

No. 751,277.

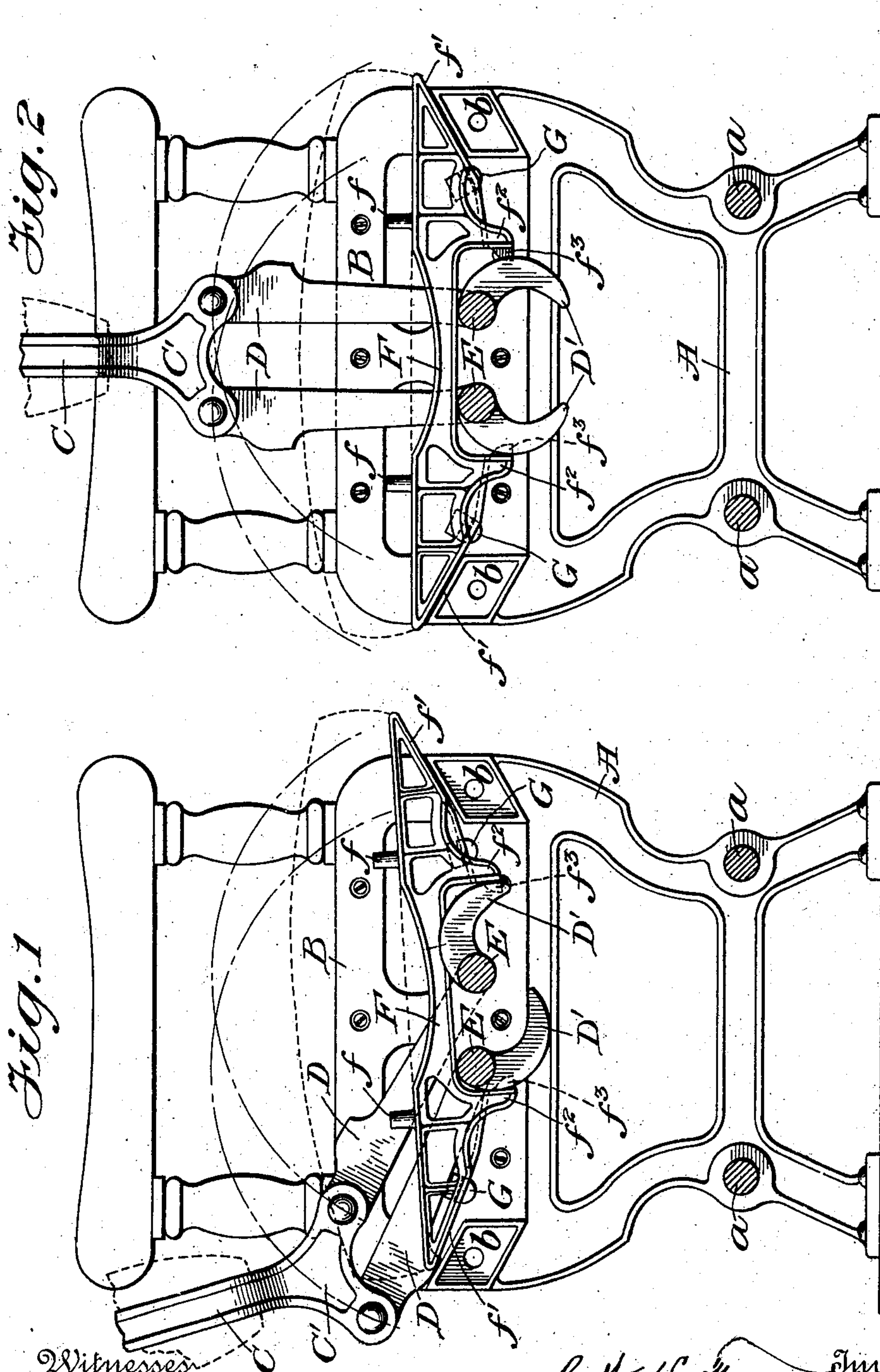
PATENTED FEB. 2, 1904.

C. W. H. FREDERICK.
CAR SEAT.

APPLICATION FILED APR. 21, 1903.

NO MODEL.

2 SHEETS—SHEET 1.



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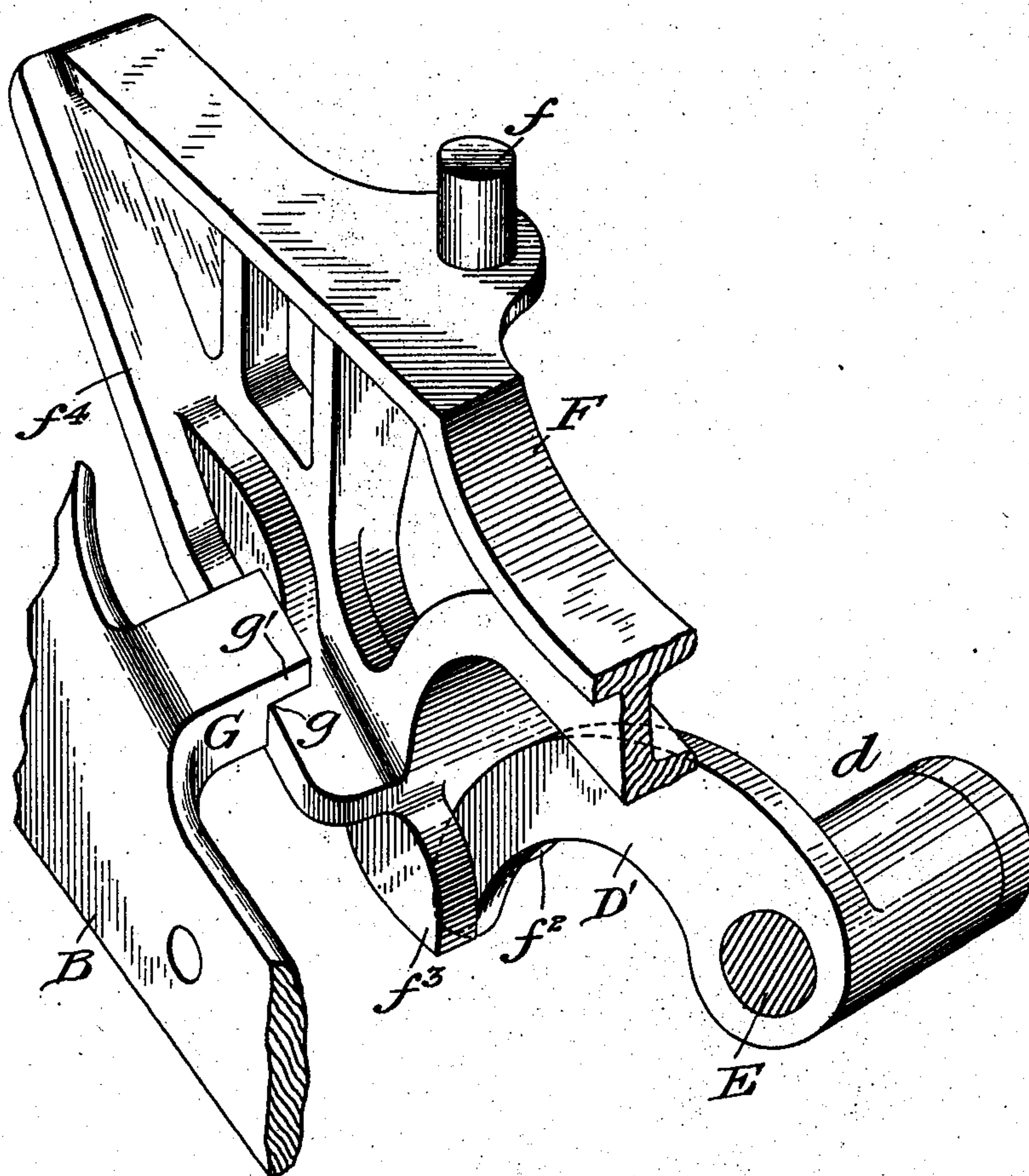
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NO MODEL.

2 SHEETS—SHEET 2.

Fig. 3



Witnesses
Chas. Clagett
J. M. Intosh

C. W. H. Frederick *Inventor*
By *Law Attorney*
Jno. Robt Taylor

UNITED STATES PATENT OFFICE.

CHARLES W. H. FREDERICK, OF MELROSE, MASSACHUSETTS.

CAR-SEAT.

SPECIFICATION forming part of Letters Patent No. 751,277, dated February 2, 1904.

Application filed April 21, 1903. Serial No. 153,596. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. H. FREDERICK, a citizen of the United States, residing at Melrose, in the county of Middlesex and State of Massachusetts, have invented a certain new and useful Improvement in Car-Seats, of which the following is a description.

This invention relates to that type of car-seats in which are employed a seat-cushion, a reversible back capable of being shifted from one edge of said seat-cushion to the other edge without turning, and mechanism intermediate of such cushion and seat-back whereby the reversal of the latter will effect a corresponding movement of the former, so as to preserve these two parts at all times in the proper relation to each other.

The invention is designed particularly as an improvement upon the structures shown in Letters Patent Nos. 491,761 and 595,415, its object being to desirably simplify the essential features of seats constructed as disclosed in these patents, to secure greater durability of the operating parts of the mechanism, and to facilitate the assemblage of such parts both in the original construction of the seat and in repairing the same.

In carrying out my invention I employ the usual seat-frame comprising side members connected by sills the ends of which are preferably mounted in sockets formed on or secured to the side members and which sockets have inclined upper faces. The back is provided with a depending arm at each edge, to each of which are pivoted the upper ends of substantially parallel links, the lower ends whereof are preferably pivoted to the side frame. Said lower ends are also provided with hubs, to which are secured cams for operating the rocker, said cams and hubs being turned by the operation of the twin links upon the reversal of the back from one position to the other. The seat-cushion is mounted upon rockers, one at each end, these rockers being preferably provided on their upper surface with pins which coact with holes in the under side of the cushion. Said rockers have inclined under faces near their ends which coact with the inclined sockets or sills extending between the side frames, so that upon the

movement of said rockers in either direction said rockers and the cushion carried thereby will be both moved forward and canted.

The mechanism as thus far described forms no part of the present invention save in conjunction with the improvements hereinafter to be described. In the Letters Patent first named the cushion-rockers are described as being permanently secured to the under side of the cushion. In the patent last mentioned the rockers are separable from the cushion, being provided with pins which coact with holes in the under side thereof, this being a common expedient even prior to the patents referred to, having been disclosed, for instance, in Patent No. 281,129, dated July 10, 1883. In said Patent No. 595,415 the sockets on the side frames which receive the sills are provided with so-called "guides," the object being to direct the movement of the rockers thereby upon the reversal of the seat. The rockers are provided with so-called "arms" located below the cross-rods, upon which the twin links are pivoted to the side frame and the function whereof is to prevent the displacement of the rocker when the cushion is lifted therefrom. Under my improvement both the guides on the sockets and the arms for preventing displacement of the rocker are dispensed with, the latter on account of their inherent frailty and consequent weakness and the former as inessential in view of the provision of unitary means for accomplishing the results performed by both in the previous structure, but in far less satisfactory manner. Thus I provide each rocker near its ends with flanges and the side frames with a cooperating lug or lugs, preferably formed integral with said side frames, said lugs extending over said flanges, and thereby holding the rocker securely against vertical displacement, meanwhile guiding it, however, in its movement from one edge of the seat to the other. The cams upon the hubs are so arranged as that at no time save when the seat-back is in the exact vertical center of the seat, as during the reversing operation, shall they be free to permit movement of the rockers toward each other. In either of the two positions of rest one or the other of said cams

rises to a position relatively to its adjacent
 rocker and upon the side thereof opposite the
 guiding and retaining lug above referred to,
 so as to retain said rocker in its position be-
 5 tween said guiding and retaining lugs and said
 cams. Additional means is preferably pro-
 vided for precluding movement of the rockers
 away from their adjacent frames, the same
 comprising lugs formed on or adjacent to the
 10 downwardly-depending ears on the under side
 of the rocker, with which the cams coact, and
 so arranged as to abut against said cams, and
 thereby further prevent displacement of the
 15 rockers in the direction away from the side
 frames. The guiding and retaining lugs above
 referred to preferably perform an additional
 function in that they act as stops for the twin
 links in each of the two positions of the back.
 They are so positioned as that in either of the
 20 two positions of rest one of the twin arms will
 abut against said lugs, thereby bringing the
 seat-back to rest at the proper inclination.
 If desired, the twin arms may also seat them-
 selves upon the sills extending between the
 25 frames or upon the sockets in which those sills
 are mounted.

By the construction above outlined a very
 simple and durable seat is produced, in which
 the rockers may be readily applied, whether
 30 in original manufacture or in repairing, and
 additional strength is secured in the rockers
 themselves, there being no weak parts to be
 broken by rough treatment of the mechanism
 in the reversing operation.

35 The invention is illustrated in the accom-
 panying drawings, in which—

Figures 1 and 2 are sectional views of a seat
 constructed in accordance with my invention,
 the seat-back and cushion and the sills being
 40 removed, the former figure illustrating the
 mechanism in one position of rest and the lat-
 ter figure illustrating the mechanism in the
 position assumed by the parts midway in the
 operation of reversing the seat-back from one
 45 edge of the seat-cushion to the other; and
 Fig. 3 is an enlarged perspective view illus-
 trating the outer surface of one of the rock-
 ers and one of the coacting guiding and re-
 taining lugs upon the side frame.

50 Referring to the drawings, in which simi-
 lar letters denote corresponding parts, A in-
 dicates one of the side frames, provided with
 foot-rests *a* and in the present instance with
 a metallic frame-plate B. The latter is pro-
 55 vided with sockets *b*, the upper surfaces
 whereof are inclined, and which sockets re-
 ceive the ends of the sills extending from one
 side frame to the other.

C designates a depending back-arm suitably
 60 secured to each side edge of the seat-back and
 provided at its end with a head C'. Pivoted
 at their upper ends to said head are twin links
 D, the other ends whereof are pivoted upon
 cross-rods E, the ends whereof are journaled
 65 in the frame-plate B and free to rotate in said

journals. This mounting is accomplished by
 means of hubs *d*, formed integral with or se-
 cured to the lower ends of said twin arms D
 and which are keyed, riveted, or otherwise
 rigidly secured to said cross-rods E. Each 70
 of said hubs is also provided with a cam D',
 the object of which will presently appear.

F designates the rocker, there being one
 adjacent to each of the side frames. The up-
 per surface of each rocker is provided with 75
 pins *f*, which coact with recesses in the under
 side of the seat-cushion to retain said cushion
 in position. The under side of each rocker
 near its ends is provided with inclined por-
 80 tions *f'*, which portions coact with the in-
 clined upper surfaces of the sockets *b*. The
 under side of each rocker is also provided
 with a cut-away portion and depending ears
*f*² on either side thereof, so positioned rela-
 tively to the cams D' as to be in contact (or 85
 almost in contact) at all times therewith.
 Said depending ears are also provided with
 lugs *f*³, so arranged as that in either of the
 two operative positions of the seat they will
 lie directly behind the cams D' and preclude 90
 movement of the rockers toward each other.
 The cams themselves are also so constructed
 as that in either of said two positions a por-
 tion of one of said cams will extend above the
 cut-away portion in the rocker above referred 95
 to, thereby further precluding movement of
 the rockers toward each other. Each rocker
 is provided with a flange *f*⁴ upon that side of
 each which is adjacent to the frame-plate B,
 the purpose of which will be presently ex- 100
 plained.

G designates a guiding and retaining lug,
 there being two of these upon each frame-
 plate B and preferably formed integral there-
 105 with. Each is recessed at *g*, thereby form-
 ing the end of said lug into a lip *g'*, located
 directly above the adjacent flange *f*⁴ of the
 rocker F. The upper surface of said guiding
 and retaining lug is preferably inclined, as
 shown in Figs. 1 and 2, to form a stop for 110
 the twin links D in either of the two operative
 positions of the seat.

It will thus be seen that the rockers are
 free to move from edge to edge of the seat
 mechanism under the influence of the cams 115
 D', which in turn are operated by the twin
 links D and the seat-back. Their movement
 is governed by the size of the cut-away under
 surface thereof and the distance, therefore,
 between the depending ears *f*², which coact 120
 with the cams D'. They are guarded against
 being displaced upon removal of the seat-
 cushion by the coaction of the flanges *f*⁴ with
 the guiding and retaining lugs G, which in
 turn determine the movement of said rockers 125
 from each other. Said rockers are prevented
 from movement in the opposite direction both
 by the cams D' and by the lugs *f*³, formed
 near the outer edges of the ears *f*². It will
 therefore be seen that not only are the rock- 130

ers effectively guided so as to operate at all times in the proper manner, but they are prevented from displacement by strong durable lugs, which, as above stated, are preferably formed integral with the frame-plates B, and therefore have ample strength to accomplish this result. It will also be seen that the rockers themselves are desirably strengthened by the addition of the guide-flanges f^4 and that said rockers may, if broken, be readily renewed, it being only necessary to move the parts to the position shown in Fig. 2, whereupon a new rocker may be passed over the hubs d and dropped into position, (this being permitted by the location of the lugs f^3 ;) and then pressed outwardly until they abut against the guiding and retaining lugs G, whereas in the structure shown in said Patent No. 595,415 a new rocker cannot be placed in position without removing the adjacent side plate of the seat.

Having now described my invention, what I claim as new therein, and desire to secure by Letters Patent, is as follows:

25 1. In a car-seat, the combination with side frames, a back and mechanism for supporting and reversing the same, of a pair of rockers, a cushion detachably carried thereby, and flanges carried by said rockers and coacting with lugs carried by said side frames for precluding upward and outward displacement of said rockers, substantially as set forth.

30 2. In a car-seat, the combination with side frames, of a reversible back, twin links pivoted thereto and to said side frames, a pair of rockers, mechanism intermediate of said twin links and said rockers for operating the latter, a removable cushion, and means carried by said side frames for preventing upward and outward displacement of said rockers, substantially as set forth.

35 3. In a car-seat, the combination with side frames, of a reversible back, a pair of rockers, a cushion supported thereby, mechanism intermediate of said rockers and said back for effecting the movement of the former by the reversal of the latter, and means carried by said side frames for guiding the rockers and guarding against upward displacement thereof, said means acting also as a stop for the seat-back in either of its operative positions, substantially as set forth.

40 4. In a car-seat, the combination with side frames, of a reversible back, a pair of rockers and a cushion sustained thereby, means car-

ried by said side frames for guiding said rockers and preventing upward displacement thereof, and movement of said rockers from each other, and lugs carried by said rockers and coacting with the reversing mechanism for guarding against movement of said rockers toward each other.

5. In a car-seat, the combination with side frames, of a back, mechanism for supporting and reversing the same, a pair of rockers and a cushion detachably supported thereby, flanges on said rockers, lugs on said side frames for guiding said rockers and preventing upward and outward displacement thereof, depending ears on said rockers, and lugs carried thereby cooperating with the reversing mechanism to preclude displacement of said rockers toward each other, substantially as set forth.

6. In a car-seat, the combination with a back and mechanism for supporting and reversing the same, of a cushion and a pair of rockers for supporting the same, said rockers being locked when said back is in operative position but removable when said back is in inoperative position, substantially as set forth.

7. In a car-seat, the combination with a back and mechanism for supporting and reversing the same, of a cushion, a pair of suitably-mounted rockers for supporting the same, and means for guarding against accidental displacement thereof, said rockers being locked when said back is in either of its two operative positions but removable when said back is in an intermediate position, substantially as set forth.

8. In a car-seat, the combination with end frames, of sills extending between the same, a back and mechanism for supporting and reversing the same, rockers mounted on said sills and provided with flanges coacting with lugs carried by said frames, a cushion carried by said rockers, and cams operated by the back-reversing mechanism and coacting with said rockers to lock the same when said back is in either of its two operative positions and to release said rockers and permit their removal when said back is in inoperative position, substantially as set forth.

This specification signed and witnessed this 17th day of April, 1903.

CHARLES W. H. FREDERICK.

Witnesses:

I. McINTOSH,

R. BEACH FERNHEAD.