

L. McFARLAND.
METALLIC TIE AND RAIL FASTENER.
APPLICATION FILED JAN. 9, 1909.

939,067.

Patented Nov. 2, 1909.
2 SHEETS—SHEET 1.

Fig. 1

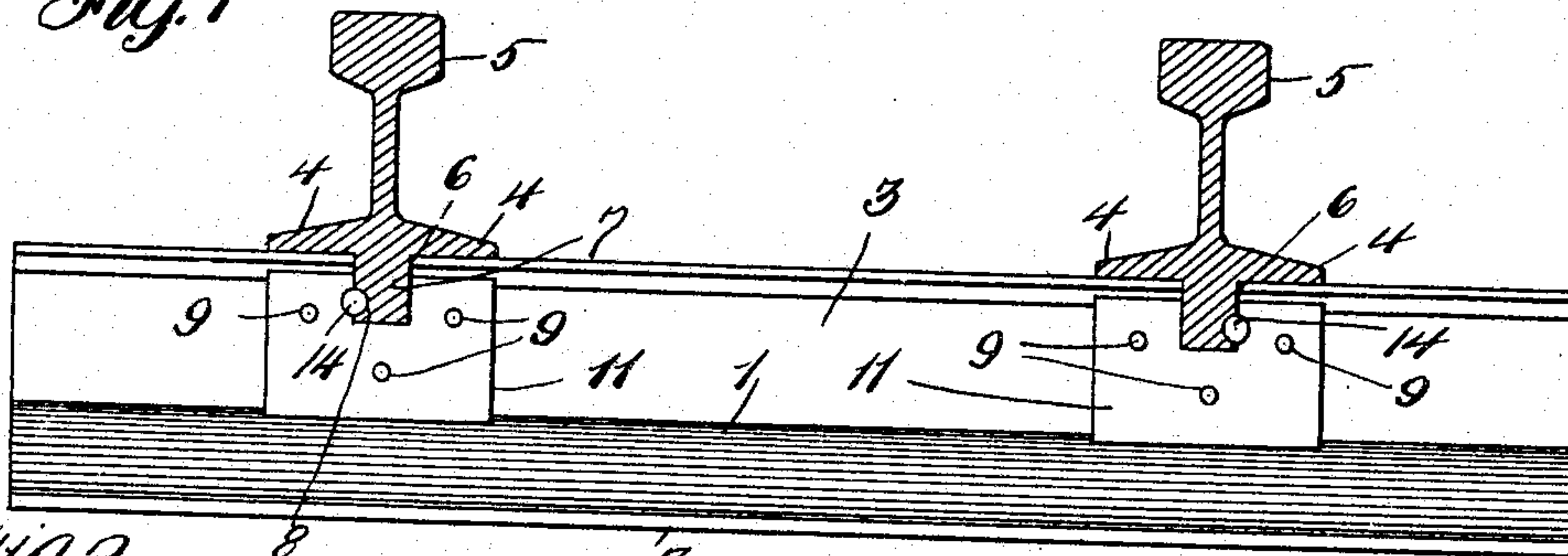


Fig. 2

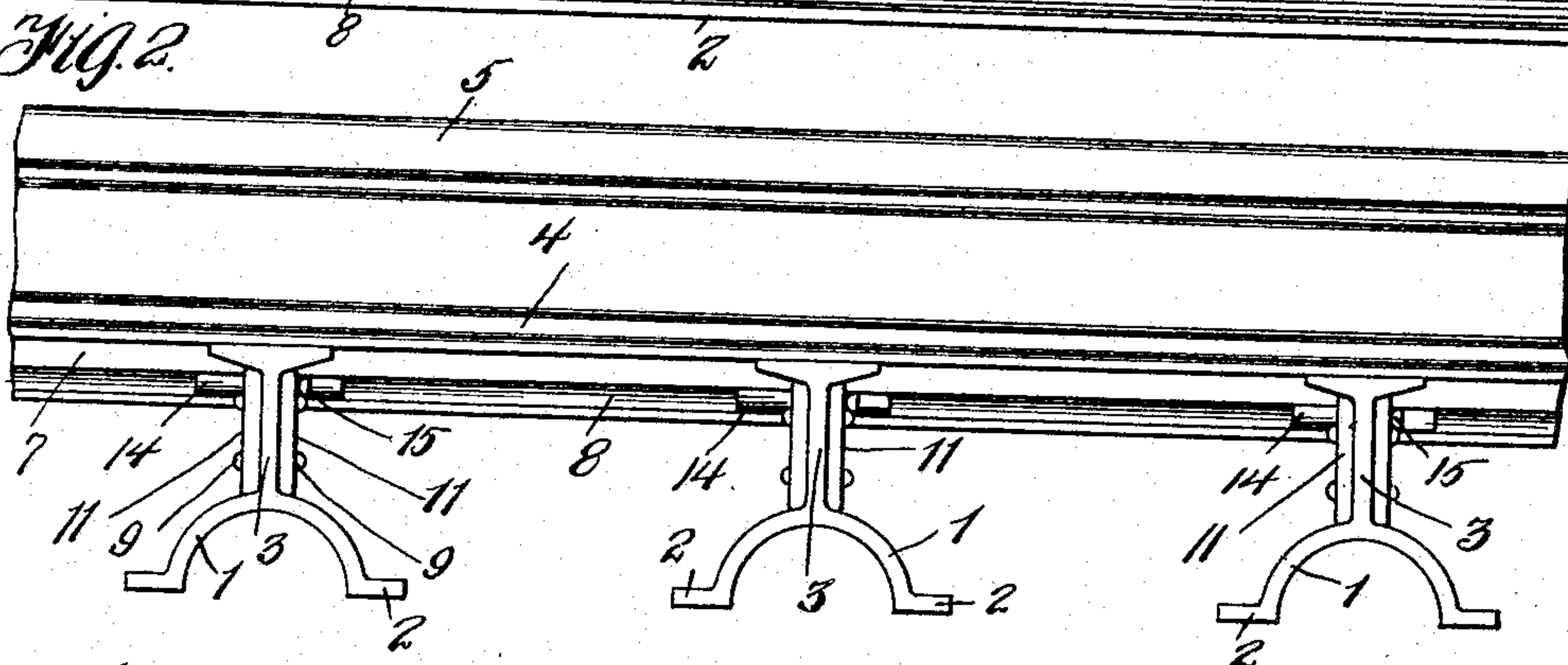


Fig. 3

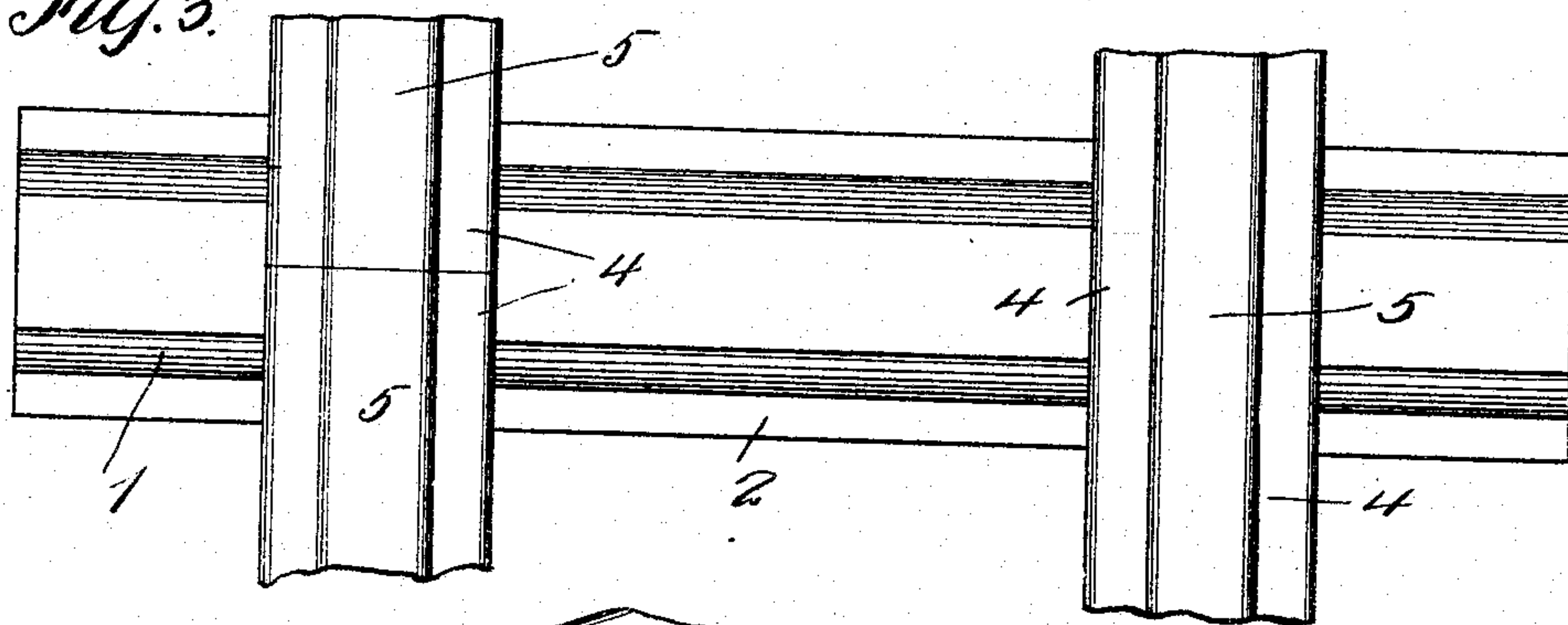


Fig. 4

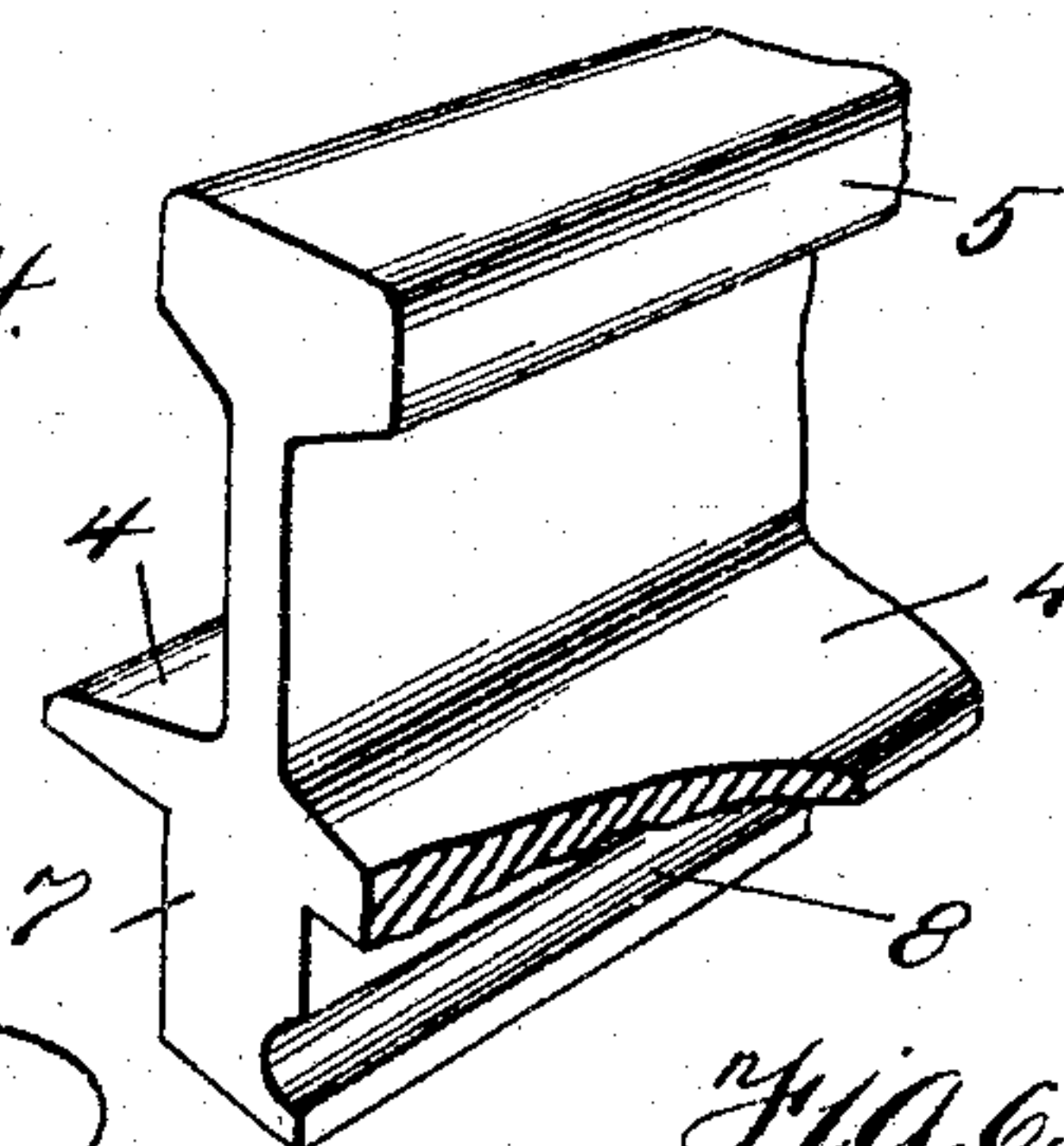


Fig. 5

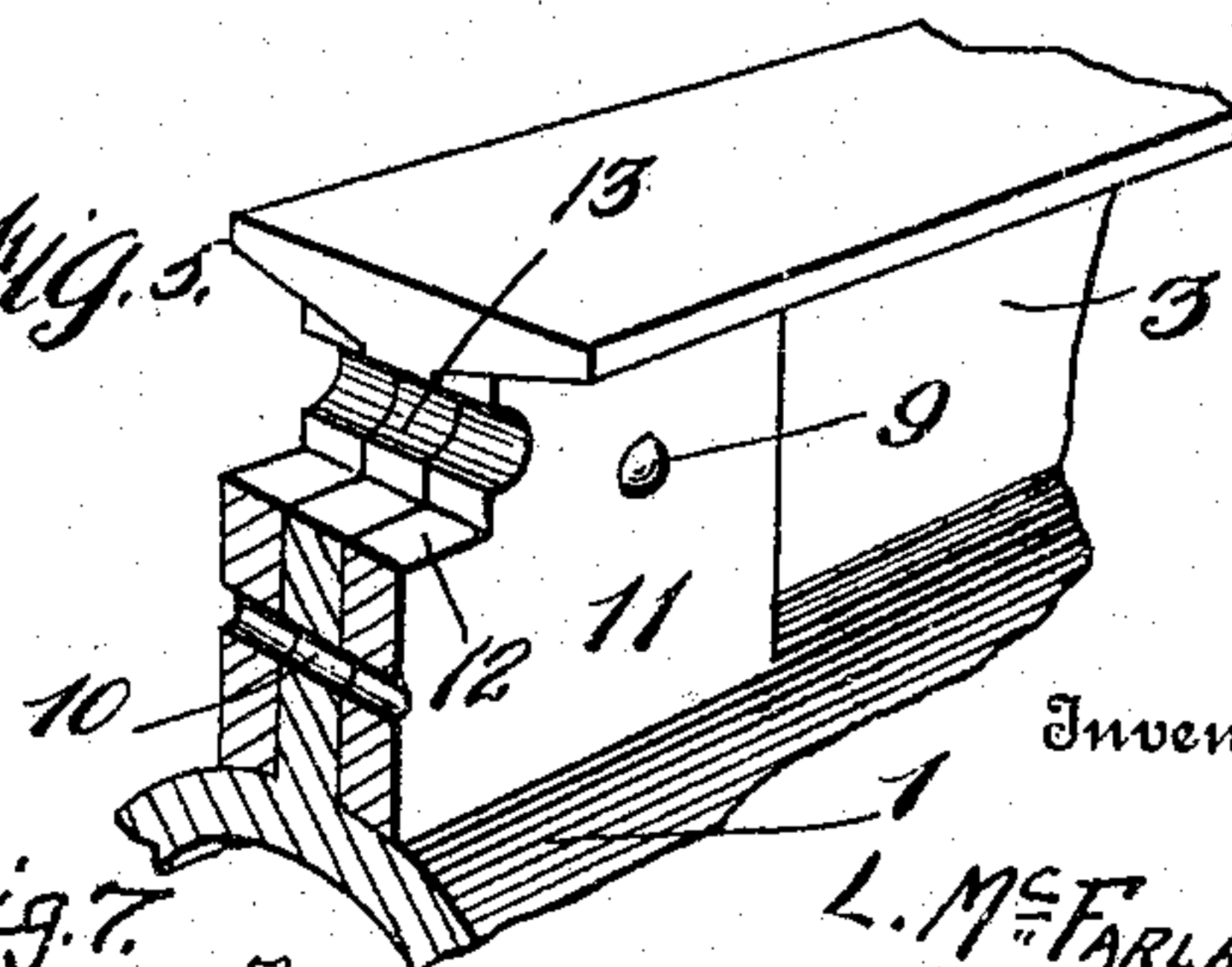


Fig. 6

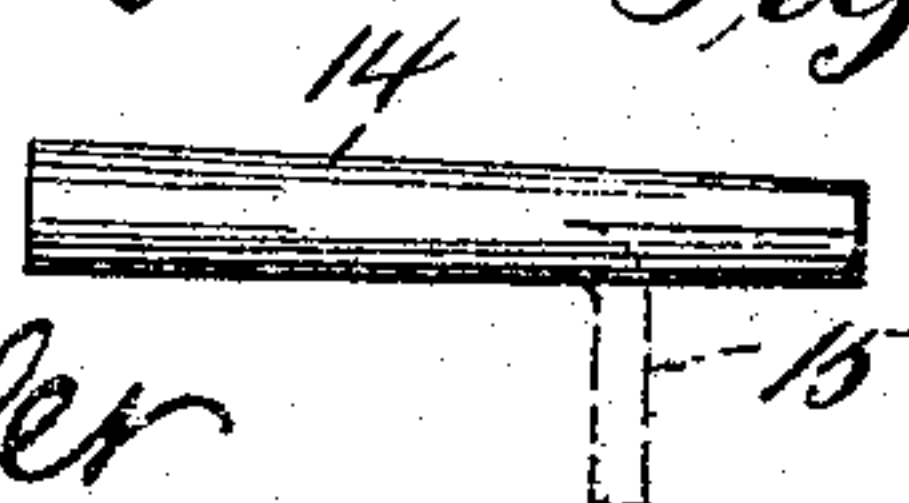
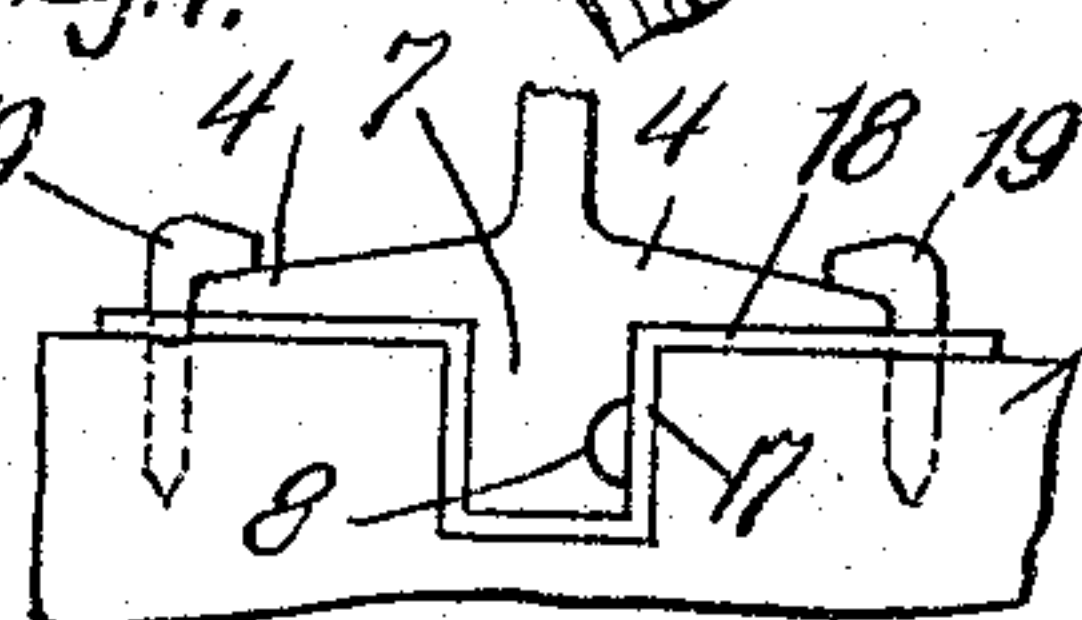


Fig. 7



Witnesses

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Fig. 8.

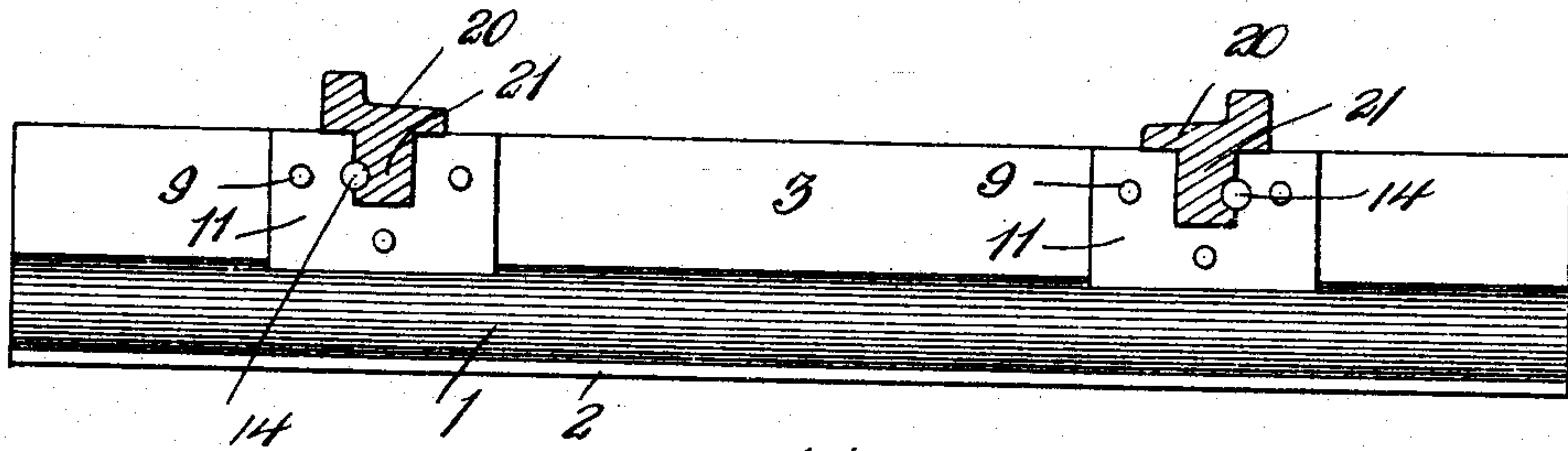


Fig. 9.

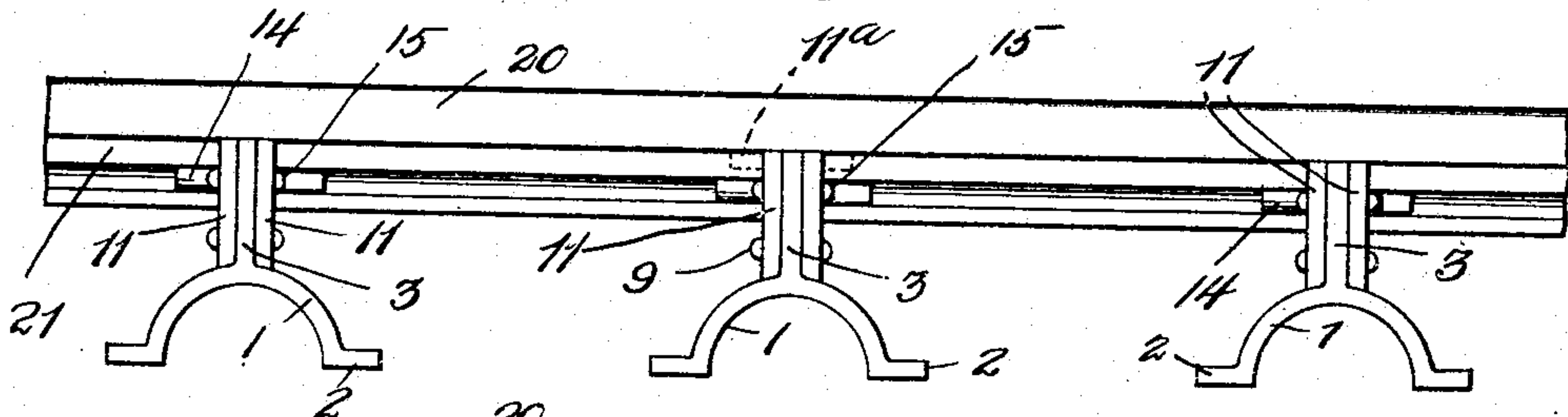


Fig. 10.

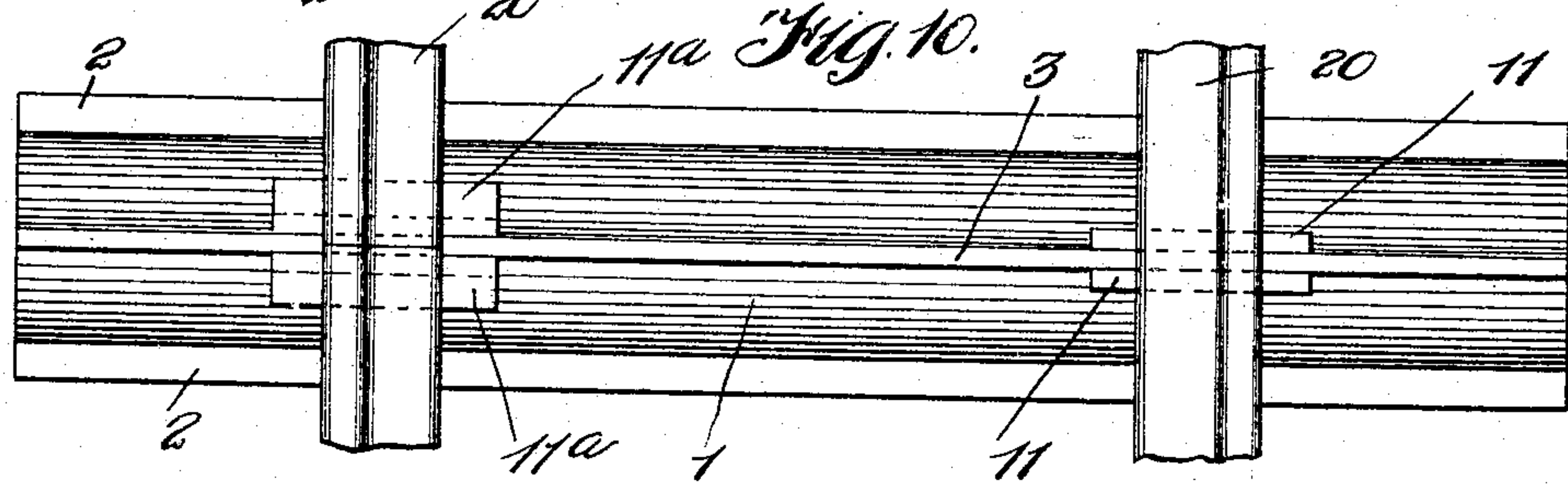


Fig. 11.

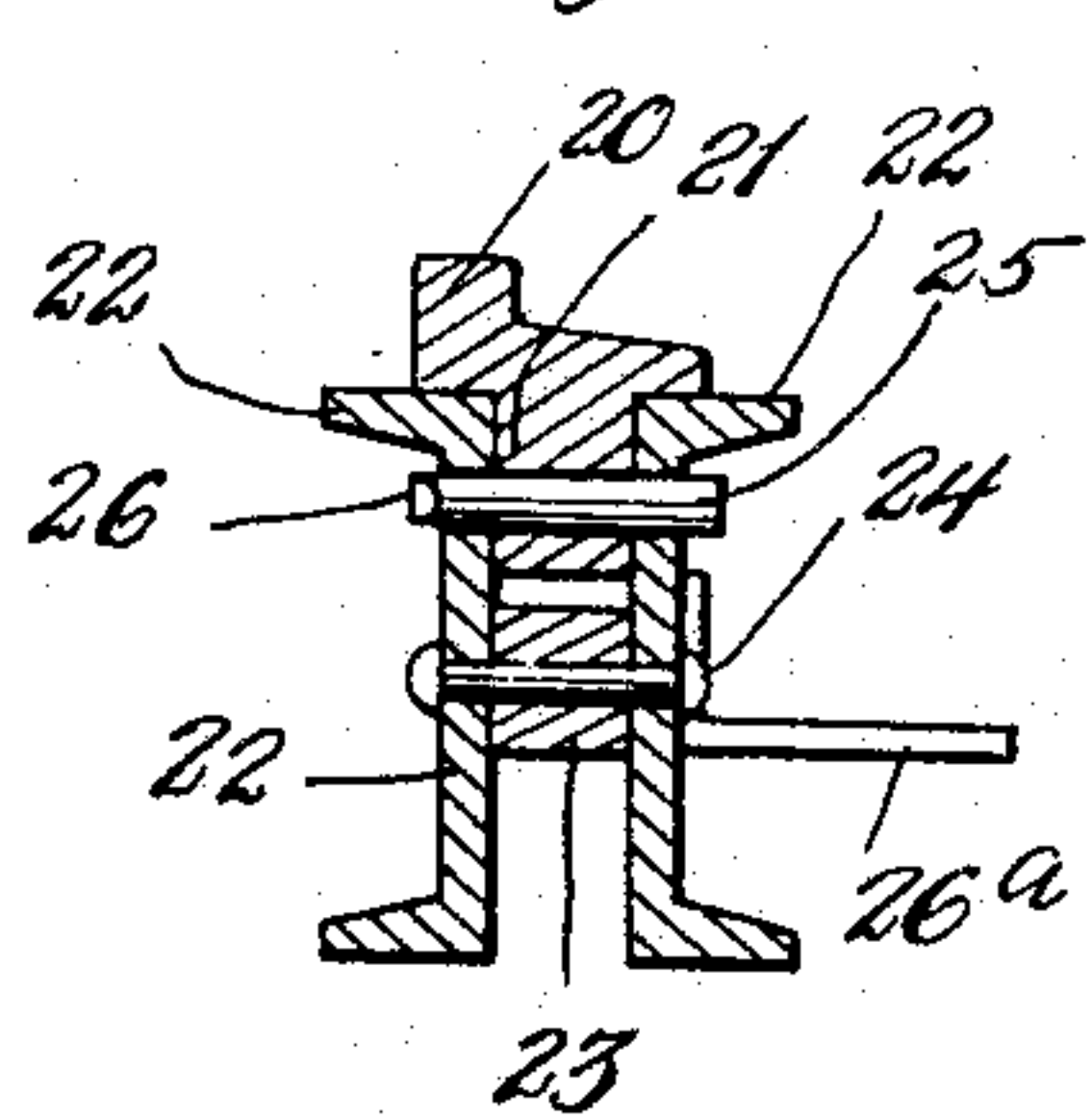


Fig. 12.

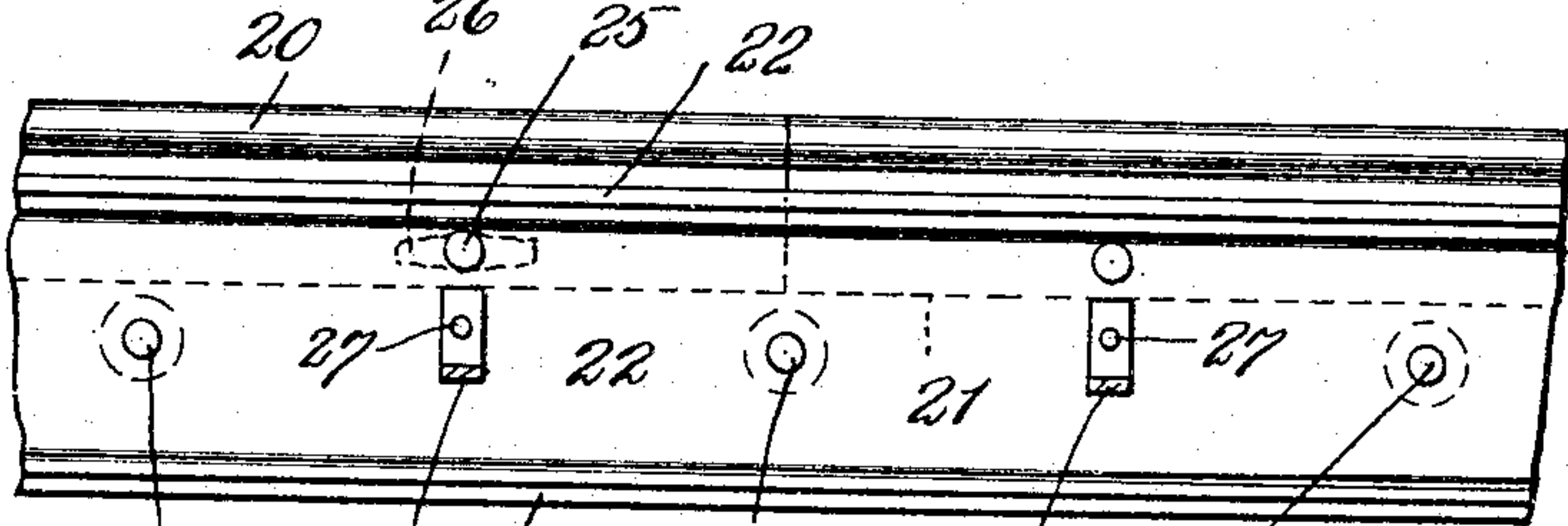
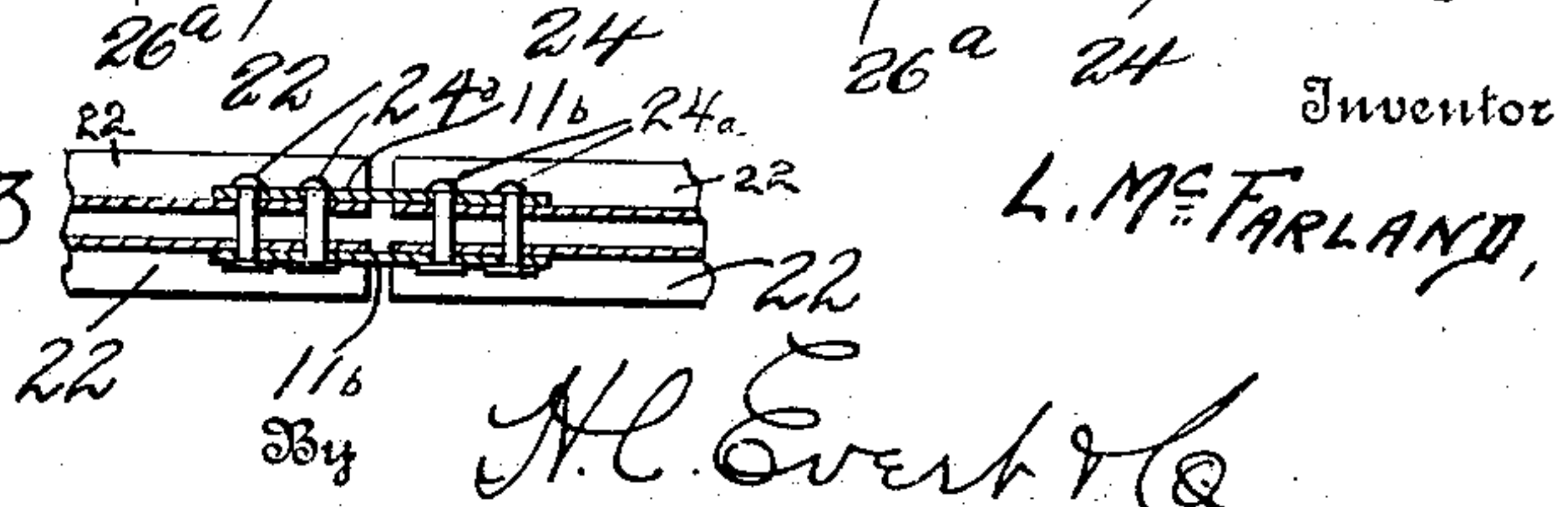


Fig. 13.



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METALLIC TIE AND RAIL-FASTENER.

939,067.

Specification of Letters Patent.

Patented Nov. 2, 1909.

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To all whom it may concern:

Be it known that I, LEWIS McFARLAND, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Metallic Ties and Rail-Fasteners, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to metallic ties and rail fasteners, and the objects of my invention are, to provide a strong and durable metallic tie for supporting rails comprising a track; second, to provide novel rails that can be positively secured to ties to prevent lateral and vertical displacement; third, to obviate the necessity of using nuts and bolts as a fastening medium for the splice bars of confronting ends of two rails; fourth, to provide novel ties and sleepers that can be used in connection with rails for steam or street railways; fifth, to provide a rail fastener by which rails can be secured to ties without the use of skilled labor; and sixth, to provide a novel metallic tie and rail fastener that will compensate for the expansion and contraction of rails.

I attain the above objects by a simple and inexpensive structure that will hereinafter be described in detail, and claimed.

Referring to the drawings:—Figure 1 is a side elevation of a tie and rail fastener constructed in accordance with my invention, Fig. 2 is a side elevation of a rail secured to a plurality of ties, Fig. 3 is a plan of one of my ties having rails secured thereto, Fig. 4 is a perspective view of the end of a rail constructed in accordance with my invention, partly broken away and partly in section, Fig. 5 is a perspective view of a portion of a tie, Fig. 6 is a plan of a cotter pin serving functionally as a fastener for rails, Fig. 7 is an end view of a portion of a rail secured to an ordinary wooden tie, Fig. 8 is a side elevation of a tie supporting street rails, Fig. 9 is a side elevation of a street car rail secured to a plurality of my ties, Fig. 10 is a plan of one of the ties supporting street car rails, Fig. 11 is a cross sectional view of a street car rail supported by a longitudinal sleeper. Fig. 12 is a side elevation of the same and Fig. 13 is a detail view in section thereof.

Each one of my metallic ties comprises a

semi-cylindrical or arch-shaped base 1 having lateral flanges 2 adapted to support the tie in or upon the ballast of a road bed. The base 1 is provided with a longitudinal T-shaped upright 3 for supporting the base flanges 4 of rails 5. The tie uprights 3 are cut away, as at 6, to accommodate a longitudinal depending rib 7 carried by the base of each rail, these ribs 7 alining vertically with the web portions of said rails and extending from one end of said rail 7 to the other. Each rib upon one side is provided with a longitudinal groove 8, the object of which will presently appear.

Suitably secured to the sides of the uprights 3, preferably by rivets 9 extending through openings 10 provided therefor in the uprights 3 are plates 11, said plates being cut away, as at 12, similar to the uprights 3. The plates 11 and the upright 3 of each tie are transversely grooved, as at 13, the groove 13 of each tie being adapted to conform to the groove 8 of each rib, whereby a tapering cotter pin 14 can be inserted between the rib 7 and the tie for holding said rib in the cut-away portion 6 of the upright 12 of the plates 11. The end of the cotter pin after being inserted in the grooves 8 and 13 is bent, as at 15, to prevent accidental displacement of the cotter pin 14. The construction just described and employed for fastening a rail to the tie is also applicable for securing the confronting ends of two rails together.

When my rails are used upon ordinary wooden ties, the wooden ties 16 can be transversely grooved, as at 17, to accommodate a base plate 18, said base plate receiving the rib 7 of each rail. The base plate 18 and the base flanges 4 of each rail can then be secured to the tie 16 by ordinary spikes 19.

Reference will now be had to Figs. 8 to 12 inclusive, wherein I have illustrated street car rails 20 having web portions 21 corresponding to the ribs 7 of the steam railway rails. The webs 21 are secured to my tie as previously described in connection with the ribs 7 of the rails 5.

In connection with street car rails, particularly at a joint, the plates 11 can have the upper edges thereof flanged, as at 11^a providing a seat for the confronting ends of the rails 20.

In Figs. 11, 12, and 13 of the drawings the rails 20 are illustrated as supported by longi-

tudinal sleepers instead of transverse ties. Each sleeper comprises two channel bars 22 provided with a spacer block 23 which is secured to the bars 22 by the rivets 24 or other
 5 suitable fastening devices. The contiguous ends of the channel bars 22 are connected together by the spliced bars 11^b maintained in position by the bolts 24^a, see Fig. 13. The depending webs 21 of the rails 20 are secured
 10 between the channel bars 22 by cotter pins 25 which have their ends bent as at 26. By the foregoing construction, the channel bars 22 firmly support the heads of the rails 20. The inner longitudinal sleeper of one pair is
 15 connected to the inner longitudinal sleeper of the other pair by the coupling rods 26^a which are shown in section in Fig. 12 and in side elevation in Fig. 11. Each end of each of the rods 26^a is flanged, the flanges abut-
 20 ting against the inner faces of the inner sleeper and secured thereto by the rivets 27.

While in the drawings forming a part of this application there is illustrated the preferred embodiment of this invention, it is to
 25 be understood that changes, variations, and modifications can be resorted to which come within the scope of the claims hereunto appended.

Having now described my invention what
 30 I claim as new, is:—

1. In a metallic tie and rail fastener, the combination with rails having longitudinal depending ribs provided upon one side with a longitudinal groove, of ties for supporting
 35 said rails, each tie comprising an arch-shaped base having lateral flanges, a T-shaped longitudinal upright carried by each base for supporting the base flanges of said rails, said longitudinal uprights being cut
 40 away to provide clearance for the depending grooved ribs of said rails, plates secured to said uprights and cut away to register with the cut-away portion of each upright, said plates and said upright being grooved to
 45 register with the groove of the depending flange of each rail, and a tapering cotter pin inserted in the grooves of said upright and said depending rib and adapted to be bent to prevent accidental displacement of
 50 said cotter pins, substantially as described.

2. In a metallic tie and rail fastener, the

combination with rails having longitudinal depending grooved ribs, of ties adapted to support said rails, each tie comprising an arch-shaped base, a T-shaped upright sup- 55
 ported by said base, said upright being cut-away to accommodate the depending rib of a rail, plates secured to the sides of said upright and cut away to register with the cut-away portion of said upright, said plates 60
 and said upright having registering grooves formed therein adapted to register with the grooves of the depending ribs of said rails, and cotter pins adapted to be inserted in said grooves for securing the ribs of said rails in 65
 said uprights.

3. In a metallic tie and rail fastener, the combination of rails, depending grooved ribs carried thereby, uprights adapted to support said rails, said uprights being cut away to 70
 accommodate the rib of each rail, plates secured to the sides of said uprights, said plates being cut away and grooved to register with the cut-away portion of each up-
 right and the groove of each rail rib, and 75
 cotter pins inserted in said grooves for holding said ribs in engagement with said uprights.

4. In a metallic tie and rail fastener, the combination of rails having longitudinal 80
 depending grooved ribs, uprights for supporting said rails, said uprights being cut away to accommodate the ribs of said rails, and cotter pins inserted in the cut-away portion of said uprights for engaging in the 85
 grooves of said ribs and retaining said ribs in engagement with said uprights.

5. In a metallic tie and rail fastener, the combination with rails having depending longitudinal ribs extending from one end of 90
 a rail to the opposite end, of an upright for supporting said rails, and a cotter pin engaging the rib of a rail and said upright for retaining said rib in engagement with said upright. 95

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

LEWIS McFARLAND.

Witnesses:

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 C. V. BROOKS.