

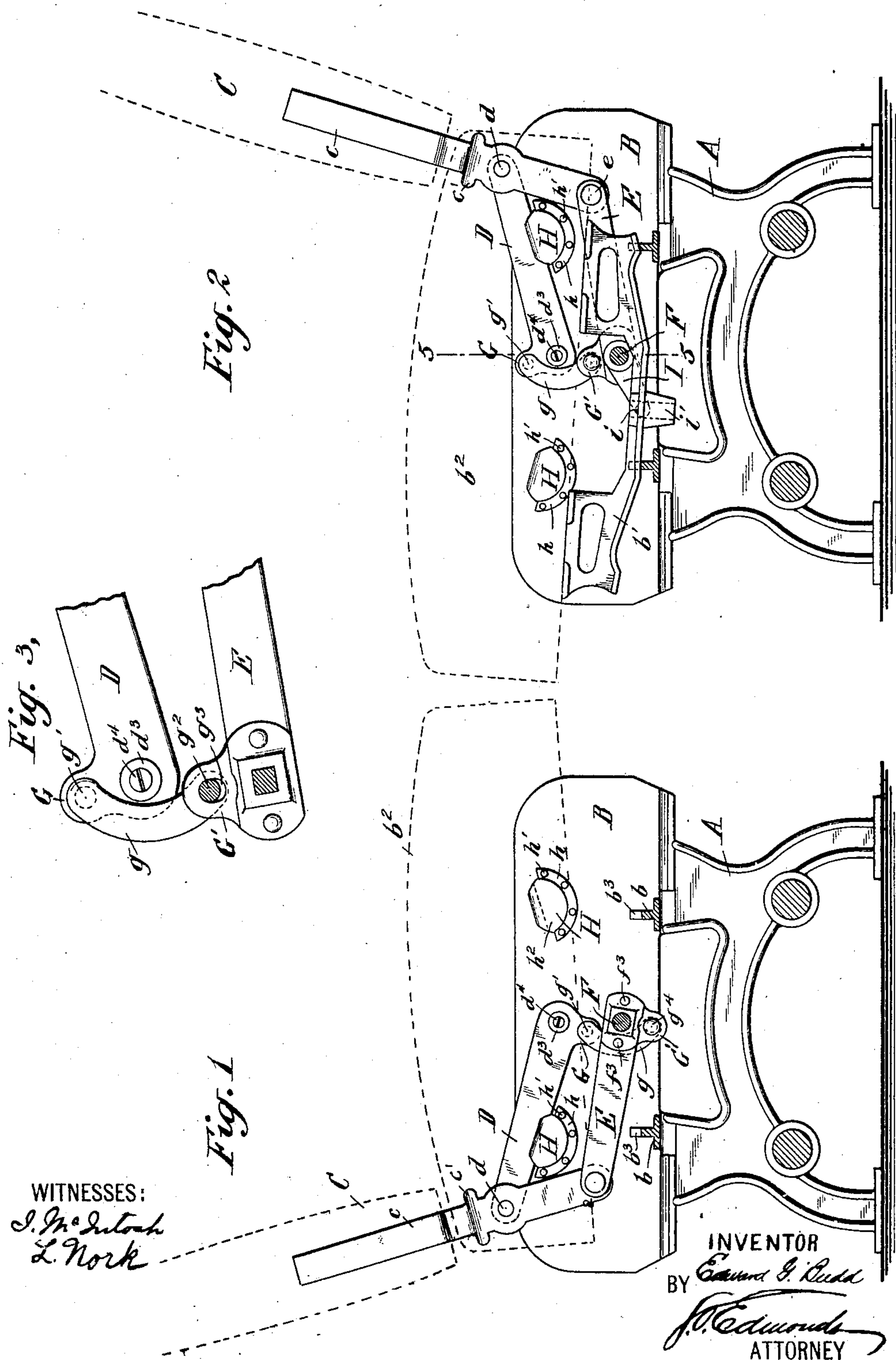
No. 814,514.

PATENTED MAR. 6, 1906.

E. G. BUDD.  
CAR SEAT.

APPLICATION FILED MAY 19, 1905.

2 SHEETS—SHEET 1.







# UNITED STATES PATENT OFFICE.

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## CAR-SEAT.

No. 814,514.

Specification of Letters Patent.

Patented March 6, 1906.

Application filed May 19, 1905. Serial No. 261,181.

*To all whom it may concern:*

Be it known that I, EDWARD G. BUDD, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Improvement in Car-Seats, of which the following is a specification.

The object of the present invention is to provide a seat, preferably of the "walk-over" type, in which the movable parts whereby the back is supported and guided in its reversal movement from one facing direction to the other shall be of great strength and durability, the several elements thereof being positively mechanically interrelated, so as to avoid loose connections and permit the back to be reversed with a uniform and continuous movement from one edge of the seat-cushion to the other.

In carrying out the invention I employ a back, preferably of the walk-over type, having at each end a depending arm to which are secured the outer ends of two levers, the inner ends whereof are pivoted to the frame-plate preferably in a vertical plane. Said levers are provided near the pivotal points at which they are connected to the frame with ears, and extending between and connecting these is a link so arranged and operating as to synchronize the movement of the inner ends of said levers. Coacting with said levers or with the back-arms are suitable stops whereby the movement of the seat-back in one or the other direction is determined. Also, if desired, a shifting seat-cushion may be employed mounted upon rockers connected with the back movement, so that the reversal of the back will through such connection effect the shifting of such rockers and the seat-cushion carried thereby.

The invention is illustrated in the accompanying drawings, in which—

Figure 1 is a central section of a car-seat constructed in accordance with my invention, the cushion-carrying rockers being removed and the back and seat cushions being shown in dotted lines. Fig. 2 is a view similar to Fig. 1, but showing the back in the opposite position and in addition one of the cushion-rockers and mechanism for actuating the same. Fig. 3 is an enlarged detail view illustrating the connection between the levers car-

rying the back-supporting arms. Fig. 4 is a front elevation, partly in section; and Fig. 5 is an enlarged sectional detail on the line 5 5, Fig. 2.

Referring to the drawings, in which similar letters denote corresponding parts, I premise with the statement that inasmuch as the mechanism at both ends of the seat may be of similar construction I shall describe that at one end of the seat only.

The frame includes the support A, the end plate B carried thereby, and the connecting rails or sills *b*, upon which are mounted the rockers *b'*, carrying the seat-cushion *b''*. Said rockers *b'* have sliding movement in runs or ways *b''*, formed in said sills or connecting-rails *b*.

C designates the seat-back, here shown as of the reversible type and carried detachably or otherwise upon a back-arm *c* at each end. Said back-arm *c* depends below the lower edge of the seat-back and is preferably provided with a shoulder *c'*, the back-cushion in practice being of less width than the seat-cushion, outside which the back-arms *c* operate.

D E designate levers pivoted at the points *d e* to the back-arms *c* in the longitude thereof and at their other ends to the end plate B of the frame. The preferred method of pivoting the inner ends of each of said levers is shown in detail in Figs. 4 and 5. The pivot of the upper lever D comprises the stud *d'*, having the head *d''*, said stud projecting through an orifice in the end plate B. *d'''* designates a disk or washer through which extends a screw *d'''*, engaging with a threaded orifice in the stud *d'* and also, if desired, in the head *d''* of said stud. Said stud *d'* furnishes a wearing-surface of considerable size and adequate strength for coaction with the lever D. The lower lever E is here shown as pivoted upon the tie-rod F, extending between and connecting the two end plates B of the seat-frame. Adjacent to each of said end plates said tie-rod is square in cross-section, as shown at *f*, to coact with the correspondingly-shaped orifice near the inner end of the lower lever E and with an orifice also correspondingly shaped in a plate *f'*, having socket *f''*. Said plate *f'* is secured, by means of rivets *f'''*, to the inner face of the lever E. The movement of said lever, there-



fore, is transmitted to said tie-rod F. The extreme end (round in cross-section) of said tie-rod is carried in a suitable bearing formed in the headed stud  $f^5$ , the head  $f^6$  whereof  
 5 may be flattened out over the washer  $f^4$ , and both may be countersunk in the end plate B, as may also the head  $d^2$  of the stud  $d'$ . Such countersinking and in addition the paneling of said end plate, as shown in Figs. 4 and 5,  
 10 contribute strength thereto, said end plate being preferably made of pressed steel.

The lever D is provided with the angularly-disposed ear G and the lever E with the similarly-disposed ear G', each of these ears  
 15 being in the present instance arranged at about a right angle to the longitude of its respective lever D E. Coacting with these ears is a link  $g$ , preferably pivoted to one of said ears and having slot-and-pin connection  
 20 with the other. In the drawings I have illustrated said link  $g$  as having pivotal connection at  $g'$  with the ear G, its other end being provided with a pin or stud  $g^2$ , coacting with the slot  $g^3$ , formed in the ear G', said pin or  
 25 stud being preferably provided with the head  $g^4$ . Preferably said pin or stud  $g^2$  and its coacting slot  $g^3$  will be of ample size to reduce the effect of wear.

It will at once be seen that by means of the  
 30 construction herein described the levers D E, fixedly pivoted at their outer ends in the longitude of the back-arm  $c$  and at their inner ends to the end plate B, are positively and mechanically correlated not only in their ultimate  
 35 positions corresponding with the two facing directions of the seat-back, but also at all times during the movement of such seat-back from one of such positions to the other. There are no loose parts to wear or be thrown  
 40 out of adjustment during continued operation of the mechanism, and lost motion of the back is avoided, the movement thereof from one facing direction to the other being smooth and continuous and the inclination  
 45 automatically effected as part of such movement through the guiding effect of the levers D E. Moreover, the coaction between the inner ends of said levers is substantially uniform during the entire throw of the back  
 50 from one position to the other, there being no possibility either of the evil of dead-centers or of lost or jerky movement in the operation of reversal.

In all car-seat structures it is essential that  
 55 a suitable stop device be employed to limit the movement of the back in either direction, such stop devices coacting either with the back-supporting arms or with the levers connected therewith. To secure adequate  
 60 strength and also to deaden impact, I prefer to employ the stops shown in the drawings, and which consists each of a cup-shaped receptacle H, having a flange  $h$ , whereby said cup may be secured by rivets  $h'$  to the inner  
 65 face of the end plate B. Within said cup I

place a block  $h^2$  of wood or of several connected thicknesses of leather or other material in order that when the upper lever D coacts therewith the shock of impact may be reduced to a minimum.

Any desired provision may be made for shifting the seat-cushion and its supporting-rockers by the reversal of the back. The provision of this character illustrated in the drawings comprises an arm I, keyed or otherwise  
 75 secured upon the tie-rod F at either end of the seat and carrying a pin  $i$ , coacting with a slot  $i'$ , formed in the rocker  $b'$ . This forms no part of the present invention, the essential feature whereof resides in the mechanism for connecting and correlating the inner  
 80 ends of the levers D E in the manner and for the purpose herein set forth.

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

1. In a seat, the combination with a frame, a back and a back-supporting arm, of two levers pivoted to said arm in the longitude thereof and at their other ends to said frame,  
 90 and a link extending between and connecting said levers adjacent to their inner ends, the connection between said link and each of said levers being arranged at an angle to the longitude of such levers, and one of said connections being a fixed pivotal connection and the  
 95 other a slot-and-pin connection, substantially as set forth.

2. In a seat, the combination with a frame, a back and a back-supporting arm, of two levers pivoted to said arm in the longitude thereof and at their other ends to said frame,  
 100 angular ears carried by said levers adjacent to their inner ends, and a link connected at each end with one of said ears, the connection at one end of said link being a fixed pivotal  
 105 connection and that at the other end a slot-and-pin connection, substantially as set forth.

3. In a seat, the combination with a frame, a back and a back-supporting arm, of two levers arranged one above the other and pivoted to said arm in the longitude thereof and at their inner ends to said frame in a vertical plane, and a link extending between and connecting said levers adjacent to their inner  
 110 ends, one end of said link having fixed pivotal connection to the upper lever at an angle to the longitude thereof and the other end of said link having a slot-and-pin connection with the lower lever at an angle to the longitude thereof, substantially as set forth.

4. In a seat, the combination with a frame, a back and a back-supporting arm, of two levers arranged one above the other and pivoted to said arm in the longitude thereof and at their other ends to said frame in a vertical plane, said levers having angular ears adjacent to their inner ends, and a link having at one end fixed pivotal connection with the angular ear formed on the upper lever and at its  
 125 130



other end a slot-and-pin connection with the angular ear formed on the lower lever, substantially as set forth.

5 In a seat, the combination with a frame, a back and a back-supporting arm, of two levers arranged one above the other and pivoted to said arm in the longitude thereof and at their other ends to said frame in a vertical plane, said levers having angular ears adjacent to their inner ends, and a link having at 10 one end fixed pivotal connection with the angular ear formed on the upper lever and at its other end a pin or stud coacting with a slot formed in the angular ear upon the lower lever, substantially as set forth.

15 6. In a seat, the combination with a frame, a back and a back-supporting arm, of a lever secured at one end to said frame and at the

other end to said arm, and a stop coacting with said lever and comprising a cup-shaped 20 receptacle secured to the frame and containing an impact-block, substantially as set forth.

7. In a seat, the combination with a frame, a back and a back-supporting arm, of means 25 for supporting and guiding said arm, and a stop carried by said frame and comprising a cup-shaped receptacle secured thereto and carrying an impact-block, substantially as set forth.

30 This specification signed and witnessed this 16th day of May, 1905.

EDWARD G. BUDD.

Witnesses:

R. M. FRIES,  
S. D. GROOME.