No. 629,258. Patented July 18, 1899.

J. S. JOHNSTON.

BALL BEARING CAR SEAT.

(Application filed Mar. 23, 1899.)

(No Model.)

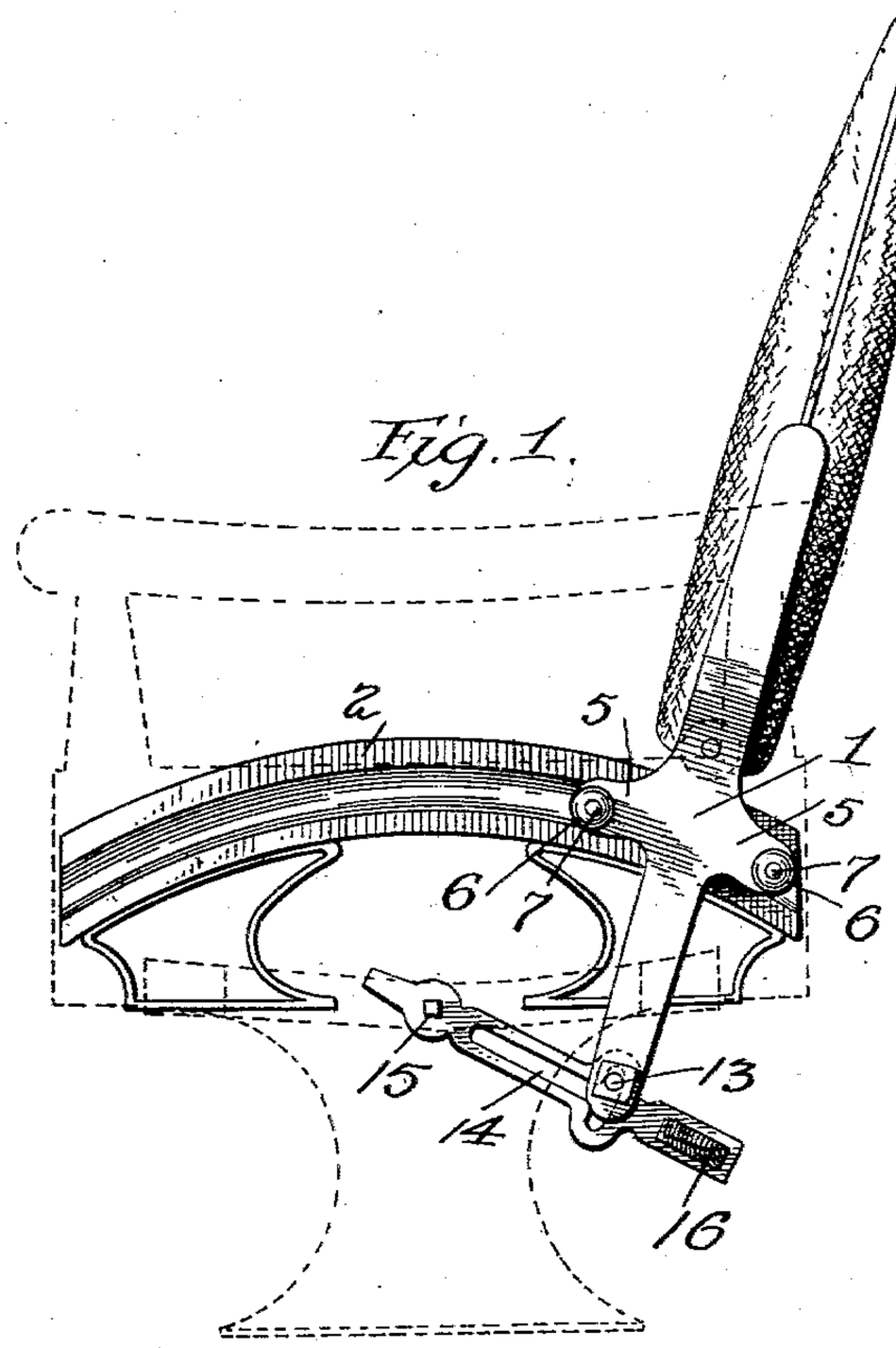

Fig. 1.

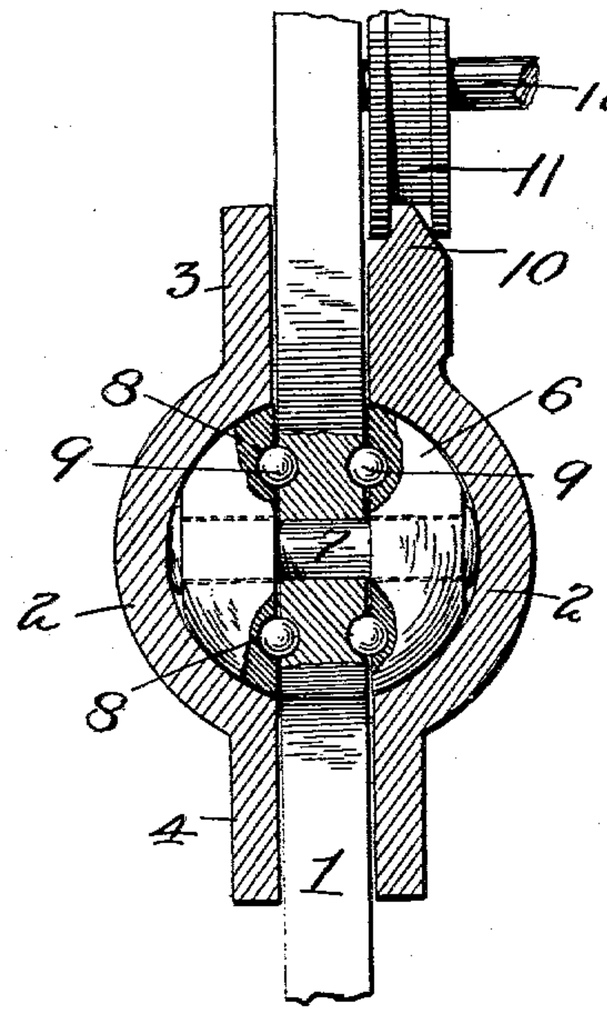

Fig. 3.

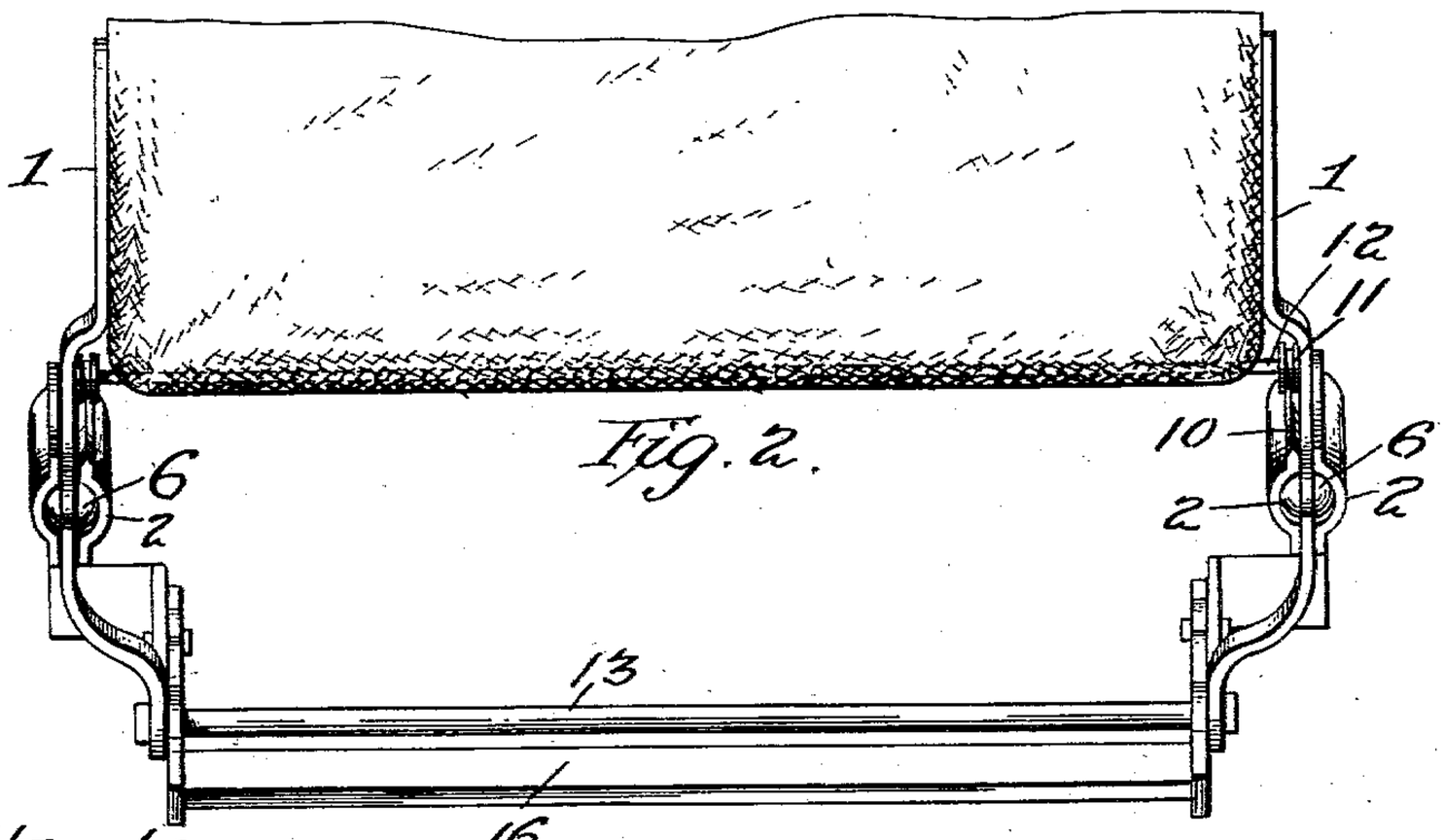

Fig. 2.

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UNITED STATES PATENT OFFICE.

JOHN S. JOHNSTON, OF NEW YORK, N. Y., ASSIGNOR TO THE POTTIER & STYMUS COMPANY, OF SAME PLACE.

BALL-BEARING CAR-SEAT.

SPECIFICATION forming part of Letters Patent No. 629,258, dated July 18, 1899.

Application filed March 23, 1899. Serial No. 710,222. (No model.)

To all whom it may concern:

Be it known that I, JOHN S. JOHNSTON, a citizen of the United States, residing at New York city, New York, have invented certain new and useful Improvements in Ball-Bearing Car-Seats, of which the following is a specification.

My invention relates to car-seats, and particularly to means for supporting and guiding the striker-arms to permit them to shift from one side of the seat to the other.

It is the object of my invention to provide such a supporting and guiding means as will allow the shifting of the striker-arms and back to be performed with greatest ease; and with this end in view my invention includes ball-bearing supporting and guiding means for the striker-arms.

My invention therefore comprises a ball-bearing car-seat, and the features thereof are shown in the accompanying drawings, in which—

Figure 1 is a side elevation of part of the supporting-frame with the striker-arms and attached parts, some of the parts being removed. Fig. 2 is a front view of the lower part of the seat. Fig. 3 is a detail sectional view.

The striker-arms 1 are attached to the sides of the back in any ordinary manner. The seat-frame is provided with curved guideways 2, and these, as shown in Fig. 3, are of tubular form in cross-section. The striker-arms pass down through these tubular guides, which have flanges 3 4 at their upper and lower edges, between which the striker-arms move. At an intermediate point on each striker-arm lateral extensions 5 are formed, and located within the tubular guides and on the ends of these lateral extensions the ball-bearings are placed, which consist of a divided sphere or ball 6, fitted to the cylindrical interior of the guideway. The sections of the ball turn freely on a pin 7, which is fixed in the striker-arm. Between these sections of a ball and the striker-arms ball-bearings 8 are formed by circular grooves in the meeting faces of the striker-arms and ball-sections, said grooves containing the antifriction-balls 9. By means of this ball-bearing supporting and guiding means there will be no binding action between the striker-arm and its guideway, and the seat may be shifted from one side to the other with the slightest effort.

On the outer side of the guideway a track 10 is formed or provided, and upon this track a roller 11 runs, which roller is carried by a pin 12 on the striker-arms. The striker-arms extend downwardly and have a cross-bar 13 at their lower ends, which is engaged by slotted levers 14, pivoted to the car-frame at 15 and carrying a foot-rest 16.

It will be seen from the above that a double ball-bearing effect is secured by the large divided sphere or ball 6 and by the rolling sections of this in connection with the balls 8. The use of the sphere is of particular advantage in preventing binding at the ends of the seat in case the force used in shifting the back is not applied at both ends or at the middle of the back.

The guideways inclose the ball-bearings and hide them from view.

I claim as my invention—

1. In combination, in a car-seat, the frame, the guideways, the seat-back, the striker-arms, one at each end of the seat, and means for preventing binding of either striker-arm in its guideway should one end of the seat-back be moved in advance of the other, said means consisting of ball-bearings one at each end of the seat-back presenting a spherical surface between each striker-arm and each guideway, substantially as described.

2. In combination in a ball-bearing car-seat, the tubular guideways, the striker-arms passing through the same, the divided sphere carried by the striker-arms and fitted to the interior of the tubular guides and the ball-bearings between the parts of the sphere and the striker-arms, substantially as described.

3. In combination in a car-seat, the frame having the guideway, the striker-arm, a rolling section loosely journaled on said striker-arm and having one face lying adjacent to said striker-arm and its other face of spherical form and the antifriction-balls between the adjacent faces of the striker-arm and rolling section substantially as described.

4. In combination in a car-seat, the frame having the tubular guideway, the striker-arm

passing through said guideway, a pin on the striker-arm, rolling sections one on each side of the striker-arm journaled loosely on the pin and having spherical surfaces fitted to the tubular guideway and ball-bearings between the adjacent faces of the striker-arms and the rolling sections, substantially as described.

5. In combination in a car-seat, the seat-frame having the hollow or tubular guideway thereon, the striker-arm passing through the guideway, the antifriction-bearing within the hollow guideway, a track on the outer side of the guideway and a roller carried by the said striker-arm and engaging said track, substantially as described.

6. In combination, the car-seat frame having guideways, the striker-arm passing through said guideway, a rolling section on each side of said striker-arm, each adapted to have independent turning movement, a pin carried by the said striker-arm and upon which said rolling sections are loosely journaled and ball-bearings between the adjacent faces of said rolling sections and the striker-arms, substantially as described.

7. In combination, the seat-frame, the seat and striker-arms mounted thereon, the back carried by the striker-arms, the hollow guideways through which the striker-arms extend and the antifriction-bearings in the guideways connected to the striker-arms, substantially as described.

8. In combination in a car-seat, the frame, the guideways, the seat-back, the striker-arms one at each end of the seat passing through the guideways and a ball-bearing at each end of the car-seat between each striker-arm and its guideway, said ball-bearings presenting spherical surfaces on each side of the striker-arm and between the same and each side of the guideway, substantially as described.

9. In combination in a car-seat, the seat-frame, the guideways one at each end thereof, the seat-back, the striker-arms connected with the seat-back and passing through the guideways and a ball-bearing at each end of the seat between each striker-arm and its guideway, each of said ball-bearings comprising a roller-section on each side of the striker-arm, said roller-sections having spherical surfaces, substantially as described.

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

JOHN S. JOHNSTON.

Witnesses:

HENRY E. COOPER,

WM. F. HALL.