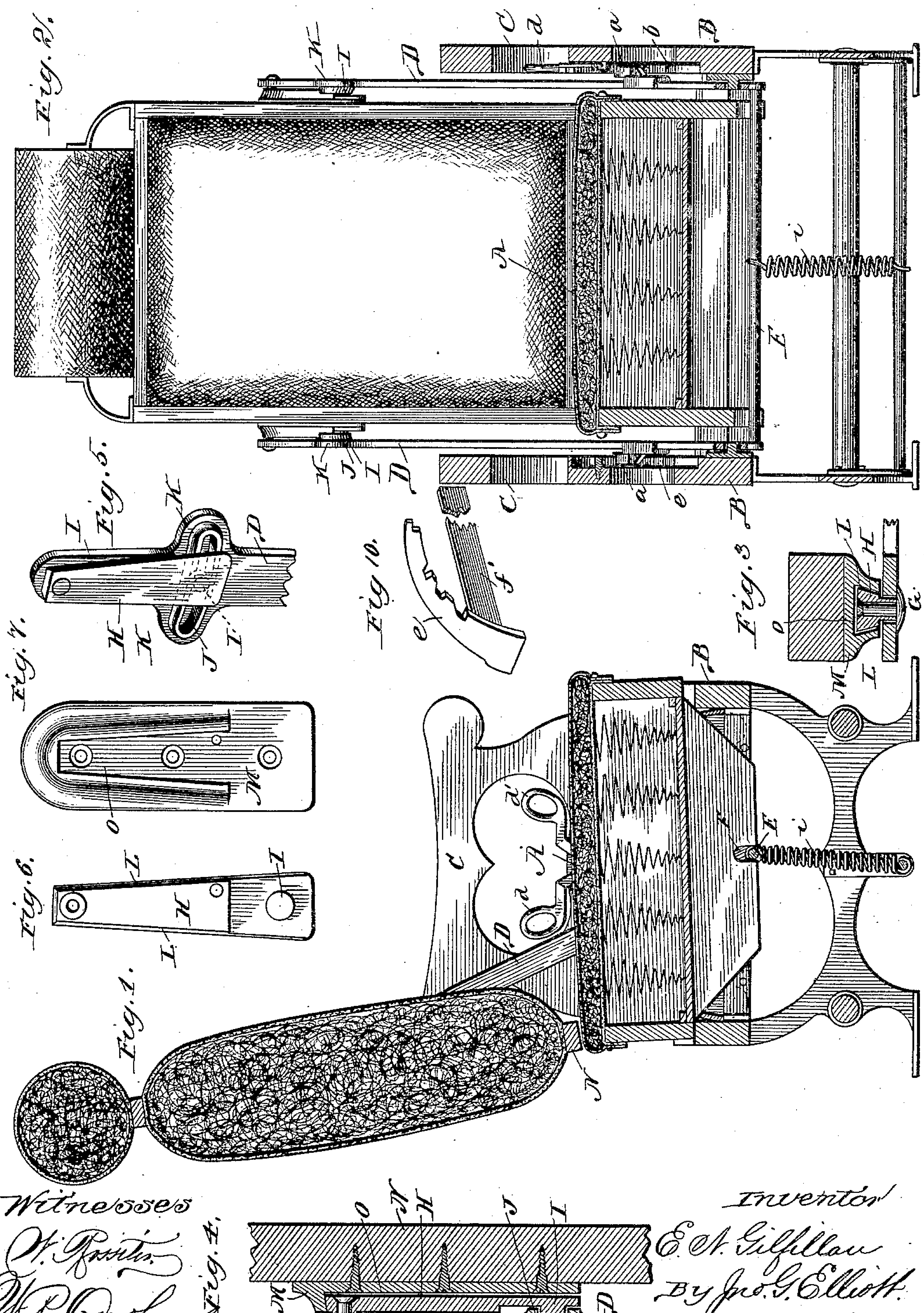
(No Model.) 2 Sheets—Sheet 1.

E. N. GILFILLAN.

CAR SEAT.

No. 436,829. Patented Sept. 23, 1890.



Witnesses
W. Rossiter
W. R. Omohundro

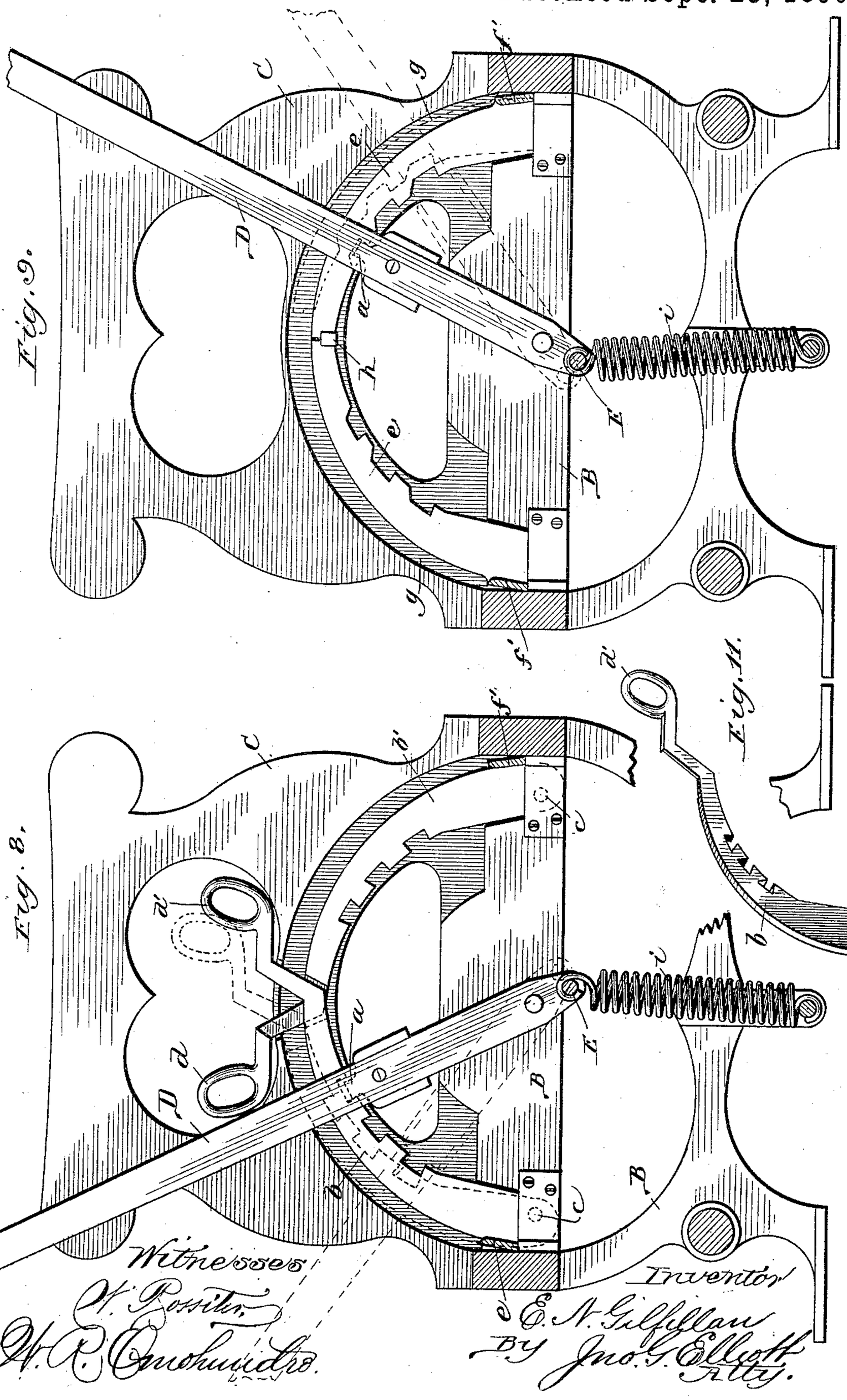
Inventor
E. N. Gilfillan
By Jno. G. Elliott
Atty.

(No Model.) 2 Sheets—Sheet 2.

E. N. GILFILLAN.

CAR SEAT.

No. 436,829. Patented Sept. 23, 1890.



UNITED STATES PATENT OFFICE.

ESSINGTON N. GILFILLAN, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE JOHNSTON CAR SEAT COMPANY, OF SAME PLACE.

CAR-SEAT.

SPECIFICATION forming part of Letters Patent No. 436,829, dated September 23, 1890.

Application filed September 3, 1888. Serial No. 284,420. (No model.)

To all whom it may concern:

Be it known that I, ESSINGTON N. GILFILLAN, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Seats, of which the following is a specification.

This invention relates to improvements in reclining car-seats, in which the back is supported upon upright bars and is made reversible as to the seat, but not as to itself, by being supported in such manner that it may be swung from one side of the seat to the other in substantially an upright position and without the necessity for reversing the positions of the upper and lower edges of the back, thus permitting the alternate use of the two faces of the back, according to the direction in which the seat faces.

This invention, however, is more especially designed as an improvement in the invention set forth in the application for Letters Patent filed by me and one J. S. Emmert as joint inventors on or about February 14, 1888, Serial No. 263,936, for improvements in reversible reclining-chairs, in which the back was shown as supported upon pivoted upright side bars, to which the back was connected by a direct pivot-connection at the upper edge and a link-connection between the lower edge thereof and said bars, the links being employed merely as stops to limit the outward swing or movement of the lower edge of the back in either direction.

The prime object of this invention is to dispense with the link-connection between the lower edge of the back and the supporting-bars and accomplish the same end by means of more simple devices, which may be located at such a point as to be entirely out of the way of the occupant of the chair, and the moving part so protected that the operator is relieved of all danger of crushing or otherwise injuring the hand.

Another object is to have the entire back detachable or removable from the chair, whereby the back may be removed and cleaned or repaired at will and without disturbing any other portion of the chair or the usually permanently-connected parts.

A further object is to have the pivot-connection between the chair-back and supporting-bars of such a character that the pivoting-plates subserve the double purpose of a pivotal support for the back, and a stop for limiting the movements thereof, and to have the back connected with said plate by a sliding connection which enables the detachment or removal of the back without the necessity of loosening or otherwise manipulating the pivoting-bolts or stop devices, which may therefore be permanently secured in position.

A still further object is to simplify the locking mechanism for the supporting-bars of the chair, which permits of the reclining of the chair in either direction from its normal upright position, whereby a number of parts heretofore found necessary are dispensed with, cheaper devices employed, and the cost of manufacture correspondingly reduced, and, finally, to have a locking mechanism operating upon both of the supporting-bars, but capable of manipulation from one side of the seat, whereby the construction and operation of the seat are simplified and the cost of manufacture correspondingly reduced. I attain these objects by the devices illustrated in the accompanying drawings, in which—

Figure 1 represents a side elevation of a car-seat, showing devices applied thereto embodying my invention; Fig. 2, a central vertical section through the seat-frame looking toward the back of the seat; Fig. 3, an enlarged transverse horizontal section taken through the supporting-bar and back-frame, more clearly showing the manner of removably pivoting the back to the supporting-bar. Fig. 4, a central longitudinal vertical section thereof, taken at right angles to Fig. 3; Fig. 5, a detail perspective view of the upper end of one of the supporting-bars, showing the construction of and manner of attaching the pivoting-plate thereto; Fig. 6, a detail face view of the pivoting-plate; Fig. 7, a similar view of the socket-plate permanently attached to the chair-back, socketed to receive the pivoting-plate; Fig. 8, an enlarged central section through the chair-frame, with the dotted lines showing the movement of the parts and the reclining of the chair in one direction;

Fig. 9, a similar view showing the movement of the parts and the reclining of the chair in the opposite direction, and Figs. 10 and 11 detail perspectives of opposite notched levers.

Similar letters of reference indicate the same parts in the several figures of the drawings.

Referring by letter to the accompanying drawings, A indicates the seat, B the frame, and C the side arms thereof, to the lower part of which, at the center of width thereof, are pivotally secured metallic side-supporting bars D, the lower ends of which, below the pivots thereof, are connected by a rod E, projecting into vertical recesses or slots F in the lower side edges of the seat, so that whenever the bars are shifted upon their pivots from one side to the other the seats are shifted correspondingly in the opposite direction, so that the forward edge thereof will project beyond the frame.

To the upper ends of the supporting-bars are pivotally suspended, by means of bolts or rivets G, pivoting-plates H, from the lower and inner side of each of which project pins I, entering and working loosely in slots or grooves J through or upon the inner faces of said bars, which grooves or slots are formed on the arc of a circle struck from the pivots G of said plates, so that the plates may swing freely upon their pivots, the slots in the supporting-bars being preferably made of a length greater than the width of the bars by means of enlargements K projecting laterally from the bars. The pivoting-plates taper from their lower free to their upper pivoted ends, and have their side edges beveled, as shown at L, thus constituting a dovetailed wedge designed to fit into socket-plates M, permanently secured to the side pieces or frame N of the back, which socket-pieces have corresponding dovetailed and tapering sockets O, thus providing a sliding detachable connection between the back and the pivoting-plates. Hence when the back is inserted in position between the supporting-bars and the socket-pieces are fitted onto the pivoting-plates the latter become a part of and move with the socket-pieces or back, and hence bear the same relation to the supporting-bars as if the back were pivotally secured directly thereto and pins projecting directly therefrom engaged the curved slots in the bars; but such a connection has the additional advantage of providing a detachable connection between the back and supporting-bars, which permits of the ready removal of the back at any time without disturbing or in any manner manipulating the pivoting-bolts or stop devices for the back.

However, so far as relates to the detachable pivot-connection between the back and the supporting-bars, I do not desire to limit myself to the exact construction or arrangement of the pivoting and socket plates, for obviously the wedging feature may be dispensed with and the location of the parts reversed—that is, have the socket in the pivoting-plate and the tongue upon the back, with a tongue-and-groove, dovetailed, or any other sliding connection between them.

The facing direction of the seat is reversed by swinging the back across the center of the seat from one side to the other in substantially an upright position, the normal position of the supporting-bars, however, being slightly inclined from the center, as shown, from which position the back may be reclined in either direction, the supporting-bars for this purpose being provided with projecting lugs or ears *a*, located a short distance above the pivots thereof and adapted and arranged to engage notched levers *b b′*, pivoted at *c c′* to each side of the seat-frame, the said levers being formed on the arc of a circle struck up from the pivot of the supporting-bars and terminating at their upper free ends in handles *d d′*, by means of which they may be elevated and the notches therein freed from the projections on the supporting-bars. At the opposite end of the seat are two more notched levers *e e′*, corresponding in length and location with the levers *b b′*, but unprovided with handles, it being designed to operate these levers by the corresponding lever *b* or *b′* through the medium of the back or cross-bars *f f′*, cast with or otherwise secured to the levers *e e′*, the free ends of which extend across the seat and lie behind the levers *b b′*, so that when either of them is operated the corresponding lever on the opposite side of the seat is simultaneously actuated. The levers *b b′* are pivoted to the seat-frame; but the levers *e e′* simply rest in sockets or recesses *g g′*, formed in the inner faces of the chair frame and arms, with sufficient room to permit the full movement of the levers, which are prevented from falling toward the center beyond their normal position by a stop *h*, projecting from the inner face of the chair-arm, against which the opposing ends of the levers abut. Such a connection, however, only permits the operation of the levers in one direction—that is, out of engagement with the lugs on the supporting-bars, the gravity of the levers being depended upon to cause them to fall into engagement therewith, to which end the arch or bend of each lever is toward the center of the chair and to one side of its pivot, the sides of the notches in the bars *e e*, as a safe-guard, being preferably beveled or cut away at an angle toward the center of the seat, as shown.

The coil-spring *i*, attached at its ends, respectively, to the rod E and a stationary part of the frame of the chair, serves to relieve the occupant of the weight of the back in returning the chair to an upright from a reclining position.

It will of course be understood that one set of notched levers at one side of the center of the seat only is employed when the back is reclining in one direction and the other set when the chair is reclined in the opposite direction, the handles of the levers for this purpose crossing each other at the center, so that

the lever to be used for manipulating the locking device is always toward the forward edge of the seat in convenient position for operation.

I may here state that I do not desire to limit myself as to the exact form of connection between each pair of notched levers herein shown and described, for my invention broadly includes any form of connection between these two members which enables the simultaneous operation of both levers by the manipulation of one of them; but I have found by experiment that the form shown is best adapted for the intended purpose, as it enables the parts to be put together at a less expense of time and material and in a more durable form than any now known to me.

It is desirable, but not imperative, that the pivot of the back should be located above the center thereof, so that in swinging from one side to the other of the seat the gravity of the eccentrically-pivoted back may be utilized to cause it to automatically shift its position from one side to the other of the supporting-bars, being limited in its movement by the pin I, working in the slot in the supporting-bars, which stops the outward swing of the lower edge of the back, so as to maintain the latter in a comfortable position for the occupant of the chair.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a car-seat, the combination, with the supporting-bars and the back, of a socket-plate secured to one of said members and a pivoting-plate secured to the other member, having a sliding connection with said socket-plate, whereby said plates afford a detachable pivot-connection between the supporting-bars and back, substantially as and for the purpose described.

2. In a car-seat, the combination, with the supporting-bars and the back, of a socket-plate secured to one of said members and a pivoting-plate secured to the other member, having a sliding connection with said socket-plate, and a stop device for limiting the movement of said back on its pivots, whereby said plates afford a detachable pivot-connection between the supporting-bars and back, substantially as and for the purpose described.

3. In a car-seat, the pivoted supporting-bars and the back, in combination with a separable pivot-connection between said bars and back, and a pin-and-slot connection between one member of said pivot-connection and the supporting-bars, constituting a stop device for limiting the outward movement of the lower edge of said back, whereby said back may be readily detached from the supporting-bars, substantially as described.

4. In a car-seat, the pivoted supporting-bars and the back, in combination with a pivoting-plate secured to one of said members, a socket-plate secured to the other, a sliding connection between said plates, and pins projecting from one of said plates, arranged to work in a transverse slot in one of said members, substantially as described.

5. In a car-seat, the pivoted supporting-bars provided with transverse slots, and the back, in combination with pivoting-plates pivoted at one end to said bars and provided at their opposite ends with pins working in the slots in said bars, socket-plates secured to the back, and a sliding connection between said socket and the pivoting-plates, substantially as described.

6. In a car-seat, the pivoted supporting-bars provided with curved transverse slots, and the back, in combination with wedge-shaped pivoting-plates pivoted at one end to said bars and provided at their opposite ends with pins working in the slots in said bars, socket-plates secured to the back and provided with tapering sockets corresponding with the wedge-shaped pivoting-plates, and a dovetailed connection between said socket and pivoting-plates, substantially as described.

7. In a car-seat, the frame, the pivoted supporting-bars, and lugs or projections thereon, in combination with notched levers pivoted to the frame to one side of the center thereof, adapted and arranged to be engaged by the lugs on said supporting-bars, substantially as described.

8. In a car-seat, the frame, the pivoted supporting-bars, and lugs or projections thereon, in combination with opposing notched levers pivoted to said frame at each side of the center thereof, adapted and arranged to be alternately engaged by the projections on said bars, substantially as described.

9. In a car-seat, the frame, the pivoted supporting-bars, and lugs or projections thereon, in combination with notched levers at each end of the seat, and a transverse bar connecting said notched levers, one of said levers being provided with a handle for manipulation, substantially as described.

10. In a car-seat, the frame and the supporting-bars, in combination with a pair of notched levers at one end of said frame, connected with a pair at the opposite end thereof, one pair of which is pivoted thereto and constitutes a hand-lever for simultaneously actuating the corresponding lever of the other pair, substantially as described.

ESSINGTON N. GILFILLAN.

Witnesses:
W. R. OMOHUNDRO,
A. M. BENNETT.