

No. 854,787.

PATENTED MAY 28, 1907.

J. A. WILLIS.
RAILWAY TIE.
APPLICATION FILED AUG. 23, 1906.

2 SHEETS—SHEET 1.

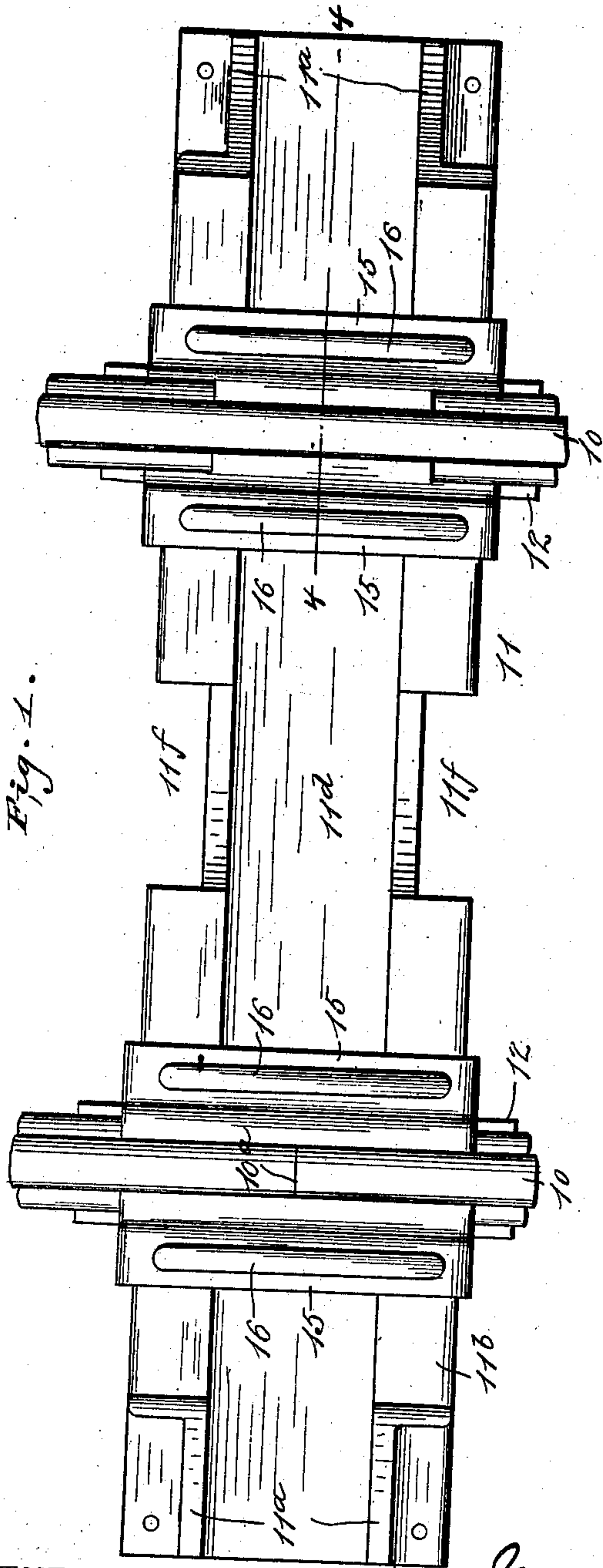


Fig. 1.

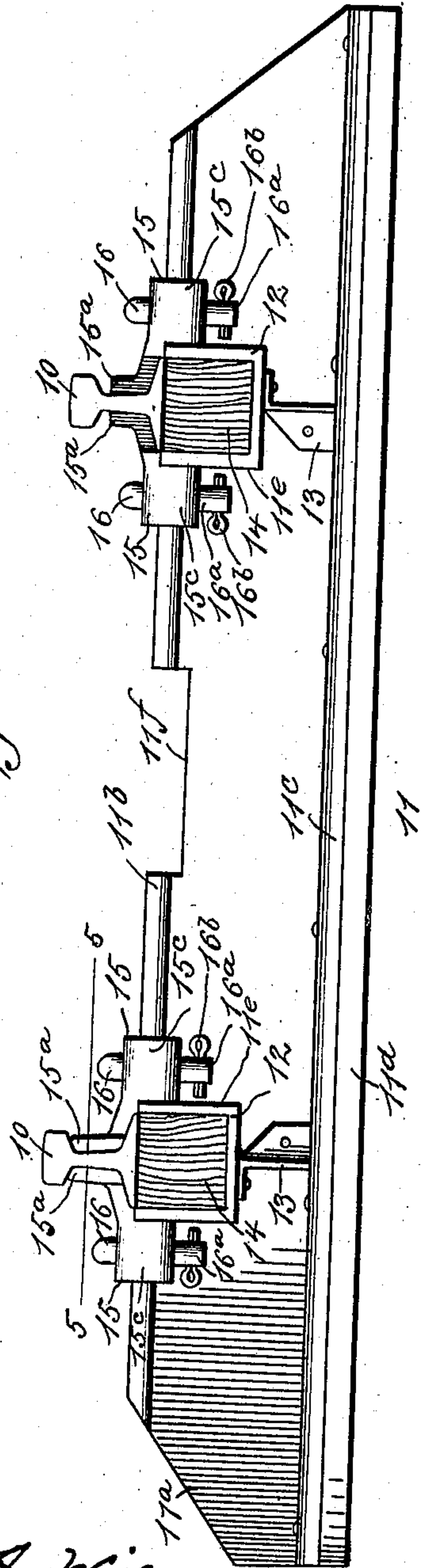


Fig. 2.

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2 SHEETS—SHEET 2.

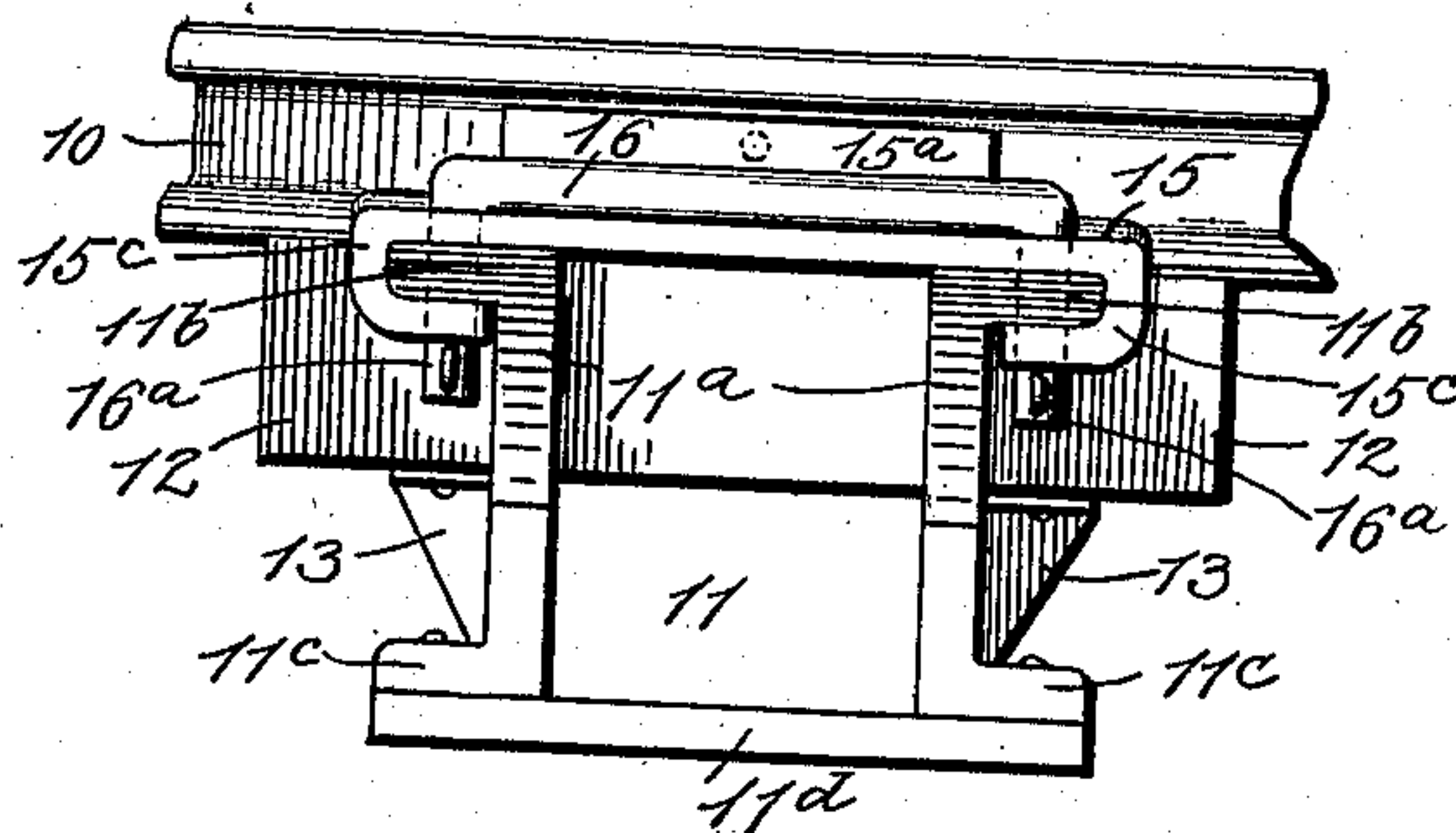


Fig. 3.

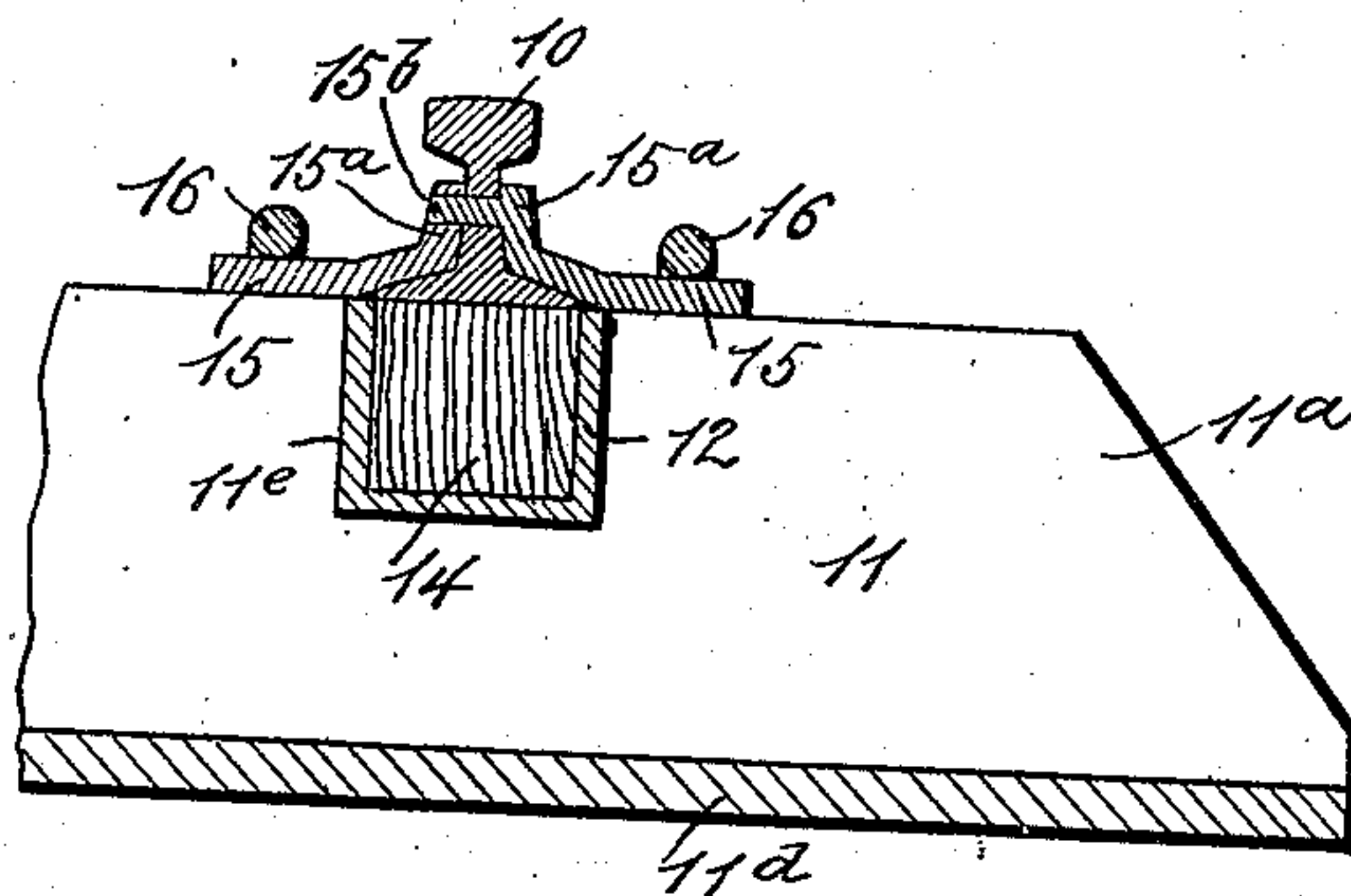


Fig. 4.

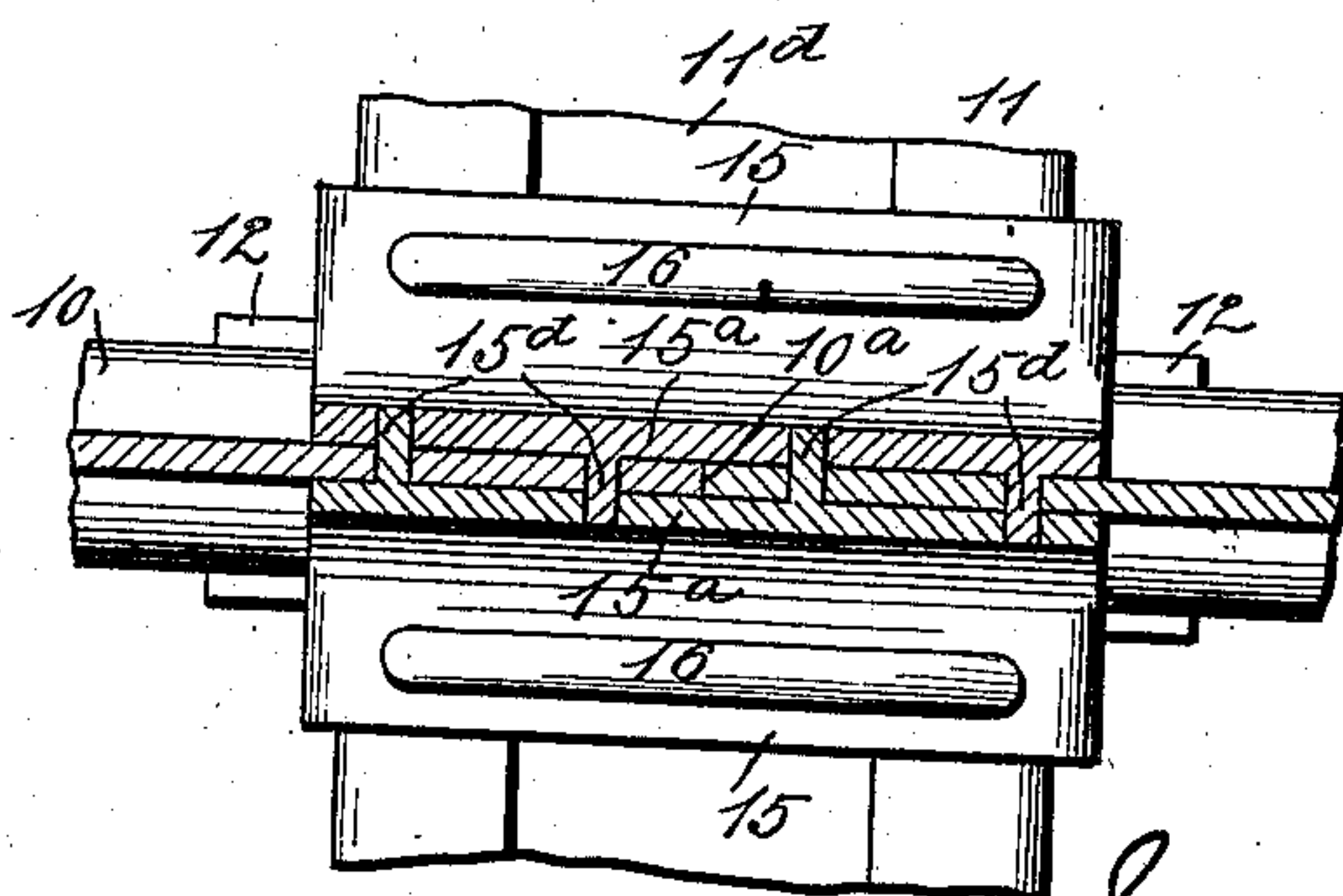


Fig. 5.

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JAMES A. WILLIS, OF LIBERTYVILLE, ILLINOIS, ASSIGNOR OF SEVENTY-FIVE ONE-HUNDREDTHS TO FRANK E. WIRE, OF LIBERTYVILLE, ILLINOIS.

RAILWAY-TIE.

No. 854,787

Specification of Letters Patent.

Patented May 28, 1907.

Application filed August 23, 1906. Serial No. 331,743.

To all whom it may concern:

Be it known that I, JAMES A. WILLIS, a citizen of the United States, residing at Libertyville, in the county of Lake and State of Illinois, have invented new and useful Improvements in Railway-Ties, of which the following is a specification.

This invention is a metallic railway tie, and has for its object to provide a tie of great durability, and one which is comparatively light, and not liable to bend or warp.

A further object is to provide a cushioned support for the rails, together with novel means for securing the latter to the tie.

In the accompanying drawing, Figure 1 is a plan view of the tie with the rails secured thereto. Fig. 2 is a side elevation. Fig. 3 is an end view. Fig. 4 is a cross section on the line 4—4 of Fig. 1. Fig. 5 is a horizontal section on the line 5—5 of Fig. 2.

Referring specifically to the drawing, 10 are the track rails. The tie 11 is made of steel by employing two side channel-bars 11^a having outwardly extending horizontal top and bottom flanges 11^b and 11^c, respectively. To the bottom flange is riveted or otherwise secured a base-plate 11^d. The resulting tie is somewhat U-shaped in cross section, the top being open.

At the top of the channel-bars are notches or recesses 11^e which form seats for a grooved beam 12 of steel. These beams are U-shaped, and extend transversely across the tie and project laterally from each side thereof. The projecting portions of the beams are braced by brackets 13 secured to the channel-bars. Two of these beams 12 are employed, or one for each rail. In the groove of each beam is placed a wooden cushion 14 which is preferably cut across the grain and the edges of the grain upwardly presented. These cushions support the rails. Materials other than wood may be used for the cushions such as vulcanized fiber, pressed wood pulp, etc.

The rails are secured to the tie by plates 15 which extend across the tie adjacent the rail on opposite sides thereof. The plates overlap the base flanges of the rail, and have up-

standing flanges 15^a which clasp the web of the rail. One of the flanges 15^a has a projecting pin 15^b on its inner face which extends through registering openings in the web of the rail and the other flange 15^a. The ends of the plates 15 are formed with hooks 15^c which engage the flanges 11^b. Each plate is secured to the tie by an inverted U-shaped fastener 16 which extends across the plate. The downturned ends 16^a of the fastener extend through registering openings in the plate 15, the flanges 11^b and the hooks 15^c. The projecting portions of the ends 16^a are provided with a transverse key or other suitable locking device 16^b.

Where a joint occurs between the rails, as at 10^a, the parts 15^a are made higher and longer, and each has a pair of projecting pins 15^d which extend through the rail web and the part 15^a in the same manner as the pins 15^b. The pins are arranged alternately and on opposite sides of the joint.

At or about the middle of the tie, the flanges 11^b are cut away as at 11^f to facilitate the application or removal of the plates 15 on the inner sides of the rails. The rail can be readily removed by sliding these plates inwardly on the flanges 11^b until the cutaway portion 11^b is reached through which they can be removed bodily from the tie.

By the construction herein described a tie is had which embodies great strength and durability, and no fish-plates, bolts, nuts and spikes are necessary. The cushioned support for the rails enables less than half the number of ties to be used, and also adds to the durability of the roadbed and the rails.

While this tie is intended principally for surface roads, it can also be employed on elevated roads with great advantage, as the cushioned support for the rails aids in deadening the noise from a passing train.

I claim:—

A railway tie comprising two parallel channel-bars having outwardly extending horizontal top and bottom flanges and recessed on top, and a base-plate secured to the bottom flanges, channel-beams extending transversely across the tie and seated in the afore-

said recesses, cushion blocks in the beams for supporting the rails, rail fastening means having hook-shaped ends engaging over the top flanges of the aforesaid channel-bars, and fastening means extending through said hook-shaped ends and top flanges.

In testimony whereof I have signed my

name to this specification in the presence of two subscribing witnesses.

JAMES A. WILLIS.

Witnesses:

H. G. BATCHELOR
FRANK E. WIRE.