

No. 850,876.

PATENTED APR. 16, 1907.

J. D. BOWNE.  
METALLIC TIE.  
APPLICATION FILED FEB. 27, 1907.

FIG. 1

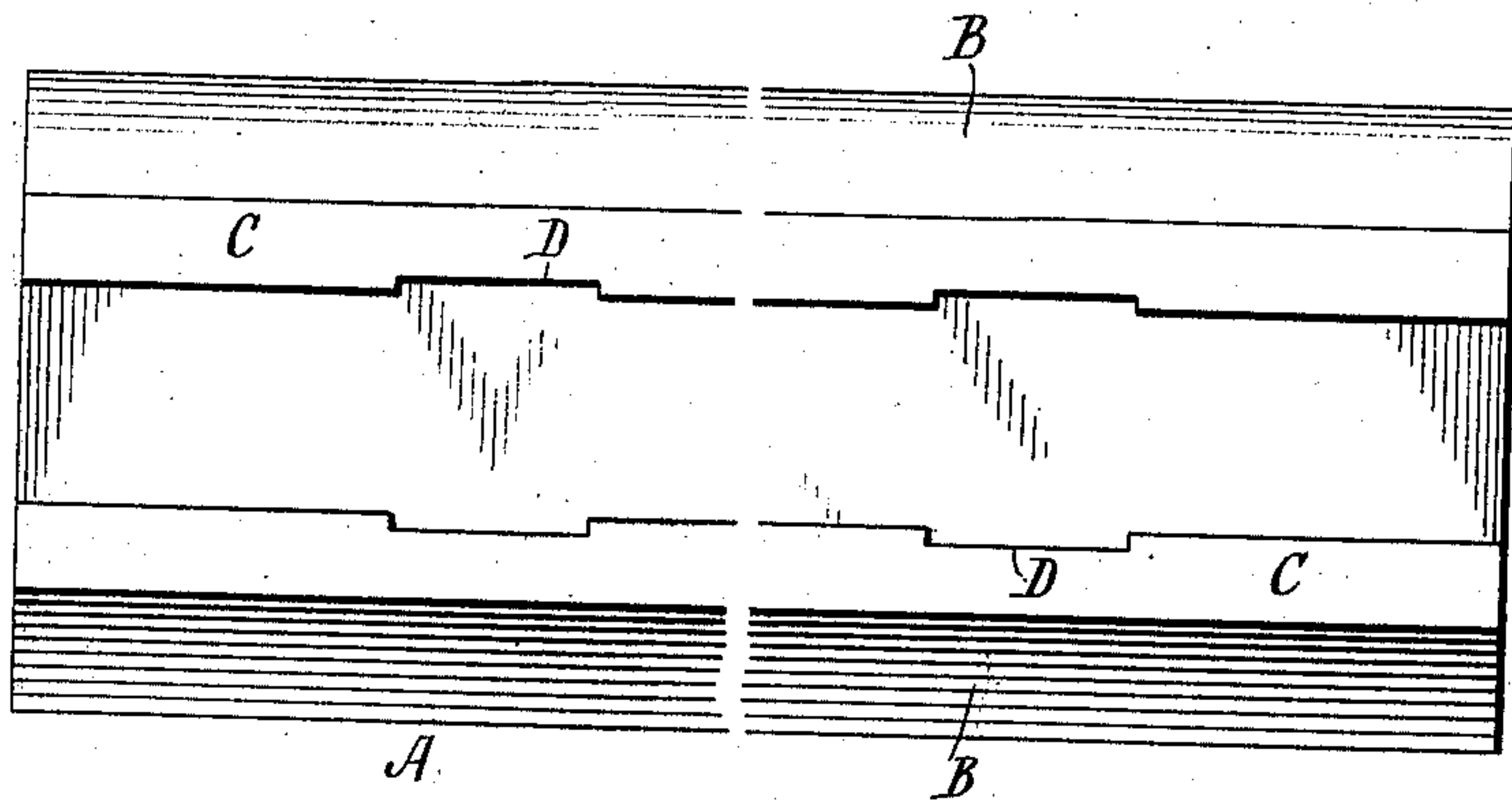


FIG. 2

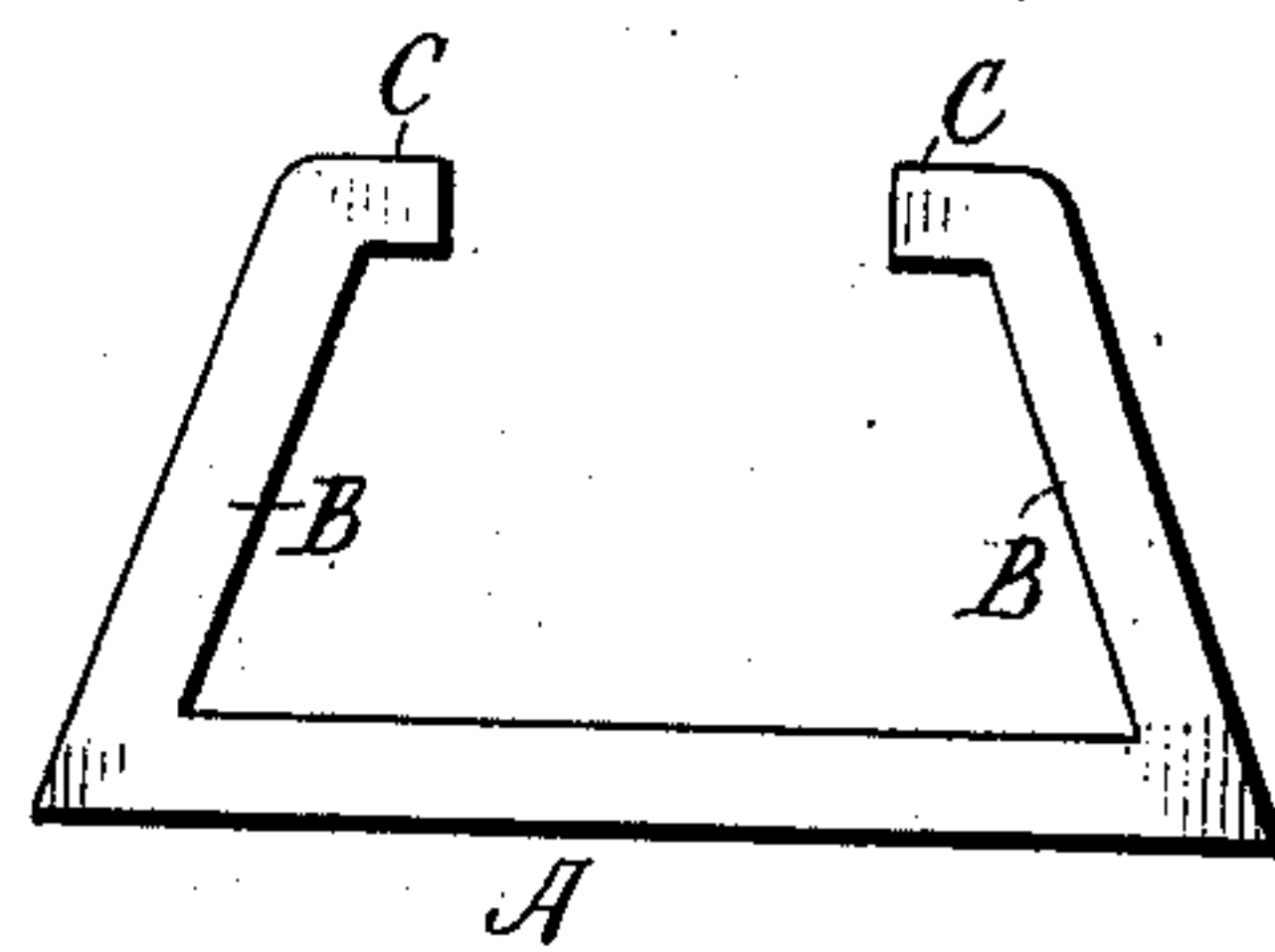


FIG. 3

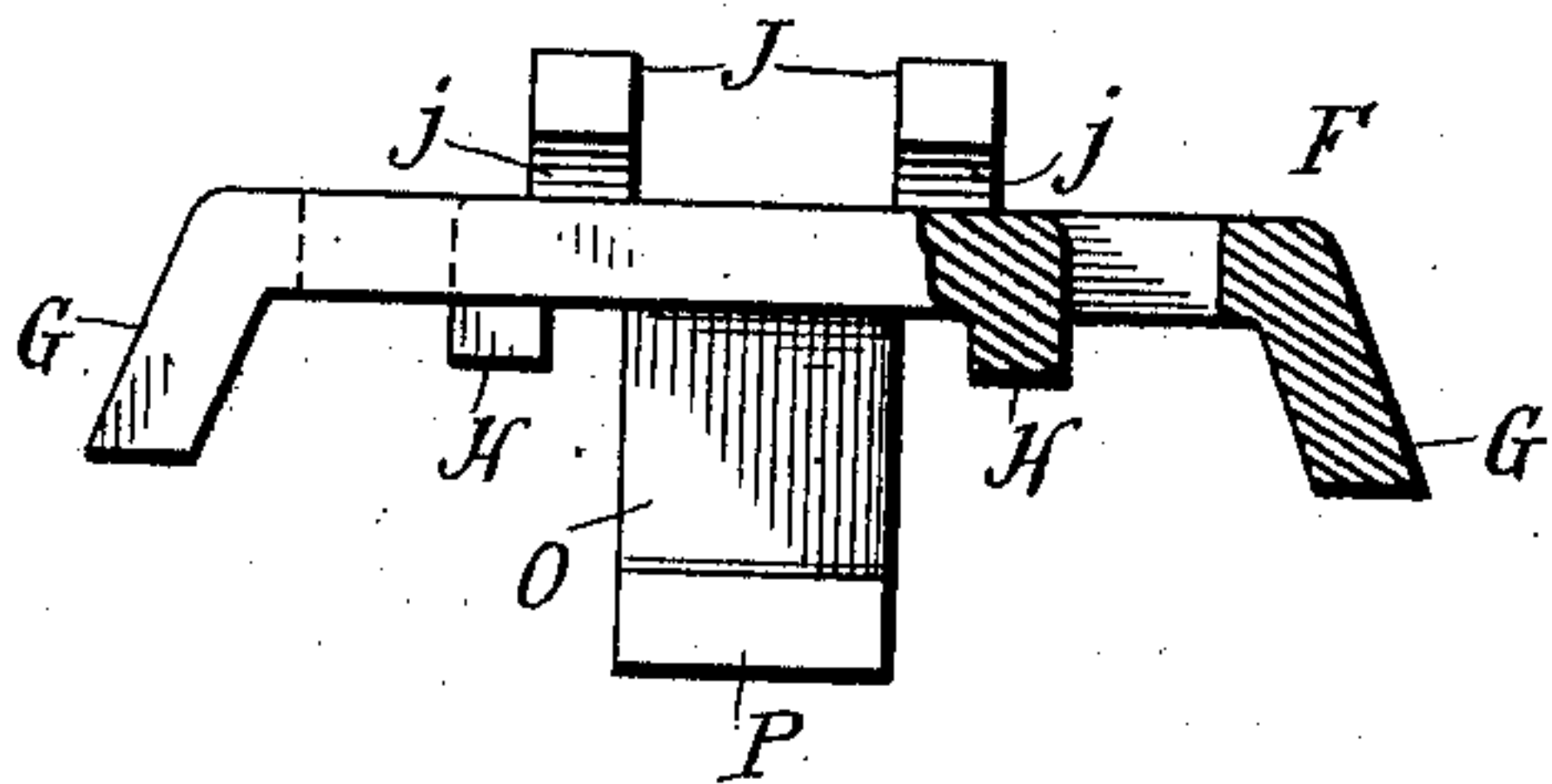


FIG. 4

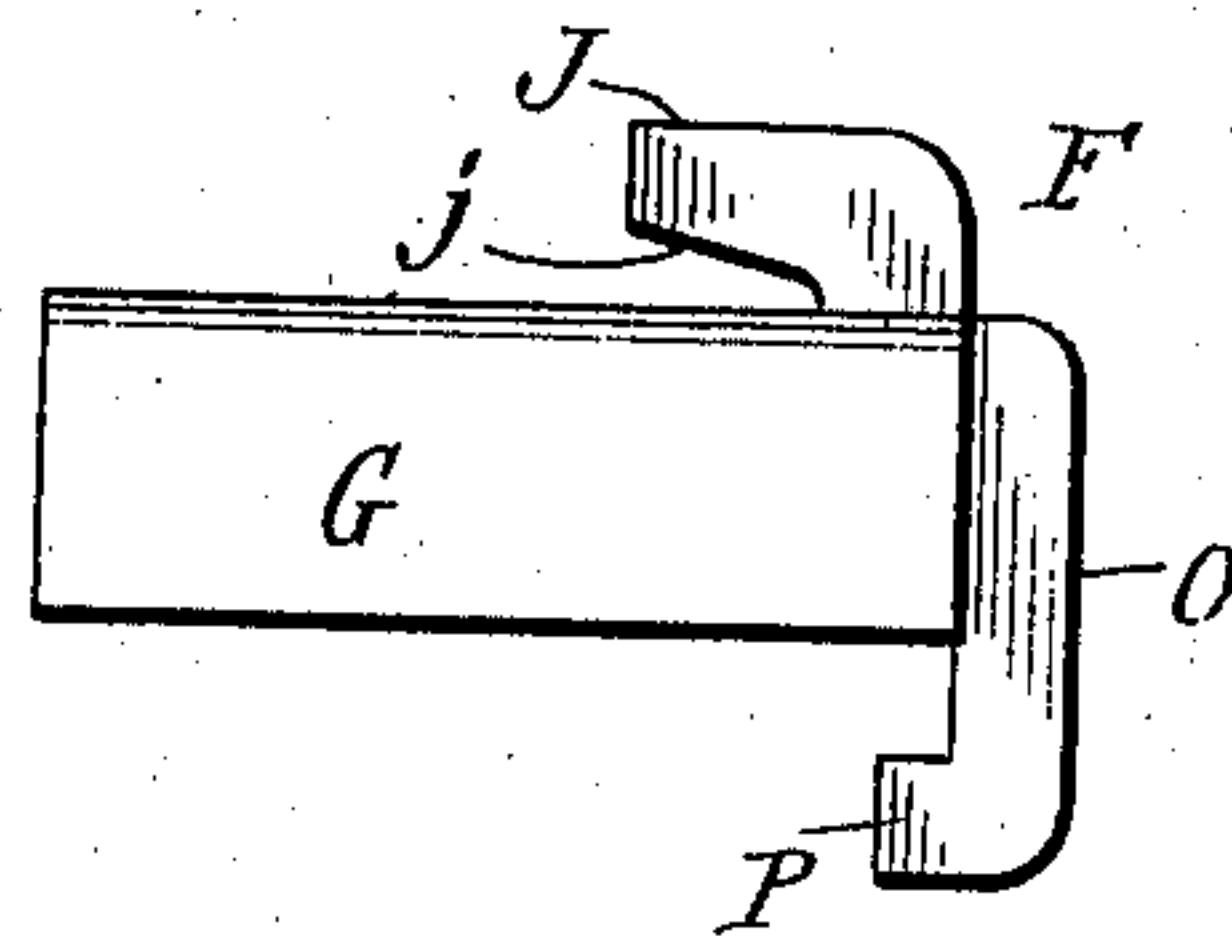


FIG. 5

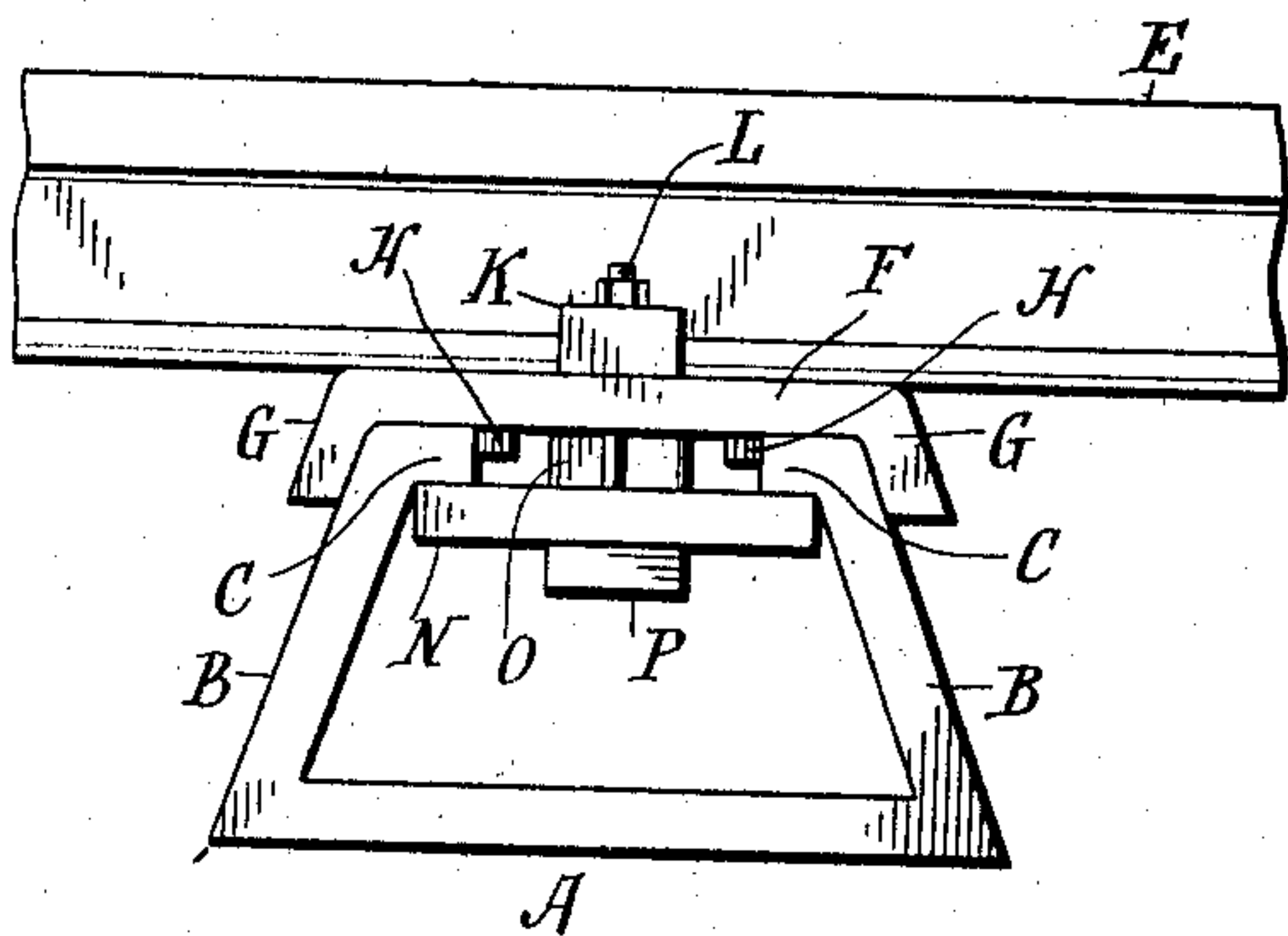
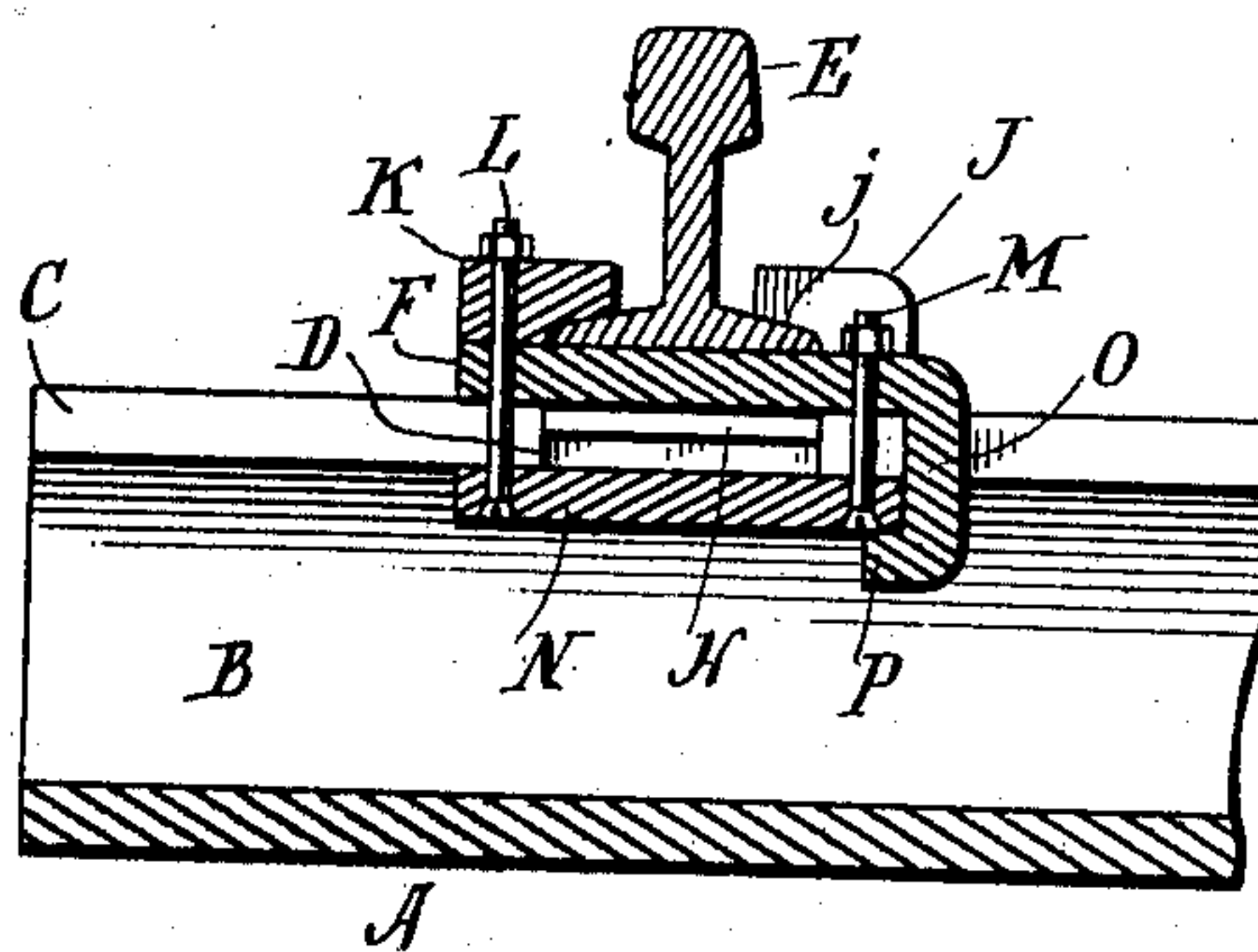


FIG. 6



Inventor

Witnesses

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# UNITED STATES PATENT OFFICE.

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## METALLIC TIE.

No. 850,876.

Specification of Letters Patent.

Patented April 16, 1907.

Application filed February 27, 1907. Serial No. 359,620.

*To all whom it may concern:*

Be it known that I, JOHN D. BOWNE, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Metallic Ties, of which the following is a specification.

My invention relates to metallic ties for railways, and belongs more particularly to that type having the body portion of hollow trough-like form adapted to be filled with the ballast of the roadway and provided with detachable devices for securing the rails in position.

The object of my invention is the production of a tie having particular form and structure, whereby the full necessary elasticity is afforded and which shall be nevertheless of ample strength for the service expected of it and at the same time capable of being readily and cheaply manufactured.

It is also an object of my invention to provide rail-fastening devices having parts of special construction and operation, by which it is believed the rails may be expeditiously and certainly secured to the ties against spreading or other displacement of any nature, no spikes being employed, and the removal of the rails rendered equally convenient and easy with the steps necessary in attaching them.

To accomplish the stated objects, the parts constituting my invention are fashioned and associated as illustrated in the accompanying drawings, of which—

Figure 1 represents a top plan view of the tie by itself. Fig. 2 is an end view of the tie alone. Fig. 3 is a side view of the overplate or bridge-piece. Fig. 4 is an end view of the bridge-piece. Fig. 5 is an end view of the tie with the bridge-piece and rail in position and showing also the clamping-plate inside the hollow tie. Fig. 6 represents all the parts assembled and shows a section lengthwise of the tie and the cross-section of the rail, the bridge-piece, and the clamping-plate within the tie.

Like letters are used to refer to the same parts throughout the specification and drawings.

The letter A designates the tie. It is a hollow trough-like body having the upwardly-convergent sides B, terminating in the narrow flanges C, extending toward each other in the longitudinal opening between the sides

B at the top. Near each end the horizontal flanges C are provided with recesses D, to be again mentioned.

To support the rail E upon the tie, I construct the bridge-piece F. It possesses the downwardly-extending ends G, corresponding with the inclination of the exterior of the sides B of the tie and fitting somewhat closely to the sides in order that there shall not occur excessive play in the direction of the length of the rail. The bridge-piece F has also the extra flanges H, formed by stamping through the bridge-piece from above and bending the portions thus pressed out downwardly and perpendicular to the lower surface of the bridge-piece, as best shown in Fig. 3. The extra flanges H are formed near the ends G of the bridge-piece, and they engage the recesses D in the horizontal flanges C. It is thought to be now clear that the ends G of the bridge-piece lie upon the outside, and the extra flanges H are upon the inside of the tie and that the extra flanges also prevent the displacement of the bridge-piece lengthwise of the rail. The engagement of the extra flanges H with the recesses D of the top flanges C of the tie further prevents the displacement of the bridge-piece F either toward the middle of the tie or toward its end, and there could be no spreading of the rails by reason of the accidental movement of the bridge-piece outwardly or in any direction.

The rail is directly secured upon the bridge-piece by the engagement of its flange on one side with the recesses of the lugs J. The recesses are marked j, and one of them is shown in Fig. 4. In addition to the recessed lugs J the rail is secured on the other side of the flange by the clamping-block K, as shown in Figs. 5 and 6, and in the last figure the two clamping-bolts L and M are shown. Those bolts serve both to secure the rail as described and to fix the bridge-piece in position. The clamping-plate N is arranged, as shown, within the tie and beneath the horizontal flanges C, and the bolts pass upwardly through the plate N and through the bridge-piece. The bolt L also passes through the rail-clamping block K. When the nuts of the bolts are suitably set up, both the rail and the bridge-piece are secured against displacement in either direction, while the hollow form of the tie affords all necessary elasticity for the track.



In addition to the parts described as adjuncts of the bridge-piece there is provided, as illustrated in Figs. 3 and 6, a depending plate O, forming a portion of and extending downwardly from the side of the bridge-piece which lies toward the middle of the tie. The plate O is formed with a ledge or shoulder P near its lower end, and the office of the plate O and its ledge is performed during the assembling of the parts. When the bridge-piece has been placed upon the tie, with its extra flanges H engaging the recesses D, as explained, the clamping-plate N is introduced within the tie and below the flanges C and its end engages and rests upon the ledge P of the depending plate O, on which the clamping-plate is held in the proper position for the convenient insertion of the bolts. Were the end of the clamping-plate not so limited in its movement and held in position, time would be always lost in placing it properly for the insertion of the bolts. By the use of the plate O and its ledge the clamping-plate is positioned without delay and certainly every time. Now if the bolts are passed upwardly through the clamping-plate, bridge-piece, and rail-clamping block, and the nuts of the bolts screwed up tight, the flange of the rail cannot be inserted in the recesses of the retaining-lugs J. By unscrewing and raising the nut of bolt L the rail-clamping block K may be raised and the flange of the rail easily placed in position, moving it sidewise or lengthwise into the recesses of the lugs J.

Having now described my invention and explained the mode of its operation, what I claim is—

1. In a metallic tie, the combination with the tie having a trough-like form and upwardly-convergent sides, the said tie having narrow horizontal flanges at the tops of the said sides, the said flanges being provided with recesses near the ends of the tie, of a bridge-piece having downwardly-inclined ends fitting exteriorly upon the tie, the said bridge-piece having the extra flanges arranged to engage the said recesses of the flanges of the tie, the said bridge-piece having the recessed retaining-lugs adapted to engage the flange of a rail, a clamping-plate arranged inside the tie below its said horizontal flanges, and a rail-clamping block arranged upon the bridge-piece, and bolts passing through the said clamping-plate, block and bridge-piece whereby the rail and bridge-piece are secured to the tie, substantially as described.

2. In a metallic tie, the combination with the tie having a trough-like form and upwardly-convergent sides, the said tie having narrow horizontal flanges at the tops of the said sides, the said flanges being provided with recesses near the ends of the tie, of a bridge-piece having downwardly-inclined

ends fitting exteriorly upon the tie, the said bridge-piece having the extra flanges arranged to engage the said recesses of the flanges of the tie, the said bridge-piece having the recessed retaining-lugs adapted to engage the flange of a rail, a clamping-plate arranged inside the tie below its said horizontal flanges, the said bridge-piece having a downwardly-projecting plate at one side provided with a ledge adapted to engage the said clamping-plate, and a rail-clamping block arranged upon the bridge-piece, and bolts passing through the said clamping-plate, block and bridge-piece whereby the rail and bridge-piece are secured to the tie, substantially as described.

3. In a metallic tie, the combination with the tie having a trough-like form and upwardly-projecting sides, the said tie having narrow horizontal flanges at the tops of the said sides, the said flanges being provided with recesses near the ends of the tie, of a bridge-piece having downwardly-inclined ends fitting exteriorly upon the tie, the said bridge-piece having the extra flanges arranged to engage the said recesses of the flanges of the tie, the said bridge-piece having the recessed retaining-lugs adapted to engage the flange of a rail, a clamping-plate arranged inside the tie below its said horizontal flanges, and a rail-clamping block arranged upon the bridge-piece, and bolts passing through the said clamping-plate, block and bridge-piece whereby the rail and bridge-piece are secured to the tie, substantially as described.

4. In a metallic tie, the combination with the tie having a trough-like form and upwardly-projecting sides, the said tie having narrow horizontal flanges at the tops of the said sides, the said flanges being provided with recesses near the ends of the tie, of a bridge-piece having downwardly-inclined ends fitting exteriorly upon the tie, the said bridge-piece having the extra flanges arranged to engage the said recesses of the flanges of the tie, the said bridge-piece having the recessed retaining-lugs adapted to engage the flange of a rail, a clamping-plate arranged inside the tie below its said horizontal flanges, the said bridge-piece having a downwardly-projecting plate at one side provided with a ledge adapted to engage the said clamping-plate, and a rail-clamping block arranged upon the bridge-piece, and bolts passing through the said clamping-plate, block and bridge-piece whereby the rail and bridge-piece are secured to the tie, substantially as described.

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

JOHN D. BOWNE.

Witnesses:

R. B. HOPKINS,

GEORGE E. MORROW.