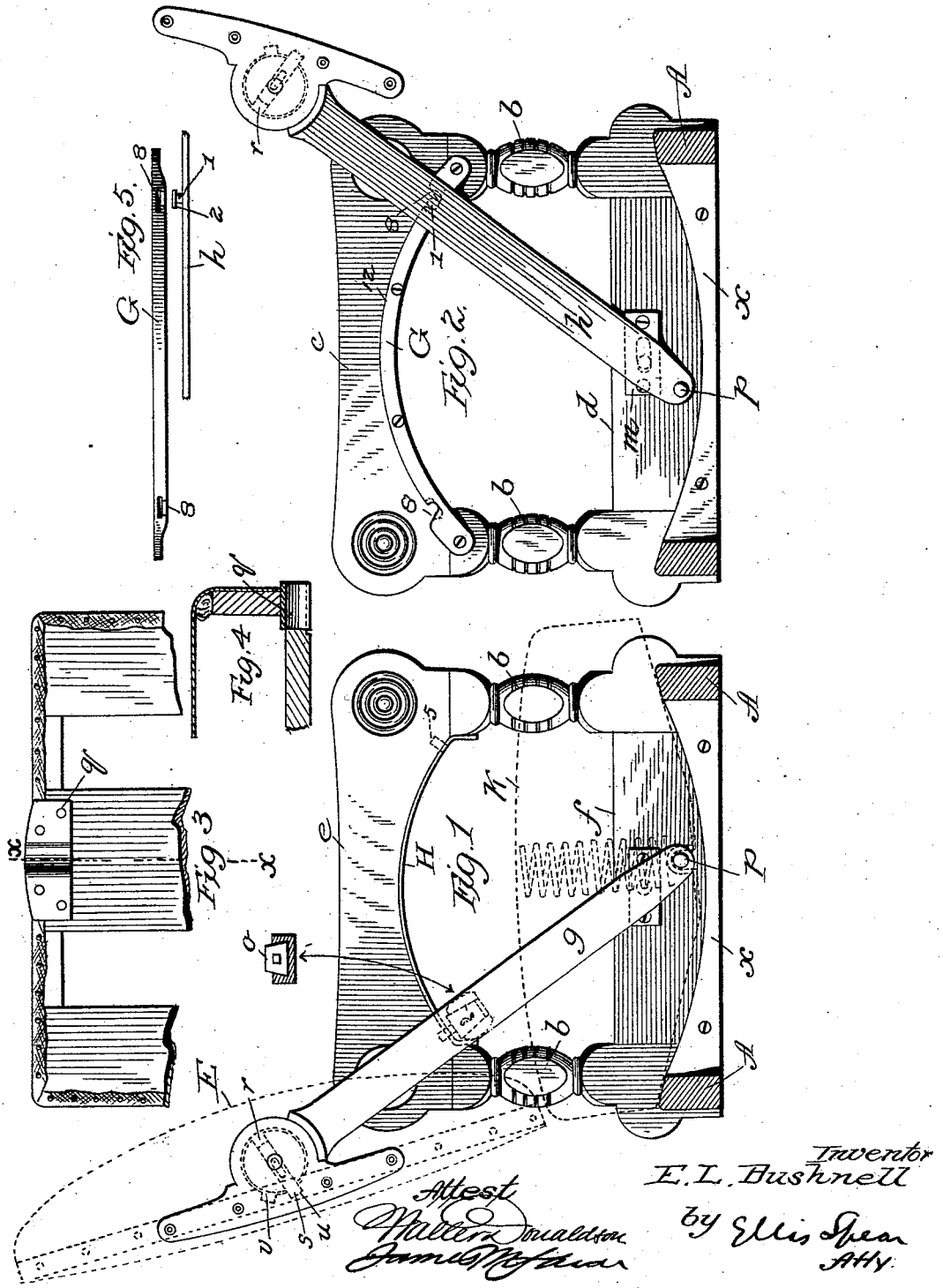
(No Model.) 2 Sheets—Sheet 1.

E. L. BUSHNELL.

CAR SEAT.

No. 456,015. Patented July 14, 1891.



THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

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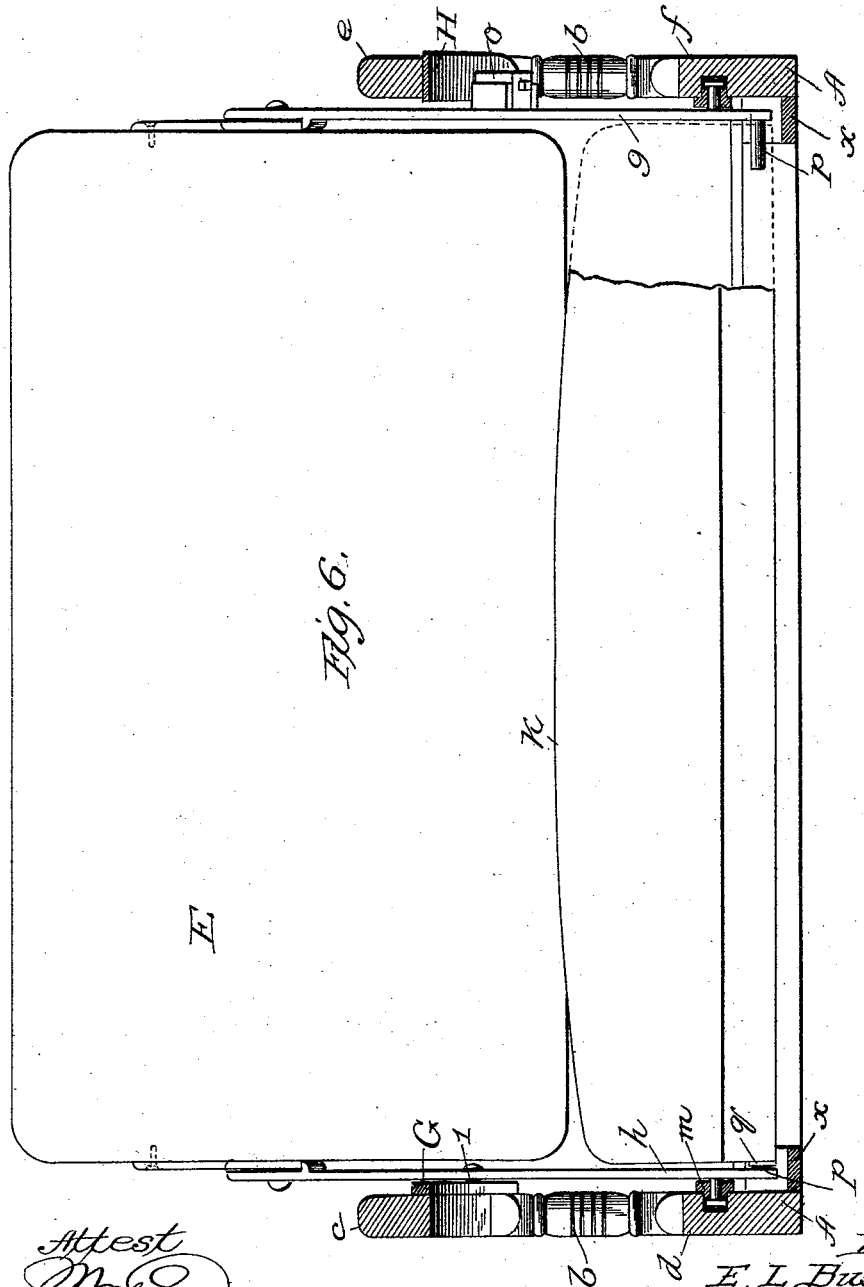

Fig. 6.

Attest
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

EDWIN L. BUSHNELL, OF POUGHKEEPSIE, NEW YORK, ASSIGNOR TO THE E. L. BUSHNELL SPRING COMPANY, LIMITED, OF SAME PLACE.

CAR-SEAT.

SPECIFICATION forming part of Letters Patent No. 456,015, dated July 14, 1891.

Application filed January 7, 1891. Serial No. 376,949. (No model.)

To all whom it may concern:

Be it known that I, EDWIN L. BUSHNELL, a citizen of the United States of America, residing at Poughkeepsie, in the county of Dutchess and State of New York, have invented certain new and useful Improvements in Car-Seats, of which the following is a specification.

The particular form or class of car-seat to which my said invention belongs is that in which long striker-arms are used to support and shift the back in reversing, the striker-arms being pivoted upon a support at their lower ends and having pivotal connection with the back of the seat at their upper ends. In seats of this class the lock generally is on the aisle end of the seat only. The result of this locking of one end only has been annoyance to the occupant of the seat and frequently damage to the lock or striker-arm, the annoyance and damage arising from the pushing forward of the unlocked end by the occupant of the seat in rear. The ordinary lock might be applied to both ends of the seat; but this would occasion such inconvenience that the plan is impracticable. In fact it has been suggested to apply positively-operating holding means at both ends of the seat; but what I have said of the ordinary lock is largely true of this.

The principal object of the first part of my invention is to provide a catch at the wall end of the seat controlled by the lock at the aisle or inner end of the seat.

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

Figure 1 is a transverse section through the frame of the seat, showing the aisle-arm of the seat and the striker-arm in side elevation and the seat and back in dotted lines. Fig. 2 is a similar view of the wall-arm of the seat and striker-arm. Fig. 3 is a bottom plan view of the end of the seat. Fig. 4 is a sectional view of the same on line $x\,x$ of Fig. 3. Fig. 5 represents the wall striker-arm and the curved bracket for the same. Fig. 6 is a longitudinal section through the seat-frame, with parts in front elevation and parts broken away.

In the drawings the bottom frame of the seat is shown at A. The posts of the end frames are indicated at b, and the top and bottom rails of the outer or wall end of the seat are shown at c d, respectively, and those of the inner or aisle end are shown at e f, respectively. The inner striker-arm is indicated at g and the wall-arm at h. The arm g is closely pivoted to a plate set into the side of the bottom rail f, and has thereon pivotal motion only. This arm carries the lock and is pivoted to the back E, as hereinafter described. The wall-arm h is pivoted in a slotted plate m in the bottom rail d of the wall end frame. The lower end of the arm h has therefore, in addition to the rocking movement on its pivot, slight oscillation in a horizontal plane. Upon the outer face of the arm is a stud 1, having a head 2. The head rides over the curved bracket 12 when the striker-arm is thrown from side to side. At the limit of the movement of the arm either way is a notch 8 in the bracket, said notch being formed, as shown in Fig. 5, to receive the shank and head of the stud 1 when the arm reaches the limit of its movement either way. When the stud is in its notch, the opposite arm g is at the locking-point. The head on the stud holds the back firmly to the arm-rest at the wall end. The back is held against movement forward (except it be lifted directly so as to raise the stud out of engagement with the notch in the bracket) by the lock which holds the back to the striker-arm g, and the latch cannot be operated to release the wall end of the back until this forward movement of the back is permitted; but when the arm g is unlocked and the back pushed forward, as in the movement of reversing, the pressure falls directly upon the upper end of the arm h at the joint with the back. As the arm is held by the stud in its bracket and in an inclined position the arm acts as a lever of the first order, and the lower end is thrown back, causing its pivoting-pin to move in the slot. This lifts the stud 1 out of its notch and this unlatches the wall end of the back. When the arm h reaches the opposite position, the stud falls into the notch at that end and is held by the weight of the back and arm, and the pivoting-pin at the bottom of the arm is pushed in the opposite direction. At the same time the spring-lock at the outer end automatically engages with its catch and secures the back at

both ends. The notches for the stud 1 are made in the metallic segment of a circle marked G. This is attached to the inside of the arm *c*, and forms a rub-iron on which the arm *h* moves. This is shown as attached to the upper rail of the said frame; but it may be attached directly to the wall of the car. The outer shoulders of the notches are high, so as to absolutely limit the movement of the striker-arm. At the other or inner end of the seat I have provided a metal strip H, which fits against the under side of the rail *e*, this being cut on the arc of a circle of which the center is the lower pivot of the striker-arm *g*. This strip has a hole 5 at each end to receive the spring-bolt of the lock. The metal extends inwardly toward the seat or toward the striker-arm and beyond the surface of the rail *e*, and the edge of it may form a rub-iron for the striker-arm *g*. Upon the side of the striker-arm *g* is formed a slotted or perforated lug to receive the lock. This may be, as shown in Fig. 1, formed with a dovetail recess or slot, in which the lock *o* is slipped from above before the arm is put in place. The lug is directly under the curved iron H when the striker-arm is in place, and the lock is held securely without any fastening. The lock upon the aisle end of the seat is the ordinary form of key-lock. The latch at the wall end performs the function of a lock to hold the wall end of the back and to prevent it from being pushed forward by the occupant of the seat next in rear, and thus the lock upon the aisle end is guarded against any twisting strain which is thrown upon it when the wall end of the back is not so secured, such twisting strain tending to break the lock; but the latch at the wall end is controlled by the lock at the aisle end of the seat and holds the back securely in place until the aisle end is unlocked, and then it yields and permits the back to be shifted. The pivots of the striker-arms, as shown in Fig. 6, pass through the plates *m*, and have washers riveted upon them, so as to hold them securely to the frame.

At the extreme lower end of the striker-arms are fixed inwardly-projecting pins *p p*, which engage with notches in the under side of the ends of the seat-cushion frame K. These pins extend over concave bed-pieces *x*. (Shown in Figs. 1 and 2.) These bed-pieces are at each end of the seat-frame and on the inside. They are fitted to and receive the convex or rounded under side of the cushion-frame K. The central part of the cushion-frame is therefore deeper, and the bottom curves upward on each side. Along the deeper central part of the frame I arrange a series of long springs, and upon the shallower part, near the sides, I set shorter springs. The long springs, rendered available by the rounded bottom, add largely to the comfort of the occupant of the seat. The bearings for the pins *p* are shown at *q*, Figs. 3 and 4. They are formed of metal plates fixed to the middle bar of the cushion-frame at the ends and having countersinks to receive the pins. They project slightly to bear against the inner face of the striker-arms to prevent the striker-arms from rubbing the plush, and through them the arms are connected to the cushion-frames, so that the cushion is shifted, as shown in Fig. 1, when the back is shifted from side to side, the inclination of the cushion being also changed by reason of the corresponding hollow and rounded shapes of the bed-pieces and cushion-frames. The striker-arms act as levers, having their pivotal bearings in the frames as fulcra, in moving the cushion back and forward, and this shifting of the cushion not only keeps the front edge highest, but also carries it forward over the front edge of the frame. The back is reversible, being pivoted to the striker-arms, and a suitable locking mechanism is provided between the back and striker-arm.

I claim as my invention—

1. In combination with a car-seat frame, a reversible back, striker-arms supporting the back and pivoted to the frame, a latching connection between one of the striker-arms and the frame adjacent to the said arm, said latching connection being automatically released by the movement of the striker-arms in reversing the back, and a lock between the other striker-arm and the frame adjacent thereto for securing the back in position, substantially as described.

2. In a car-seat, a supporting-frame, inner and outer striker-arms pivotally connected thereto, a back carried by the striker-arms, a latching connection between the outer striker-arm and the frame adjacent to said arm, said latching connection being automatically released by the movement of the striker-arm in shifting the back, a slotted bearing in the frame to receive the pivot of the outer striker-arm, and a lock between the inner striker-arm and the frame adjacent thereto for securing said back in position, substantially as described.

3. In a car-seat, a supporting-frame, striker-arms pivoted thereto and carrying a back, bearings in the frame for the pivots of the arms, one of said bearings being in the form of an elongated slot, a stud on one of the striker-arms, notches in the frame with which the said stud engages and from which it is automatically released by the sliding movement of the striker-arm in the bearing, and a lock on the other striker-arm engaging the frame adjacent thereto to secure the back in position, substantially as described.

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

EDWIN L. BUSHNELL.

Witnesses:
GANES C. BOLIN,
FRED E. ACKERMAN.