

W. H. FAILOR.
RAIL FASTENER.
APPLICATION FILED MAY 9, 1910.

985,254.

Patented Feb. 28, 1911.

2 SHEETS—SHEET 1.

Fig. 1.

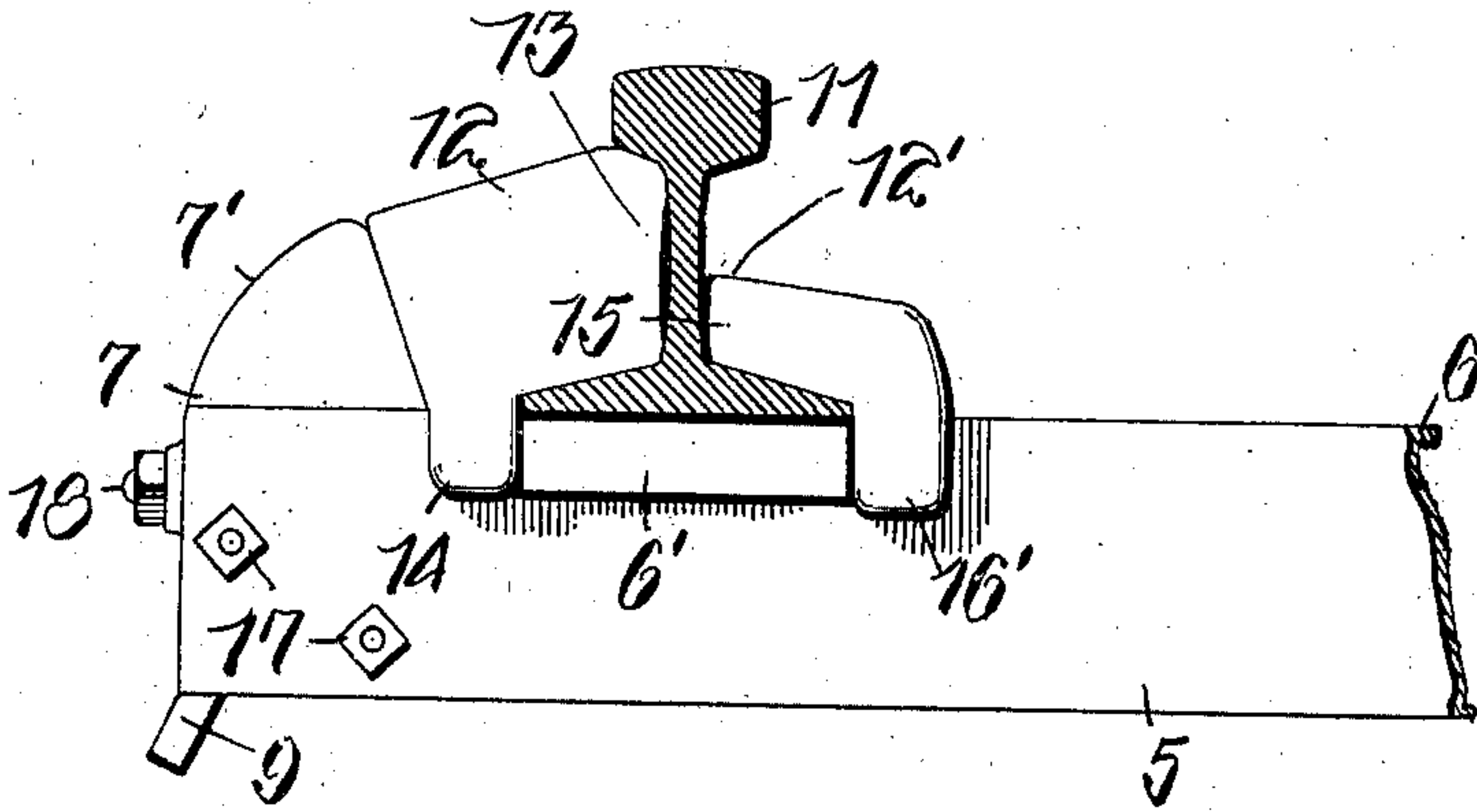


Fig. 2.

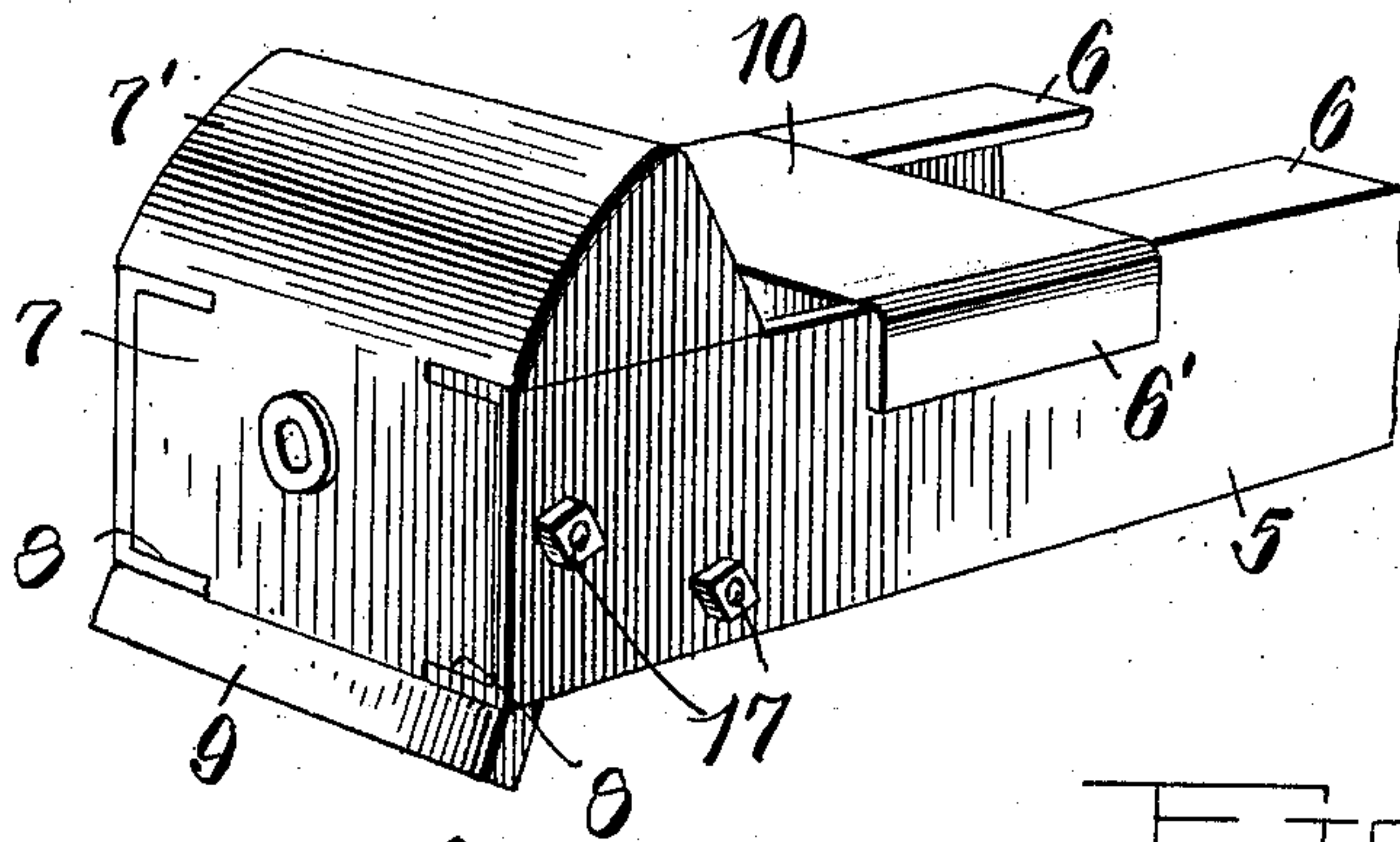
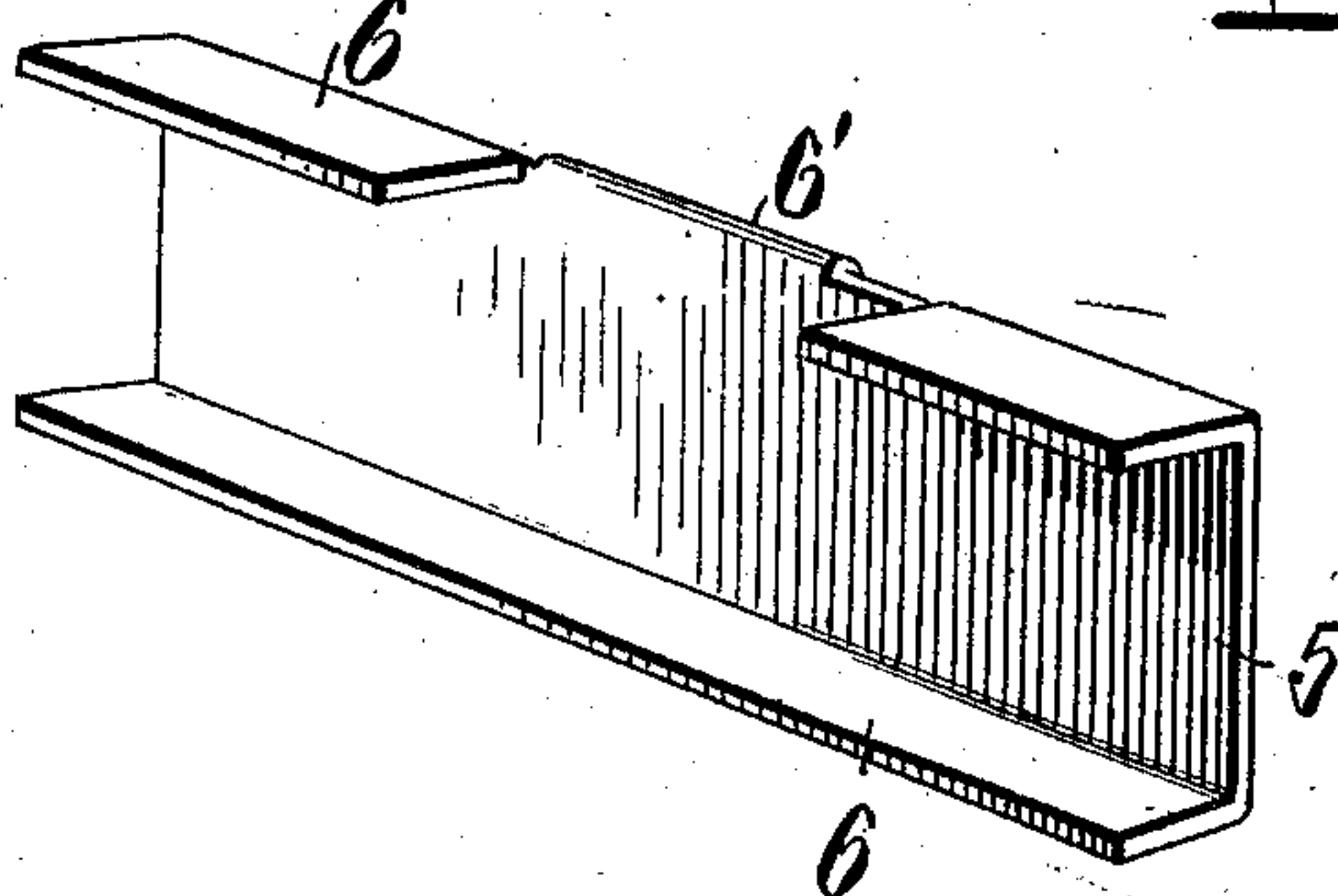


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 2.

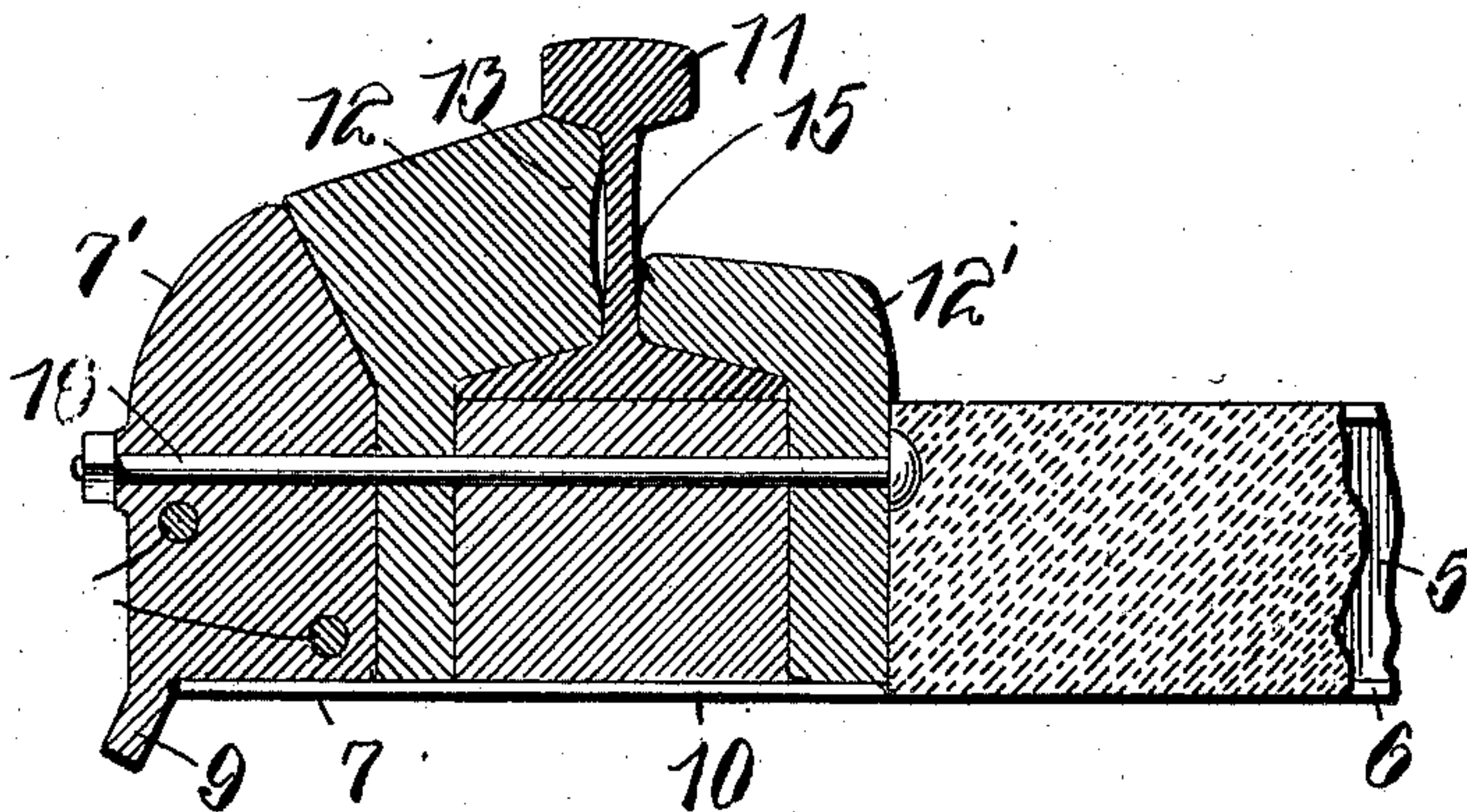
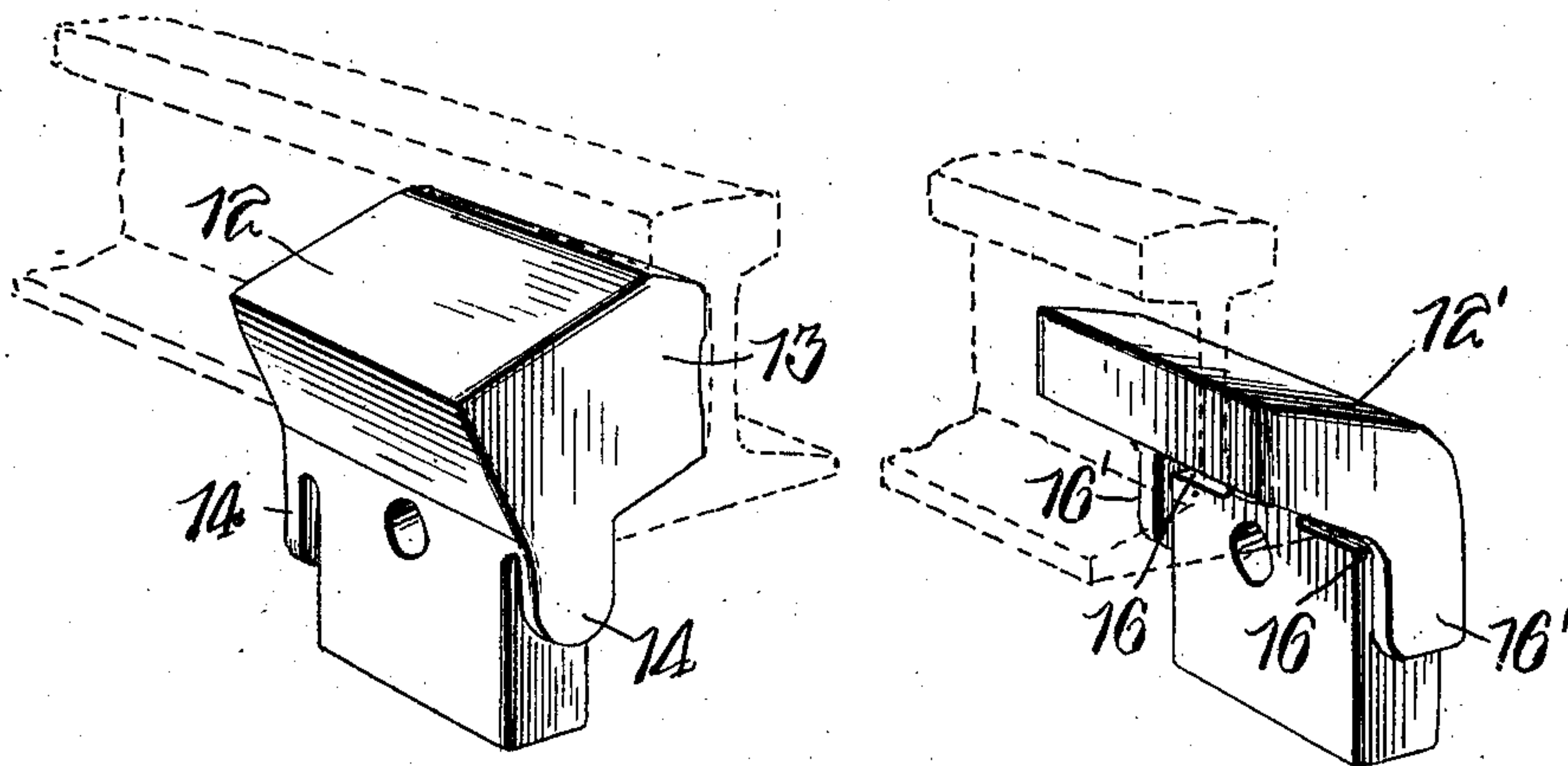


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

WILLIAM H. FAILOR, OF CANTON, OHIO, ASSIGNOR OF ONE-HALF TO WILLIAM H. FINKENBINDER, OF CARLISLE, PENNSYLVANIA.

RAIL-FASTENER.

985,254.

Specification of Letters Patent.

Patented Feb. 28, 1911.

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To all whom it may concern:

Be it known that I, WILLIAM H. FAILOR, a citizen of the United States, residing at Canton, Stark county, Ohio, have invented certain new and useful Improvements in Rail-Fasteners, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to certain new and useful improvements in rail fasteners and has for its object to provide a new and novel construction of metallic rail tie, and fastening means for retaining the rails thereon.

Another object of the invention resides in the provision of a tie which may be constructed at a minimum cost and rail engaging blocks arranged upon said tie and adapted to engage the rail upon the base flange and the web thereof, said blocks, rails and the tie being rigidly connected and fastened together by means of a single clamping bolt.

A further object is to provide a metallic tie comprising parallel side members having inwardly extending flanges formed on their upper and lower longitudinal edges, said members being adapted to receive cement or other ballast between them, and a metallic seat positioned between the sides of the tie to support the rails for engagement by the fastening blocks.

With these and other objects in view, the invention consists in the novel construction, combination and arrangement of parts, hereinafter fully described and claimed, and illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of a rail tie and fastener embodying my improvement; Fig. 2 is a vertical longitudinal section through one end of the tie and the rail; Fig. 3 is a detail perspective view of one end of the rail tie, the rail and clamping blocks being removed; Fig. 4 is a fragmentary detail perspective view of one of the tie plates; Fig. 5 is a detail perspective view of one of the fastening blocks; and, Fig. 6 is a similar view of the other fastening block.

Referring more particularly to the drawings, 5 indicates the tie plates which are of similar construction, each comprising a longitudinally extending body portion and the transversely extending flange 6. The

ends of the tie plates are connected by means of the blocks 7, said blocks being provided in their ends with transverse grooves 8, which are adapted to receive the upper inwardly extending flanges 6, of the tie plates. The lower flanges of the tie plates extend under the bottom of the block and provide a support therefor upon the road bed. The edges of the blocks 7, are formed with beveled surfaces 7', which extend above the tie and terminate in a point at the longitudinal center of the block.

The block 7, is formed at its lower end with a downwardly extending lip 9, which is adapted to prevent the tie moving from its original position. The flanges 6, of the tie plates are cut away a short distance inwardly of the tie blocks 7, and beyond the cutaway portions the transverse flanges are bent downwardly upon the outer faces of the tie plate as shown at 6'. The block extends transversely between the tie plates and is disposed upon the lower flanges thereof. The upper surface of this block is disposed in a line with the upper surfaces of the upper flanges 6, of the tie plate and extends between the opposed outwardly disposed portions 6' in said flanges. This block provides a suitable seat or chair for the rail 11.

Between the outside face of the rail and the inner beveled surface of the block 7, one of the fastening members 12 is positioned. This member has close engagement upon the beveled surface of the block 7, and occupies the entire space between the opposed tie plates 5. This block is formed with a longitudinal inwardly extending portion 13, which is disposed upon the base flange and against the outer face of the rail 11 and is likewise formed with downwardly extending arms 14, which receive the tie plates 5, and are disposed upon the outer faces of said plates. The other of the fastening blocks 12' has sliding movement upon the rail plates and is likewise formed with a longitudinal extension 15, for engagement with the base flange and web of the rail. This block is provided at its opposite ends with the slots 16 which form the arms 16' similar to the arms 14 of the block 12, for engagement upon the outer face of the tie plates.

In assembling the device, the tie plates are

arranged in opposed relation and the blocks 7, positioned between their ends. The blocks and plates may be secured together by means of suitable bolts 17, which are disposed through the tie plates and blocks and have nuts threaded on their ends in the usual manner. The fastening member 12 is now arranged upon the tie plates upon the end block 7 as shown in Fig. 2. The fastening member 12', is then positioned between the plates 5, and upon the flanges thereof and is moved a sufficient distance inwardly from the end of the tie to permit of the insertion of the rail block. The rail is arranged upon the seat block 10 beneath the inwardly extending end 13 of the member 12. The member 12' is then shoved into position for engagement with the inner face of the rail in the manner above set forth. Each of the fastening blocks, the rail supporting block 10, and the tie block 7, is provided with a bolt receiving opening. When thus arranged, the bolt 18, is disposed through the aligned openings, said bolt being provided with a washer and a clamping nut at its outer end whereby said nut may be threaded inwardly and securely clamp the fastening members and the rail in position on the tie. The remaining space between the tie plates may be then filled with concrete or other material to provide a suitable ballast. If desired the bottom flanges of the tie plates may be corrugated to more securely fix the tie in position after the same has been filled with the ballasting material and properly tamped.

From the foregoing, it is believed that the construction and operation of my improved rail tie and fastener will be readily understood, without necessitating a more extended description. The device is simple in construction, may be inexpensively produced, and is extremely useful and highly efficient in use. The rails will be rigidly held upon the ties and the expansion and contraction of the metal due to the variations in temperature will not affect the same to such extent that the rails will spread upon the ties.

While I have shown in detail and described the preferred embodiment of my invention it will be understood that the same is susceptible to many minor modifications without departing from the essential features or sacrificing any of the advantages thereof.

Having thus described the invention what is claimed is:

1. In a rail fastener, the combination with a tie comprising longitudinally extending tie plates, means for holding said plates together at their ends, fastening members removably arranged upon said tie plates, a rail supporting block disposed between said plates and means for rigidly connecting said

supporting block, fastening members and plate connecting means, substantially as and for the purpose set forth.

2. In a rail fastener, the combination of opposed tie plates having transverse flanges formed upon their upper and lower longitudinal edges, a block transversely positioned between the ends of said plates, bolts connecting said plates and block, a rail supporting block positioned between said plates, the upper flanges of said tie plates being bent upon the outer faces of said plates inwardly of said block, fastening members disposed between said tie plates and arranged upon the same adapted to be positioned upon opposite faces of the rail, and means for rigidly connecting said fastening members, rail supporting block and tie block, substantially as described and for the purpose set forth.

3. In a rail fastener, the combination of opposed tie plates having inwardly extending flanges formed upon their longitudinal edges, a connecting block transversely arranged between the ends of said plates, said block being provided with grooves to receive the upper flanges, means for securing said block in position, a portion of the upper flanges of said plates being cut away inwardly of the block, a rail supporting block disposed between said plates, and engaged upon the lower flanges thereof, the upper flanges being outwardly bent and disposed upon the outer face of said plates opposite of said supporting block, fastening members disposed upon said tie plates and flanges and adapted to engage with the opposite faces of the rail, and a clamping bolt extending through said members, the rail supporting block and the tie block to rigidly clamp said rail to the tie.

4. In a rail fastener, the combination of opposed tie plates having inwardly extending flanges formed upon their longitudinally extending edges, blocks transversely disposed between the ends of said plates and connecting the same, said blocks having grooves formed in their ends to receive the upper flanges, the lower flanges of said plates being disposed beneath the blocks, said tie plates being adapted to have a rail positioned thereon, means removably disposed between said plates for supporting the rail, and fastening blocks extending between said tie plates and engaged therewith and adapted to be disposed upon the opposite faces of the rail to have clamping engagement thereon.

5. In a rail fastener, the combination of opposed tie plates, means arranged between the ends of the plates to rigidly connect the same, said plates being adapted to receive a rail thereon, a supporting block between the plates for said rail, fastening members extending transversely between the plates, each of said members being engaged with

the outer faces of the plates and adapted to be disposed in close engagement upon the faces of the rails and means for clamping said members upon the rails.

5 6. A rail fastener comprising opposed tie plates having inwardly extending longitudinal flanges upon their upper and lower edges, blocks arranged between the ends of said plates and secured thereto, said plates being adapted to receive a rail upon their upper
10 edges, a fastening member disposed transversely between the plates and having arms engaging with the same, said member being formed with a longitudinal extension for engagement with the rail, a second fastening member having slots therein to receive the flanges of said plates and engaged with the outer faces thereof, said member being adapted to be disposed in engagement with
15 the face of the rail, a block arranged beneath the rail between the tie plates, and means for rigidly connecting said members and blocks between the ends of said tie plates and said last named block.

25 7. In a rail fastener, the combination of opposed tie plates, blocks arranged between

the ends of said plates and extending above the same, bolts securing said plates and blocks together, said plates being adapted to receive a rail thereon inwardly of the blocks, a fastening member disposed between the plates between the outer face of the rail and said block and closely engaged therewith, a second fastening member arranged between said plates and engaged with the inner face
30 of the rail, a rail supporting block positioned between said tie plates and each of said fastening members, said rail supporting block and said tie block being provided with openings therethrough, said openings being alined, and a clamping bolt positioned
35 through said alined openings and having a nut threaded upon its outer end whereby said fastening members may be rigidly clamped upon the rail. 45

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

WILLIAM H. FAILOR.

Witnesses:

EMMA E. METZGER,
GEO. W. SPONSELLER.