

No. 751,277.

PATENTED FEB. 2, 1904.

C. W. H. FREDERICK.
CAR SEAT.

APPLICATION FILED APR. 21, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 2

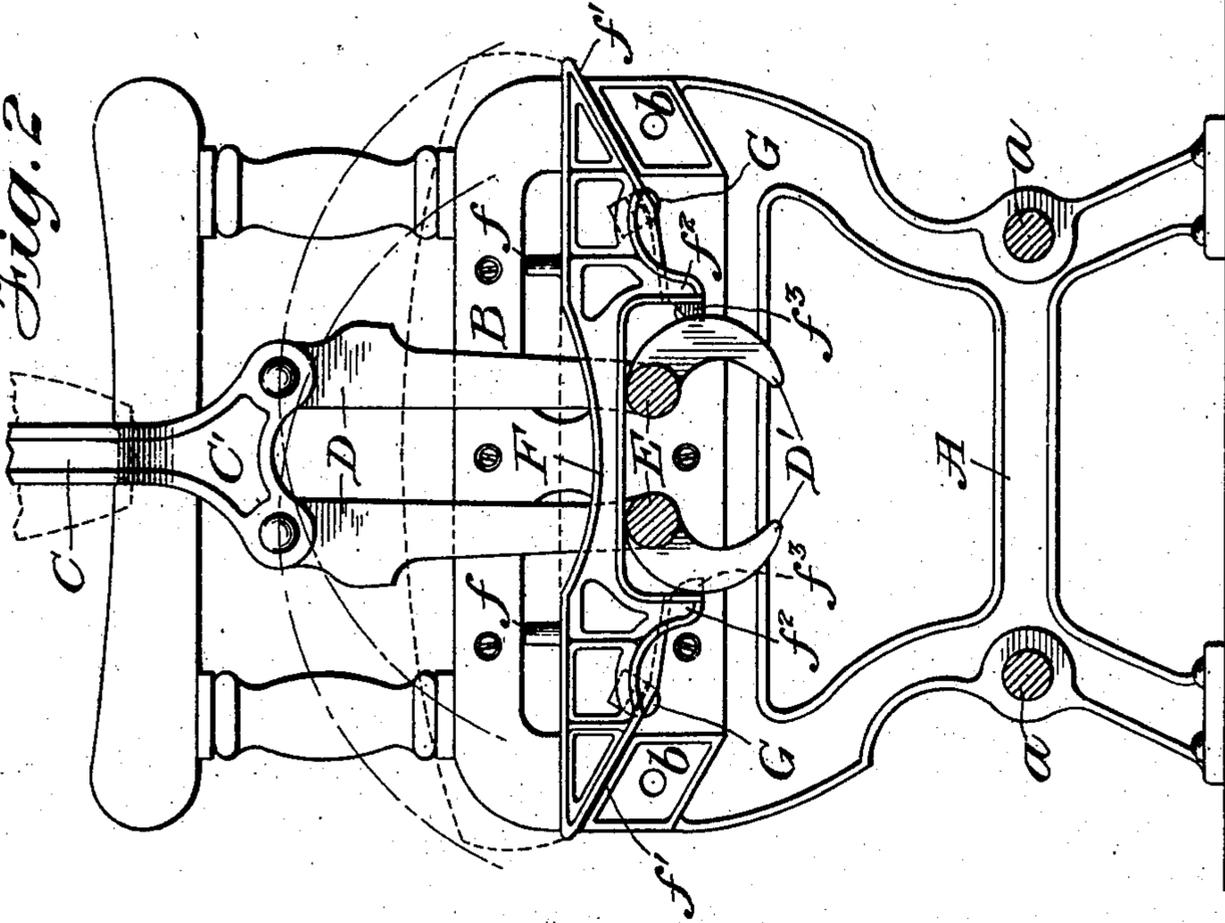
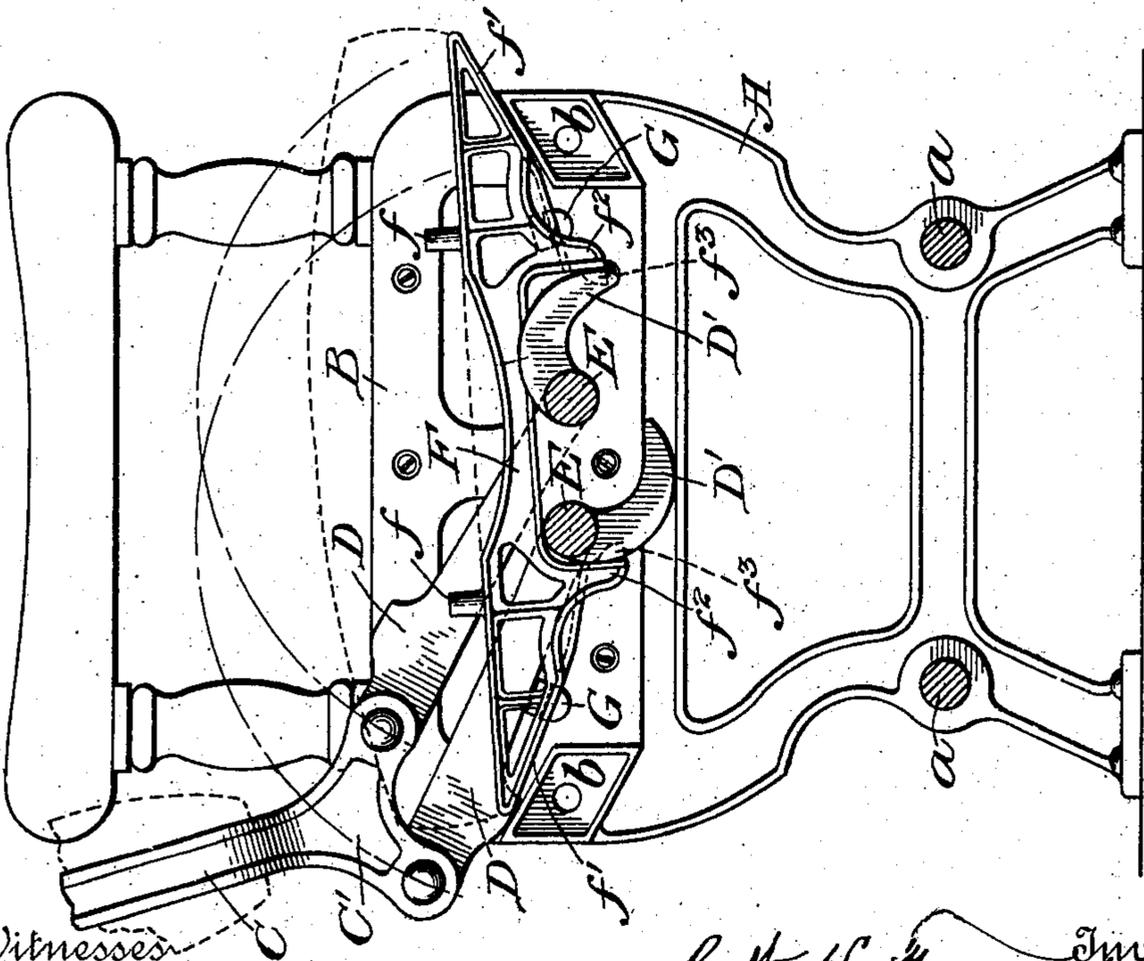


Fig. 1



Witnesses
Chas. J. Clagitt
J. M. Intosh

Inventor
C. W. H. Frederick
By his Attorney
Wm. Robt Taylor

No. 751,277.

PATENTED FEB. 2, 1904.

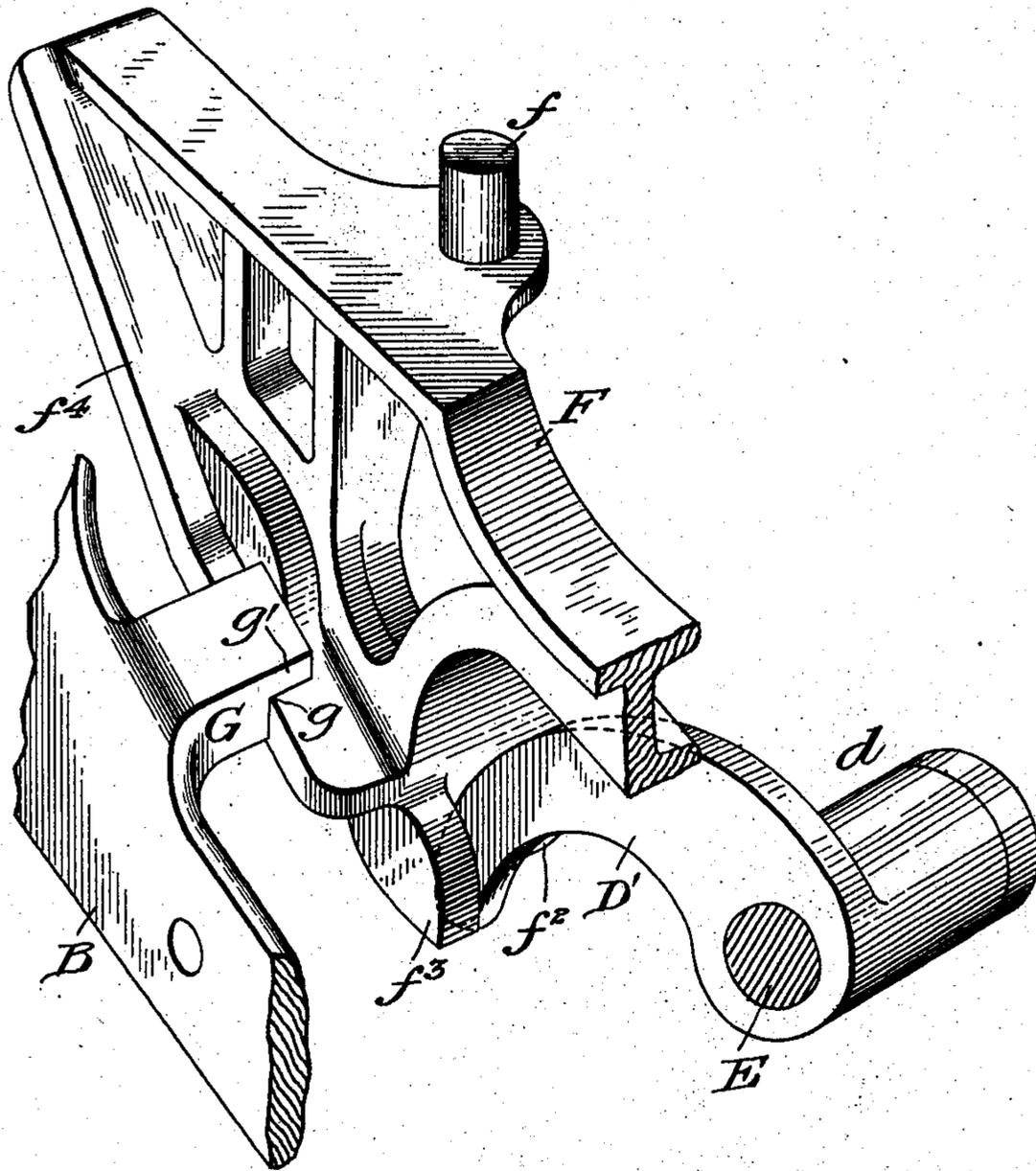
C. W. H. FREDERICK.
CAR SEAT.

APPLICATION FILED APR. 21, 1903.

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 between said guiding and retaining lugs and said cams. Additional means is preferably provided for precluding movement of the rockers away from their adjacent frames, the same comprising lugs formed on or adjacent to the 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 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 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 themselves upon the sills extending between the 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 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.

The invention is illustrated in the accompanying 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 removed, the former figure illustrating the mechanism in one position of rest and the latter figure illustrating the mechanism in the position assumed by the parts midway in the operation of reversing the seat-back from one edge of the seat-cushion to the other; and Fig. 3 is an enlarged perspective view illustrating the outer surface of one of the rockers and one of the coacting guiding and retaining lugs upon the side frame.

Referring to the drawings, in which similar letters denote corresponding parts, A indicates one of the side frames, provided with foot-rests *a* and in the present instance with a metallic frame-plate B. The latter is provided with sockets *b*, the upper surfaces whereof are inclined, and which sockets receive the ends of the sills extending from one side frame to the other.

C designates a depending back-arm suitably 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 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 secured to the lower ends of said twin arms D and which are keyed, riveted, or otherwise rigidly secured to said cross-rods E. Each 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 upper surface of each rocker is provided with 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 portions *f'*, which portions coact with the inclined 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 relatively to the cams D' as to be in contact (or 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 movement of the rockers toward each other. The cams themselves are also so constructed as that in either of said two positions a portion of one of said cams will extend above the cut-away portion in the rocker above referred 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 explained.

G designates a guiding and retaining lug, there being two of these upon each frame-plate B and preferably formed integral therewith. Each is recessed at *g*, thereby forming 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 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 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 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 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-

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:

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.

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.

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.

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.