermediate members 10 and rib or flange 12, an upholstered arm rest 13 being secured to the top member 2. At the juncture of upright member 8 and intermediate member 10 the side frame is formed to provide a bearing socket 14 in which one end of a tubular shaft 16 is journaled. There is a pair of these shafts 16, one extending across the back of each seat, with their outer ends supported in the side frame bearing sockets while their inner end portions are journaled in bearing 18 formed on the center post casting 20 which is secured, as by the screws 22, to the seat base panel C substantially centrally of the seat, as shown in Fig. 3. The reclining seat backs F are pivotally supported on shafts 16 by means of bracket castings 24 and 26 secured to each side of the back, as by wood screws 28, the bracket castings being welded to the shaft. The bracket casting 26, which is adjacent the seat side frame, is formed integral with two spaced, depending arms 30 and 32 pivotally connected, respectively, with the sliding seat frame and the back reclining mechanism, as hereinafter described.

The control mechanism for the reclining back consists of an operating lever or bar 34 pivotally connected at one end portion, as at 36, with the arm 32 and provided with projections or teeth 38, as shown in Fig. 1, arranged slightly forward of the central portion of the lever and adapted to engage similar teeth 40 formed on a block 42 whereby the seat back may be locked in any one of a plurality of inclined positions. The block 42 may be secured in any suitable manner to the inner face of a supporting plate 44 Fig. 1 which is riveted or otherwise secured to attaching flanges 46 and 48 formed integral, respectively, with intermediate side frame member 10 and the rib member 12. A coil spring 50 connected at one end to operating lever 34 and at its other end to the frame member 10 constantly urges the lever towards operative position. The lever 34 is operated by a plunger 52 having an interme-

plate portion 54 and stem 56, the end portion of which is arranged in and guided by boss 58 formed integral with the rib member 12. The plunger 52 is reciprocally mounted in an opening formed in the frame member 10 and the intermediate portion 54 of the plunger is provided with an opening through which the forward end portion of operating lever 34 extends. A coil spring 60 which surrounds the plunger stem 56 is seated between the boss 58 and the intermediate portion 54 of the plunger and serves to retain the latter in normal position.

From the above description it will be seen that by depressing the plunger 52 the lever 34 will be swung downwardly against the tension of spring 50 to disengage the teeth 38, thus permitting the seat back to be reclined as desired. Upon release of the plunger the lever 34, through the action of spring 50, will be brought back into teeth engaging position to lock the seat back in its adjusted position.

The sliding seat or cushion frames E are formed by flat bar side members 62, one at each side of the frame, having offset forward end portions or seat frame extensions 64 to each of which is secured a bracket 66 carrying a roller 68, as shown in Fig. 2 and Fig. 3, the side members being joined together by front and rear angle members 70 and 72, respectively, welded thereto, as clearly shown in Fig. 3. The cushion may be held in place on the seat frame by any suitable means such as the retaining member 74 attached to the bottom panel 76 of the cushion and projecting through a slot in the rear angle 72, as shown in Figs. 2 and 3, and by wood block 78 positioned against the front angle 70. An operating arm 80 is welded or otherwise secured to one of the shafts 16 adjacent the center post casting 20, as shown in Fig. 4, and pivotally connected at the inner side of the seat frame, as is arm 30 at the opposite side of the frame, to one of the lugs 82 welded to the rear angle member 72. The base frame panel C at its front edge portion is formed to provide a rearwardly inclined or sloping portion 84 to which are secured wear strips 86 on which the rollers 68 ride during sliding movement of the seat cushion. It is believed clear from the foregoing description that upon inclination of the seat back the cushion will be moved forward and its front end portion elevated by reason of the rollers 68 riding on the inclined wear strips 86, thus automatically adjusting the angular position of the cushion with that of the seat back.

Referring now to Fig. 5, the seat may be provided with front and rear foot rests 88 and 90, respectively, preferably formed of tubular stainless steel, carried by supporting members 92. The outer supporting member is pivotally supported from the seat pedestal, as shown in Fig. 7, by means of the pin 94 which extends through trunnion casting 96, while the inner supporting member is similarly supported from the seat base frame B. A spring catch 98 is provided at each side of the seat with which the supporting member is adapted to be engaged to retain either one of the foot rests in raised or out-of-use position while the other foot rest is retained in lower or in-use position.

In the modified form of foot rest arrangement shown in Fig. 8 the foot rests 88 and 90 are independently supported; that is, there is a pair of supporting members 100 for each foot rest pivotally supported at their end portions by pin 94 passing through trunnion casting 96 in a man-

ner similar to the arrangement shown in Fig. 5, and as clearly shown in Fig. 9. The trunnion casting 96 in this instance, however, is formed with bottom walls or ledges 102, as clearly shown in Figs. 8 and 10, at each side of the pivot point, which serves as an abutment or stop for supporting the foot rest in the lowered or in-use position. The spring catch 98 in this modified arrangement is provided for the same purpose as previously described in connection with the foot rest shown in Fig. 5.

While the invention has been described in more or less detail it is obvious that various changes may be made in the arrangement of parts and all such changes are contemplated as come within the scope of the following claims.

What is claimed is:

1. In a reclining seat, a seat base comprising a base frame and a base frame panel supported thereby, said base frame panel including rearwardly inclined portions positioned at the forward part of the base frame panel and extending above the rest of the panel, a seat member including a seat frame, forwardly directed extensions carried by and extending above said seat frame, a seat frame panel resting adjacent its front end on said forwardly directed extensions and at its rear end on said seat frame adjacent the lower edge of the seat frame, whereby said seat frame panel normally extends forwardly in an upwardly inclined position to provide a clearance between the seat frame panel and the bottom of the seat frame for the reception of the rearwardly inclined portions of the base frame panel, and rollers carried by the seat frame panel for travel over the inclined portions of the base frame panel whereby the seat frame panel and seat frame are elevated upon forward movement over the base frame.

2. In a reclining seat, a seat base comprising a base frame and a base frame panel supported thereby, said base frame panel including rearwardly inclined portions positioned at the forward part of the base frame panel and extending above the rest of the panel, a seat member including a seat frame, forwardly directed extensions carried by and extending above said seat frame, a seat frame panel resting adjacent its front end on said forwardly directed extensions and at its rear end on said seat frame adjacent the lower edge of the seat frame, whereby said seat frame panel normally extends forwardly in an upwardly inclined position to provide a clearance between the seat frame panel and the bottom of the seat frame for the reception of the rearwardly inclined portions of the base frame panel, rollers carried by the seat frame panel for travel over the inclined portions of the base frame panel whereby the seat frame panel and seat frame are elevated upon forward movement over the base frame, a seat back hingedly mounted on the base, a downwardly depending arm secured to said seat back and seat member and being so formed and arranged as to move said seat member forward into inclined position upon inclination of said seat back, and means including a lever pivotally connected with said arm for controlling the inclination of said seat back, said means adjustably engaging a portion of the seat frame.

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