May 23, 1950 W. B. DEAN ET AL 2,508,598

RECLINING SEAT

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FIG. 1

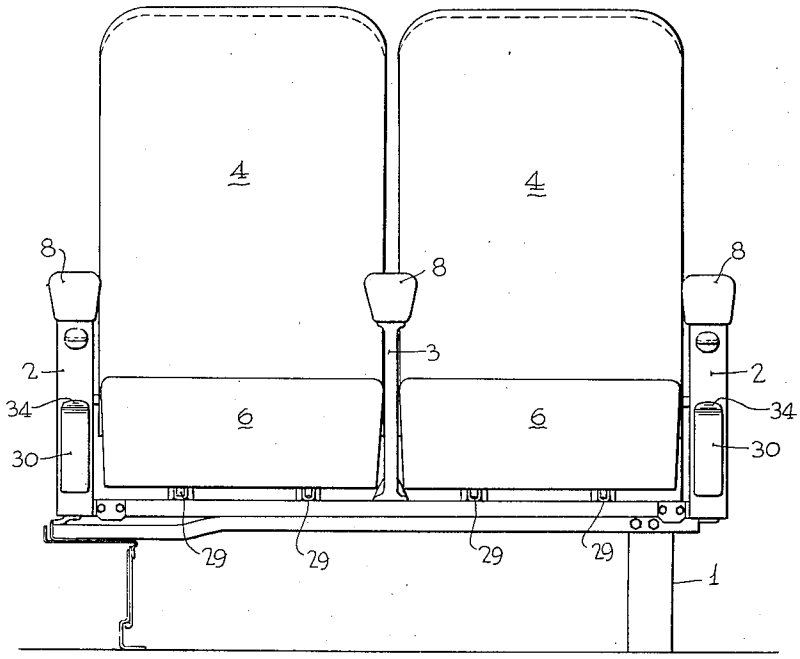
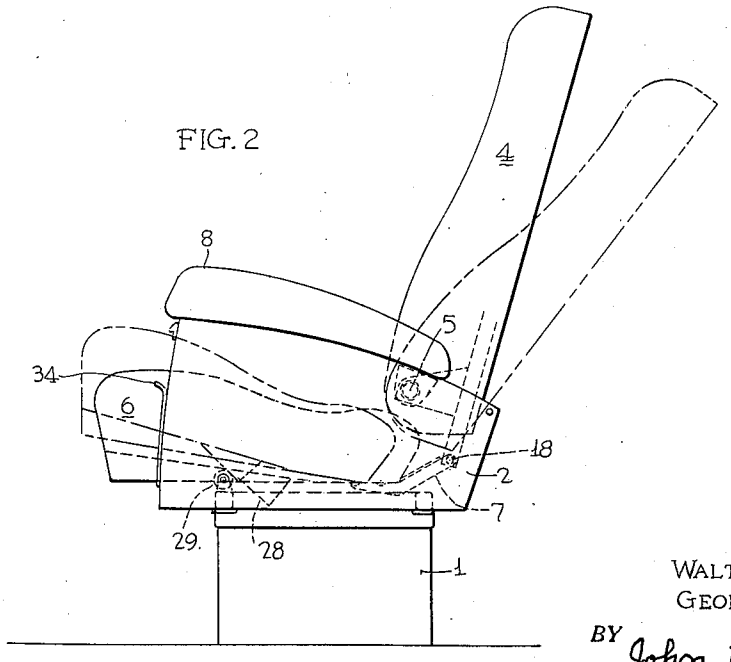


FIG. 2



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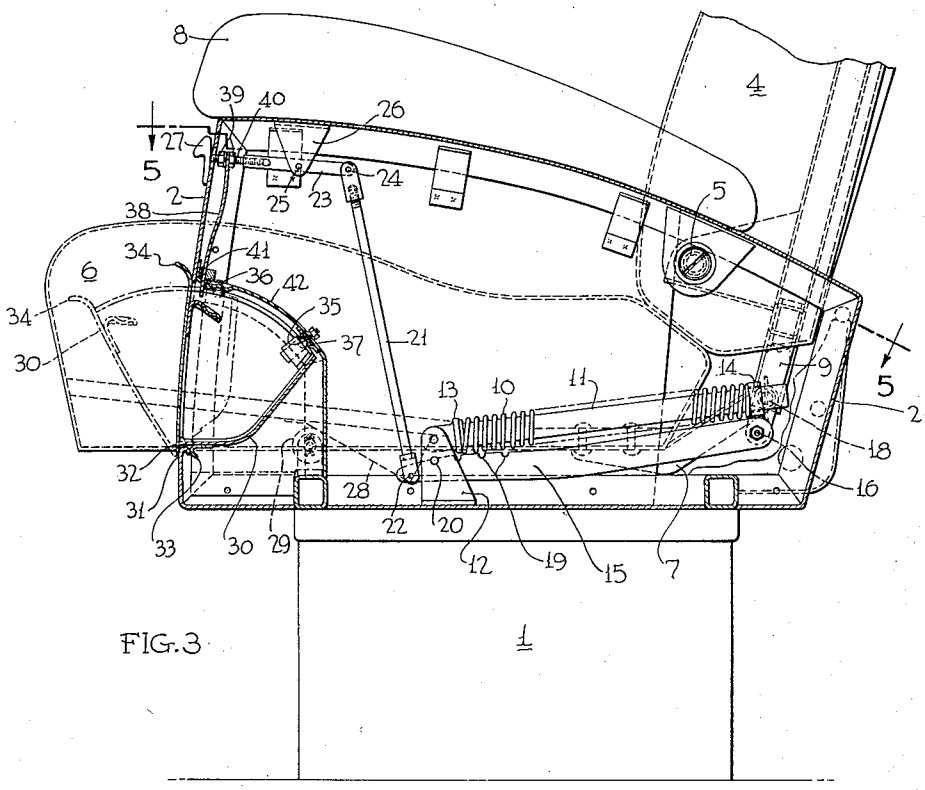


FIG. 3

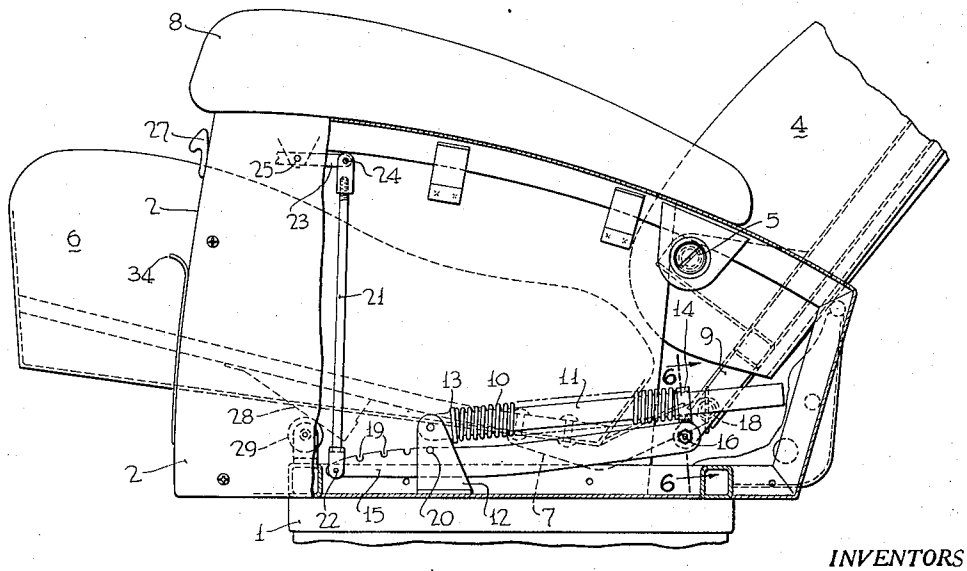


FIG. 4

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RECLINING SEAT

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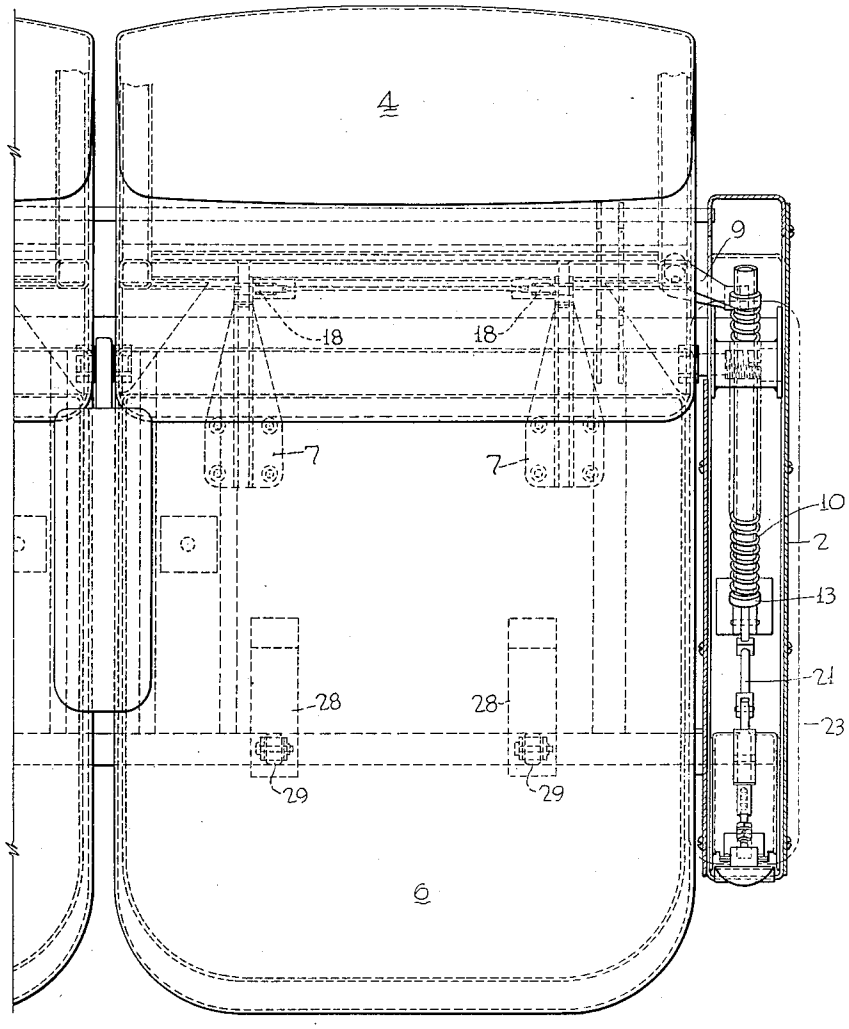


FIG. 5

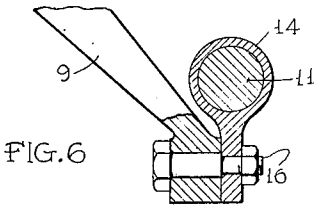


FIG. 6

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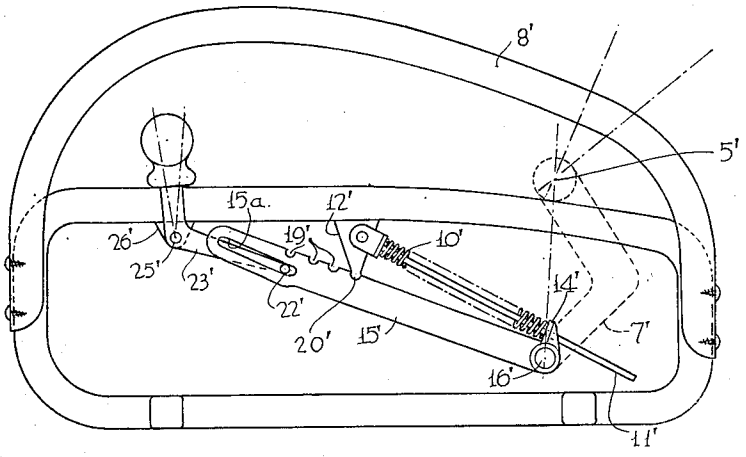


FIG. 7

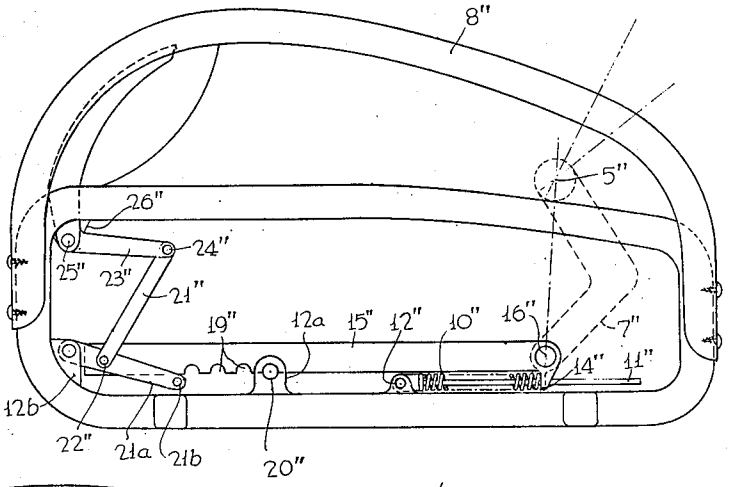


FIG. 8

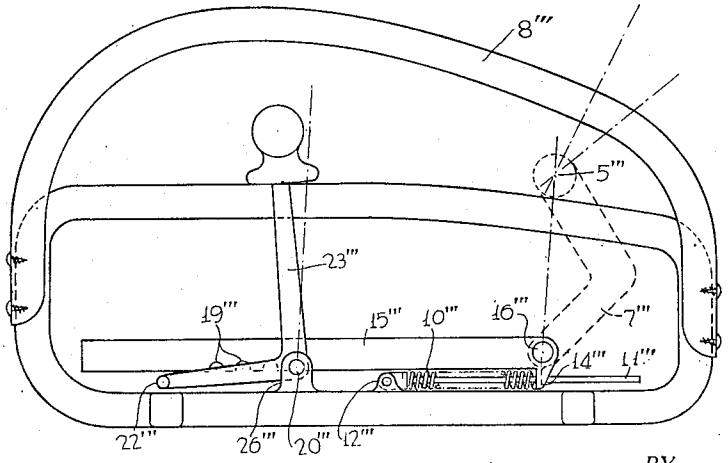


FIG. 9

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UNITED STATES PATENT OFFICE

2,508,598

RECLINING SEAT

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Application February 27, 1945, Serial No. 579,974

2 Claims. (Cl. 155—161)

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This invention relates to reclining seats, as for passenger vehicle use, and has for an object the provision of improvements in this art.

One of the particular objects of the invention is to provide simple, sturdy, inexpensive, and durable means for biasing a seat back and latching it in various adjusted positions.

Another object is to provide unitary means for biasing the seat back and the latch therefor.

Another object is to provide unitary means for latching the seat back and a removable ash receptacle.

Other objects will be apparent from the following description of an exemplary embodiment of the invention, reference being made to the accompanying drawings, wherein:

Fig. 1 is a front elevation of a double seat embodying the invention;

Fig. 2 is a side elevation of a seat;

Fig. 3 is an enlarged partial sectional elevation, showing the back in forward position;

Fig. 4 is a similar view showing the back in a rearward position;

Fig. 5 is a plan and section taken on the line 5—5 of Fig. 3;

Fig. 6 is an enlarged section taken on the line 6—6 of Fig. 4;

Fig. 7 is a side elevation of a modification;

Fig. 8 is a side elevation of another modification, and

Fig. 9 is a side elevation of another embodiment.

Referring first to the embodiment shown in Figs 1 to 6, the double seat comprises a base frame 1, having side arm frames 2 and a center arm frame 3 rigidly mounted thereon, a pair of back rests 4 pivoted at 5 to the side and center frames, a pair of cushions 6 provided with arms 7 by which they are hinged to the respective back, and arm rests 8. Each back has depending projections or arms 9 aganst which force is exerted tending to move the back to a forward position, that shown in Fig. 3.

A spring 10 on one or both sides of each back is provided for biasing the latter, the spring being carried on a guide rod 11 which is pivoted on a bracket 12 secured to the seat frame 2. The spring is compressed between a shoulder 13 on the rod and a ring arm 14 slidably embracing the rod, the arm 14 being rigid with a latch bar 15 which is pivoted to arm 9 of the back by a hinge pin 16. The cushion arm 7 is hinged to the back by a pivot 18.

The latch bar 15 is provided with a plurality of notches 19 adapted to engage a pin 20 on the

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fixed bracket 12. The latch bar is constantly biased upward toward latching position with the pin 20 by the spring 10, and is pushed down to release when desired by a link 21 pivoted at its lower end to the bar by a pin 22 and at its upper end to a lever 23 by a pin 24. The lever 23 is pivoted between its ends on a pin 25 carried by a bracket 26 secured to the frame 2. A hand piece 27 is secured to the front end of the lever at the front end of the side frame 2 convenient for operation by the passenger.

The cushion 6 is provided with inclined cams 28 on the bottom which ride up on rollers 29 located along the upper forward margin of the base frame 1, whereby the front edge of the cushion is raised when the back is lowered and vice versa.

It will be apparent that the spring exerts force primarily on the ring arm 14 of the latch bar to bias the bar upward at the front end, and secondarily, through the hinge connection 16, exerts force on the back projection 9 tending to move the back forward. The arm 14 being much shorter than the latch bar, the force acting on the front end of the bar will be much less than that acting on the projection; hence the latch bar can be easily operated by the handle 27 and at the same time considerable force is exerted on the back.

The latch lever 23 may have a dual function. Besides releasing the latch bar it may serve to release an ash receptacle. As best shown in Fig. 3, a receptacle 30 is hingedly mounted on an edge 31 of the front wall of the side or arm frame 2, being releasably held between depending front and rear projections 32, 33. The receptacle may be swung in or out by a hand piece 34. A ball detent 35 and cooperating parts 36, 37, hold the receptacle in outer or inner (open and closed) positions.

A keeper blade 38 is secured to the latch lever 23, as between nuts 39 on a threaded rod portion 40, and at its lower end slides vertically in a guide slot 41 of a receptacle casing 42. It is thus seen that when the hand piece 27 is pulled up to release the latch bar of the seat back it will also pull the keeper blade 38 into releasing position for removal of the receptacle. Note that the lower end of blade 38, when in normal position, as shown in Fig. 3, is in the path of the upper part of the receptacle's rear wall. However, the receptacle is rather strongly held by its ball detent against further outward movement and it will not readily occur to passengers that the receptacle may be completely removed.

The attendant, being more familiar with the equipment will be able to remove and clean the receptacles.

In Fig. 7 a modification is shown in which the metal frame arm rest 8' has a back arm 7' hinged thereto at 5'. A latch bar 15' is hinged to the arm 7' at 16' and has a short ring arm 14' rigidly secured thereon, the short arm holding one end of a spring 10', on a guide rod 11' which is hinged by a pin to a bracket 12' on frame 8'. The bar 15' is provided with notches 19' adapted to engage a holding element 20' on the bracket 12'. A release lever 23' pivoted at 25' to a bracket 26' has a pin 22' directly engaging the bar 15', as in a long slot 15a therein. The action is very similar to that of the first form and obvious from the description and drawings so requires no explanation.

In Fig. 8 a modification is shown in which the metal frame arm 8'' has a back arm 7'' hinged thereto at 5''. A latch bar 15'' is hinged to the arm 7'' at 16'' and has a short ring arm 14'' rigidly secured thereon, the short arm holding one end of a spring 10'', on a guide rod 11'' which is hinged by a pin to a bracket 12''. The bar 15'' is provided with notches 19'' adapted to engage a holding element 20'' on a fixed bracket 12a. A release bell crank lever 23'' pivoted at 25'' to a bracket 26'' has a pin connection 24'' between one of its arms and a link 21'', which link has a pin connection 22'' with a release arm 21a pivoted by a pin to a fixed bracket 12b. A pin 21b on the arm 21a engages beneath the bar 15'' to raise and release it.

In Fig. 9 a modification is shown in which the metal frame arm 8''' has a back arm 7''' hinged thereto at 5'''. A latch bar 15''' is hinged to the arm 7''' at 16''' and has a short ring arm 14''' rigidly secured thereon, the short arm holding one end of a spring 10''' on a guide rod 11''' which is hinged by a pin to a bracket 12'''. The bar 15''' is provided with notches 19''' adapted to engage a holding element 20''' on a fixed bracket 26'''. A release lever 23''' pivoted to an extension on the element 20''' on the bracket 26''' has a pin 22''' engaging the bar 15''' on the lower edge to raise and release it.

It is thus seen that the invention provides very

simple, effective and durable means for latching a seat back in various positions and also for retaining an ash tray.

While certain embodiments of the invention have been illustrated and described by way of example, it is to be understood that there may be various embodiments within the limits of the prior art and the scope of the subjoined claims.

What is claimed is:

1. In a reclining seat, in combination, a supporting structure, a seat back hingedly supported by said supporting structure, an arm attached to said back for moving it about its hinges, a latch bar pivoted to said arm, a rigid spring-engaging arm on said bar, a spring acting between means on said structure and said spring-engaging arm to actuate both said latch bar and said seat back, and a guide within said spring, said guide being pivoted to a fixed bracket and slidingly supported by said spring-engaging arm.

2. In a reclining seat, in combination, a supporting structure, a seat back hingedly supported by said supporting structure, and said back being provided with a relatively long operating arm, a latch bar pivoted to said back arm, means on said structure adapted to engage and to hold said bar in a number of different positions, means engaging said bar at a great distance from its pivot and adapted to disengage the bar from said means, said bar being furthermore provided with a relatively short operating arm, and a spring engaging means supported by said structure and said latch arm for biasing both the latch bar and the back arm.

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