

No. 645,594.

Patented Mar. 20, 1900.

G. HENDERSON.  
CAR SEAT.

(Application filed Mar. 26, 1898.)

(No Model.)

2 Sheets—Sheet 1.

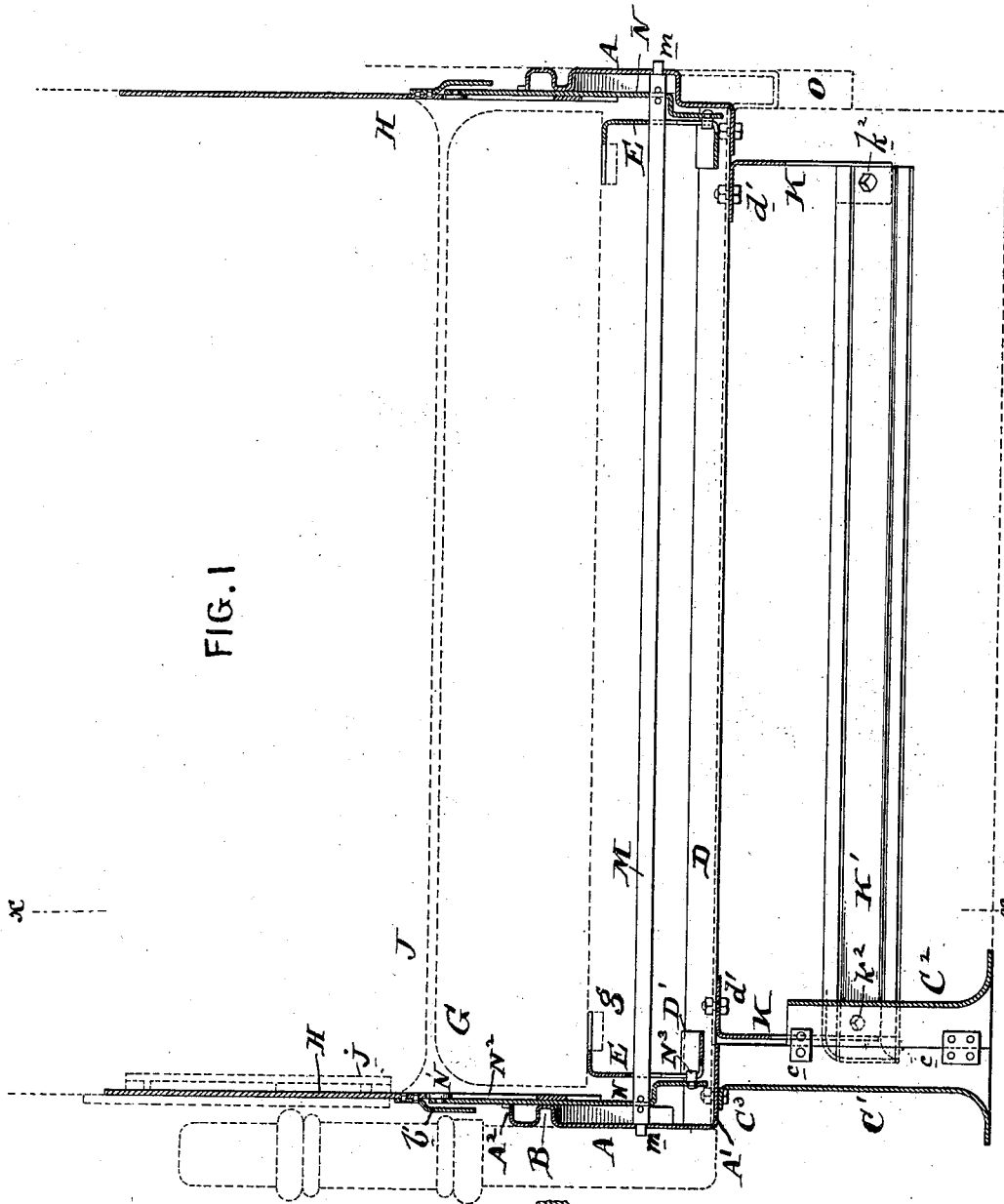
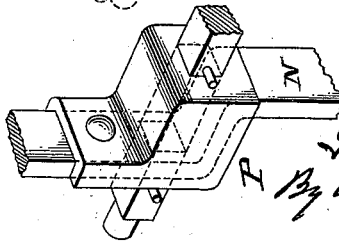


FIG. 1

WITNESSES:  
*Henry Denny*  
*Wm. H. Cress*

FIG. 6



INVENTOR:

*Geo Henderson*  
*By [Signature]*

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2 Sheets—Sheet 2.

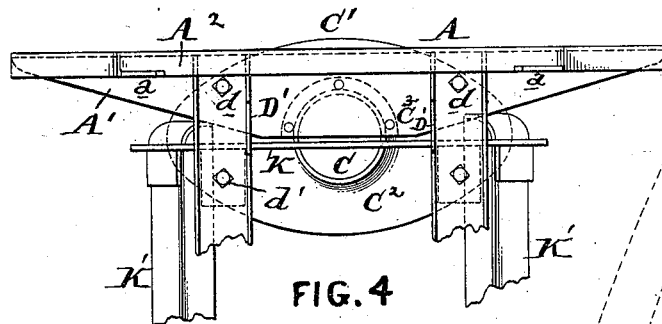


FIG. 4

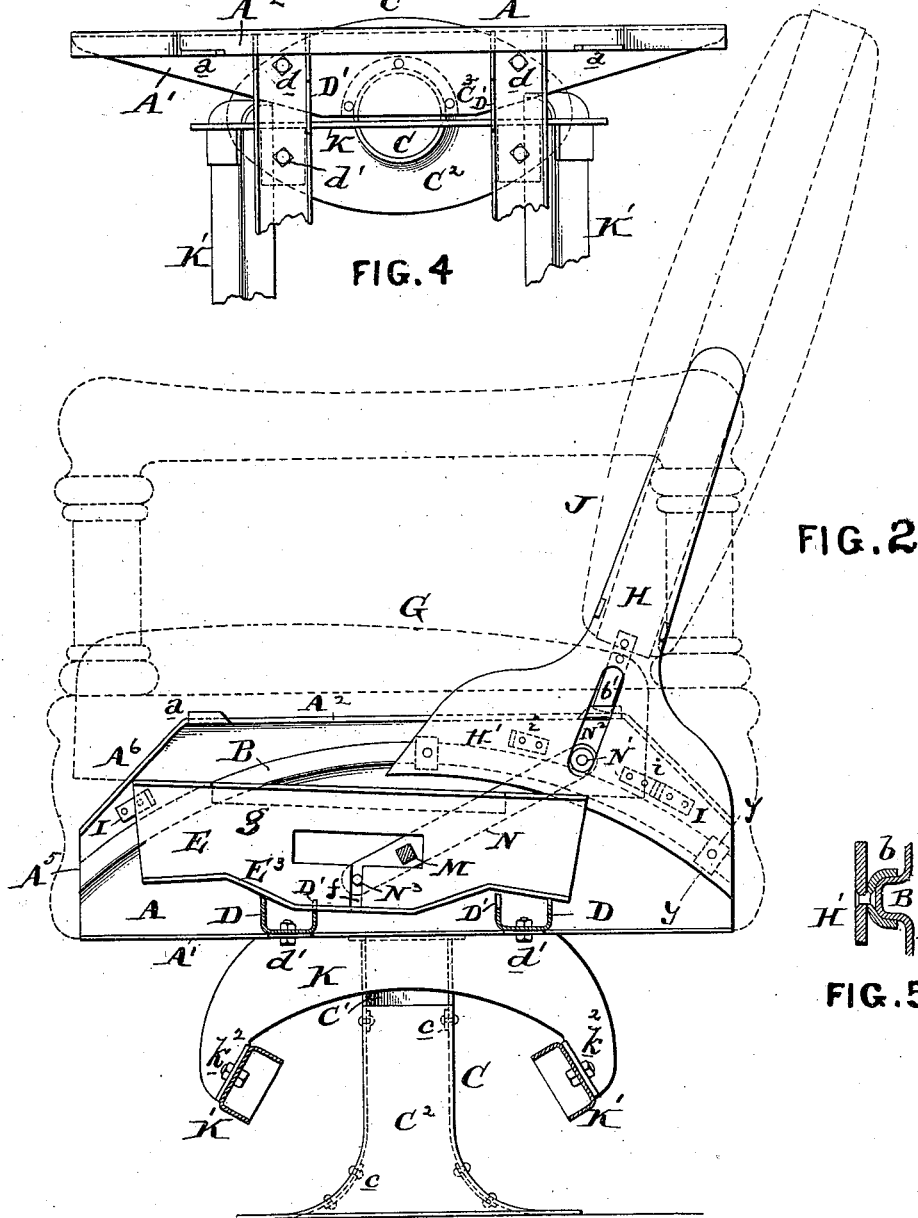


FIG. 2

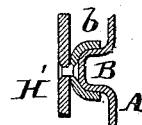


FIG. 5

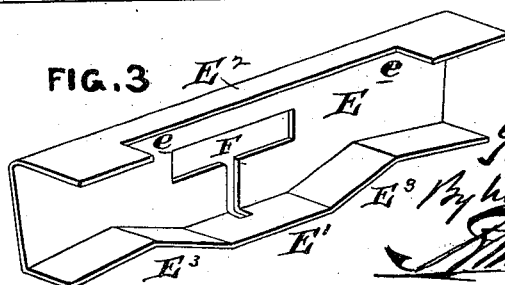


FIG. 3

WITNESSES:

*Henry Denny*  
*Wm. Brown*

INVENTOR:

*Geo. Henderson*

*By his atty*  
*Wm. Brown*

# UNITED STATES PATENT OFFICE.

GEORGE HENDERSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO  
HENRY S. HALE, OF SAME PLACE.

## CAR-SEAT.

SPECIFICATION forming part of Letters Patent No. 645,594, dated March 20, 1900.

Application filed March 26, 1898. Serial No. 675,213. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE HENDERSON, of the city and county of Philadelphia and State of Pennsylvania, have invented an Improvement in Car-Seats, of which the following is a specification.

My invention has reference to car-seats; and it consists of certain improvements which are fully set forth in the following specification and are shown in the accompanying drawings, which form a part thereof.

The object of my invention is to provide a suitable construction of car-seat which shall be light in weight, durable in construction and use, compact, and at the same time easily operated for reversing the seat cushion and back.

In carrying out my invention I form the metal-work of the seat of stamped sheet-steel, the shapes, bends, and drawn portions thereof being such as to give great strength consistent with lightness and beauty of design. Furthermore, the moving or guiding portions are so formed as to secure easy movement and proper shifting and tilting of the seat-cushion relative to the reversal of the back.

My invention comprehends, furthermore, many details of construction, all of which will be better understood by reference to the accompanying drawings, in which—

Figure 1 is a longitudinal sectional elevation of my improved car-seat with the seat-back moved immediately above the seat-cushion in the act of reversing. Fig. 2 is a transverse section of my improved car-seat on line *xx* of Fig. 1. Fig. 3 is a perspective view of one of the shifting seat-cushion-supporting frames. Fig. 4 is a plan view of one end of the car-seat frame with the shifting seat-cushion-supporting frame and seat back and arms removed. Fig. 5 is a cross-section of Fig. 2 on line *yy*, and Fig. 6 is a perspective view of a portion of the shifting-lever and rocker-shaft when reinforced.

Each end of the car-seat is substantially the same, with the exception that on the side next to the window there is no pedestal; but instead the frame is supported directly by the frame or sill of the car, which invariably runs along the side wall below the windows. I

will therefore describe the aisle end of the seat structure, which will answer as the description for the ends.

A is the end frame and is formed of stamped sheet-steel of the shape shown and having a base-flange *A'* of considerable horizontal depth, a top lateral flange *A<sup>2</sup>*, having the upwardly-turned lugs *a* and the segmental or arc-shaped rib *B* on its inside. In addition to this the frame *A* may have its vertical edges *A<sup>5</sup>* and oblique edges *A<sup>6</sup>* flanged to correspond and meet with each other and with the flange *A<sup>2</sup>* to increase the strength and finish. This end frame *A* rests upon the top flange of a pedestal *C* and is bolted thereto at *C<sup>3</sup>*. The pedestal is composed of two stamped sections *C'* *C<sup>2</sup>*, of sheet-steel, which are united by straps *c c*, riveted to the sections. The sections are so shaped that when secured together they present a smooth round body terminating at the bottom in a flaring oval base adapted to be screwed to the floor of the car. The inner section *C<sup>2</sup>* of the pedestal is preferably of less height than the section *C'* to leave space for the foot-rest support.

At the window end of the car-seat the frame *A* has no supporting-pedestal, but rests directly upon the longitudinal timber or sill *O* of the car. The frame *A* at this end may be bent, with an offset *A<sup>3</sup>* or with an extension (indicated at *A<sup>4</sup>* in dotted lines in Fig. 1) to fit to the sill *O*, as required. The frame is screwed directly to the sill or side of the car.

The two end frames *A A* are secured together by two channel-bars *D D*, of rolled metal, which are bolted at *d* to the bottom flanges *A'* of the frames *A*.

*K* are foot-rest frames made of stamped sheet-steel, preferably crescent-shaped and having their upper parts flanged and bolted at *d'* to the bottom of the flanges *A'* of the end frames *A*. The lower and free ends of these foot-rest frames are flanged also and receive the foot-rests *K'* and to which they are bolted at *k<sup>2</sup>*. The foot-rests are formed of angle or channel bars and on the ends next to the aisle are finished off, as shown, to improve their appearance. These foot-rest bars *K'* form additional means for positively and strongly connecting the end frames *A A*.

At the aisle end the woodwork supporting the arm-rest is indicated in dotted lines and is secured to the frame A by screws.

E are seat-cushion-supporting frames and are of the shape shown in Fig. 3, being stamped from sheet-steel. They comprise the vertical or body part, a top flange E<sup>2</sup>, notched as at e, and a bottom flange E<sup>3</sup>, having the oblique or cam portions E<sup>3</sup>. The body part, furthermore, is provided with a T-shaped slot F. These frames rest upon the channel-bars D. D and are guided thereon, while adapted to be shifted by working in notches D' in the inner flanges of the channel-bars.

G is the seat-cushion and rests upon the frames E and has upon its under part, at its ends, the bars g, fitting the notched portions e of the frames to prevent lateral shifting upon said frames. It will now be understood that when these frames E are shifted the cushion G moves with them and at the same time tilts upward at its forward edge, due to the cam surfaces or flanges E<sup>3</sup> riding up upon one bar D and downward upon the other or rear bar. (See Fig. 2.)

H are seat-back frames and are formed of stamped sheet metal of the shape shown. They are each extended at the bottom, as at H', and provided with an upwardly-extending shank upon which the back J is fitted, it having sockets j to receive the said shanks, so as to be detachable. These frames H have near each end of their extended lower parts U-shaped guides b riveted to them and adapted to the segmental or curved ribs B on the end frames A. In this manner the seat-back J is supported by the frames A and adapted to be bodily shifted upon them over the seat-cushion G when reversing the seat. The frames H are also provided with lugs i, which strike stop-lugs I, secured near each end of the end frames A to limit the extent of movement of the seat-back. The frames H are further provided with lugs b', which extend outward and downward to fit over the lugs a on the frames A to prevent any lateral shifting of the frames H and seat-back.

M is a rock-shaft extending between the end frames A and journaled therein at m. This rock-shaft is preferably made square or polygonal in cross-section and passes through the upper portions of the slots F in the supporting-frames E for the cushions. Fitted upon each end of this rock-shaft M, just inside of the end frames A, are levers N, which positively move with the rock-shaft and so that the movement to each lever is the same. The lower arms of these levers are provided with pins N<sup>3</sup>, which work in the upright portions f of the slots F in the supports E, and the upper arms are provided with pins or roll-

ers N', which work in slots N<sup>2</sup> on the shifting seat-back frames H. Now it is evident that when the seat-back is shifted the levers N and rock-shaft M are rocked, and the frames E, with their seat-cushion C, are shifted also, but in the opposite direction. It is also clear that the movement to both ends will be alike in view of the employment of the rock-shaft, and hence no binding at the inner end is possible. The construction is such that the lever N is wholly protected and hidden from view by the end frames A when the seat is fully reversed. All gearing and complicated mechanism heretofore employed are dispensed with and lightness and simplicity secured in the construction.

In view of the heavy duty which comes upon the connection between rock-shaft M and levers N it may be reinforced, as shown in Fig. 6, in which a casting or forging P is fitted to the bent portion of the levers and riveted to them and also adapted to receive the rock-shaft. Any other form of connection may be used, if desired.

While I have described my invention in the form I prefer to use it, I do not limit myself to the details thereof, as they may be varied without departing from the spirit of my invention.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a car-seat, the combination of two end frames formed of sheet metal, two longitudinal metal bars bolted to said end frames, with shifting seat and back supported respectively by said bars and end frames, two depending independent sheet-metal frames extending below and directly connected to the longitudinal bars and each having two downwardly-spreading arms, and two longitudinal foot-rests formed of ribbed metal bars secured to said depending frames below the seat and having a flat surface presented upward.

2. In a car-seat, the combination of an end frame formed of sheet metal, longitudinal bars for securing the end frame in position, a pedestal formed of sheet metal secured to the lower part of the end frame for supporting it and having the inner upper portion cut away, a shifting seat-back supported by and guided on the end frame, a depending frame secured to the bottom of the end frame and close to the inner side of the pedestal and in the cut-away portion thereof, and foot-rest bars supported by the depending frame.

In testimony of which invention I hereunto set my hand.

GEORGE HENDERSON.

Witnesses:

A. F. OLD,  
SAML. B. S. BARTH.