Sheet 1

F. M. Hawkins,
Automatic Reversible Seat.

Fig. 1.

PATENTED JUL 4 1871

116590

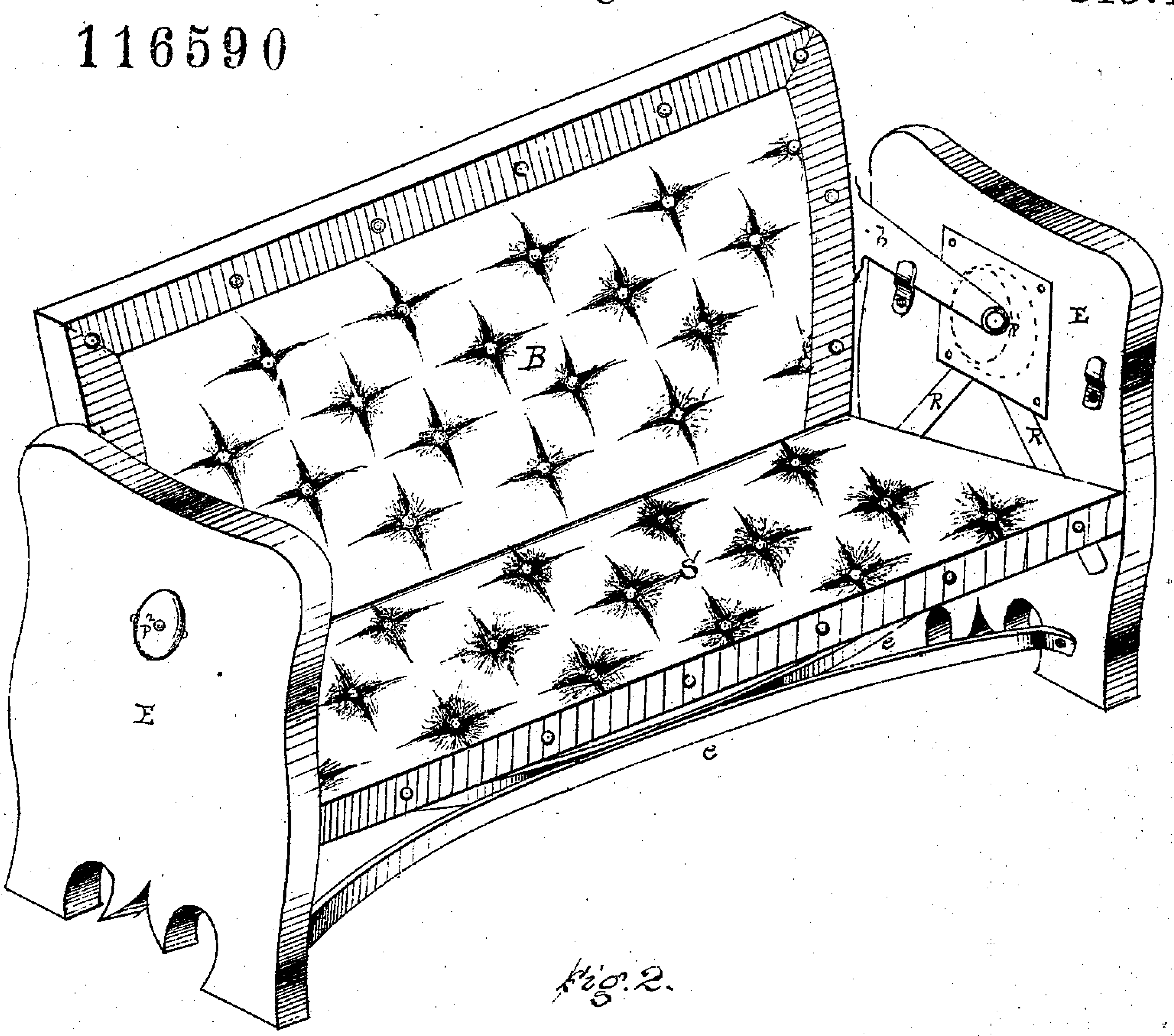
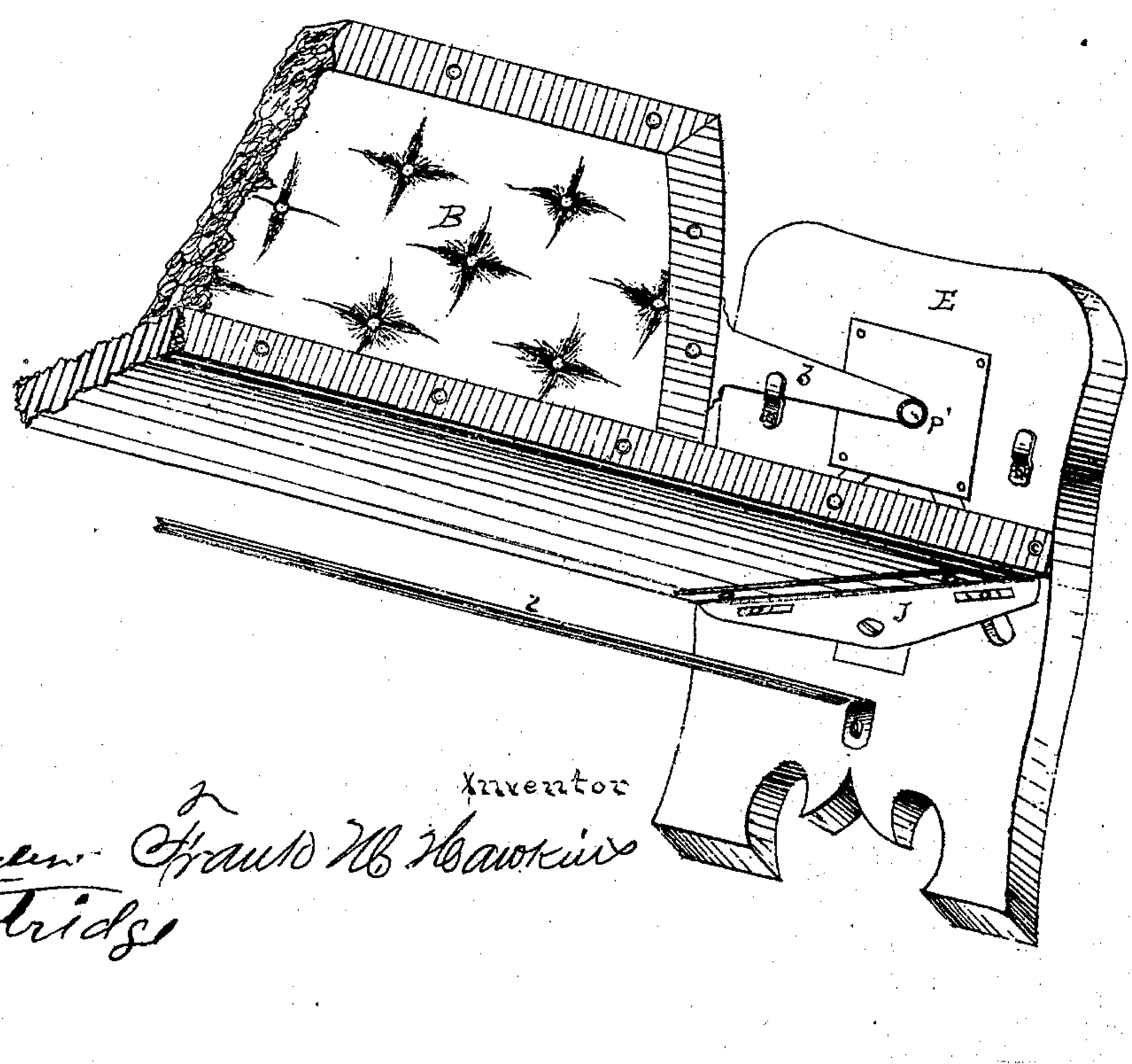


Fig. 2.



Witnesses.

Geo. W. Alexander

W. C. Shortridge

Inventor

Frank M. Hawkins

F. M. Hawkins,
Automatic Reversible Seat.

Fig. 3.

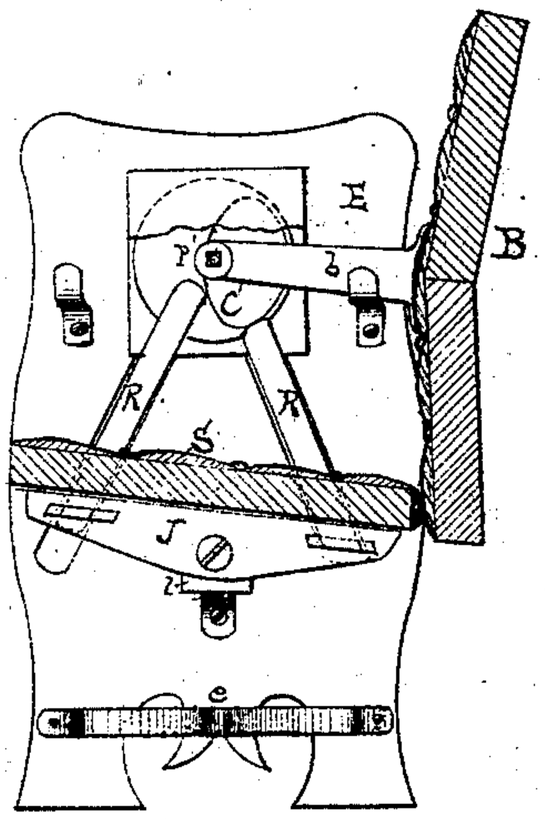
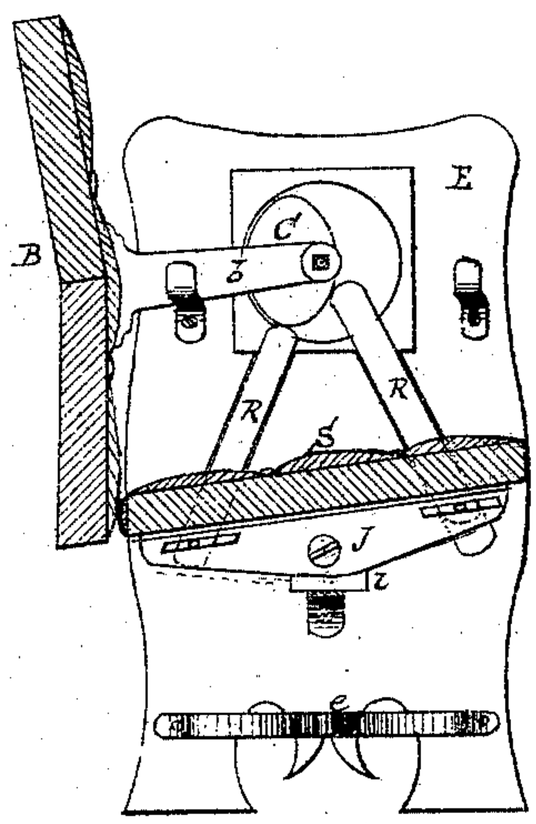


Fig. 4.



Witnesses.
Geo. Wm. Alexander
W. C. Shortridge

Inventor.
Frank M. Hawkins

UNITED STATES PATENT OFFICE.

FRANK M. HAWKINS, OF INDIANAPOLIS, INDIANA.

IMPROVEMENT IN REVERSIBLE SEATS.

Specification forming part of Letters Patent No. 116,590, dated July 4, 1871.

To all whom it may concern:

Be it known that I, FRANK M. HAWKINS, of Indianapolis, in the county of Marion and State of Indiana, have invented certain Improvements in Seats for Railroad Cars, Churches, Schools, &c., of which the following is a specification:

My invention relates to the combination of an oscillating seat with a reversible back, through the intervention of a cam and cam-rods, so that whichever side the back is occupying that edge of the seat is forced down for the time being, and the opposite edge is raised in a corresponding degree, and the effect is always to have the front part of the seat a little higher than the rear part of the same, thereby obviating all tendency to slide forward and off of the seat.

Figure 1 is a front perspective view of a seat with my invention applied. Fig. 2 is an underside view of one end of Fig. 1. Fig. 3 is an elevation of one end piece of a seat with the working parts thereof exposed to view, showing the back to the right; and Fig. 4 is the same as Fig. 3, but showing the back to the left side.

S is the seat. B is the back; E, the ends of a seat; and *b*, the swinging bars connecting the back with the end pieces E. J is a vibrating base, one at each end of the seat S, and connecting the seat to the upright ends E by means of a fixed fulcrum, upon which they rock or oscillate. These may be made of cast-iron or any other suitable material. They have a right-angled flange, through which screws pass, securing them to the under side of the seat S, Fig. 2. They are fulcrumed in their middle to a pin or bolt securely fixed on the inner face of the upright ends E. These oscillating base-pieces J are provided with slots at each end, in which a pin plays that is fixed in the lower end of each cam-rod R. These cam-rods may be made straight, or they may be semicircular in shape. If they are semicircular there is no necessity of having slots in the ends of J, only a pin-hole being necessary. The reason is obvious. The cam-rods R may be gained into the face of E, or they may lie on the surface. If the latter, they ought to be covered with a housing of sheet metal, crimped or stamped into shape. The cam-rods R converge until their upper ends almost meet, and rest snugly against the edge of cam C. This prevents any surplus motion in the seat S. Cam C is let into a circular recess in the face of E. It is an oblong oval, and is firmly secured in the end of seat-bar *b* and in end piece E by a square-ended bolt, the outer end of which bolt rotates in plate P^2, and its inner end in plate P^1. (See Fig. 1.) When back B is in position the cam C stands perpendicular, as seen in Figs. 3 and 4 and by the dotted lines in Fig. 1, and the lower end of the cam is in contact with the upper ends of the cam-rods R. If back B is rotated to the opposite side of the seat the cam sweeps over with it and reverses the position of the cam-rods by pressing down one and allowing the other to move up in the same ratio, thus rocking the seat S in the opposite direction. By moving the lower ends of cam-rods R further apart or closer together a lesser or greater motion may be given to the oscillation of the seat, and its slant back decreased or increased accordingly. It is thus seen that, by this simple device, a seat is always made to slant back from the front edge, and is thereby rendered an agreeable and easy position for rest to the users of the same. The bars *b* may be made similar to those used on any of the common seats with reversible backs. Inasmuch as the upright ends E cannot be firmly and stiffly attached to the seat S, it becomes necessary to brace their lower ends securely to each other by means of double braces *e* and *l* reaching from one to the other. One of these braces should be bifurcated at its ends to hold the end uprights E exactly parallel to each other. The general style and width or length of these seats may be varied, to suit the fancy of the builder, to any extent, or to adapt them to whatever purpose they may be required. The cams C may be cut out of metal, or they may be cast in the exact shape needed. The cam-bars or rods R may be cast, if semicircular; or cut from straight thin iron bars, if straight, as here shown.

I claim—

The cam C, as connected with the reversible back B, in combination with an oscillating seat, S, by means of cam-rods R or their equivalent, all as shown and described, substantially, in the foregoing specification.

FRANK M. HAWKINS.

Witnesses:

GEO. W. ALEXANDER,

W. C. SHORTRIDGE.