

(No Model.)

G. W. ZERN & M. H. MILHONE.
RAIL JOINT, SPLICE, OR TRUSS.

No. 593,505.

Patented Nov. 9, 1897.

Fig. 1.

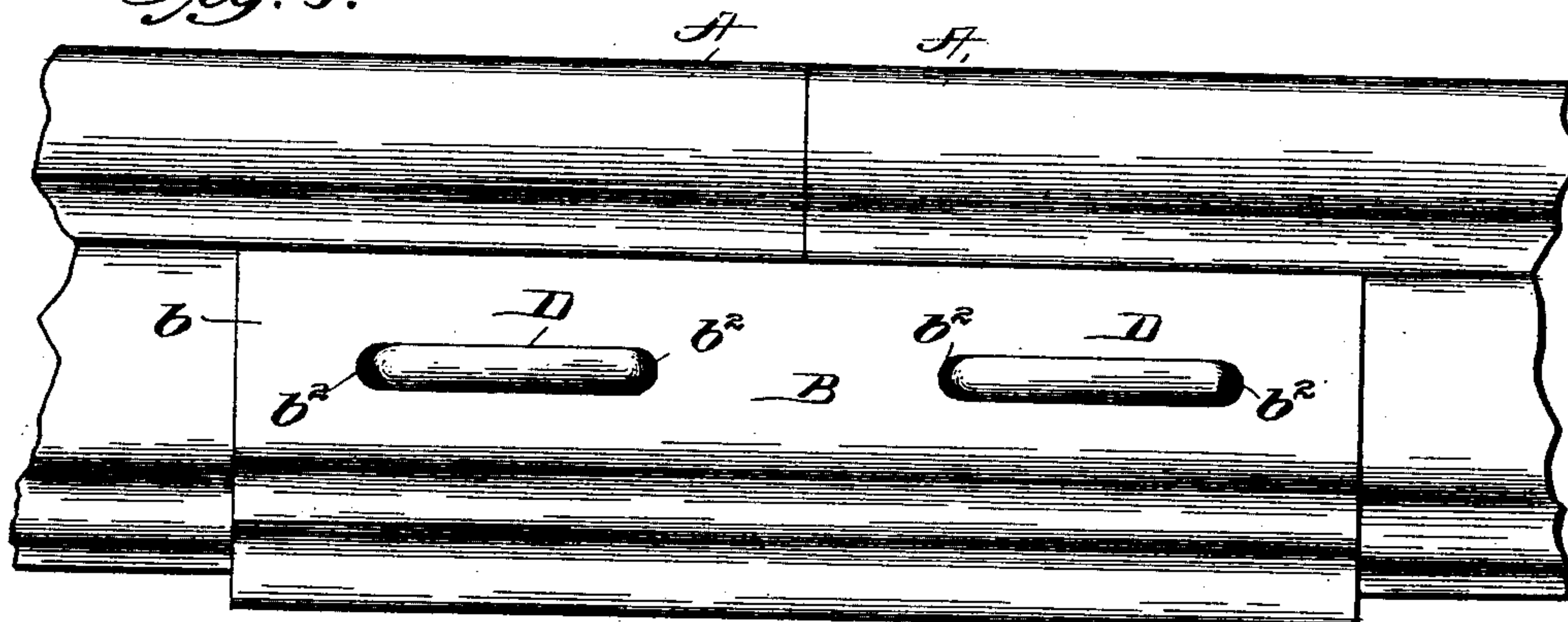


Fig. 2.

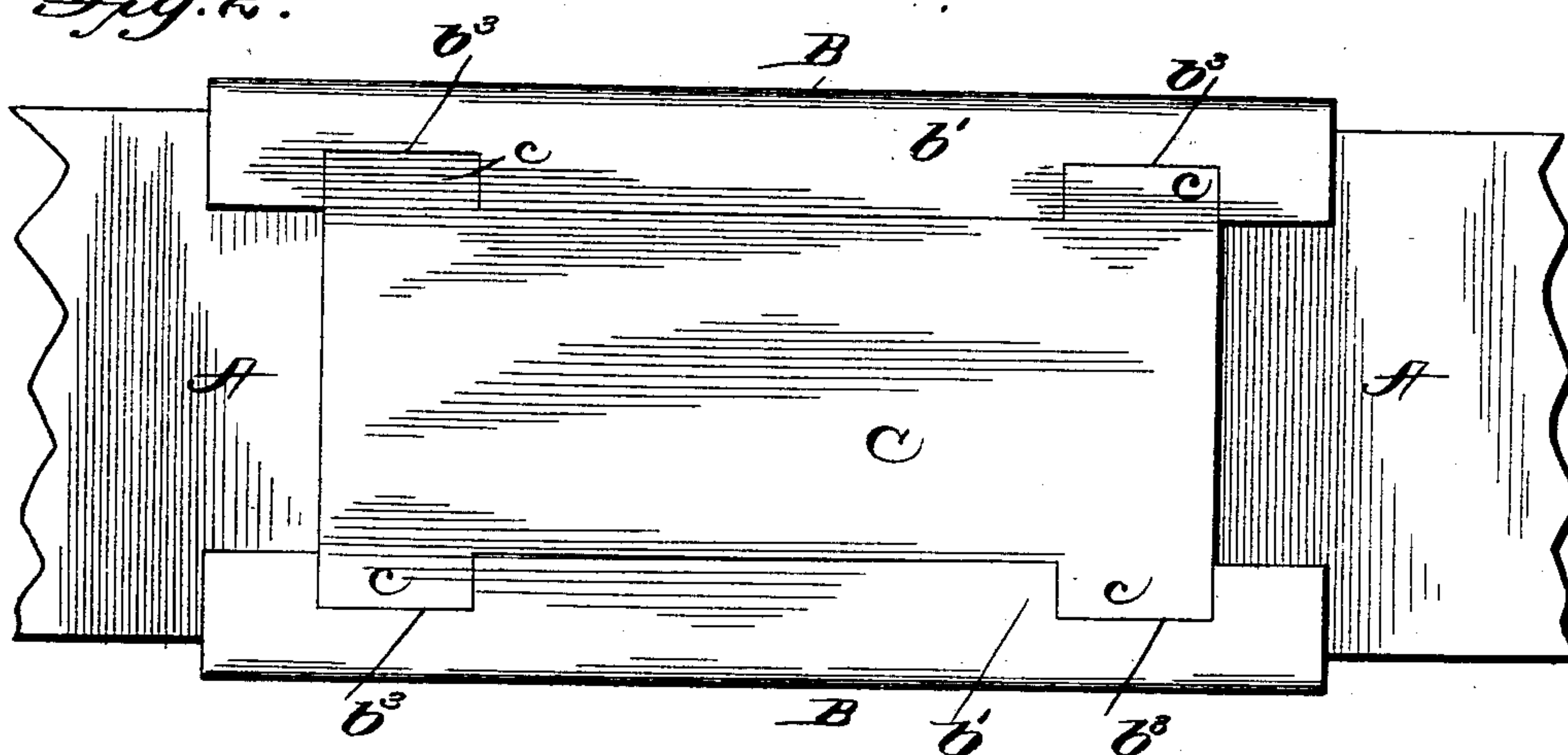
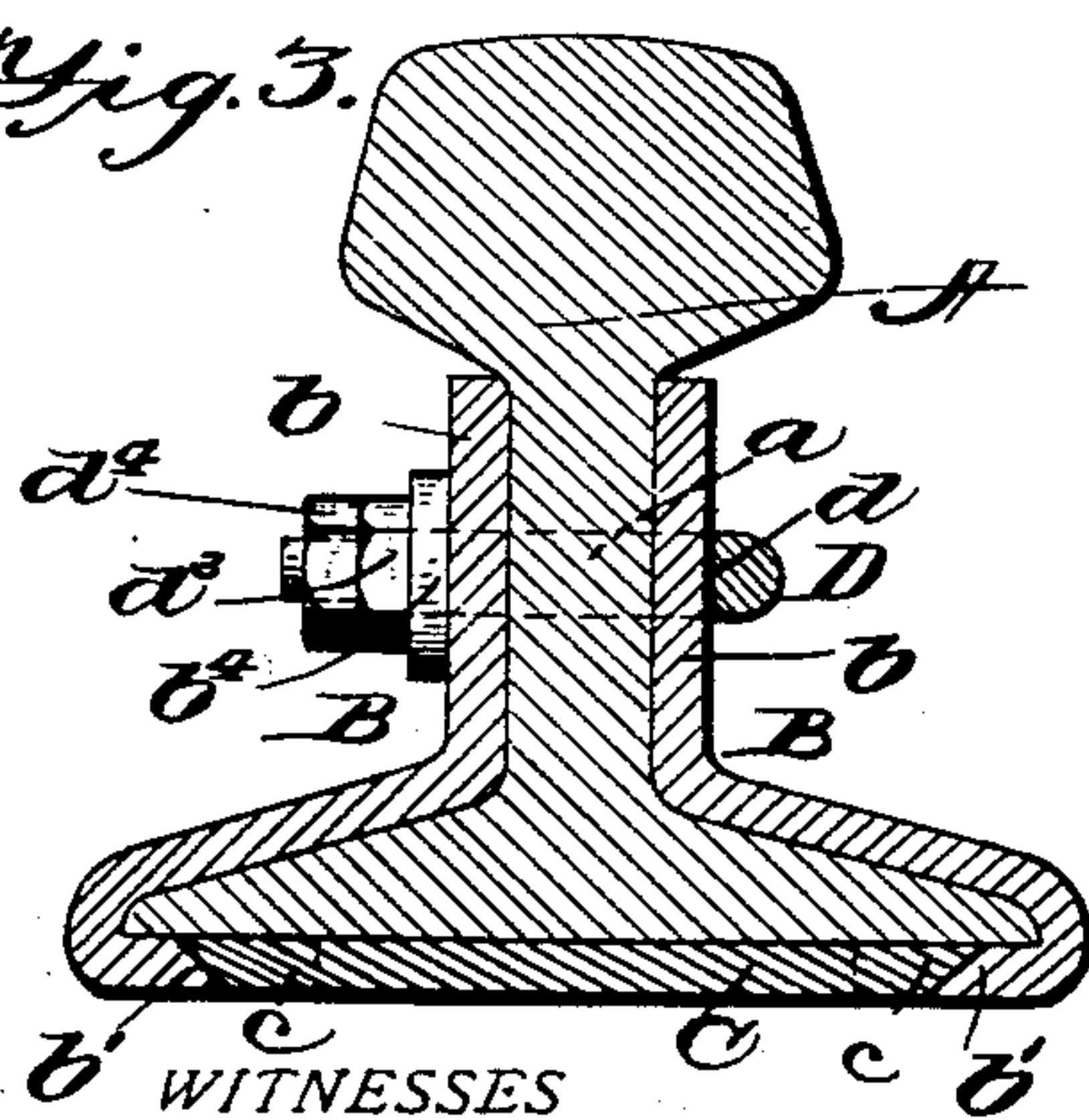
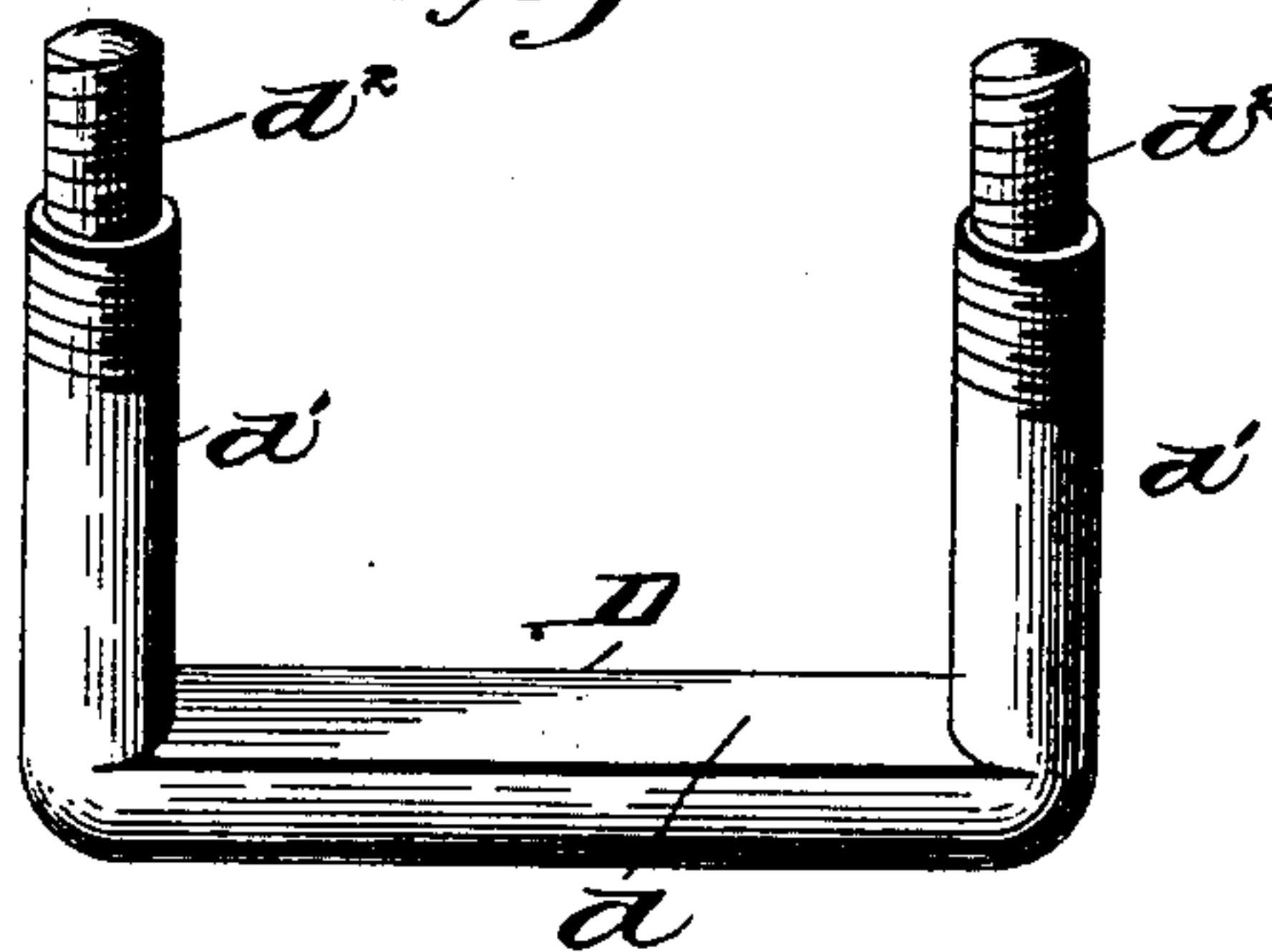


Fig. 3.



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Fig. 4.



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GEORGE W. ZERN AND MYRON H. MILHONE, OF GOOD HOPE, ILLINOIS.

RAIL JOINT, SPLICE, OR TRUSS.

SPECIFICATION forming part of Letters Patent No. 593,505, dated November 9, 1897.

Application filed February 26, 1897. Serial No. 625,102. (No model.)

To all whom it may concern:

Be it known that we, GEORGE W. ZERN and MYRON H. MILHONE, citizens of the United States, residing at Good Hope, in the county of McDonough and State of Illinois, have invented certain new and useful Improvements in Rail Joints, Splices, or Trusses; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in rail-joints; and it consists in the combination, with two apertured fish-plates adapted to be applied upon the respective sides of the rails, of loop screw-bolts adapted to have their respective ends passed through the apertures in the fish-plates and rails and screw-nuts mounted on the ends of said bolts.

The invention also consists in certain other novel features, combinations, and arrangements of parts, all of which will be hereinafter more particularly set forth and claimed.

In the accompanying drawings, forming part of this specification, Figure 1 represents a side elevation of the joint embodying our invention applied in position upon the rails. Fig. 2 represents a bottom plan view of the same. Fig. 3 represents a central transverse section through said joint. Fig. 4 represents an enlarged detail perspective view of one of the loop-bolts.

A A in the drawings represent the rail; B B, the fish-plates; C, the screwing or locking plate, and D D the loop-bolts. Said rails A may be of any desired construction and are formed at their ends with elongated slots a . The fish-plates B each comprises a segmental portion b , adapted to lie against the sides of the rails, and an inwardly-turned flange b' , adapted to extend under the rails. Each of these fish-plates is provided with a plurality of slots b^2 , adapted to correspond in position with the respective slots in the rails A. Each of the flanges b' is provided with a plurality of spaced notches b^3 . The base or locking plate C is adapted to be applied over the bottoms of the rails A, extending on each side of the joint, and is provided at its opposite ends with laterally-extending arms c , adapted to fit within the notches b^3 when said plate C is applied in position. The thickness of said

plate C is equal to the thickness of the flanges b' , so that when said plate is applied in position between said flanges it will lie flush with the under sides of the same and present an even unbroken support for the rail ends. Said plate C, besides forming a support for the adjoining ends of the rails, also prevents any longitudinal movement to the fish-plates B, as it rigidly locks them together by this connection with the notches b^3 . Each of the loop-bolts B comprises a flattened portion d , having a pendent screw d' at each end. The length of said portion d is such that the screws d' may be readily passed through two of the elongated slots b^2 of the fish-plate and two of the slots a of the rails. The threads of the end portion of the screws d' extend from left to right, while the outer portion of said screws d^2 are reduced and extend from right to left. Nuts d^3 are applied on the inner portions of the screws d' and smaller nuts d^4 upon the outer portions d^2 . By this peculiar construction of the bolts and nuts the latter may be locked upon said bolts against any accidental displacement by engaging each other and jamming the threads. By forming the screw-bolts D in the peculiar manner herein described the same are effectively prevented from turning in their slots by the application of the nuts. The office of the elongated slots a and b^2 is to permit of the extension and contraction of the rails because of the temperature to which they are subjected by the varying conditions of the weather.

It will be observed from the foregoing description that the fish-plate B, in combination with the plate c , forms a perfect chair about the sides and under the adjoining ends of the rails and at the same time permits of the removal of this chair at will without slipping the same longitudinally from the rails, as is ordinarily done. We preferably apply washers b^4 between the inner ends d^3 and the surface of the fish-plates, so as to permit said nuts to be forced home more readily and tightened upon their respective bolts.

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

1. In a rail-joint, the combination with angular fish-plates adapted to be applied upon the sides and partly under the rails, and

formed upon their inner sides with notches, of a base-plate provided with a plurality of projections adapted to engage with the notches in the fish-plates and adapted to rest under the rails, and means for securing the fish-plates together from the opposite sides of the rails, substantially as described.

2. In a rail-joint, the combination with rails having elongated slots formed in their ends, of fish-plates adapted to be applied upon the opposite sides of the rails, and provided with elongated slots, and a base-plate having projections adapted to cooperate with notches in the fish-plates, of loop screw-bolts, each adapted to be passed through two of the elongated slots of the fish-plates and rails and locking-nuts adapted to be applied upon the opposite ends of said screw-bolts substantially as described.

3. In a rail-joint, the combination with fish-plates adapted to be applied upon the sides and partly under the rail and provided with bolt-apertures in said sides and notches in the base portions, of loop screw-bolts each adapted to be passed through two of the apertures in the fish-plates and the apertures in the rail, locking-nuts adapted to be applied on said bolts, and a base-plate applied under the rails and provided with projections

adapted to enter the notches in the fish-plates whereby the latter are held from moving longitudinally independent of each other, substantially as described.

4. In a rail-joint, the combination with fish-plates adapted to be applied upon the respective opposite sides of the rails and provided with bolt-apertures and a base-plate having projections engaging notches in the fish-plates, of loop screw-bolts each adapted to pass through two of said apertures in the fish-plates and the apertures in the rails and each comprising two screw portions, suitably connected, said screw portions being of different diameters and the threads upon said portions being respectively cut in opposite directions, and locking-nuts adapted to be applied upon the oppositely-inclined threads of the respective sections of each bolt, substantially as described.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

GEORGE W. ZERN.
MYRON H. MILHONE.

Witnesses:

W. A. CREEL,
HARLIE TATE.