

No. 747,668.

PATENTED DEC. 22, 1903.

I. M. WARNER.

RAILWAY TIE.

APPLICATION FILED OCT. 7, 1903.

NO MODEL.

Fig. 1.

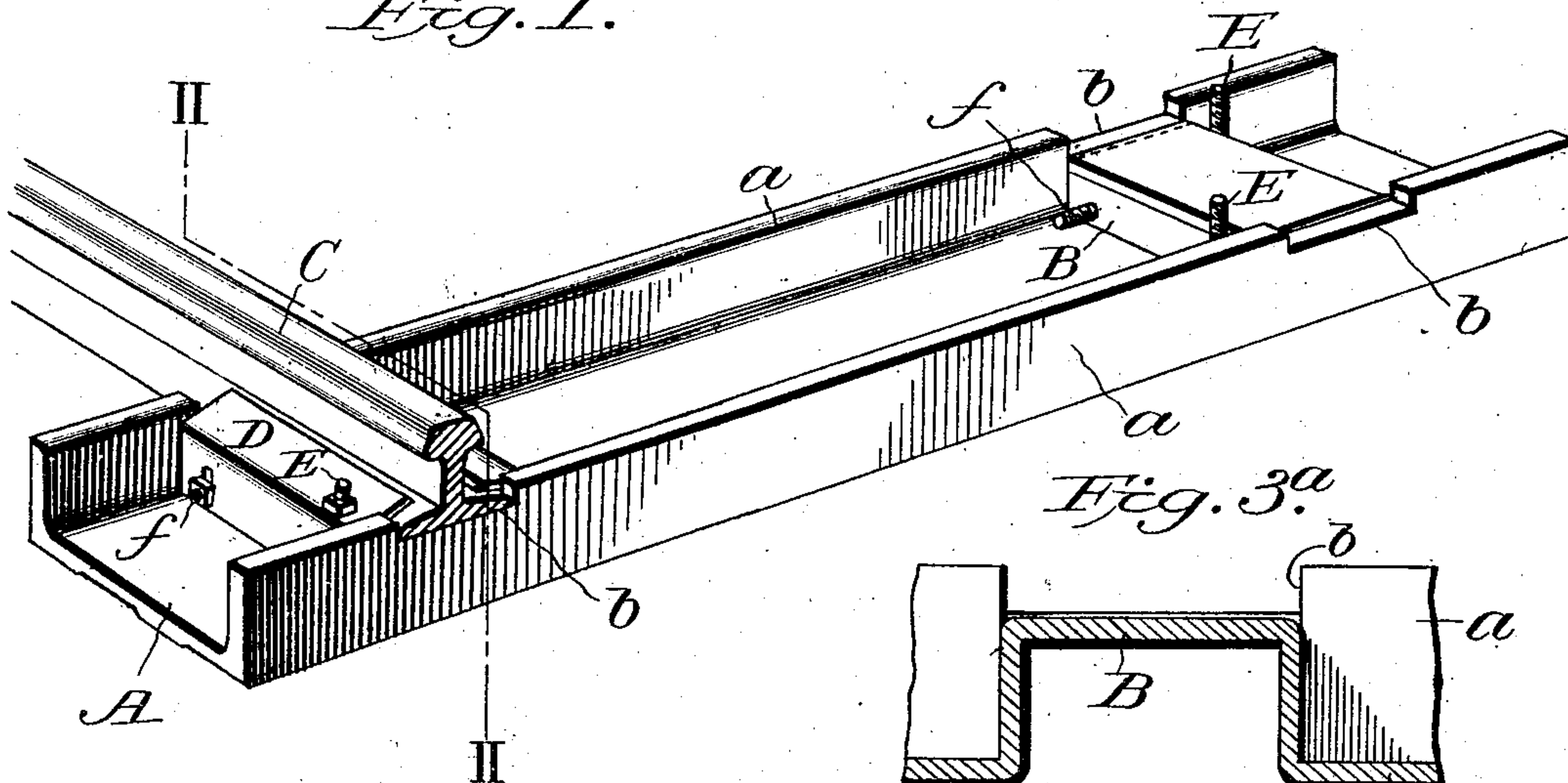


Fig. 3a

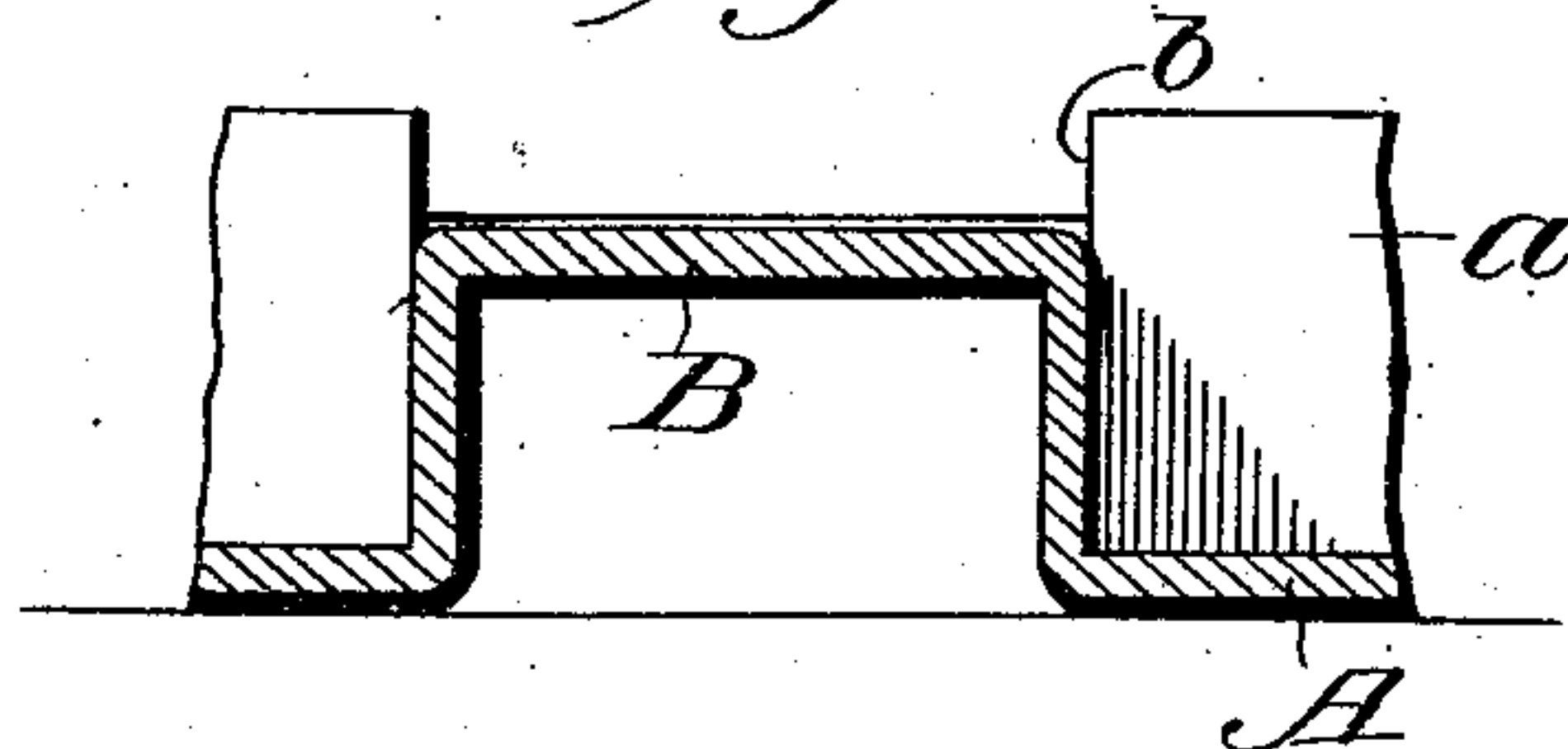


Fig. 2.

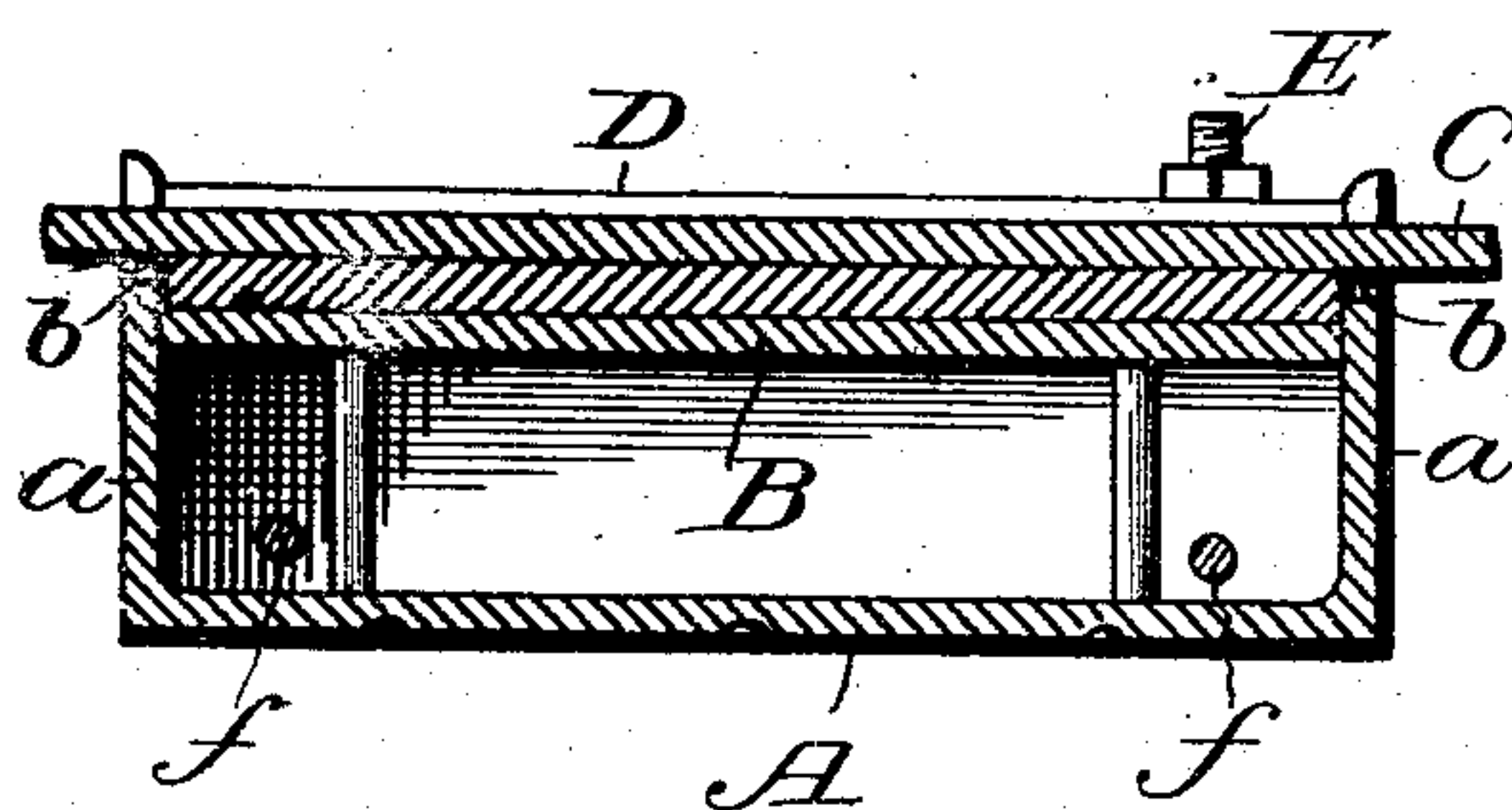


Fig. 3.

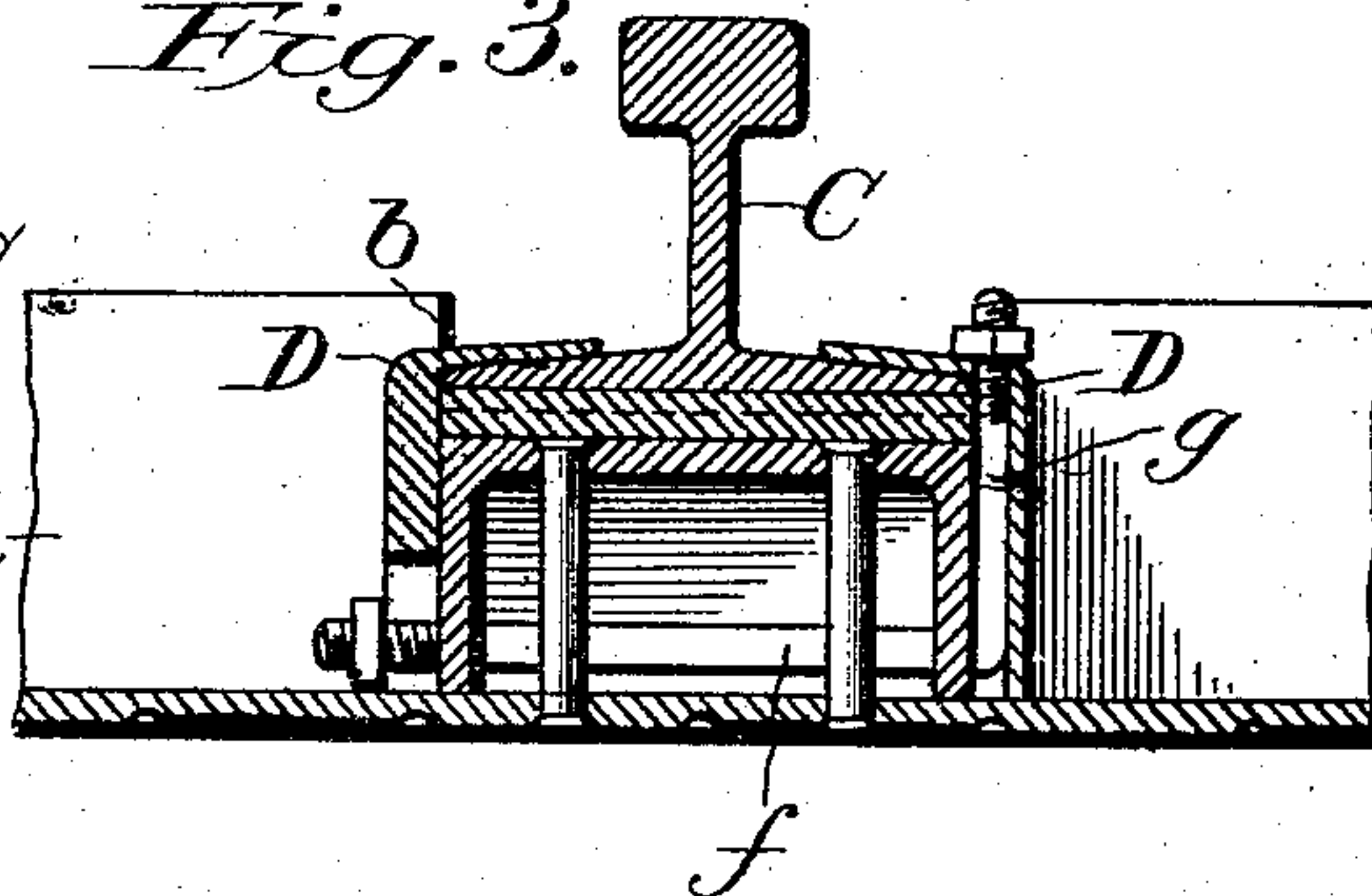
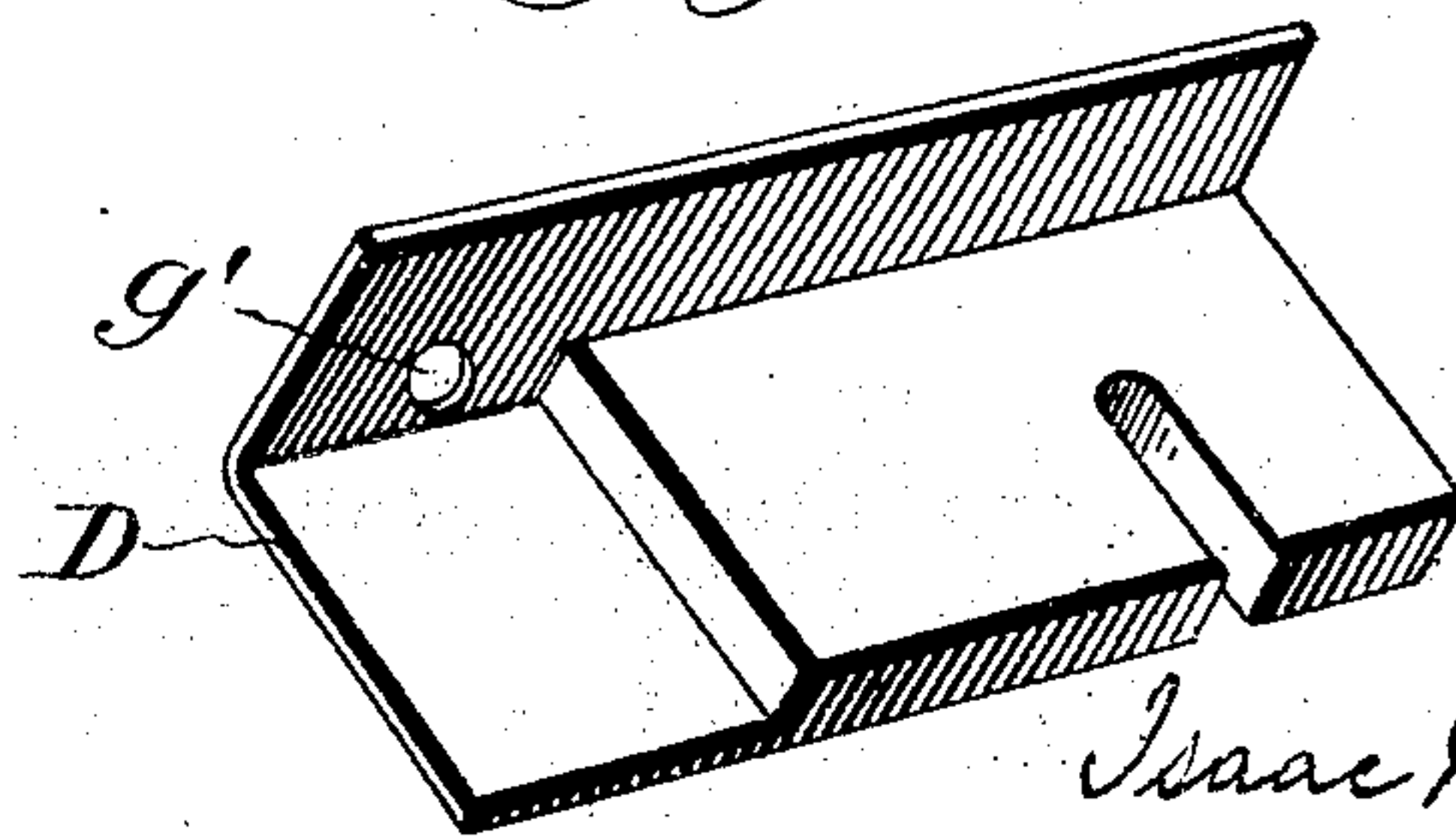


Fig. 4.



WITNESSES:

C. M. Walker.
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ISAAC M. WARNER, OF UNION CITY, MICHIGAN, ASSIGNOR TO HIMSELF,
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WILLIAM ODEN HUGHART, JR., OF GRAND RAPIDS, MICHIGAN.

RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 747,668, dated December 22, 1903.

Application filed October 7, 1903. Serial No. 176,168. (No model.)

To all whom it may concern:

Be it known that I, ISAAC M. WARNER, a citizen of the United States, residing at Union City, in the county of Branch and State of Michigan, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

This invention relates to railroad-ties, and is embodied in the construction hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of the channel-bar body of the tie and rail-seats. Fig. 2 is a cross-section on the line II II of Fig. 1. Figs. 3 and 3^a are longitudinal sections through the rail-seats in the tie, showing the rail and clamping-pieces in cross-section and two forms of rail-seat. Fig. 4 is a perspective view of one of the clamping-pieces.

The main body of the tie is formed of a channel-bar A, preferably rolled in the usual stock form, or it may, if preferred, have the rail-seats rolled integral therewith. The base of the bar, as shown in the section, may be checked or otherwise roughened or may be plane, as preferred. It is also preferably suitably perforated to permit the escape of water. The flanges *a* of this channel are then cut away at points *b* for the reception of the T-rail. B represents the rail-seats, secured in the channel or made integral therewith, as before stated, and located between the cut-away portions *b* of the flanges. These blocks or seats B are slightly less in height than the portions of the upturned flanges left beneath the rests *b* for the reception of the rail. On the top of the blocks or seats B are loosely placed shims, preferably of hard wood, which are on account of the greater height of the flanges prevented from escaping transversely of the tie and by the clamping means are held against movement in a direction at right angles thereto.

The rails C are placed within the grooves *b* of the tie and are secured to the seats B by clamping devices constructed, preferably, as follows: At D D are angle-plates, each having one flange adapted to rest against the vertical sides of the seats B and the other side adapted to pass over the base of the rail, se-

curing the latter in place. These angle-plates D have flanges of unequal thickness, as shown, the thickening of the vertical side thereof not extending its entire length, but being equal to the diameter of the bolts E, used for securing the angle-plates and rails in position, so as to leave a recess for the passage of the vertical portion of the bolt. These bolts E are threaded at opposite ends and bent at right angles near their centers, so as to have when placed in position in the tie a horizontal portion *f* and vertical portion *g*. The horizontal portion *f* passes through horizontal aperture in the rail-seat B and thence through a notch in the vertical flange of the angle-plate D on the opposite side of the rail-seat. The vertical portion *g* of the bolt passes through aperture *g'* in the horizontal rail-clamping portion of the angle-plate located on its own side on the rail-seat. A pair of these plates D and bolts E are reversely arranged on opposite sides of the rail-seats, so that each clamping-plate is secured by one vertical and one horizontal portion of the bolts.

In case of displacement of the ties by frost or the like it will be seen that the clamping-plates and bolts may be readily removed and a shim of greater or less thickness, as the case may require, placed beneath the rail.

The whole structure will be seen to embody an exceedingly simple, secure, and durable support and fastening for the rail.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A railway-tie comprising a channel-bar having a portion of each of its flanges cut away to receive the rails, rail-seats between the cut-away portions of the flanges and of less height than the flange portion beneath the notches, and means for securing the rail to said rail-seats.

2. A railway-tie comprising a channel-bar having its side flanges cut away at suitable points to receive the rail-bases, rail-seats of less height than the flange width beneath the cut-away portion, and angle-plates and bolts adapted to secure said rail-bases to said seats.

3. In a railway-tie, in combination, a channel-bar having portions of its flanges cut away

to receive the rail-bases, rail-seats between the flanges opposite said cut-away portions and of less height than the flange portion beneath the notches, angle-plates for embracing the rail-bases, and right-angled bolts passing through said rail-seats and angle-plates for securing the rails to the tie.

4. A railway-tie comprising a channel-bar having its side flanges partially cut away to receive the rail-bases, rail-seats in said channel-bar between the cut-away portions and of less height than the flange portion beneath the notches, angle-plates adapted to bear on each side of said rail-seats and embrace the rail-bases, and reversely-arranged, right-angled clamping-bolts passing horizontally through said rail-seats for securing said angle-plates to the rail bases and seats.

5. A railway-tie comprising a channel-bar having a roughened base and notched side flanges adapted to receive the rail-base, rail-seats between the rail-receiving notches and of less height than flange portion beneath the notches, shims on said rail-seats and retained by said flanges, angle-plates having one limb thickened for a portion of its length, said

plates adapted to embrace the rail-base, and reversely-arranged, right-angled clamping-bolts passing through said seat and said angle-plates to secure the rail-base to said seat.

6. In a channel-bar railway-tie having a roughened and perforated base, and side flanges notched to receive the rail-bases, rail-seats between the flange-notches and of less height than the bottom of said notches, shims adapted to said rail-seats and retained thereon by the uncut portions of the tie-flanges, angle-plates having one limb thicker than the other for more than half their length and suitably recessed to receive the fastenings, and reversely-arranged, right-angled clamping-bolts for securing the parts, whereby each angle-plate is held by one vertical and one horizontal fastening, substantially as described.

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

ISAAC M. WARNER.

Witnesses:

GEO. STYLES,

CLARA H. PAGE.