

Jan. 2, 1923.

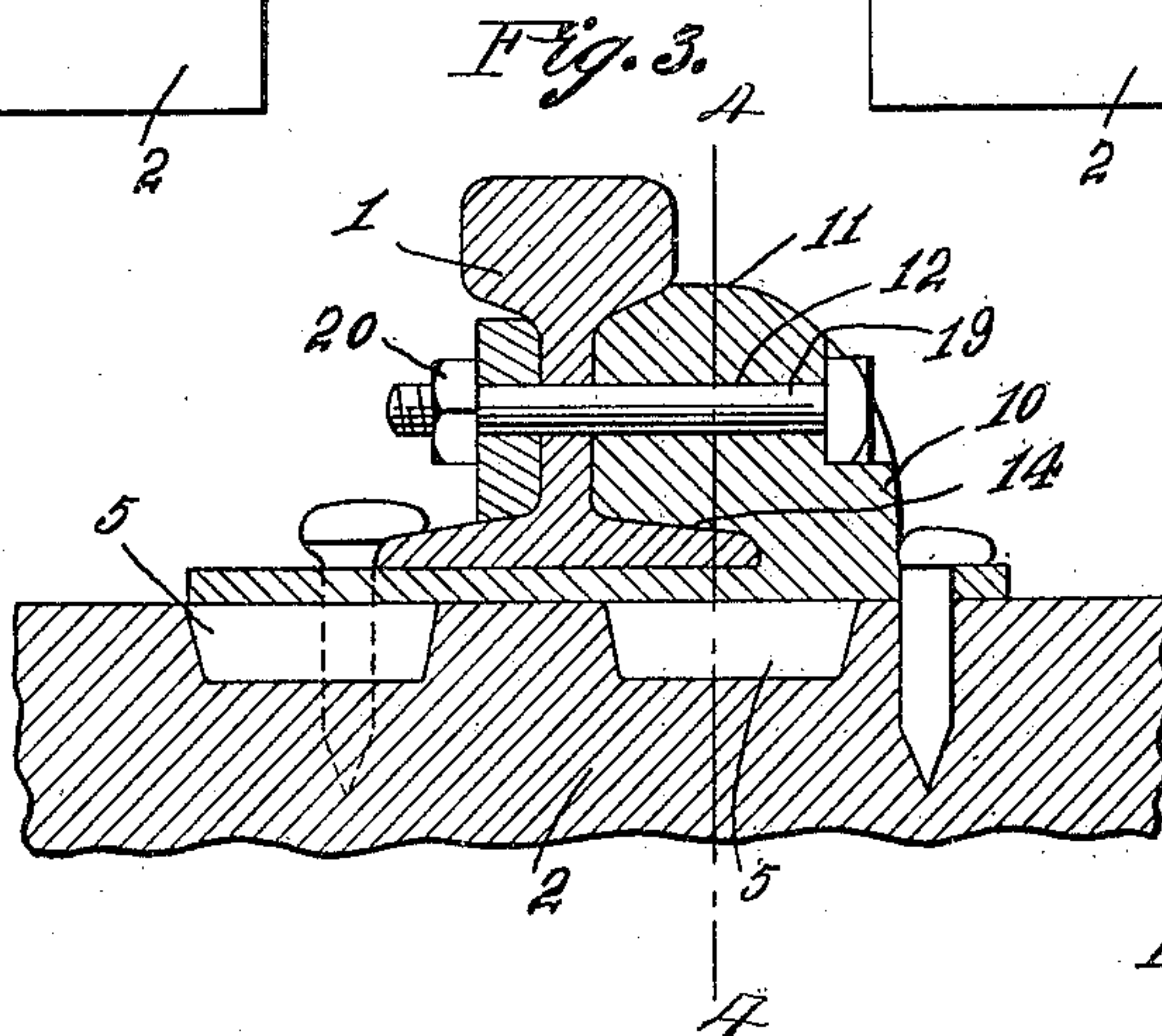
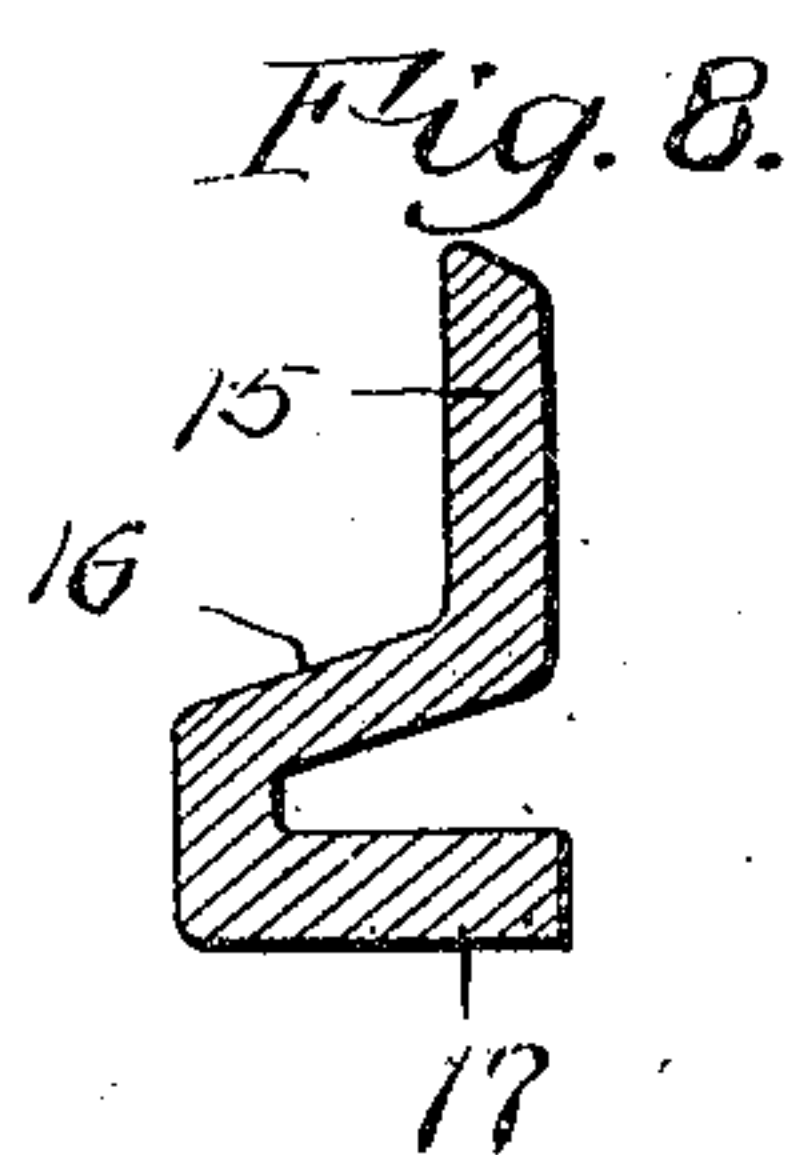
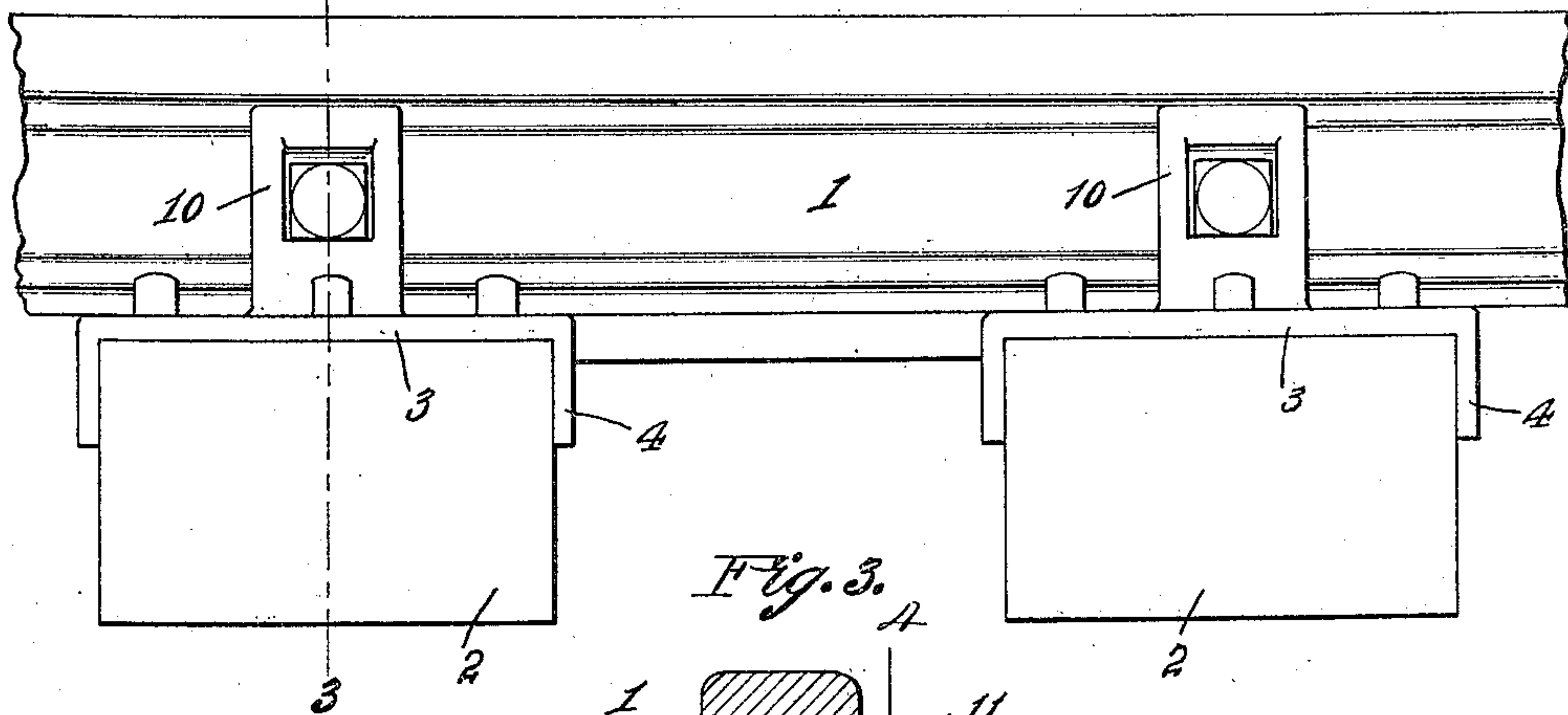
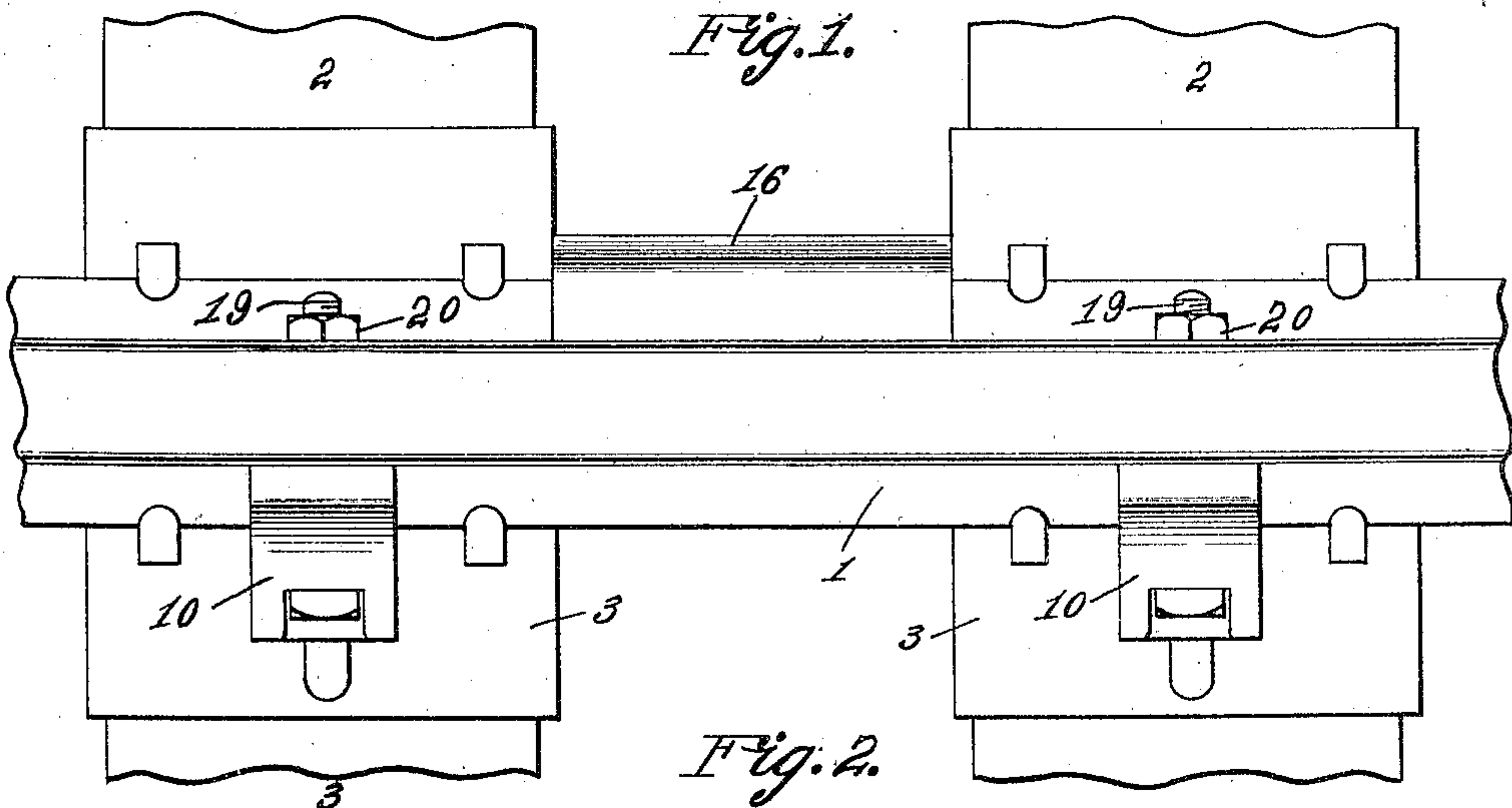
1,441,177.

N. SAROS.

BRACE.

FILED APR. 18, 1922.

2 SHEETS—SHEET 1.



*Leeds & Co.,*  
*WITNESS:*

*Nick Saros*

INVENTOR

BY *Victor J. Evans*

ATTORNEY

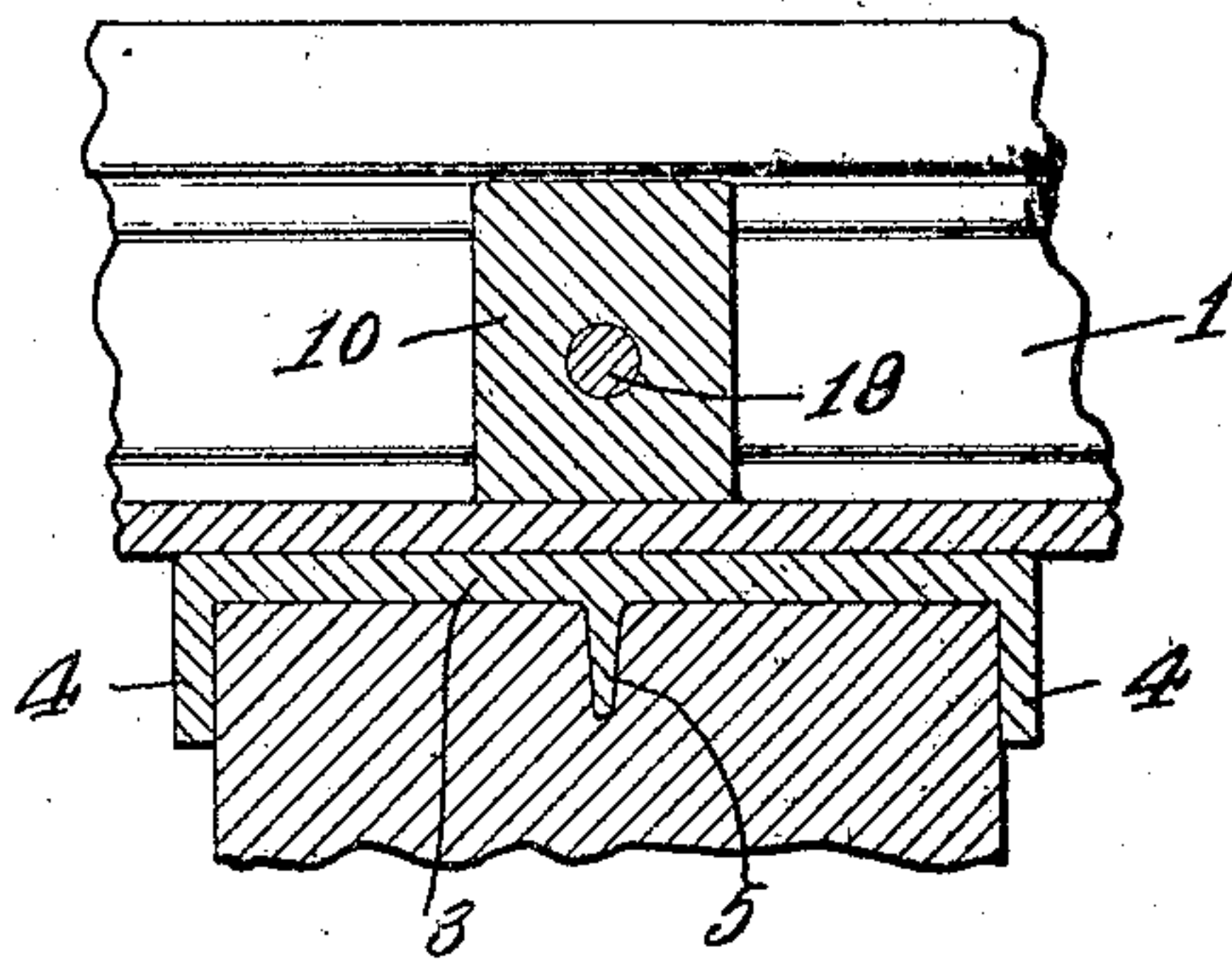
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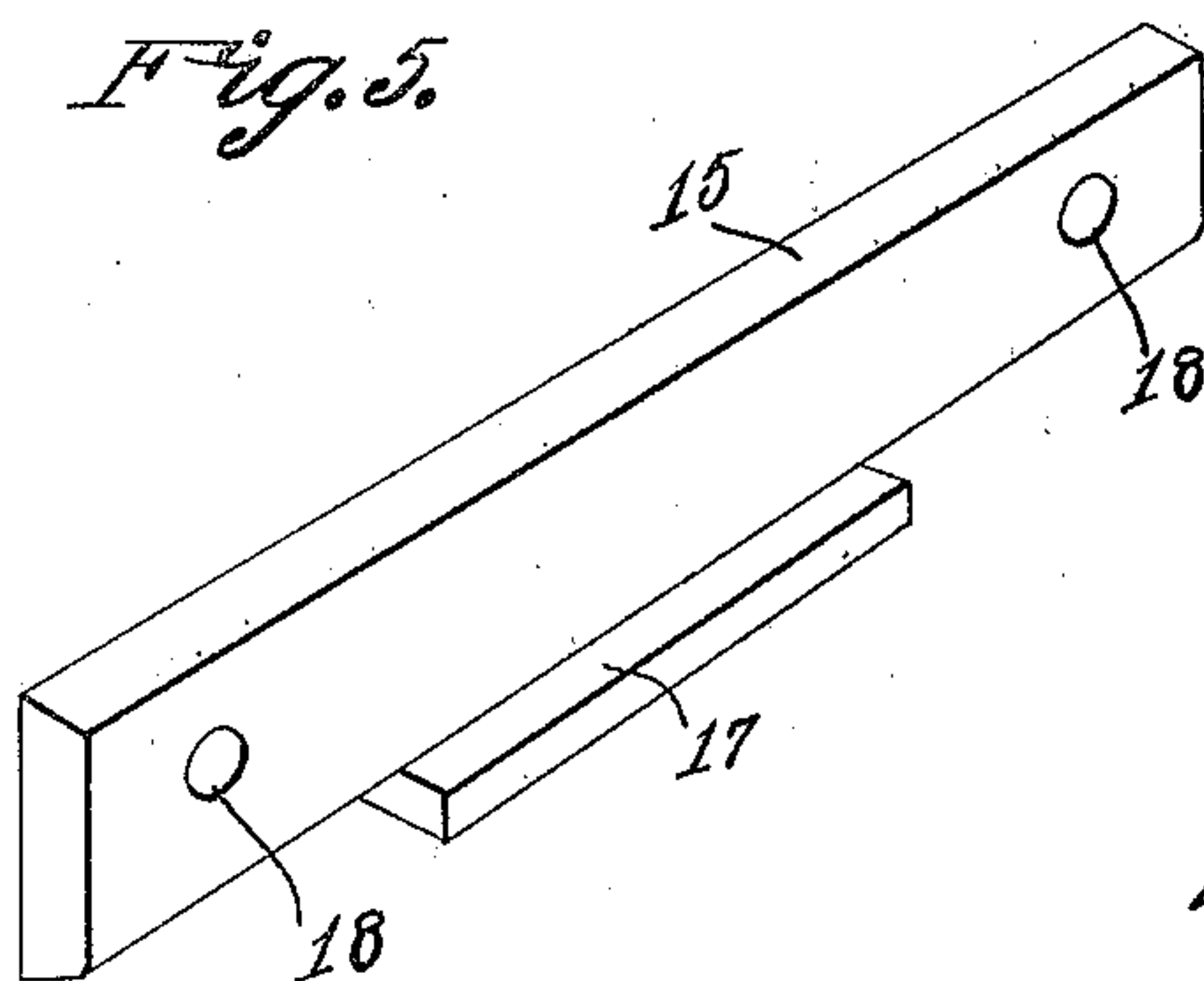
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2 SHEETS—SHEET 2.

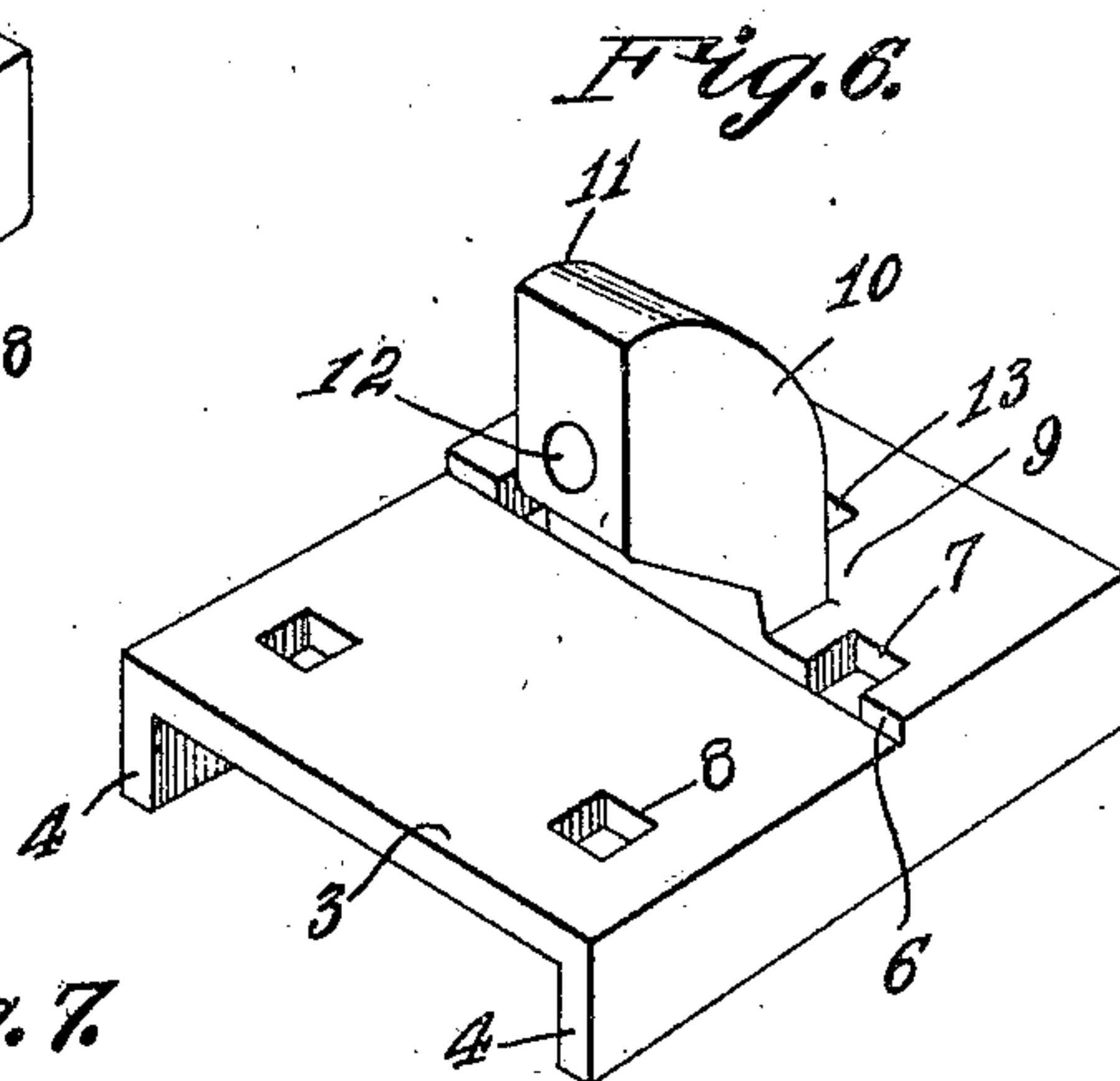
*Fig. 4.*



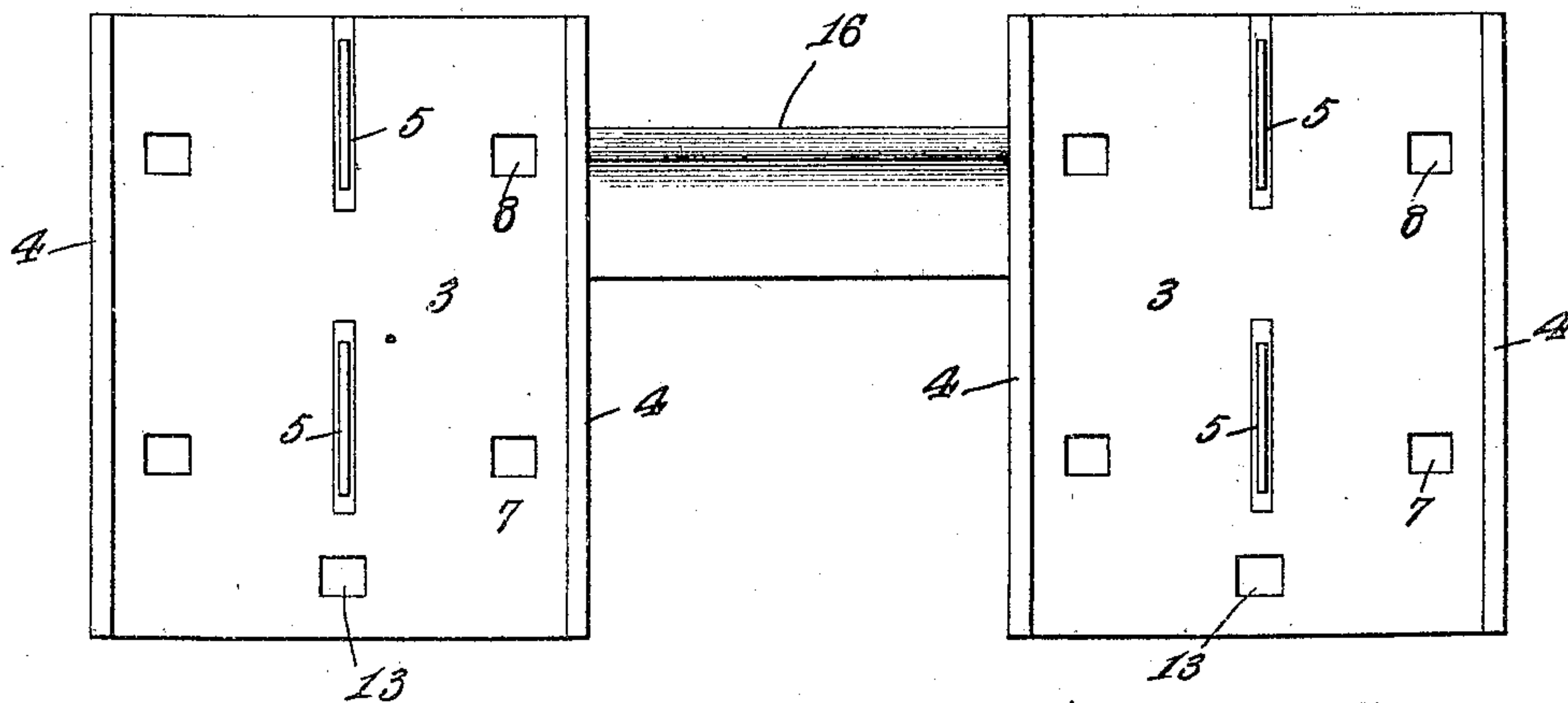
*Fig. 5.*



*Fig. 6.*



*Fig. 7.*



*Les Hayes*  
*Witness*

WITNESS:

*Nick Saros*

INVENTOR

BY *Victor J. Evans*

ATTORNEY



Patented Jan. 2, 1923.

1,441,177

# UNITED STATES PATENT OFFICE.

NICK. SAROS, OF BEVERLY, WASHINGTON.

## BRACE.

Application filed April 18, 1922. Serial No. 554,656.

*To all whom it may concern:*

Be it known that I, NICK. SAROS, a citizen of the United States, residing at Beverly, in the county of Grant and State of Washington, have invented new and useful Improvements in Braces, of which the following is a specification.

My present invention has reference to a means for bracing railway rails to prevent the same from tilting, creeping, spreading, or vertical movement.

The object of the invention is to produce a rail brace which, while of an extremely simple construction and may be cheaply manufactured and easily applied, will effectively support and strengthen the rails.

A still further object is to produce a rail brace that shall include cooperating members arranged on opposite sides of a rail, engaging in the fishing spaces and with the flanges of the rail, and which also provides tie plates on which the rails rest, while simple means, in the nature of bolts and nuts connect the elements constituting the brace with the rails and with each other.

The foregoing, and other objects which will appear as the nature of the invention is better understood, may be accomplished by a construction, combination and operative association of parts, such as is disclosed by the drawings which accompany and which form part of this specification.

In the drawings:—

Figure 1 is a top plan view of a rail braced in accordance with this invention.

Figure 2 is a side elevation thereof.

Figure 3 is an enlarged sectional view on the line 3—3 of Figure 2.

Figure 4 is a sectional view on the line 4—4 of Figure 3.

Figure 5 is a perspective view of one of the brace members.

Figure 6 is a similar view of one of the coacting brace members.

Figure 7 is a bottom plan view of Figure 1.

Figure 8 is a central cross sectional view through the bar employed.

While in the drawings, I have illustrated the improvement applied on rails away from the joints between the rails, it is to be understood that the device, in addition to serving as a brace for rails may be employed with equal efficiency for connecting the confronting ends of two rails. In addition to this, it is to be understood that the improvement

may be employed in connection with frogs and guard rails as well as a protector for switch points and likewise as a protector for insulated rail joints.

In the drawings, the rails of a track are indicated by the numeral 1 and the supporting ties therefor by the numeral 2.

Resting on one or more of the ties 2 at desired spaced intervals there are pairs of flat plates 3. The plates, on their under faces are formed at their edges with depending ribs 4 and with central spaced ribs 5. The central ribs 5 are V-shaped in cross section, and the end ribs 4 are preferably spaced away from each other a distance equalling the width of the tie 2. The plate 3 is thickened from adjacent one of its ends, providing a shoulder 6 between the plate proper and the thickened portion thereof. The plate, in a line with the thickened portion is provided with openings 7 and other openings 8 preferably opposite the openings 7 but arranged adjacent to one of the edges of the said plate. From the center of the thickened portion of the plate 3, which for distinction, is indicated by the numeral 9, there arises a lug 10. The lug is formed with what I will term a head portion 11 that projects over the plate proper, the under face of the head being arranged at an inclination, the outer end thereof being straight, and the inner corner being preferably rounded. The lug is provided with a central longitudinal opening 12 therethrough, and the thickened portion 9 of the plate 3 to the rear of the lug 10 has an opening 13 therethrough. The openings 7, 8 and 13 have passed therethrough either spikes or lag screws, the latter preferred, which, of course, enter the ties and therefore hold the plates firmly on the ties. The headed portion of the lug is received in the fishing spaces of the rails 1, the lower inclined wall 14 of the head 11 contacting with the upper surface of the base flanges of the rails, the inner flat end of the head contacting the webs of the rails, while the top of the head underlies the heads of the rails.

The remaining element of the brace is in the nature of a bar 15 which is received in the fishing space at the opposite side of the rail. The bar has its lower edge beveled to rest on the base flange of the rails and its upper edge, at its inner corner is rounded, the said upper edge underlying the heads of the rails. The bar 15, upon its outer face is centrally formed with an extension 16



whose under face is arranged at an inclination corresponding with the inclined lower edge of the bar proper. The outer wall of the extension 16 is downwardly directed  
 5 and is, on its inner face formed with an inwardly extending flat flange 17, the latter underlying the base flange of the rails and being disposed to contact with the confronting sides of the plates 3. The bars 15, adjacent their ends, and in a line with the  
 10 openings 12 have bolt openings 18 there-through, and passing through the said openings 12 in the lugs 10, suitable openings in the webs of the rails and through the said  
 15 openings 18 there are bolts 19, the said bolts being engaged by suitable nuts 20.

It is to be noted that one edge of the base flange of the rails contacts with the shoulder 6 and that the heads of the lag screws passing through the openings 7 in the plates 3  
 20 contact the said edges and upper faces of the rail flanges. It is to be understood that if desired the plates 3 may rest on widened ties instead of disposed on two of the ordinary ties as shown, in which instance the  
 25 depending side flanges may be V-shaped in cross section to form penetrating elements which enter the ties, while the central penetrating elements may be disposed between the confronting sides of the ties. It  
 30 is thought that the foregoing description, when taken in connection with the drawings will fully set forth the construction, operation and advantages of the improvement to  
 35 those skilled in the art to which such inventions relate.

Having described the invention, I claim:—

1. In combination with a rail and ties on which the rail rests, of a brace for said  
 40 rail, comprising spaced plates resting on and secured to the ties, each of said plates having an inwardly extending lug received in the fishing spaces of the rails, a bar received in the opposite fishing spaces of the  
 45 rails, said bar having a central flanged portion whose inner face is shaped to receive therein the flange of the rail, the flange of the bar being disposed between and in contacting engagement with the confronting  
 50 ing edges of the plates, means passing

through the lugs of the plates, rails and bars for connecting these elements.

2. The combination with a railway rail, and ties on which the rail rests, of a brace for the rail, comprising plates resting on  
 55 certain of the ties and receiving thereon the base flanges of the rails, said plates having upwardly extending shoulders against which one edge of the base flange of the rail contacts, a lug centrally formed on each  
 60 of the plates having an inwardly projecting head received in the fishing space of the rail, a bar received in the opposite fishing space of the rail, said bar having a centrally arranged outwardly extending flange whose  
 65 end is downturned and formed with an inward projection which underlies the base of the rail and which has its ends in contacting engagement with the confronting edges of the plates, means passing through  
 70 the head, rail and bar for connecting these elements, means passing through the plates for securing the same on the ties, and certain of said means contacting the rail.

3. The combination with a rail and supporting ties therefor, of a brace for the rail, including spaced plates having depending  
 75 flanges to engage the sides of the ties and central penetrating elements which enter the ties, the rail resting on the plates and the plates having shoulders against which one  
 80 edge of the flange of the rail abuts, each of said plates having a centrally disposed lug provided with an inwardly directed head received in the fishing space of the rail, a  
 85 bar received in the opposite fishing space of the rail, an outwardly extended downwardly inclined flange centrally formed on the outer face of the bar, said flange terminating in a downturned portion which is  
 90 provided with an inwardly extending portion that is arranged below the base of the rail, removable and adjustable means passing through the lug, rails and bar for connecting these elements, means for fastening  
 95 the plates on the ties, and certain of said means contacting the base flanges of the rails.

In testimony whereof I affix my signature.

NICK. SAROS.