

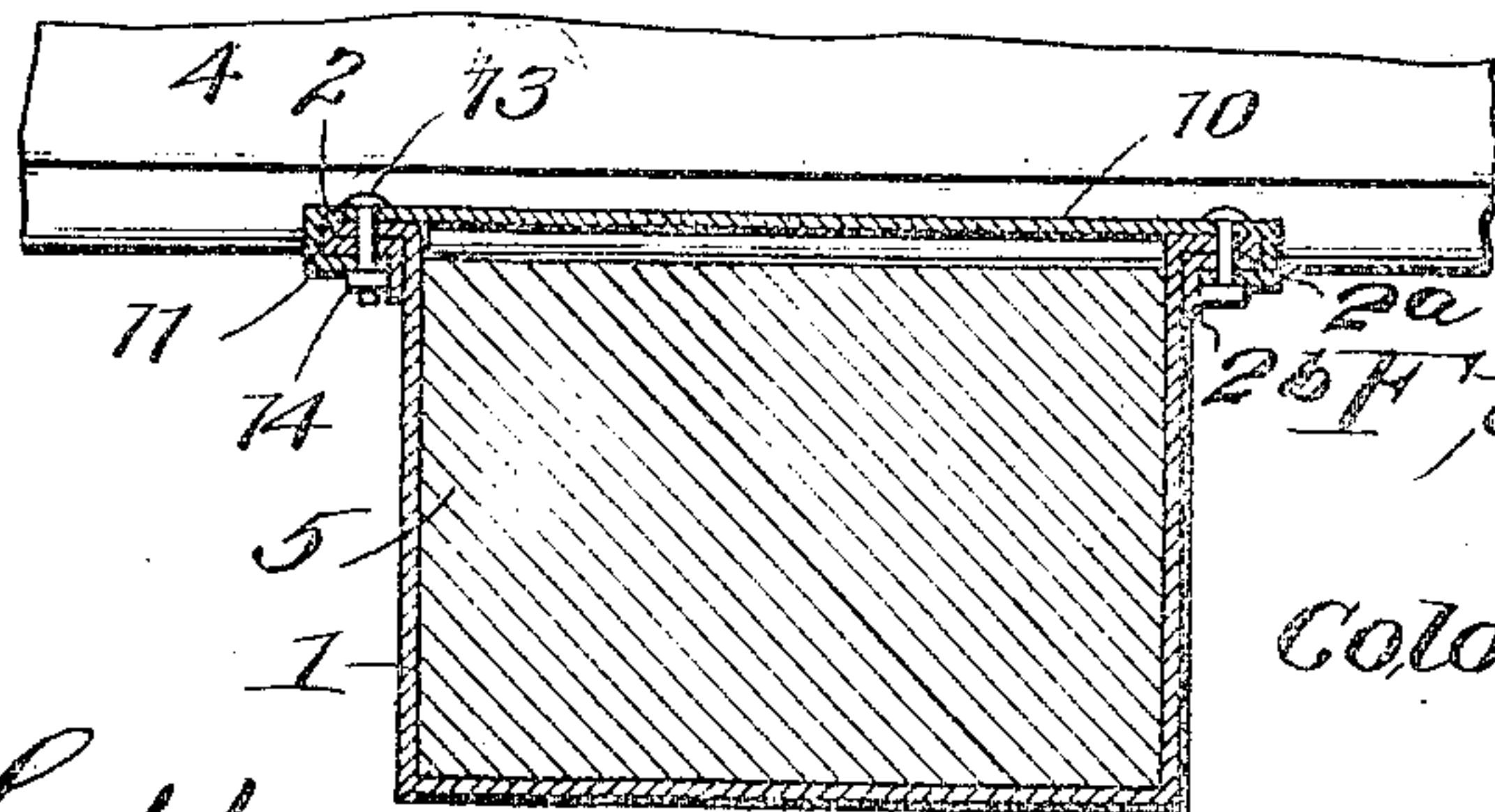
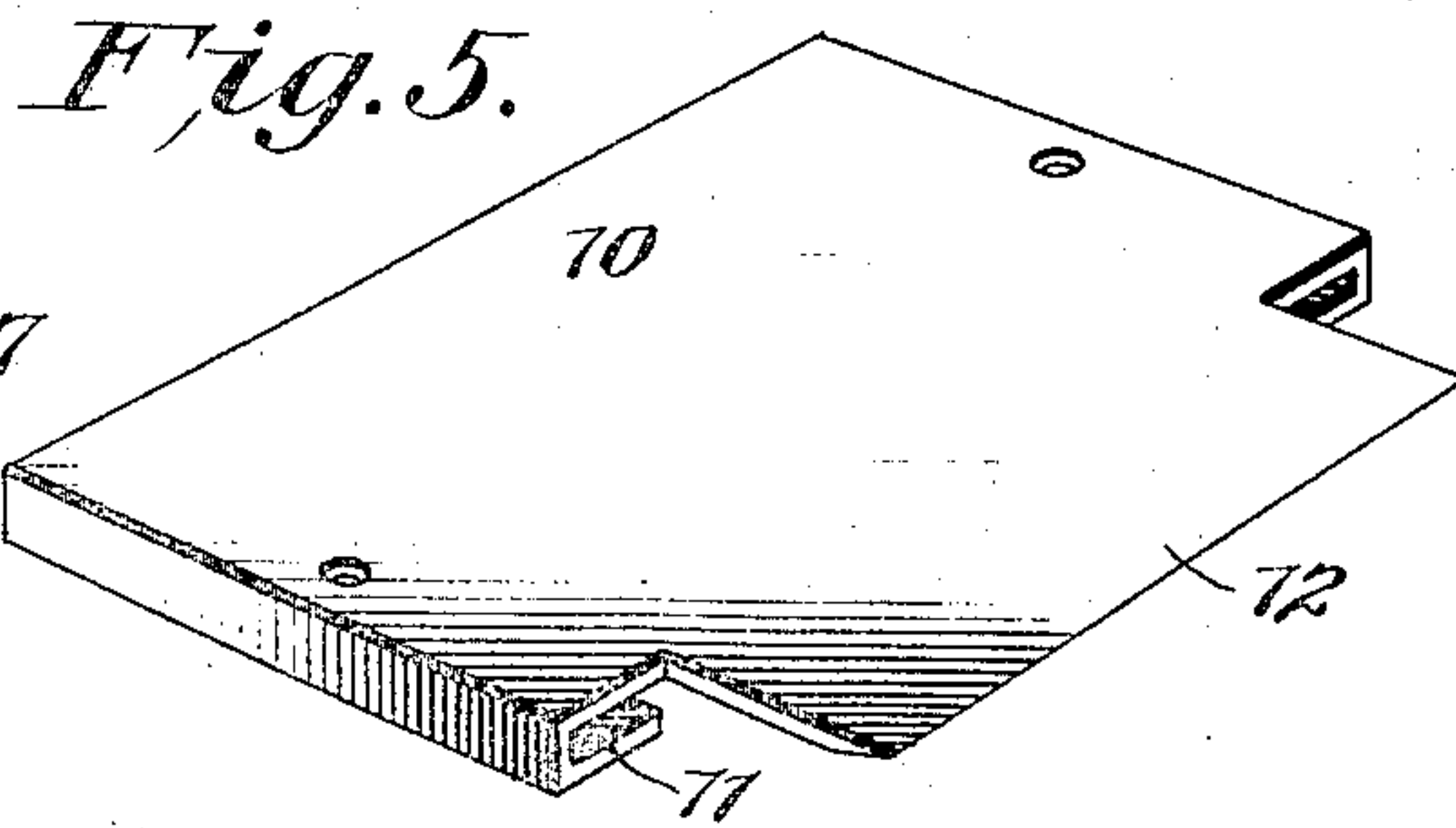
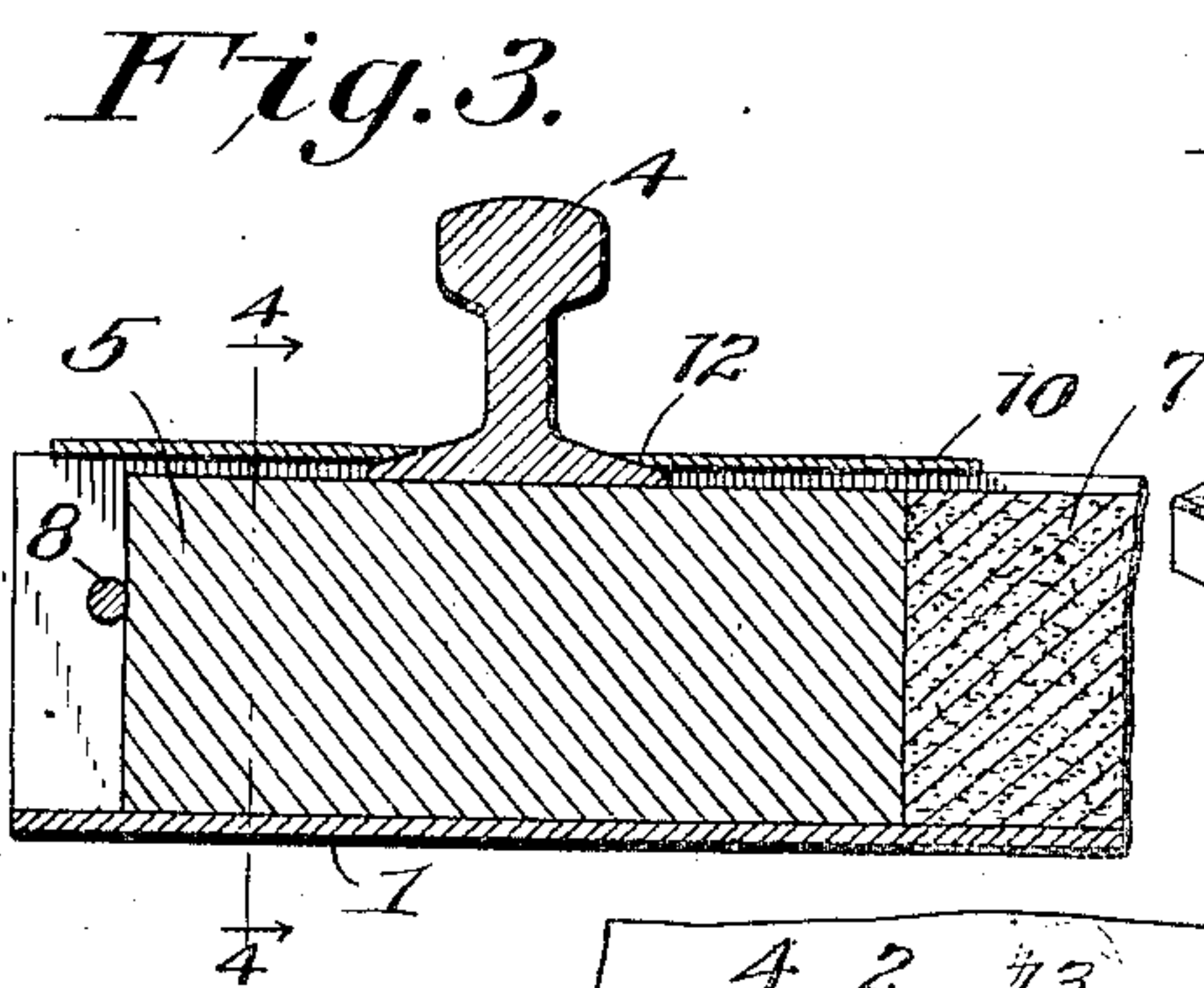
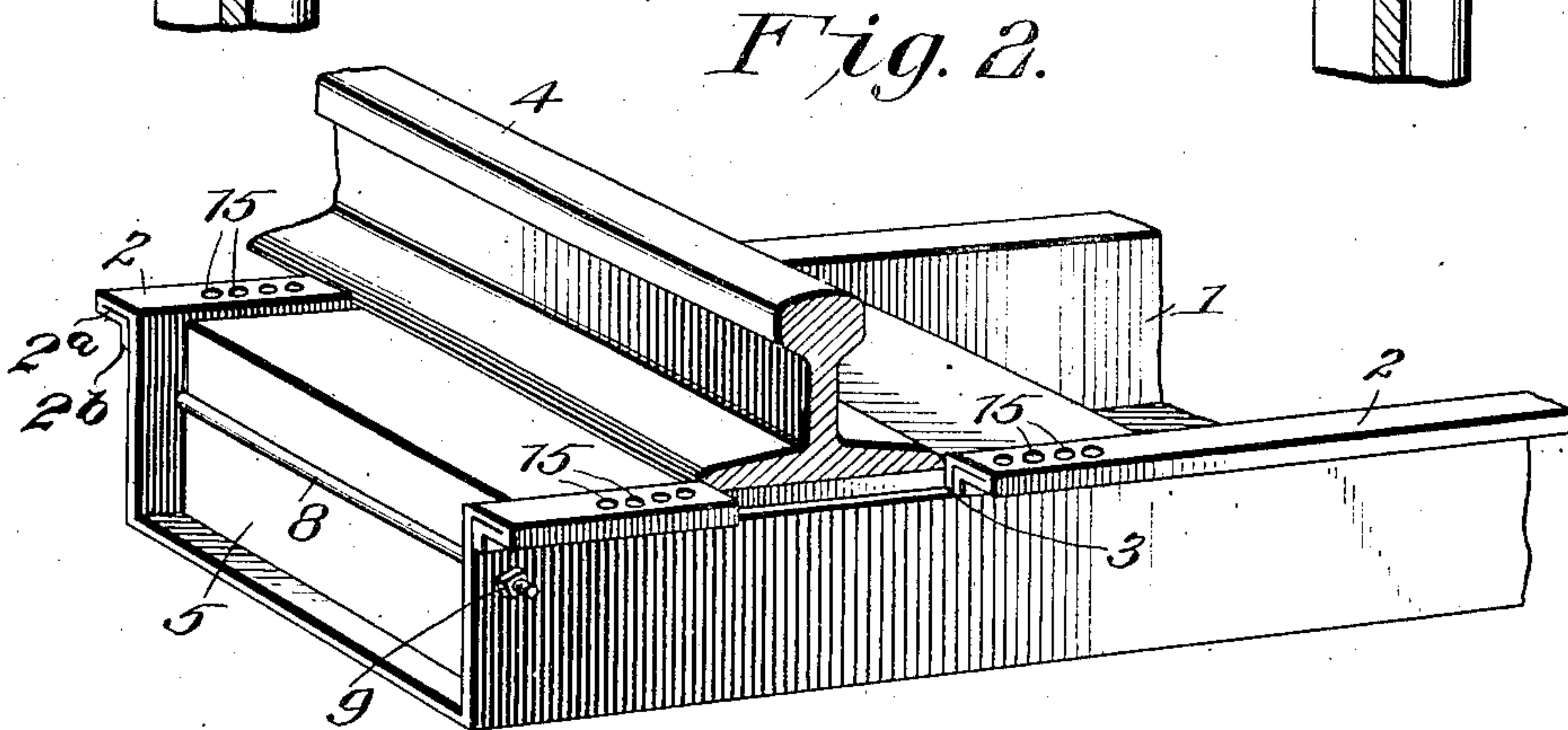
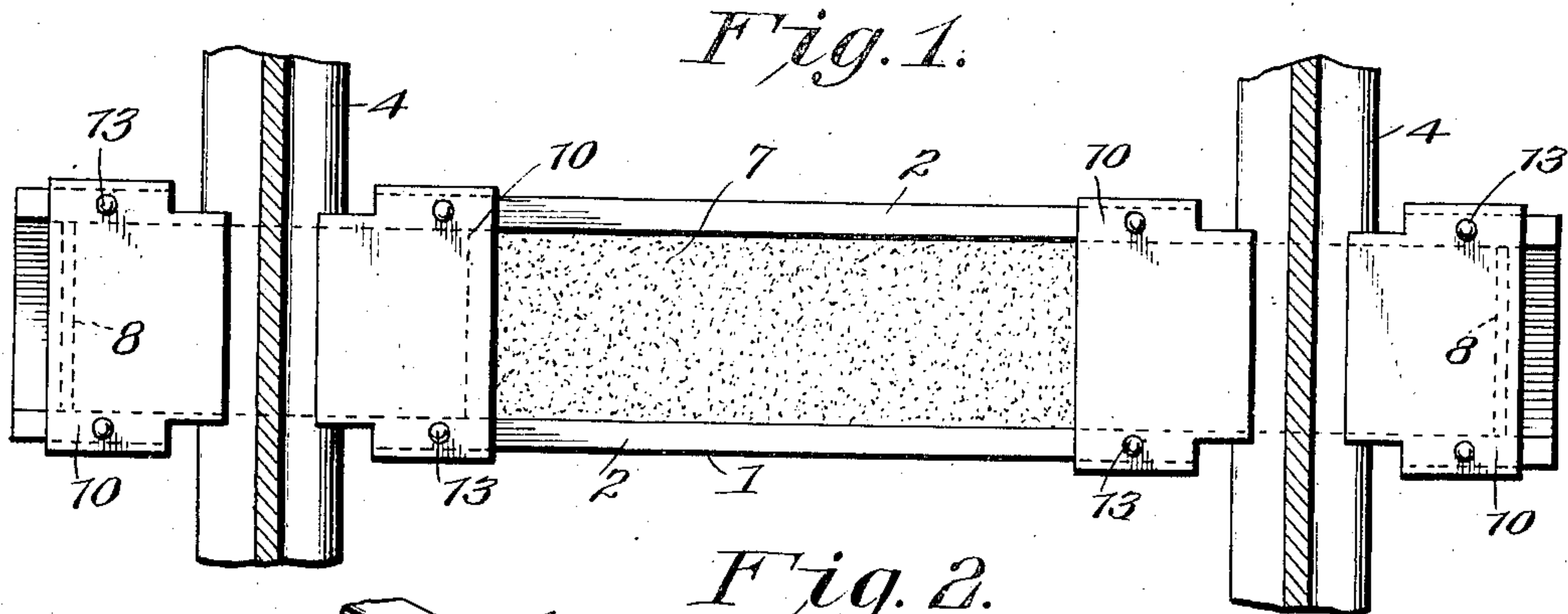
No. 884,190.

PATENTED APR. 7, 1908.

C. A. MURPHY.  
RAIL TIE.

APPLICATION FILED JULY 19, 1906. RENEWED NOV. 25, 1907.

2 SHEETS—SHEET 1.



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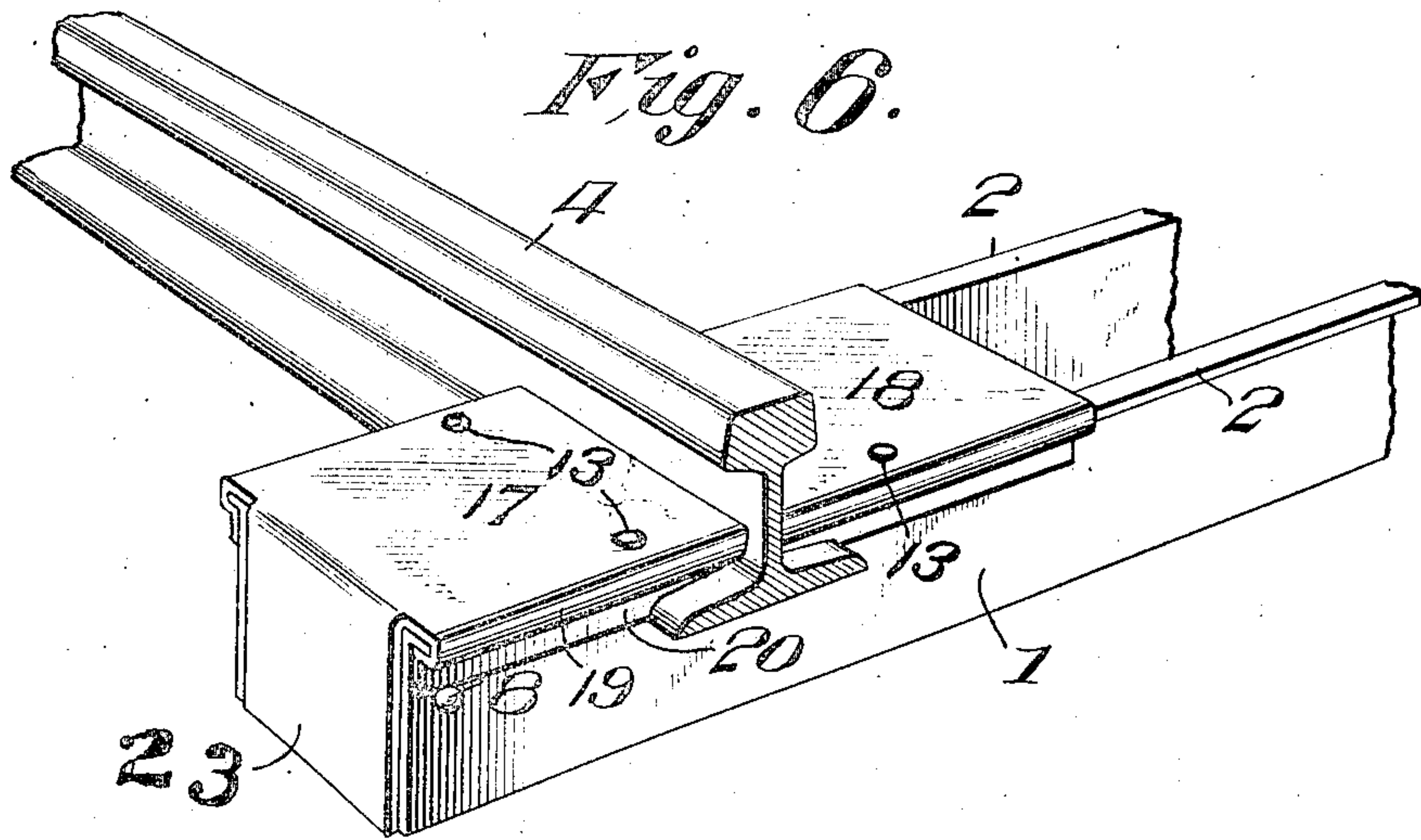
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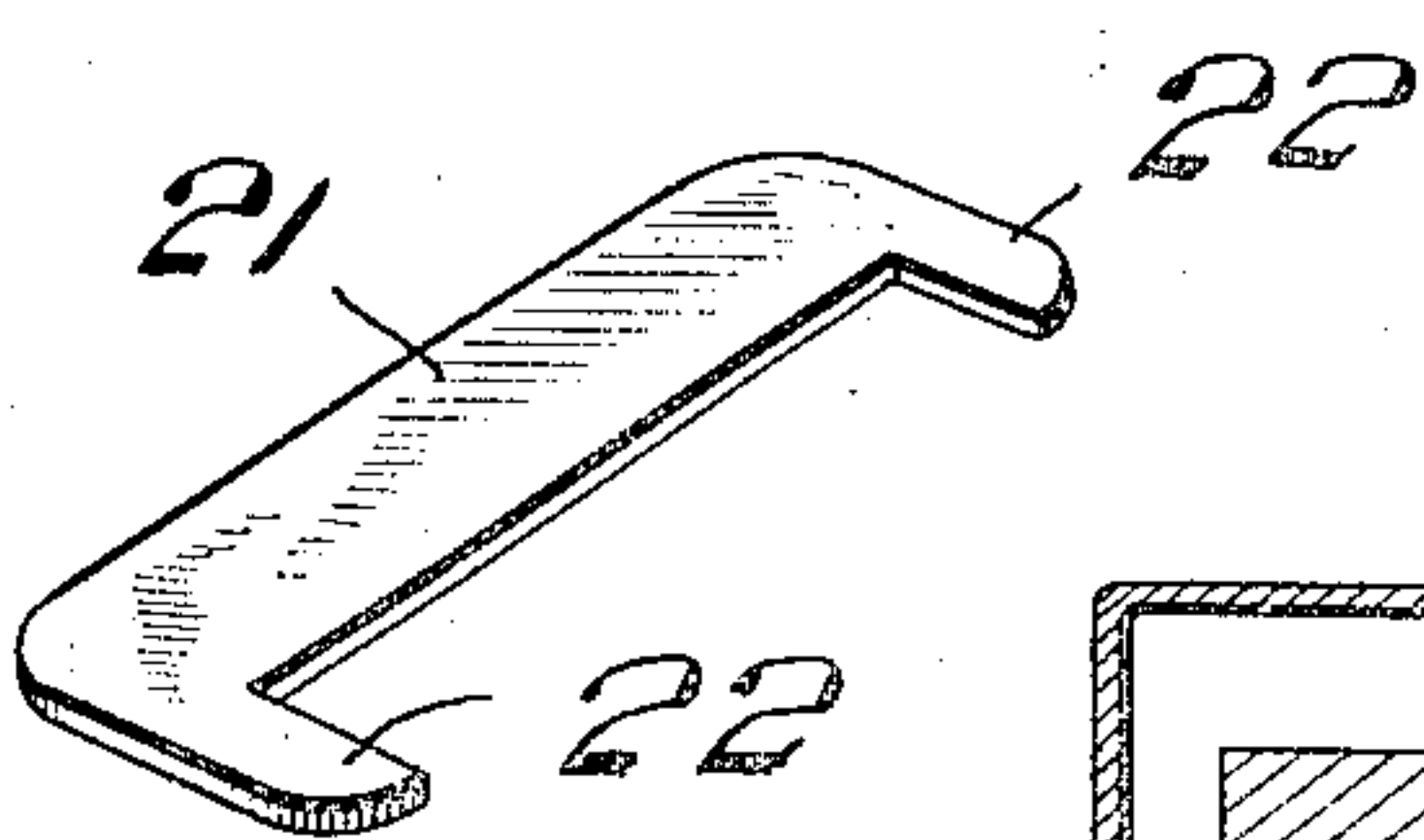
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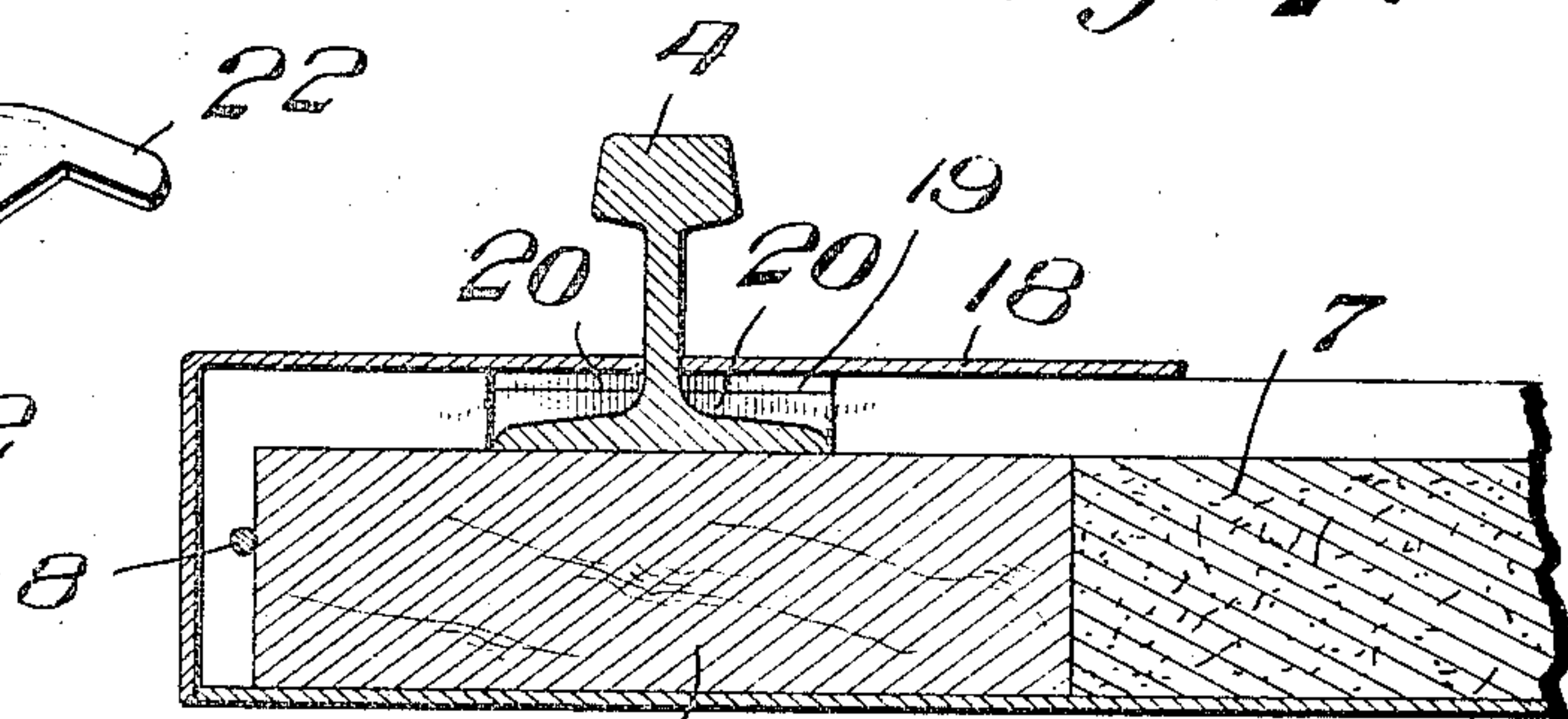
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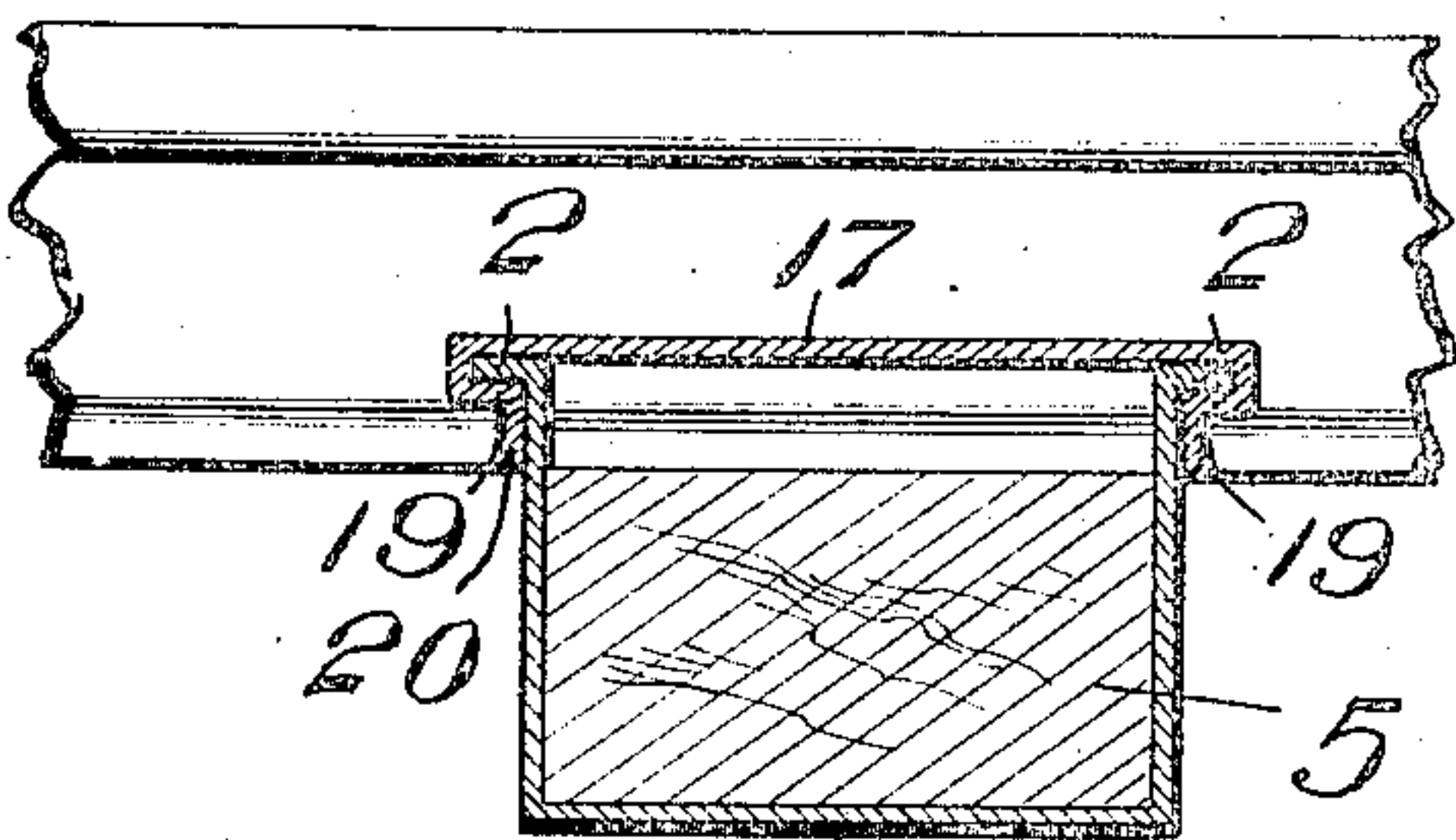
*Fig. 10.*



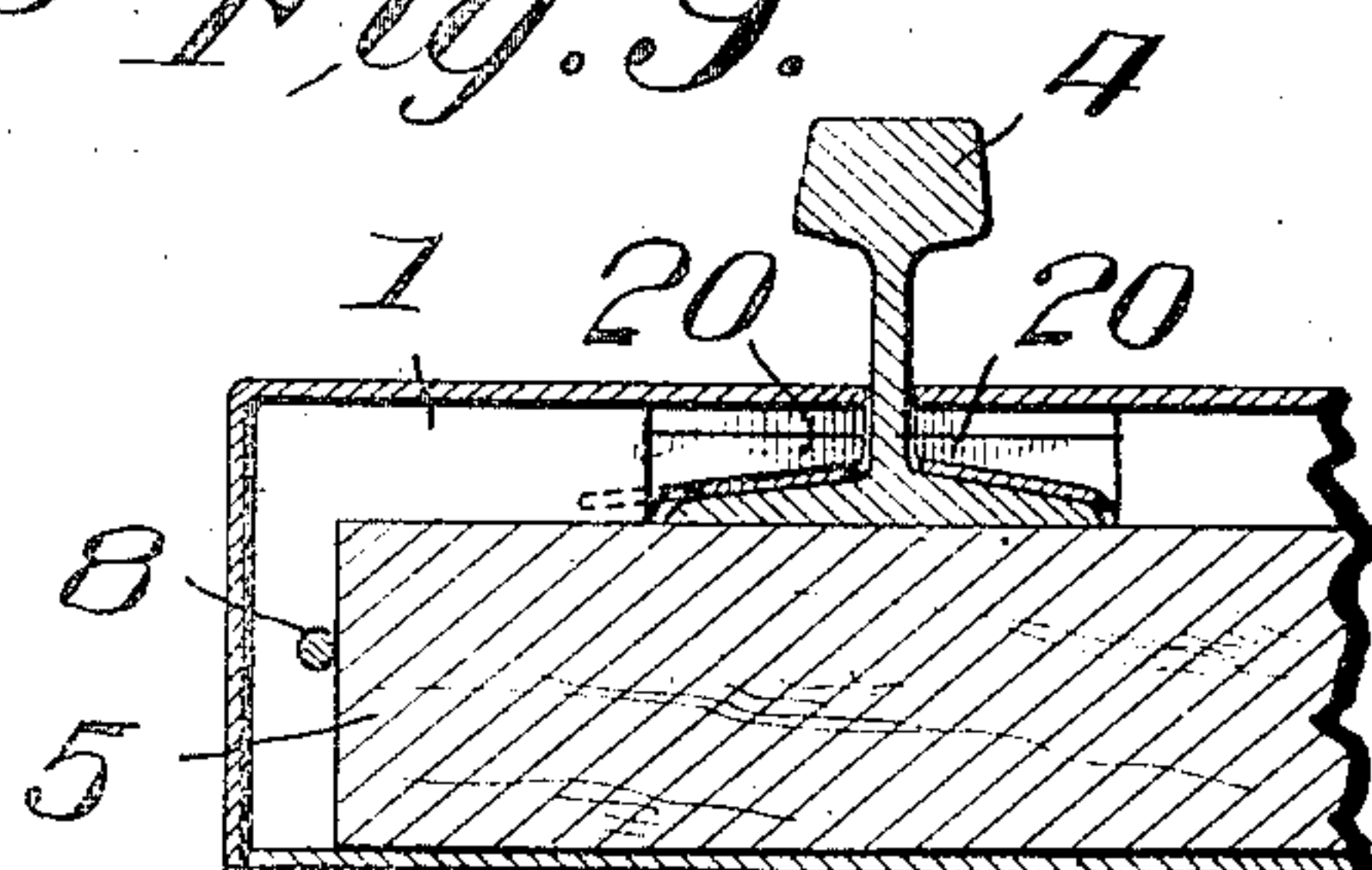
*Fig. 7.*



*Fig. 8.*



*Fig. 9.*



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# UNITED STATES PATENT OFFICE.

COLONEL A. MURPHY, OF CHATFIELD, MINNESOTA.

## RAIL-TIE.

No. 884,190.

Specification of Letters Patent.

Patented April 7, 1908.

Application filed July 19, 1906, Serial No. 326,892. Renewed November 25, 1907. Serial No. 403,696.

*To all whom it may concern:*

Be it known that I, COLONEL A. MURPHY, a citizen of the United States, residing at Chatfield, in the county of Fillmore and State of Minnesota, have invented certain new and useful Improvements in Rail-Ties; and I 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.

My invention relates to new and useful improvements in railroad ties and more particularly to that class adapted to be constructed of different classes of material, and my object is to provide a tie which is cheap, durable and efficient and one that can be readily applied to use.

A further object is to provide a resilient rest for the rail and having the remainder of the tie solid and making it impossible for rails to spread.

A still further object is to provide a combined rail-lock and covering for the tie.

Other objects and advantages will be hereinafter made clearly apparent in the specification and pointed out in the claims.

In the accompanying drawings I have shown the preferred form of my invention.

In said drawings—Figure 1 is a top plan view of my improved tie, showing portions of rails secured thereon. Fig. 2 is a perspective detail view of one end of the tie showing a rail in position thereon with the combined locking means and covering removed. Fig. 3 is a central, longitudinal sectional view through one end of the tie and rail. Fig. 4 is a sectional view as seen from line 4—4 of Fig. 3, on an enlarged scale. Fig. 5 is a perspective view of one of the rail-securing members removed from the ties. Fig. 6 shows another form of my invention. Fig. 7 is a longitudinal section of Fig. 6, Fig. 8 is a transverse section thereof. Fig. 9 is a longitudinal view through the tie and rail showing the manner of securing a rail with a small base, and, Fig. 10 is a perspective view of an insert piece used in connection with a rail having a small base.

Referring to the figures by numerals of reference, 1 indicates the tie proper which is preferably constructed of metal, said tie being substantially trough-like in cross section and having its edges bent over to form ledges 2. In some instances I provide the extensions or ledges 2 with inwardly extending

sections 2<sup>a</sup> having the downward terminals 2<sup>b</sup>, the parts 2<sup>a</sup> being parallel with one face of the ledges 2 while the terminals 2<sup>b</sup> are parallel with the tie, said parts 2<sup>a</sup> and 2<sup>b</sup> being designed to provide a greater reinforcement for the edges of the tie as will be obvious. The ledges 2 and a portion of the side walls thereof are cut away near each end to form ways 3 for the reception of the usual form of rail 4.

To form a resilient support for the rail 4 I dispose a block of wood 5 in each end of said tie, upon which said rails rest. The space between the blocks 5 is filled with a block of cement or like material 7, thereby spacing said blocks apart and adding rigidity and weight to the tie. The blocks 5 are held rigidly in place within the tie by means of bolts 8, which extend transversely through the tie and are drawn taut there-through by means of nuts 9. The purpose of the ledges 2 is to reinforce the walls of the tie 1 and also to cooperate with the combined covering and rail securing members 10, each of said members having its edges bent to form channels 11 in which take the ledges 2 when said members are placed in position on the tie.

In placing my improved tie into use, the tie is first placed in position and a pair of members 10 placed upon the edges 2 and moved inwardly thereon until they have passed the ways 3 in the tie when the rails 4 are placed on the blocks 5. After the rails are thus placed, the members 10, already on the tie, are moved outwardly until the projecting ends 12 thereof extend over the base of the rails 4. Similar members 10 are then placed on the outer ends of the tie and directed inwardly until the opposite sides of the rails are engaged. All the members 10 are then secured in position by means of bolts or the like 13, said bolts being directed through openings in the members 10 and the ledges 2 and are secured therein by means of nuts 14. The ledges 2 are provided with a plurality of openings 15 so that the members 10 may be longitudinally adjusted on the tie for a purpose to be hereinafter more fully explained.

Referring more particularly to Fig. 2 of the drawings, it will be seen that the lower edges of the ways 3 are at a distance below the upper surface of the blocks 5, thereby disposing the rails into engagement with and resting upon the blocks so that a certain amount of resiliency will be imparted to said rails.



As best shown in Fig. 3 of the drawings, the outer edge of the projecting ends 12 are tapered to snugly fit the tapered faces of the rails and it will also be seen that when the blocks 5 are first inserted below the rails that the ends 12 will engage the base of the rails near the outer edge of said base so that when the blocks 5 become worn, the members 10 may be moved inwardly at intervals and the ends 12 again disposed in contact with the base thereof.

After the rails have worn into one surface of the blocks, said blocks may be removed from the tie and the opposite surface placed into engagement with the rails. When the rails are seated in the ways 3 they will be held against lateral movement by the base of the rails engaging the adjacent portions of the tie and said rails thus prevented from spreading.

It will be clearly seen that in addition to locking the rails upon the tie, the members 10 form coverings for the blocks 5, thereby shielding said blocks from the weather and prolonging the life of the same and it will further be seen that any part of the tie may be readily renewed when broken or otherwise destroyed.

In Figs. 6, 7, 8 and 9, I have shown still another form of securing means to connect the rail to the tie and said means consists, as will be observed by reference to said views, of the metallic tie proper 1, having the flanges 2, as described in the other views the sections 2<sup>a</sup> and 2<sup>b</sup> being omitted and also having the movable locking plates 17 and 18 which are provided with channels 19 adapted to fit around the flanges 2 upon the tie and are each furthermore provided with downwardly projecting terminals 20 said downwardly projecting terminals being designed to compensate for the omission of parts 2<sup>a</sup> and 2<sup>b</sup> on the members 2, the rail engaging ends being tapered so that they will fit against and over the base of the rail, conforming snugly thereto and thereby insuring that the rail will be held firmly seated in the transverse recess it occupies in the upper edge of the tie.

In using rails having a thin base I have provided an insert plate 21 having angular extensions 22 at each end thereof, the insert plate being disposed on the upper face of the rail base so that when the locking plates are disposed into place the terminals will engage the plates 21 and the extensions 22 be disposed on the outer faces of the terminals thereby holding the plates 21 firmly in place and prevent the accidental displacement of the same. The plates 17 in this instance are also provided with depending ends 23 which extend over the outer ends of the blocks 5

and protect them from rain, sleet, snow and the like.

Various simple modifications and changes may be made in applying my invention to use without materially departing from the spirit and scope thereof, and I therefore wish to comprehend such substantial equivalents and substitutes as fall fairly within the purview of my invention.

What I claim is:

1. A tie of the class described comprising the combination with a tie proper having ledges at its upper edges and ways in said ledges, said ledges having a plurality of vertically disposed openings therethrough adjacent the ways and at each side thereof; of blocks in each end of said tie, a composition block between said end blocks, plates engaging said ledges and extending over the base of rails on the tie, said plates having a vertical opening in each edge thereof adapted to register with the vertically disposed openings in the ledges and a bolt adapted to extend through said openings and one of the openings in the ledges to lock the plates in position.

2. A tie of the class described comprising a trough-like tie proper having transverse ways in the upper edge thereof, outwardly directed ledges at the upper edge of said tie, a block disposed in each end of said tie, bolts disposed through the tie to retain said blocks in the tie, means in said tie to dispose said blocks apart, locking members having channels at their edges adapted to engage the ledges of said tie and lock rails in said ways, and means disposed through said members and ledges to secure said members in position.

3. The combination with a tie, and ledges on said tie, of a locking member, channels on said locking member to engage said ledges, said locking member and ledges having openings therethrough, a bolt extending through said openings to adjustably secure said member upon said tie, and means on said locking member adapted to engage the base of a rail and lock the same on the tie.

4. The combination with a tie having blocks therein and ledges on said tie, of locking members, channels on said locking members, downwardly projecting terminals on said channels, said terminals being tapered at one end, and an insert plate adapted to be disposed between the inner ends of the locking members and the rail base.

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

COLONEL A. MURPHY.

Witnesses:

F. T. WRIGHT,  
G. A. HAVEN.