

(No Model.)

J. TOWNSEND.
RAILROAD RAIL CHAIR.

No. 331,012.

Patented Nov. 24, 1885.

Fig. 2.

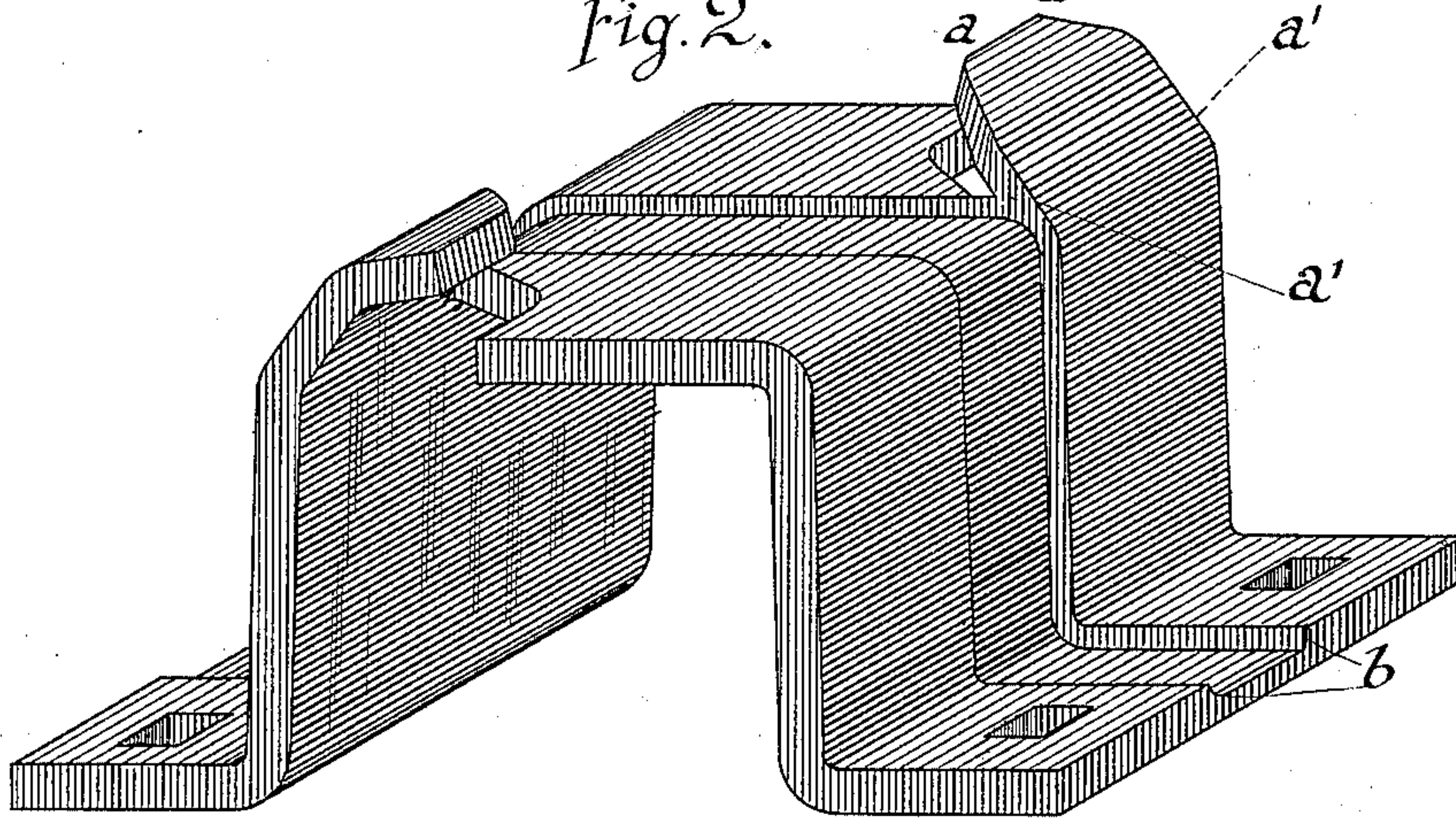


Fig. 1.

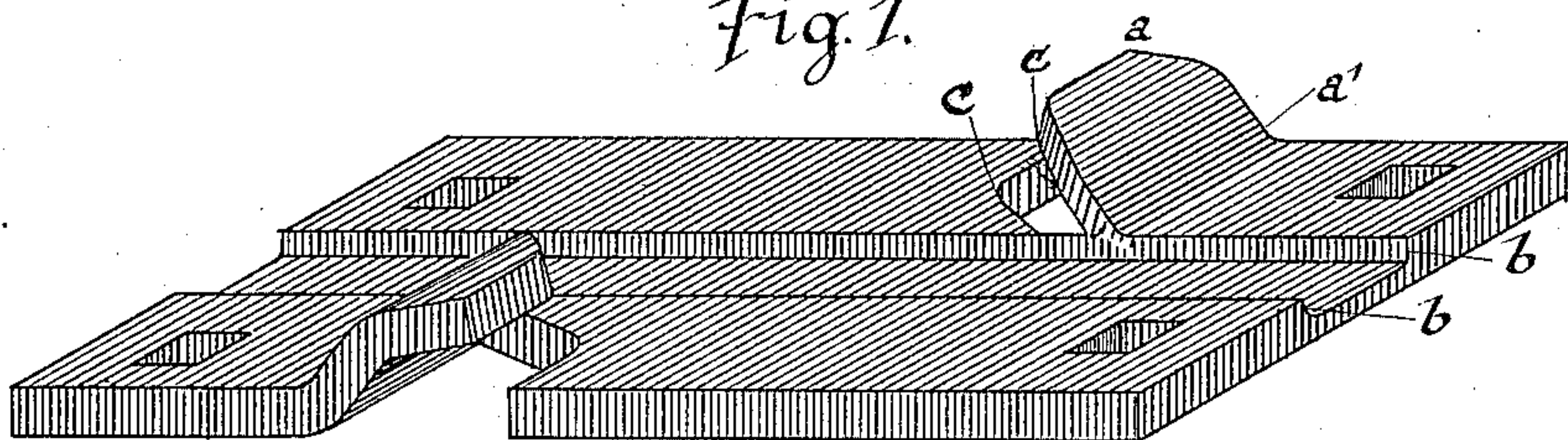
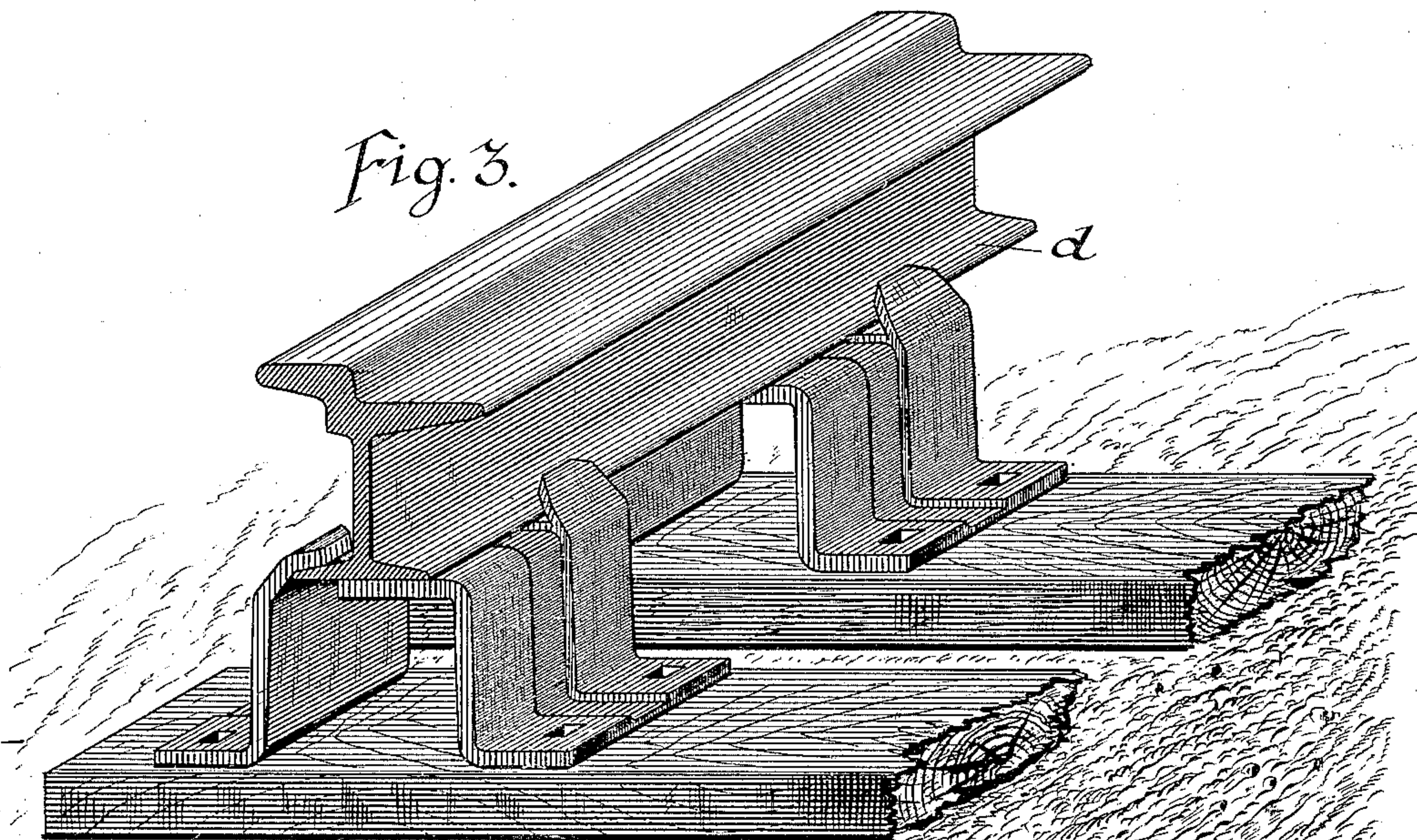


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN TOWNSEND, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE
JOHNSON STEEL STREET RAIL COMPANY, OF SAME PLACE.

RAILROAD-RAIL CHAIR.

SPECIFICATION forming part of Letters Patent No. 331,012, dated November 24, 1885.

Application filed October 1, 1885. Serial No. 178,725. (No model.)

To all whom it may concern:

Be it known that I, JOHN TOWNSEND, a citizen of the United States, residing at Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Railroad-Rail Chair, which invention is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to make a rail-chair of rolled or wrought metal having such form and distribution of material as will permit of ample strength and durability of lugs for clamping the rail, utilizing at the same time the natural elasticity or spring of the metal to securely fit the variable thicknesses of rail-flanges met with in every day practice.

The invention will first be particularly described and then specifically set forth in the claim.

In the accompanying drawings, Figure 1 shows in perspective a flat form of the chair forming the subject of this invention. Fig. 2 shows in perspective the same chair in box form. Fig. 3 shows in perspective a side bearing girder-rail mounted on two of said chairs, which chairs are mounted on cross-ties.

In said figures the several parts are indicated, respectively, by letters hereinafter referred to as descriptive of the distinctive character of the invention.

The form of the chair, it will be observed, is that of a grooved bar, as shown at *b b* in the several figures. Said grooving removes superfluous metal from the center of the chair, where no strain exists, and enables the metal to be so distributed that the lugs *a a'*, which clamp the rail-flanges, shall have ample strength and durability. Said lugs are stamped out of the heaviest portions of the bar, and thus, instead of being, as experience has proved with ordinary chairs, the weakest points, are rendered of proper strength, durability, and clamping power, whereas it has been found in ordinary practice that the tendency of the lugs has been to break off at the point marked *a' a'*, Fig. 1. The fit of the lug is a large factor in its strength. If of loose fit, it takes long continued driving to bring a lug down

to a bearing, should the rail be in place, as the spring back or resilience of the lug under blows is only overcome by long continued sledging, which crystallizes and weakens the metal, whereas if the lug be driven down before attaching to the rail, it is difficult to adjust to such a point as will not endanger the quality of the material by the backward bend. Bending in two directions, it is well known, quickly destroys iron or steel. But as all rolled rails vary to a perceptible extent in shape, owing to varying heat or other contingencies of manufacture, it becomes necessary to provide a fit to a varying article. Such fit is secured in this invention without impairing the strength of the material in the following-described manner: In stamping out the lugs they are stamped so that the distance *c c*, Fig. 1, shall be always slightly less than the corresponding thickness of the lower flange, *d*, Fig. 3, of the rail which the chairs are to fit. Each lug is furthermore so shaped that its point *a a*, Fig. 2, is of considerably less width than its root or base, *a' a'*. By this means, when the chair is entered or started over the lower flange, *d*, of the rail, the bevel of said flange tends to spring open the lugs on turning the chair to a right angle with the direction of the rail. The lug being weaker at its point *a a* yields at said part first, and so the whole lug opens gradually to a fit without overstraining any part of it, and at the same time leaves the spring of the metal a living force to maintain a firm hold during the use of the track.

By the above-described method of construction not only is a firm clamping secured by a clamp that is not affected by the vibration of use, but it will be noted that the strain that is put upon the lugs in securing their fit is in continuation of the flow induced by the formation of the lug, which application of strain is less exhausting to the metal than if the strain were applied in the opposite direction to such flow, a principle well recognized in practical metal construction, even within the small limits of change dealt with here.

It is not imperative that the points of the lugs be made smaller than their bases or roots,

but such shape is preferable for the reasons above given.

Having thus fully described my said improved rail-chair as of my invention, I claim—

5 A railroad-rail chair shaped out of grooved metal, and having lugs formed out of the thickened parts of the metal at the side of said groove, substantially as described, whereby the

flanges of the rail are securely clamped within said lugs, substantially as and for the purposes 10 set forth.

JOHN TOWNSEND.

Witnesses:

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