

No. 772,545.

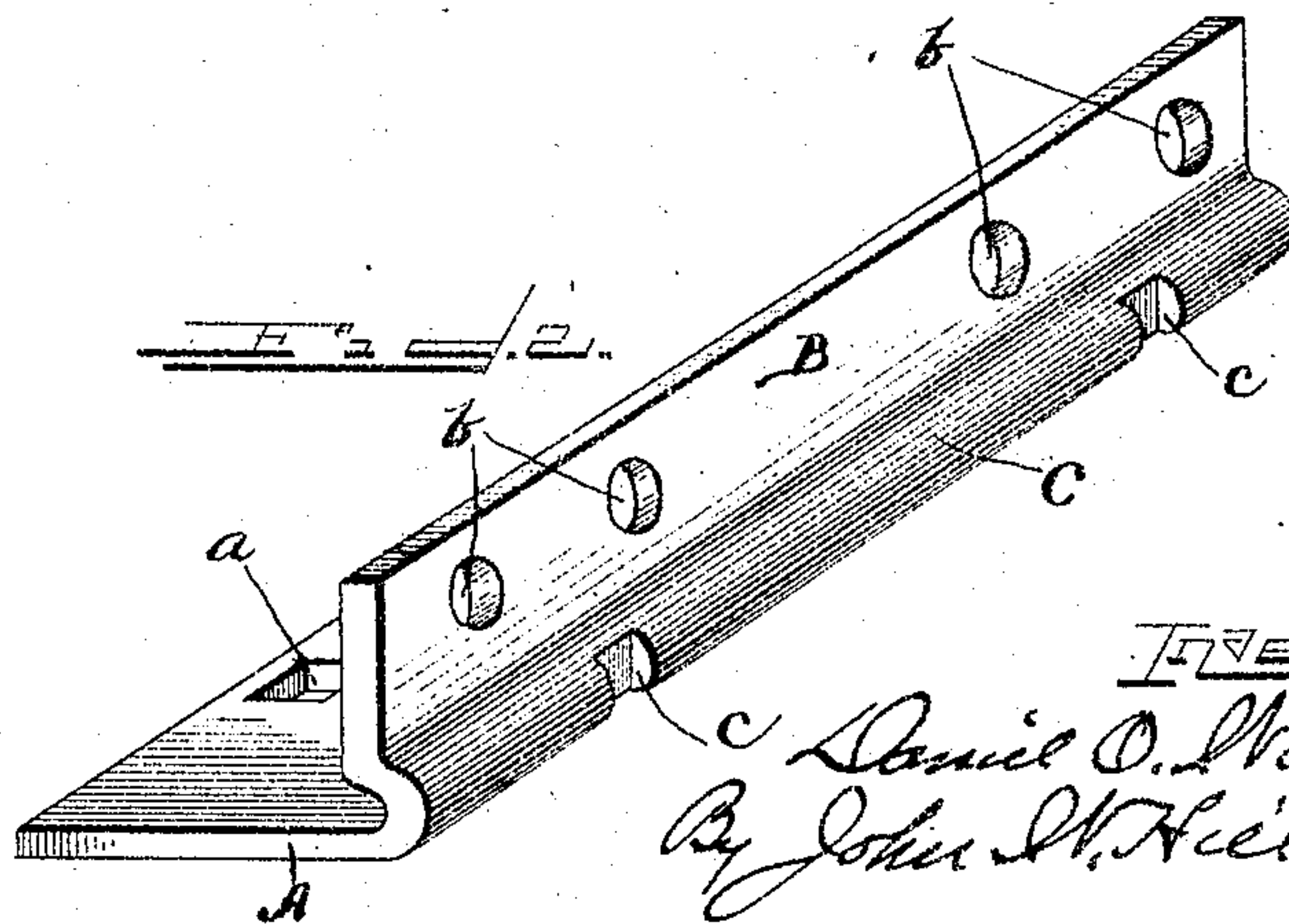
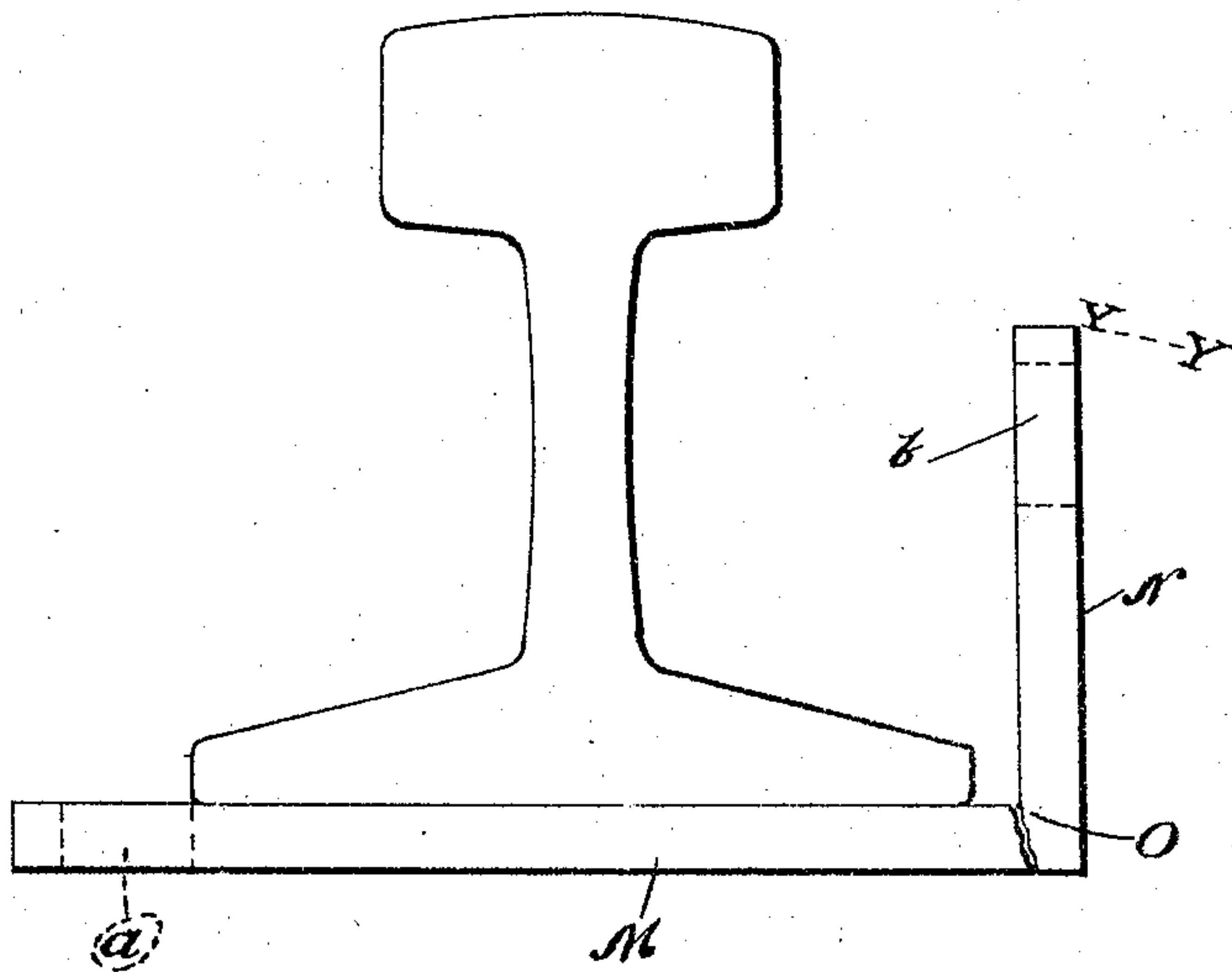
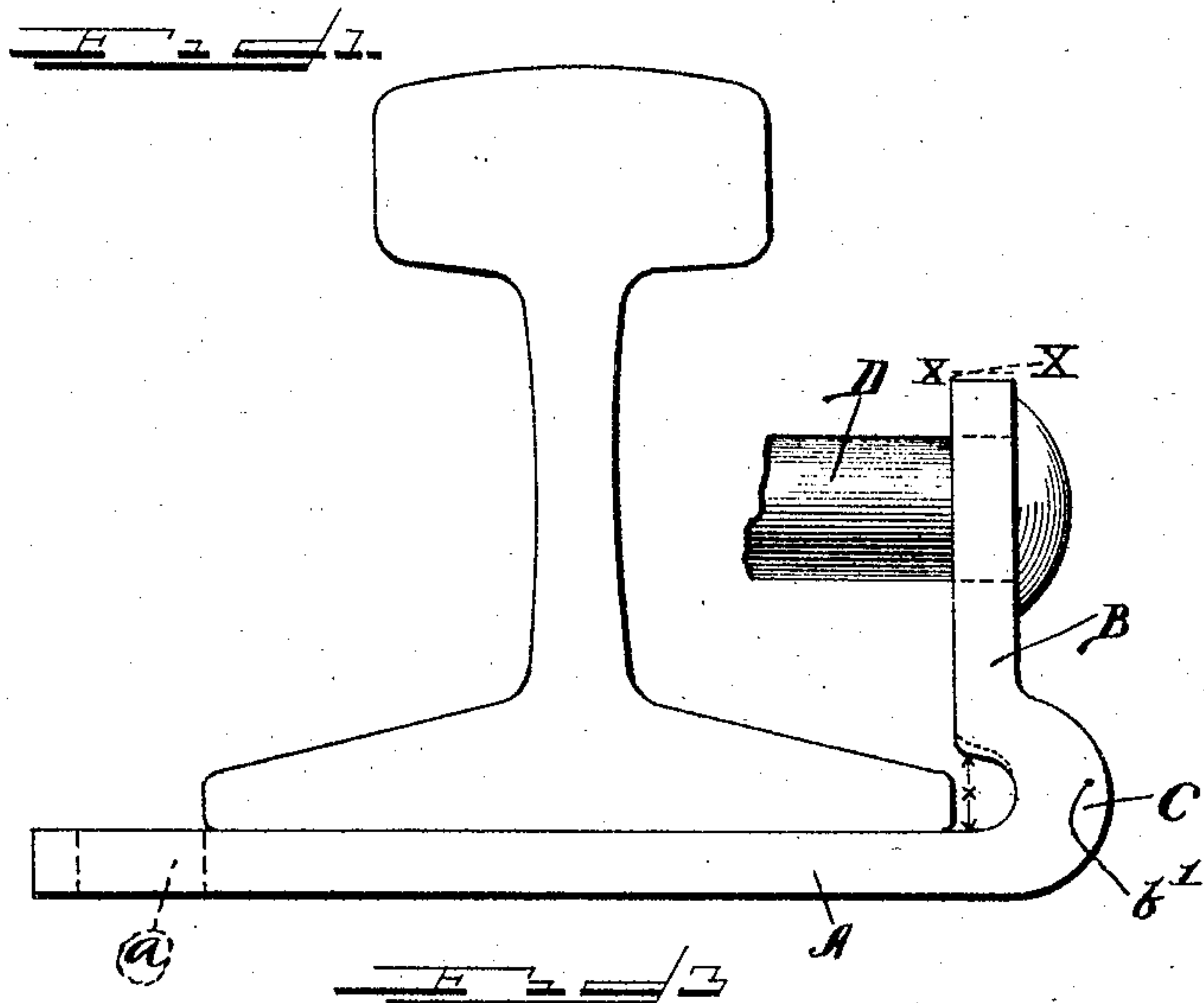
PATENTED OCT. 18, 1904.

D. O. WARD.

SOLE PLATE OR RAIL CHAIR.

APPLICATION FILED JUNE 14, 1901. RENEWED MAR. 7, 1904.

NO MODEL.



WITNESSES

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UNITED STATES PATENT OFFICE.

DANIEL O. WARD, OF OAK PARK, ILLINOIS.

SOLE-PLATE OR RAIL-CHAIR.

SPECIFICATION forming part of Letters Patent No. 772,545, dated October 18, 1904.

Application filed June 14, 1901. Renewed March 7, 1904. Serial No. 196,988. (No model.)

To all whom it may concern:

Be it known that I, DANIEL O. WARD, a citizen of the United States of America, residing at Oak Park, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sole-Plates or Rail-Chairs, of which the following is a description.

My invention belongs to that type of sole-plates or rail-chairs consisting of two sections extending substantially at right angles to one another, one of which is adapted to be positioned between the upper surface of the tie and the lower surface of the rail-base, the other extending vertically therefrom. As heretofore constructed, the junction of the two sections has been a substantially right angle, as stated. When the device is in use as ordinarily employed, the horizontal section is spiked firmly to the tie, and the edge of the rail-base is snugly in contact with the vertical section. As thus assembled, the direct stress of the wheel blows to the rail are transmitted to the vertical section at or near the point of its juncture with the horizontal section, which is firmly secured to the tie, as set forth. This causes a rupture of the two parts at the point of their union, as clearly shown in Figure 3. In some cases the fish-plate or angle-bar so fills the intervening space that the rail-base is not in immediate contact with the vertical section. The effect is the same, however, in either case, the stress being transmitted to the same point and with the same result.

The object of my invention is to obviate the objectionable feature above referred to in a simple and effective manner without adding materially to the cost of the article.

To this end it consists in the novel construction, arrangement, and combination of parts herein shown and described, and more particularly set forth in the claims.

In the drawings, wherein like reference letters indicate like or corresponding parts, Fig. 1 is a transverse vertical section of a rail and my improved sole-plate, showing the relative proportions of the parts in the preferred form. As shown, the parts are not fully as-

sembled, parts being broken away. Fig. 2 is a perspective view of my improved sole-plate, and Fig. 3 is a transverse vertical section of a rail and the type of the sole-plate upon which my invention is an improvement.

In the drawings, A is a horizontal section constructed to be positioned between the tie and rail-base. It is preferably wider than the rail-base, its free edge extending from the edge of the same a sufficient distance to permit the formation of spike-notches *a a* and the positioning of spikes therein to aid in securing the device firmly to the ties. B is a vertical section which lies in a plane at substantially right angles to that of section A. The section B is provided with the usual bolt-holes *b b* for the securing-bolts D.

C is a curved section uniting sections A and B and is constructed with sufficient resiliency to relieve the device from the direct stress of the wheel blows. Thus when the parts are assembled the stress of wheel blows tends to lift the section B upward and outward in a direction indicated by the arc *x x*, the center of the arc being substantially at the point of the curve, as at *b'*. The resiliency of the material as thus formed permits this tendency without undue strain, the wheel blows being effectively cushioned thereby. In the old form (shown in Fig. 3) it will be observed the tendency from the stress of wheel blows is in an entirely different direction, it being outward and downward in the direction shown by the arc *y y*. The center of the arc being substantially at the point O at the juncture of the two sections M and N and the tie preventing the free movement of the parts in that direction, a breaking strain is imparted, as shown.

In all cases where the tires are unevenly surfaced from any cause—such, for example, as uneven tamping and consequent uneven settling, which is to be met with to a greater or less extent on all railways—an undue vertical stress is distributed to the sole-plate proper near the angle formed by the two sections. As the horizontal section is secured to the tie and the vertical section secured to the rail, this action tends to draw the free ends of the sections apart from one another, changing the

substantially right-angle union to an obtuse angle, the parts partially assuming their normal condition when the stress is removed. This action is particularly liable to rupture the union of the sections, as before stated. My invention is particularly adapted to obviate this difficulty, the necessary resiliency being provided to permit the tendency referred to and transmit the stress to a point particularly constructed to receive it without injury to the device, and thus to the railway.

In rolling my improved sole-plate the metal may, if preferred, be reinforced at the bend of the section C, as shown, providing material for the formation of spike-notches *c c* therein.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A sole-plate for rails having a horizontal portion, a vertical portion positioned to be beyond the plane of the side of the upper portion of the rail, and a curved connecting por-

tion constructed to yield and extending in a curve directly from one portion to the other.

2. A sole-plate or chair for rails comprising a horizontal portion and a vertical portion arranged to be positioned outwardly beyond the plane of the side of the tread of the rail and an arc-shaped connecting portion between the two other portions and extending directly from one portion to the other.

3. A sole-plate or chair for rails comprising a horizontal portion, a vertical portion and a curved connecting portion arranged to be normally out of contact with the rail-base; substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two witnesses.

DANIEL O. WARD.

Witnesses:

JOHN W. HILL,
CHARLES I. COBB.