(No Model.) 2 Sheets—Sheet 1.

H. S. HALE.

SEAT.

No. 303,508. Patented Aug. 12, 1884.

Fig. 1.

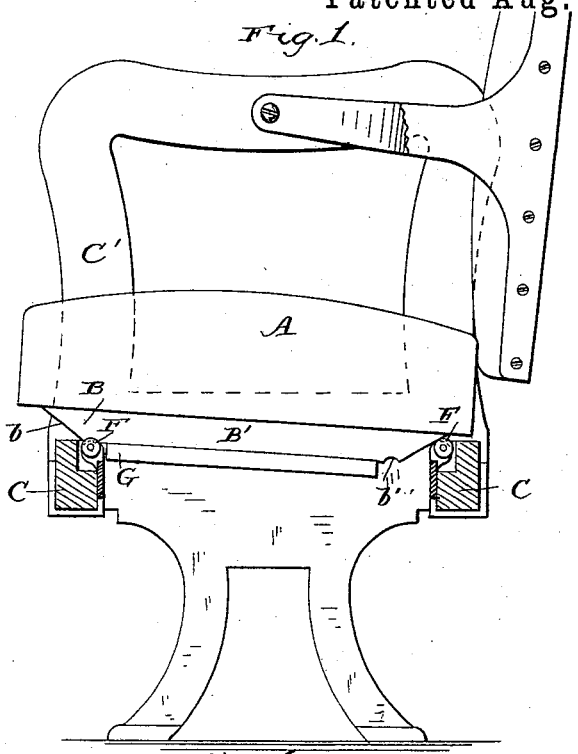


Fig. 4.

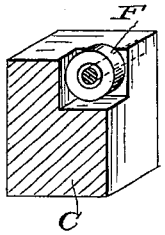


Fig. 3.

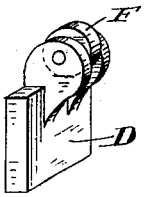


Fig. 6.

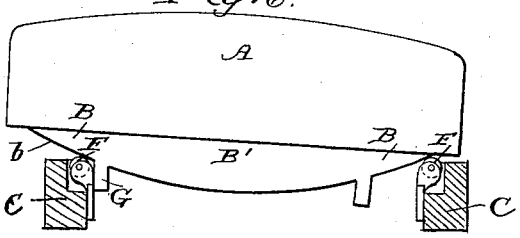
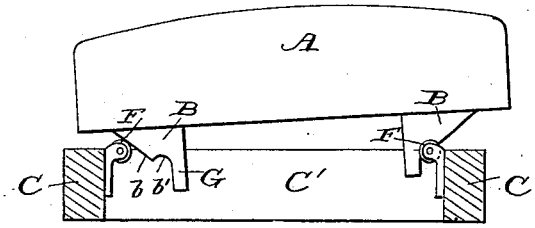


Fig. 5.



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(No Model.) 2 Sheets—Sheet 2.

H. S. HALE.

SEAT.

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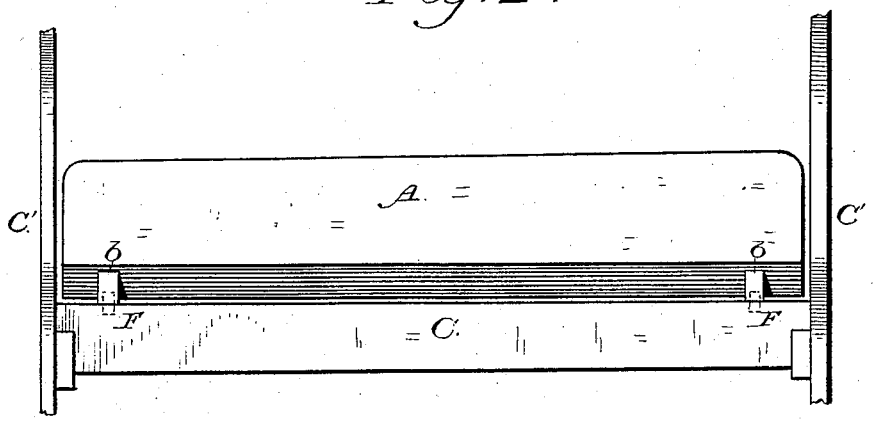
Fig. 2.



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UNITED STATES PATENT OFFICE.

HENRY S. HALE, OF PHILADELPHIA, PENNSYLVANIA.

SEAT.

SPECIFICATION forming part of Letters Patent No. 303,508, dated August 12, 1884.

Application filed May 23, 1883. (No model.)

To all whom it may concern:

Be it known that I, HENRY S. HALE, a citizen of the United States, residing at Philadelphia, in the State of Pennsylvania, have invented certain new and useful Improvements in Car-Seats, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a view, partly in end elevation and partly in section, of a seat embodying my improvement. Fig. 2 is part of a front elevation of the same. Fig. 3 is a perspective of one of the anti-friction rollers detached. Fig. 4 shows a modified form of roller-support. Fig. 5 shows a modification of the device in Fig. 1. Fig. 6 shows, partly in end elevation and partly in section, another modified form.

In the drawings, A represents the cushion, which may be made in any of the ordinary ways, and can be secured to any suitable supporting-frame. Below the cushion there are inclined or curved guides B, preferably one at or near each corner of the cushion. Each has an edge or face, *b*, extending upwardly and outwardly. These guides may be either formed each separately from the others, as shown in Fig. 5, or two may be constructed together upon one piece or bar extending from side to side, as shown in Figs. 1 and 6.

C C represent the side pieces of the frame, upon which the movable portion of the seat rests in the constructions shown in Figs. 1, 5, and 6. The stationary frame—to wit, the side bars, C C, and the end frames, C′—may be constructed in any suitable way. Between the stationary frame and the movable seat I interpose anti-friction rollers F, which, in the construction shown in said Figs. 1, 5, and 6, are arranged in the transverse planes in which is placed the inclined or curved guide B. These rollers may be mounted either directly on the side bars, C C, of the frame, as shown in Fig. 4, or they may be mounted in detachable plates D, adapted to be secured to the inner sides of the bars C. In either case I prefer to have recesses in the upper inner angles or corners of the side bars, in which the rollers can be seated, so that only a portion of each shall be exposed; but they may be arranged as shown in Fig. 5—that is to say, situated inside of or above the permanent frame. The seat rests upon these rollers, and it will be seen that upon a comparatively slight downward pressure upon that edge which is elevated said edge will be depressed, it sliding down upon its rollers F, the opposite edge passing upward upon its rollers.

E (see Fig. 1) is the back of the seat, supported upon the swinging arms E′—one at each end of the seat—which are pivoted at their forward ends, so that the back can be reversed, as is customary in seats of this general character. When the back of the seat is reversed, it bears downward upon one edge or the other, and automatically effects the required adjustment.

By the use of anti-friction rollers I overcome the difficulty which has been heretofore experienced in seats of this character, it being that the seats will often be too tightly seated in the frame to readily yield, and much trouble and inconvenience are caused in shifting them.

I am aware of the fact that anti-friction rollers have been used heretofore in seats having the back and the seat portion made together as one piece or frame, each of these parts being adapted to serve in turn as a back and as a seat. I do not wish to be understood as claiming such devices as my invention; but my construction of seat and back is materially different from those last above alluded to, and to it are incident advantages not found in the others.

Preferably I form recesses *b′* at the lower ends of the inclines B, so as to provide a catch or lock, which holds the seat sufficiently firm. At the same time, however, they do not effect a too rigid fastening, for when the back is reversed a slight shock upon the opposite edge of the seat will release it from the recesses.

G G are stops immediately inside of the lower ends of the inclined or curved edges *b*, adapted to abut against the side pieces, C, of the frame. Each comes in contact with its corresponding frame-piece when the opposite side of the seat has reached its lowermost point, and prevents the edge of the seat above it from rising too far. By examining the drawings it will be seen that the stops G are so constructed and related to the other parts that when the seat reaches either end of its throw one or the other of the stops strikes against the stationary part of the frame. As a result, the strongest part of the seat receives the jar or

blow almost invariably incident to the act of reversing the seat, and the rollers are relieved. The rollers and their mounting, therefore, may be lighter than when they are so arranged as to receive the whole force of the seat when being reversed; and, in fact, the anti-friction devices are saved from the wear and breakage necessarily incident to seats having anti-friction devices as heretofore constructed. It will be further seen that there is a comparatively long distance between the stops, and that the rollers do not come in contact with any part of the seat between the stops, whereas in the other seats heretofore used having anti-friction rollers the parts were so related that the rollers were compelled to traverse this longer distance. When the parts are arranged as I have shown, I can conveniently provide stops or abutments of great strength, as there is no limitation in this respect, and at the same time the devices to accomplish these ends can all be concealed by the end portion of the seat.

What I claim is—

1. In a seat, the combination, with the end pieces, C′, and side bars, C C, recessed at their ends, of the anti-friction rollers F, supported in the recesses of the side bars, the movable cushioned part A of the seat, the inclined guides B B, and the stops G G, which limit the forward movement of the seat, substantially as set forth.

2. In a seat, the combination, with the end pieces, C′, and the side bars, C C, recessed at their ends, of the anti-friction rollers F, the detachable plates D, secured to the inner sides of the side bars, C, the inclined guides B B, and the stops G, projecting below the friction-rollers, substantially as set forth.

3. In a seat, the combination, with the end pieces, C′, and the side bars, C C, recessed at their ends, of the anti-friction rollers F, supported in the recesses of the side bars, the movable cushioned part A of the seat, the inclined guides B B, and the stops G G, which limit the forward movement of the seat and the swinging back, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY S. HALE.

Witnesses:

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OWEN D. ROBERTS.