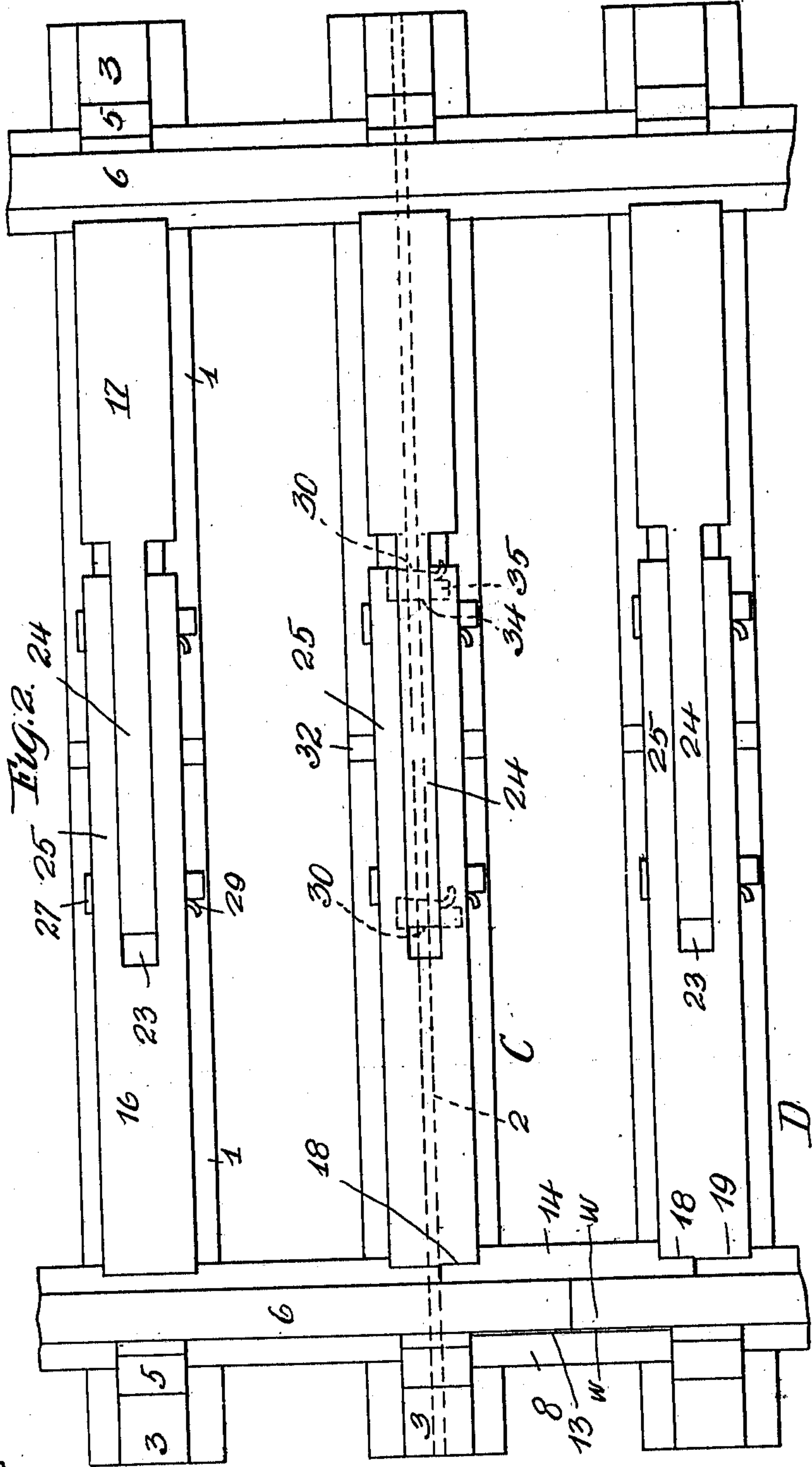
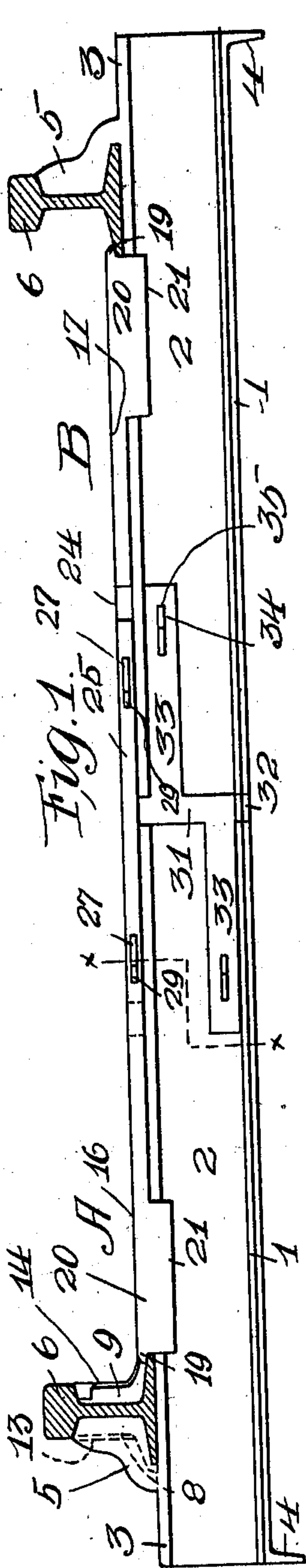


L. KNOTT.
METALLIC TIE AND RAIL JOINT.
APPLICATION FILED AUG. 5, 1910.

Patented Apr. 18, 1911.

2 SHEETS—SHEET 1.

990,199.



WITNESSES

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K. H. Butler

INVENTOR

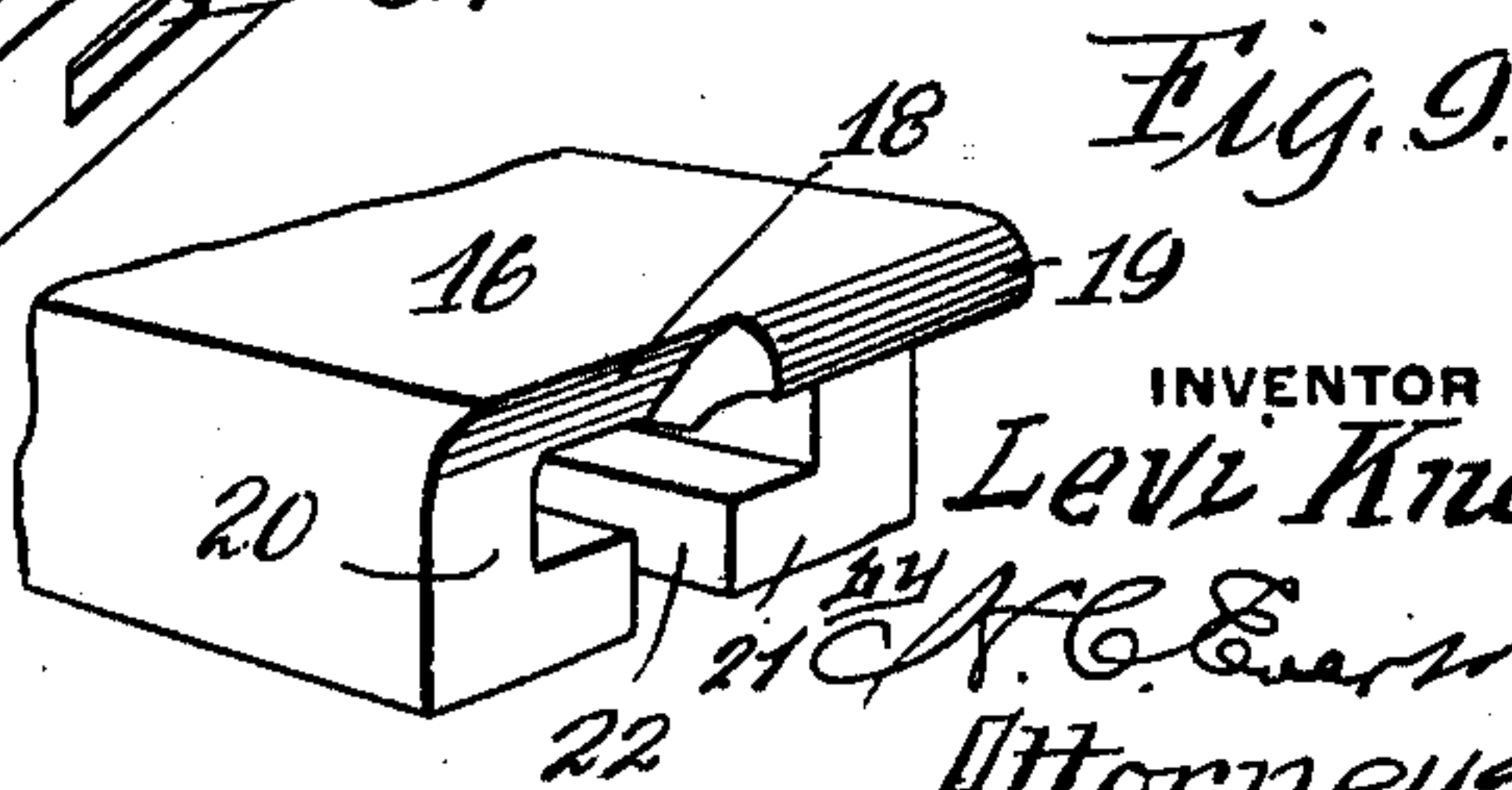
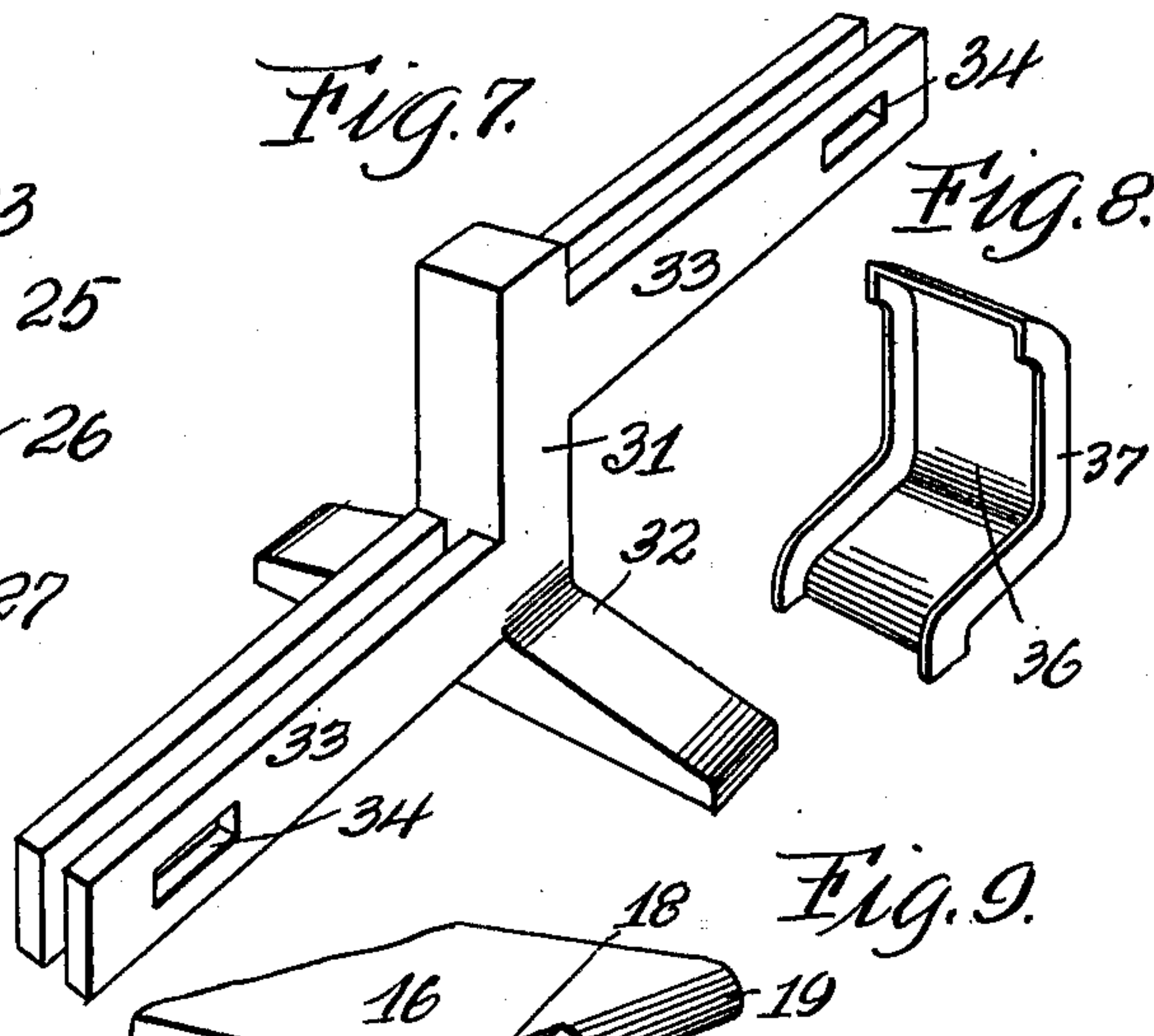
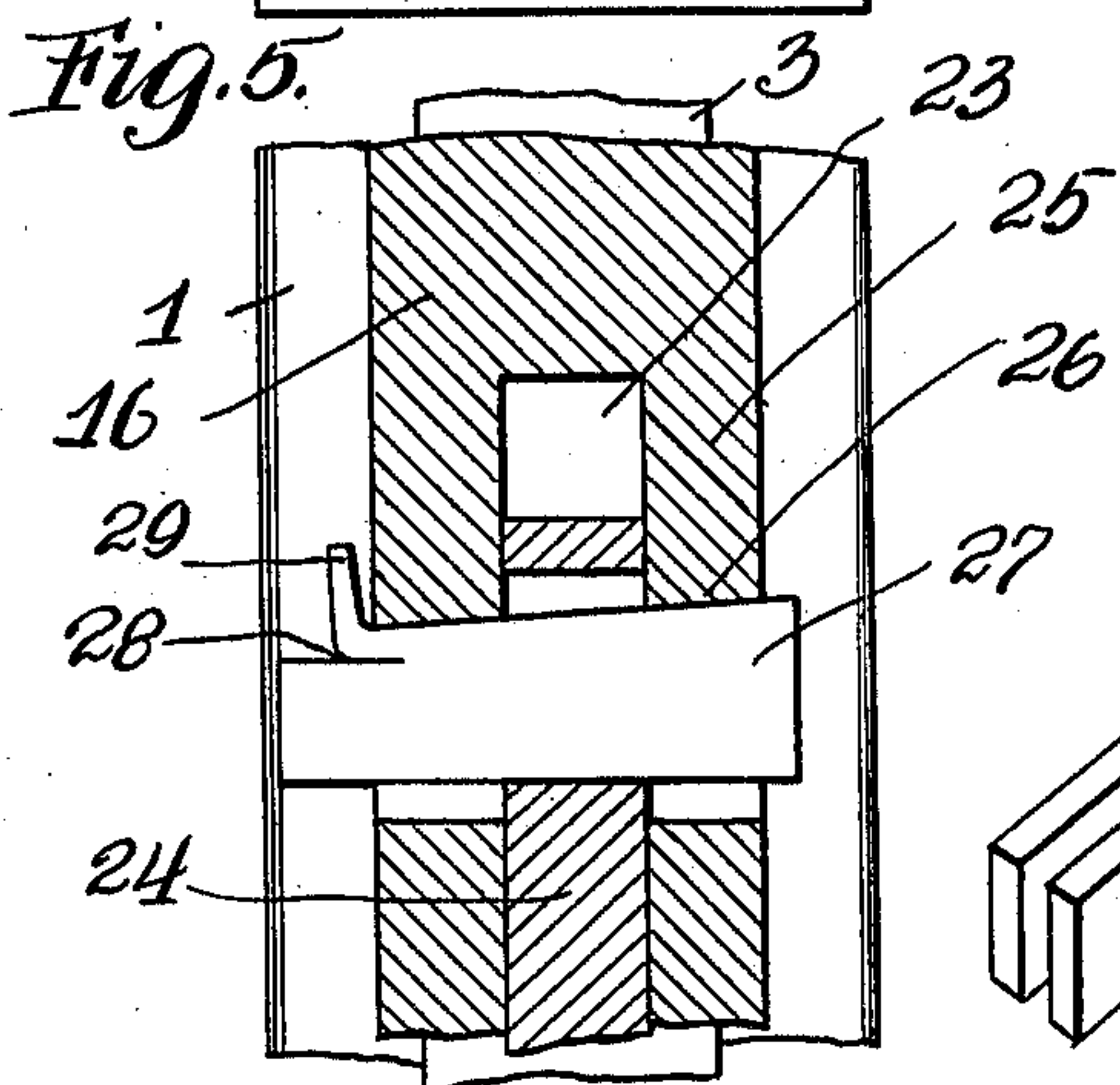
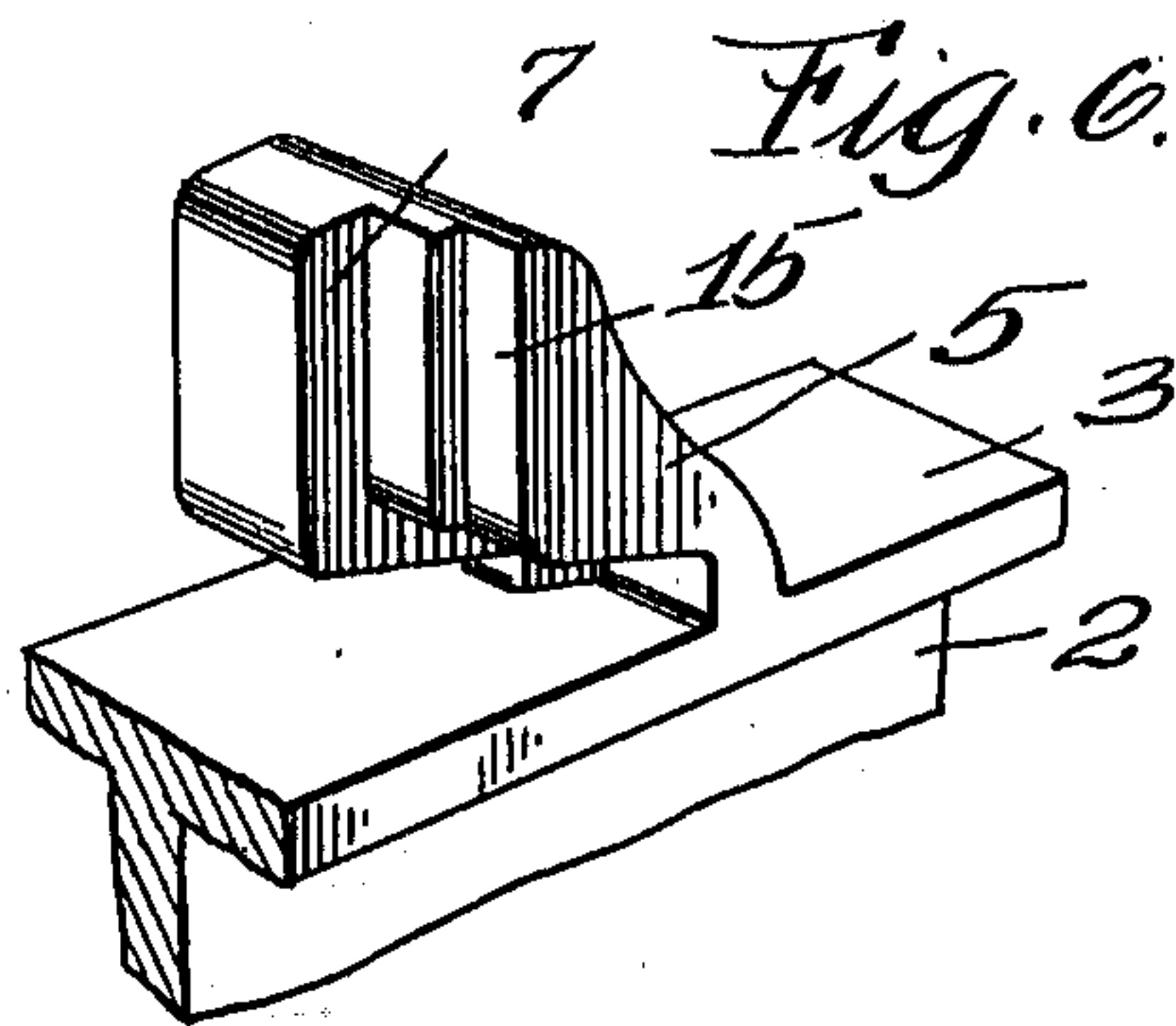
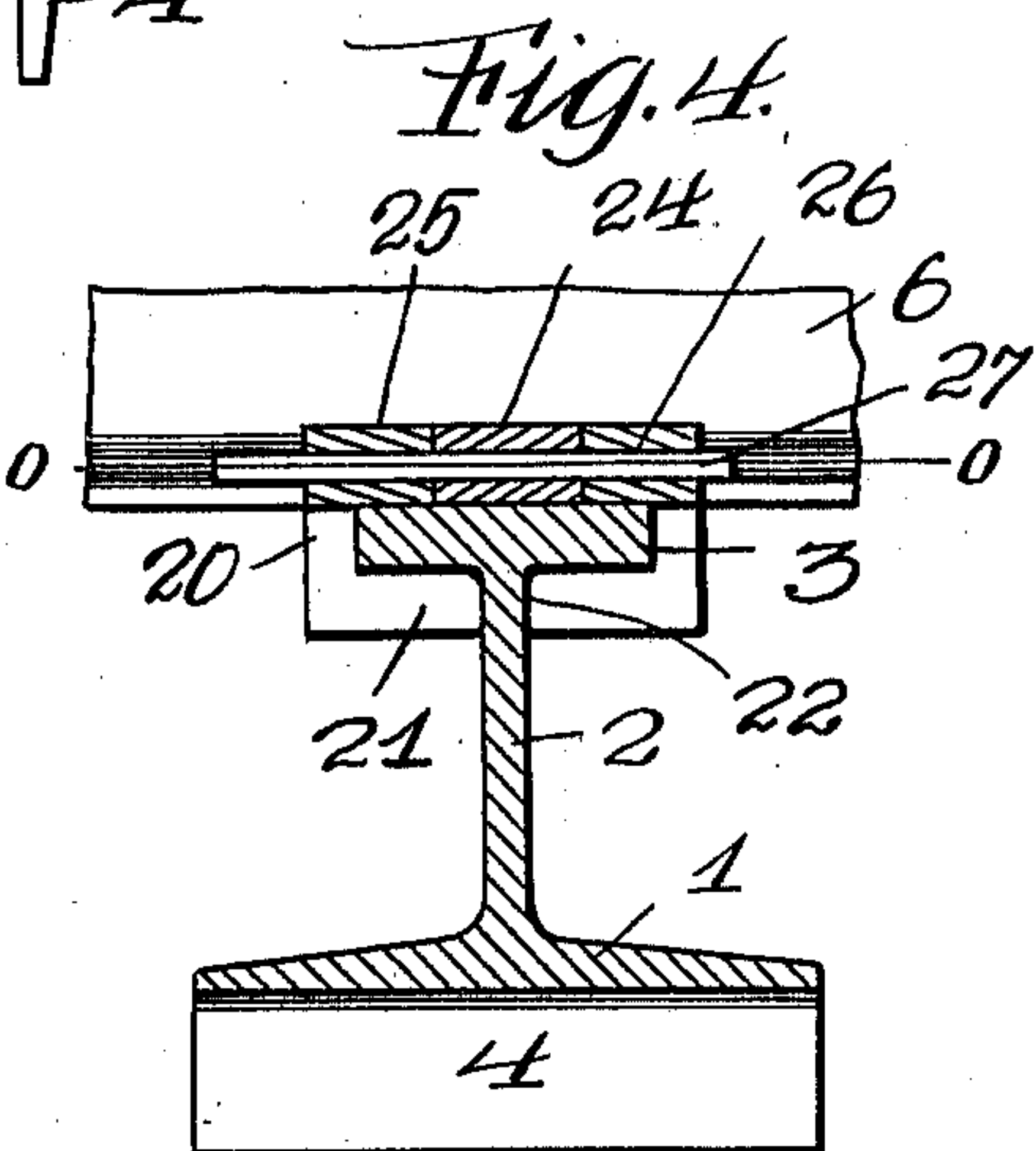
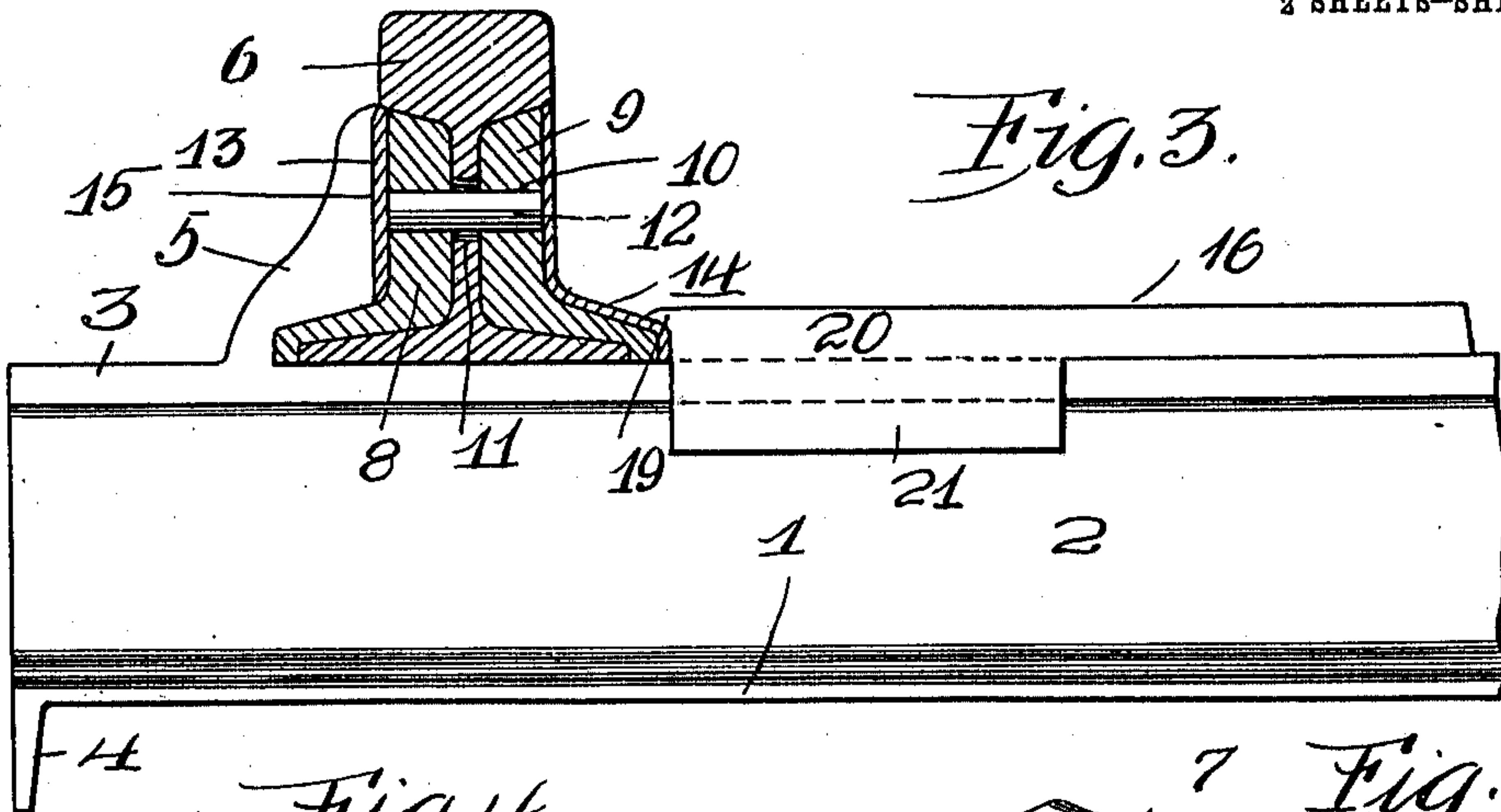
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2 SHEETS—SHEET 2.



WITNESSES

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UNITED STATES PATENT OFFICE.

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METALLIC TIE AND RAIL-JOINT.

990,199.

Specification of Letters Patent.

Patented Apr. 18, 1911.

Application filed August 5, 1910. Serial No. 575,636.

To all whom it may concern:

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

10 This invention relates to metallic ties and rail joints, and the objects of my invention are to provide a metallic tie of the I-beam construction that can be easily and quickly installed, and to furnish the tie with a novel fastener whereby rails can be easily secured to the tie.

Other objects of the invention are to provide a metallic tie that can be easily anchored in a road-bed and prevented from creeping, and to provide novel means in connection with the tie whereby the confronting ends of two rails can be easily secured thereto.

Other objects of the invention are to obviate the necessity of using bolts and nuts in connection with a rail joint, to provide means in connection with the confronting ends of two rails whereby said rails cannot become laterally or vertically displaced, to provide a sectional tie that can be easily and quickly adjusted, and to accomplish the above objects by a mechanical construction that is simple, durable, inexpensive to manufacture, and efficient for the purposes for which it is intended.

35 With these and such other objects in view as may hereinafter appear, the invention consists of the novel construction, combination, and arrangement of parts to be hereinafter specifically described and then claimed.

40 In the drawings: Figure 1 is an elevation of the tie. Fig. 2 is a plan of a plurality of ties showing the same in connection with a rail joint. Fig. 3 is an enlarged cross sectional view taken on the line *w-w* of Fig. 1. Fig. 4 is an enlarged cross sectional view of the tie taken on the line *x-x* of Fig. 1. Fig. 5 is a horizontal sectional view taken on the line *o-o* of Fig. 4. Fig. 6 is a perspective view of a portion of the tie. Fig. 7 is a perspective view of a coupling member. Fig. 8 is a perspective view of a wearing plate adapted to form part of the tie, and Fig. 9 is a perspective view of a slide bar forming part of the tie.

55 A tie in accordance with this invention is of the I-beam construction and each tie con-

sists of two sections A and B, each section comprising base flanges 1, a web 2, and a head 3. The outer ends of the sections A and B have the base flanges 1 thereof but bent downwardly, as at 4, to engage in the ballast of a road-bed and prevent the tie sections or the tie in its entirety from creeping or shifting due to the vibrations set up by rolling stock passing over the tie.

65 The outer ends of the sections A and B have the heads 3 thereof provided with integral outer braces 5 adapted to brace the outer sides of rails 6 mounted upon the ties. The integral outer braces 5 in some instances are cut away upon one side to provide pockets 7 for a detachable splice bar 8, said splice bar being mounted in two of the confronting pockets 7 between two of the ties, as shown in Fig. 2 of the drawings, said detachable splice bar being employed in conjunction with another splice bar 9 for bracing the confronting ends of two of the rails 6, for instance, between the ties C and D. The splice bars 8 and 9 are provided with a plurality of openings 10 adapted to register with openings 11 formed in the webs of the rails 6.

Mounted in the openings 10 and 11 are connecting pins 12, and these pins are retained within said openings by two plates 13 and 14. The former is arranged upon the outer side of the splice bar 8 and has the ends thereof mounted in pockets 15 provided therefor in the integral outer braces 5, and the latter is retained in place by a slide bar 16 mounted upon the section A of the tie, the section B also having a slide bar 17. The outer ends of the slide bars 16 of the sections A of the ties C and D are cut away, as at 18, to provide clearance for the ends of the splice bar 9, yet a portion 19 of said slide bars retains the plate 14 against the detachable splice bar 9. It is not necessary to cut away the outer end of the slide bar when it is simply employed for retaining a rail 6 upon the ties, as shown at the right-hand end of Figs. 1 and 2. The slide bars 16 and 17 have the outer ends thereof provided with longitudinal depending flanges 20 that are bent inwardly, as at 21, to provide a T-shaped slot 22 adapted to receive the heads 3 of the sections A and B. The inner ends of the slide bars are interlocked, this being accomplished by cutting away the inner end of the slide bar 16 to form a slot 23 adapted to receive a tongue 24 formed by cutting

away the inner end of the slide bar 17. The tongue 24 and the arms 25 formed by slotting or bifurcating the inner end of the slide bar 16 are provided with transverse slots 26 and in these slots are placed tapering keys 27 adapted to force the slide bars apart and cause the outer ends thereof to frictionally engage the plates 14 or the rails 6, as the case may be. The keys 27 have the small ends thereof split, as at 28, and the split portion 29 bent outwardly to lock the keys within the slide bars.

The confronting ends of the tie sections A and B have the webs 2 thereof provided with transverse slots 30 and interposed between the ends of said tie sections is a coupling member, comprising a post 31 having the lower end thereof provided with laterally projecting flanges 32 adapted to aline with the base flanges 1 of the tie sections. The post 31 adjacent to the upper and lower ends thereof has opposite sides thereof provided with outwardly projecting parallel arms 33 engaging upon both sides of the webs 2, with the upper end of the post 31 extending between the heads 3 of the tie sections A and B. The arms 33 have the outer ends thereof slotted, as at 34, to register with the slots 30 of the webs 2, and driven in the slots 34 and 30 are keys 35 similar to the keys 27, these keys drawing the tie sections A and B together whereby the integral braces 5 coöperate with the slide bars 16 and 17 in firmly retaining the rails 6 upon the tie sections. It is preferable to locate the arms 33 at the upper and lower ends of the post 31 whereby the webs 2 are firmly braced by said arms and connected together, the positioning of the slots 30 in the webs 2 not weakening or impairing the strength and rigidity of said webs.

It is a well-known fact that curved rails constituting a track receive greater wear than rails that are straight and on the level, and that the fastening means employed for holding curved rails are considerably worn. Since the integral braces 5 are worn on a curved section of track more than on a straight section, I employ wearing plates 36, these plates being shaped to fit the inner sides of the integral braces 5 and the edges

of said plates are flanged, as at 37, whereby they cannot become displaced relatively to said integral braces after the rails 6 have been placed against said wearing plates.

It is thought that the manner of assembling the various parts of the metallic tie and rail fastener will be apparent without further description, and while in the drawings there is illustrated a preferred embodiment of the invention, it is to be understood that the structural elements thereof are susceptible to such changes as fall within the scope of the appended claims.

What I claim, is:

1. In a metallic tie and rail fastener, the combination with rails, of tie sections of the I-beam construction adapted to be connected together and adapted to support said rails, integral braces carried by said sections adjacent to the outer ends thereof and adapted to engage the outer sides of said rails, slide bars movably mounted upon said sections and adapted to hold the inner sides of said rails, means for interlocking the inner ends of said slide bars, a coupling member interposed between the confronting ends of said sections, and means for connecting said coupling member to said sections.

2. In a metallic tie and rail fastener, the combination with rails, of tie sections of the I-beam construction, integral braces carried by said sections adjacent to the outer ends thereof and adapted to brace the outer sides of said rails, slide bars movably mounted upon said sections for holding the inner sides of said rails, keys adapted to simultaneously spread said slide bars apart and lock said bars together, a coupling member interposed between the confronting ends of said tie sections, and keys adapted to simultaneously draw said sections together and connect said sections to said coupling member.

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

LEVI KNOTT.

Witnesses:

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D. A. HENDERSON,
W. L. SHELLENBERGER.