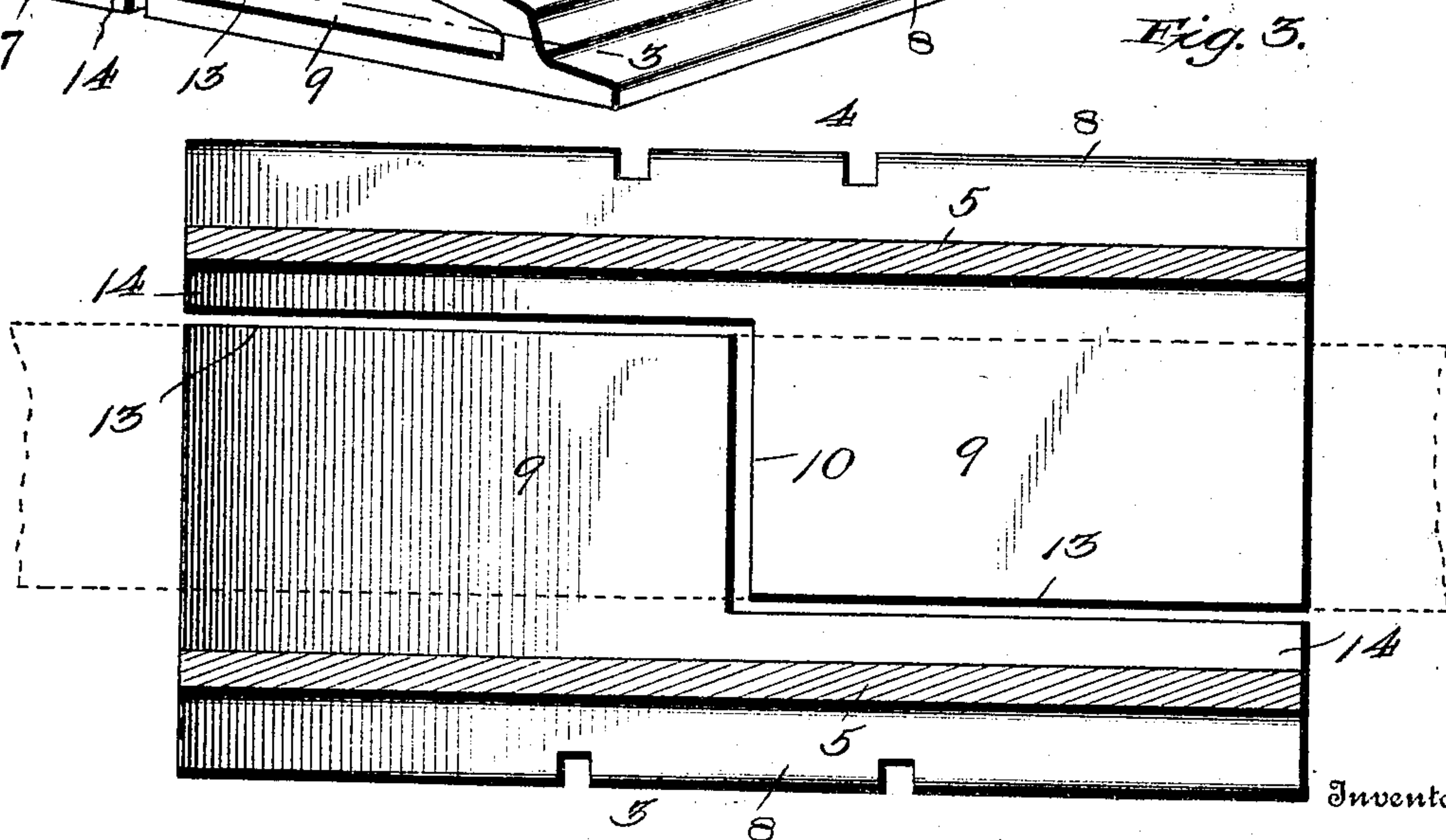
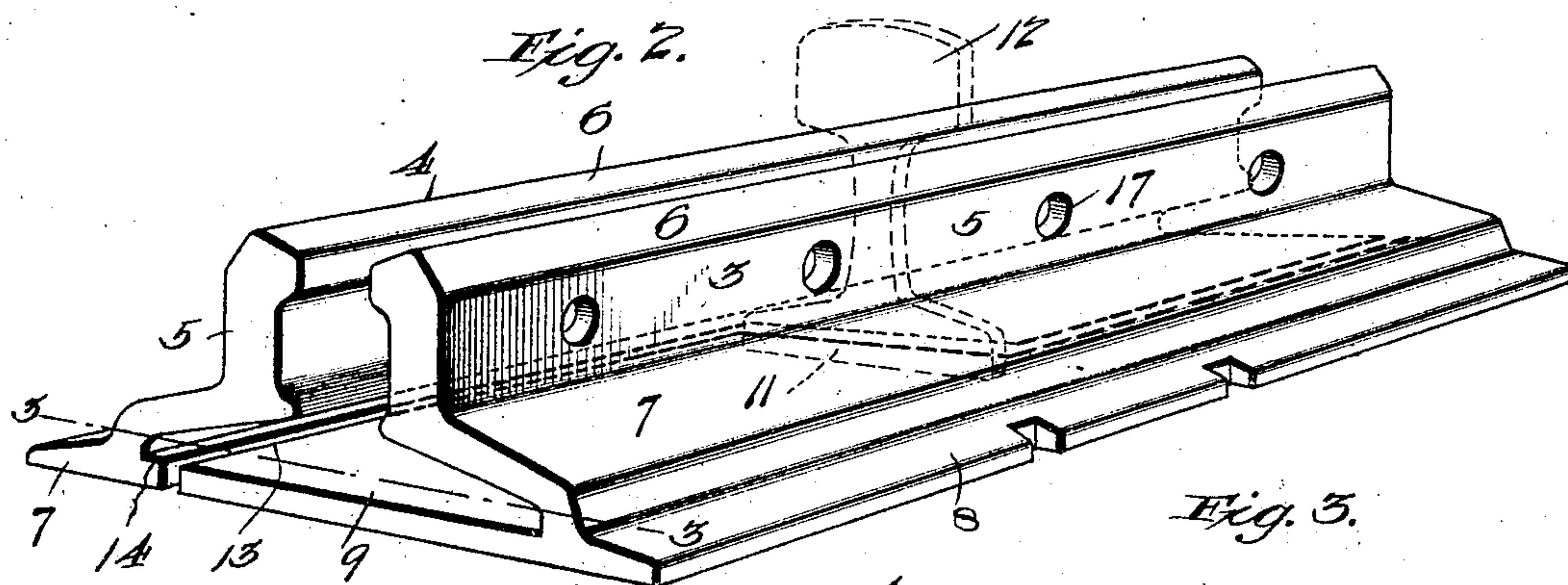
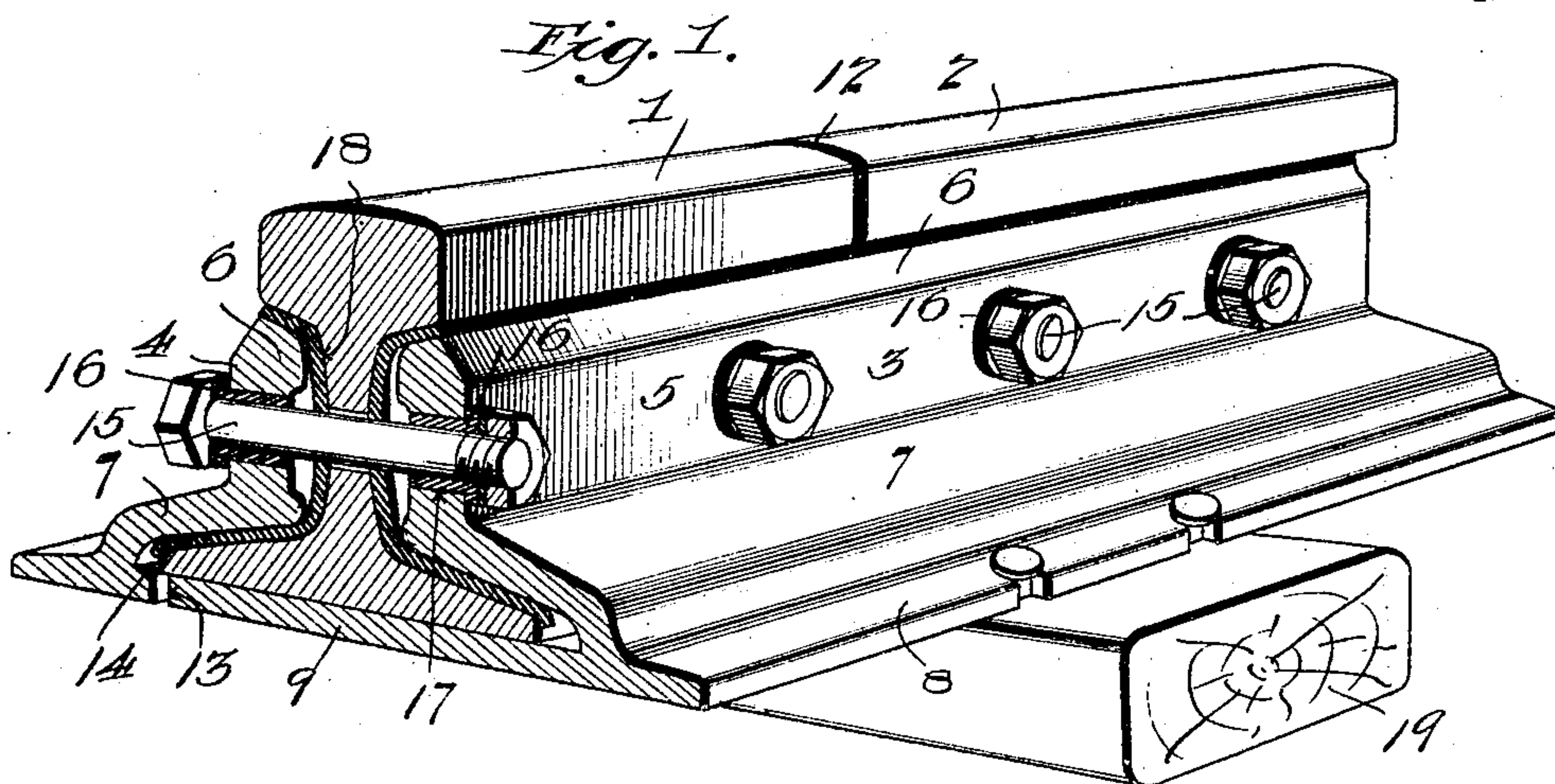


No. 868,518.

PATENTED OCT. 15, 1907.

B. WOLHAUPTER.  
INSULATED RAIL JOINT.  
APPLICATION FILED NOV. 8, 1906.

2 SHEETS—SHEET 1.



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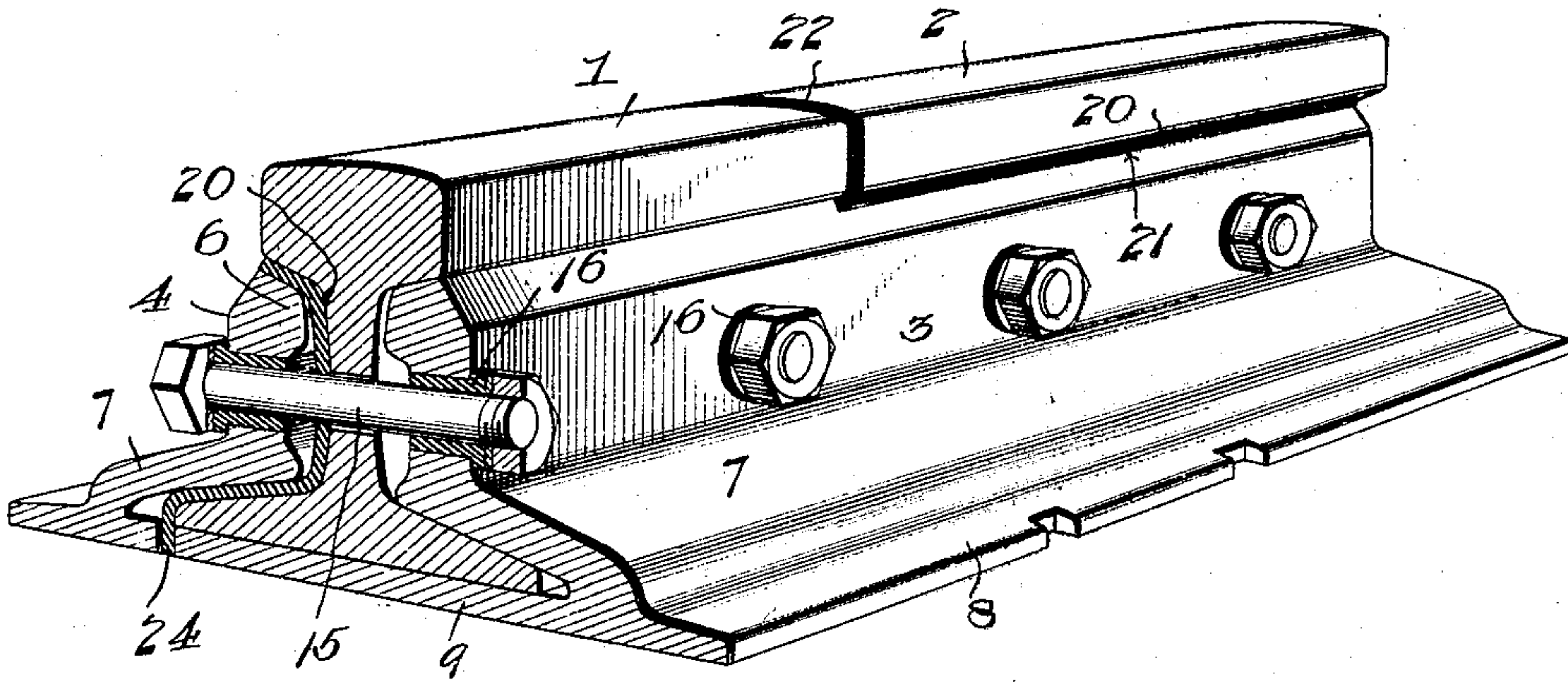


Fig. 4.

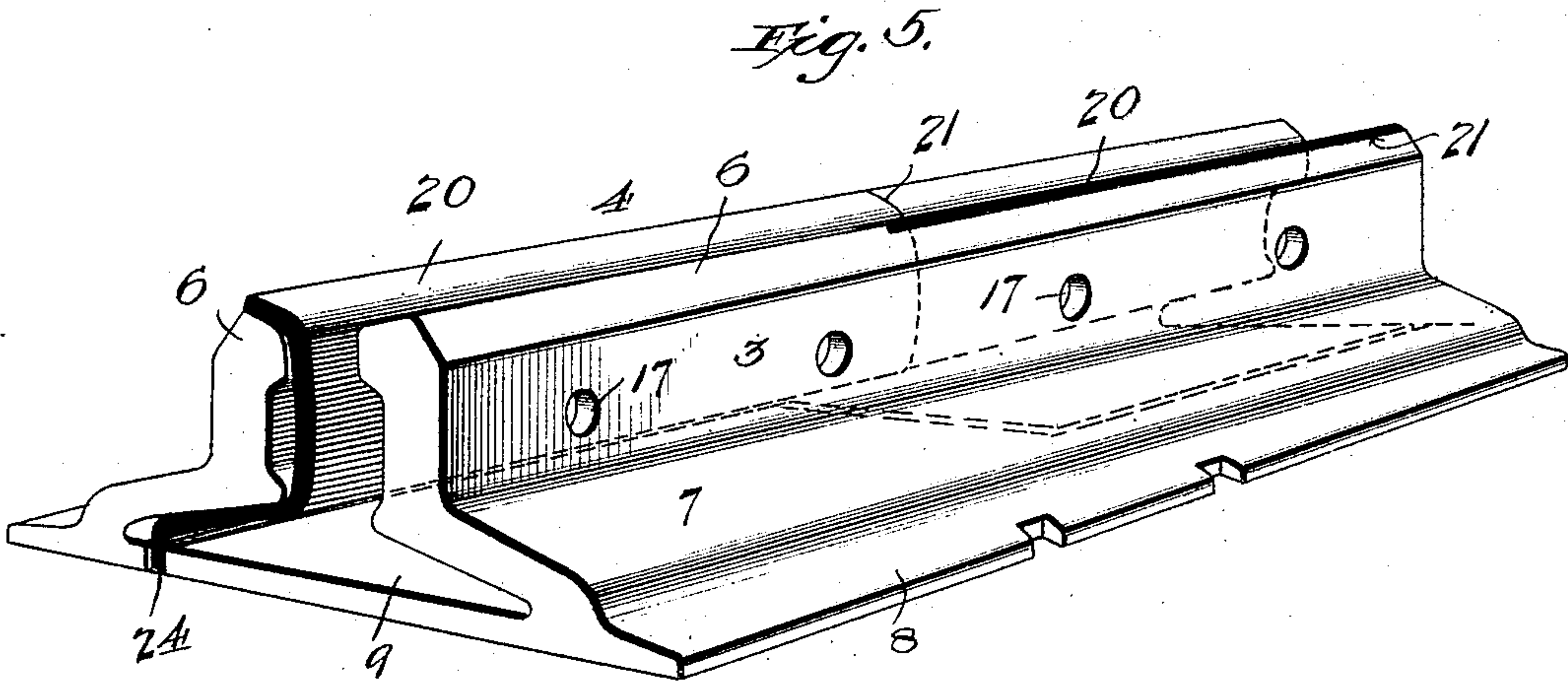


Fig. 5.

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# UNITED STATES PATENT OFFICE.

BENJAMIN WOLHAUPTER, OF NEW YORK, N. Y., ASSIGNOR TO THE RAIL JOINT COMPANY,  
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## INSULATED RAIL-JOINT.

No. 868,518.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed November 8, 1906. Serial No. 342,524.

*To all whom it may concern:*

Be it known that I, BENJAMIN WOLHAUPTER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Insulated Rail-Joints, of which the following is a specification.

This invention relates to insulated rail joints of the type wherein an individual and independent metal base support is provided for each rail end, while at the same time thorough and complete insulation is provided throughout the joint.

The general objects to be attained by the present invention are the same as those carried out in connection with the forms of insulated joints disclosed and claimed in a companion application filed November 8, 1906, Serial Number 342,523.

With these objects in view, the invention consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

The essential features of the invention involved in adapting the divided or two-part base construction to joints of the continuous and similar types of rail joints are susceptible to structural changes without departing from the scope of the invention, but for illustrative purposes there are shown in the drawings certain preferred practical embodiments of the invention.

In these drawings—Figure 1 is a sectional perspective view of a rail joint constructed in accordance with the present invention and illustrating the improvements in their application to that form of insulated rail joint represented by the well known continuous type of rail joint. Fig. 2 is a detail perspective view showing the matching relation of the separate bases of the opposite angle bars or side joint plates which are illustrated in their applied position in Fig. 1. Fig. 3 is a sectional plan view on the line 3—3 of Fig. 2. Fig. 4 is a sectional perspective view showing a modified construction of insulated rail joint embodying the present invention. Fig. 5 is a perspective view of the oppositely arranged angle bars of the joint shown in Fig. 4 illustrating their matching relation and showing the one end insulation idea along the non-supporting end of each bar.

Like references designate corresponding parts in the several figures of the drawings.

An insulated rail joint of the general type shown in the drawings, embodying the divided or two-part base construction whereby each rail end has a separate supporting base or base plate, includes the service rails 1 and 2, and the opposite continuous side joint plates 3 and 4 located respectively upon opposite sides of the rails. Each of the side joint plates of the form of rail joint shown in Fig. 1 of the drawings-consists of a main continuous splice bar portion 5 having head and foot

flanges 6 and 7, respectively engaging beneath the head of the rails, and over the base flange thereof. The foot flange 7 of each side plate 3 and 4 extends over the inclined upper face of the rail base at an obtuse angle to the vertical plane of the main splice bar portion 5, and has formed integrally with the outer edge thereof an outwardly projecting continuous reinforce and spiking flange 8, and with an inwardly projecting base member or base plate 9 designed to constitute a supporting and reinforcing base for one of the rail ends.

The base member or base plate 9 of each side joint plate is usually of a length approximately equaling one-half the full length of said side joint plate, though this may be varied to suit different conditions where the joint is to be applied, but in all forms of the invention this base plate proper 9 of each side plate is located wholly at one side of the transverse center of the plate, so that such plate is provided with what may be termed one end portion having a supporting base, while the other end portion may be termed a non-supporting end. Also, in order to preserve uniformity of support throughout the entire joint, the separate base plates 9—9 are preferably duplicates in design and arrangement and are disposed respectively at opposite sides of the transverse central line of the joint as plainly shown in Fig. 3 of the drawings. It will also be observed that the opposite side plates 3 and 4, with their separate and independent base plates 9, preserve a matching relation, inasmuch as one of the side plates, designated by the numeral 3, has its base plate 9 projected inwardly from one end portion thereof, while the opposite side plate, designated by the numeral 4, has its base plate projected inwardly from the correspondingly opposite end portion thereof. With this arrangement the base plates of the opposite side joint plates, while lying in the same horizontal plane, are disposed in spaced though matching relation in order to extend well beneath the individual rail bases engaged and supported thereby. In the application of the side joint plates to the service rails an intervening gap or space 10 is left between the inner or adjacent edges of the base plate 9, which space is designed to be suitably insulated, preferably by having the base 11 of the insulating end post 12 drop sufficiently below the rail bases to extend into the said intervening gap or space 10. While this utilization of the insulating end post for the rail ends is a practical method of providing the necessary insulation between the inner ends of the base plates 9, other insulating expedients may obviously be resorted to without affecting or departing from the invention.

The longitudinal edge 13 of each base plate 9 is arranged in parallelism to and spaced from a narrow girder or trussing flange 14 projected inwardly from the lower edge of the foot flange 7 of the directly op-



posite side plate. This narrow girder flange or trussing flange 14 is the portion of the metal left by the shearing or casting operating along the non-supporting end of the side plate, that is along that end portion of the side plate which is not provided with a base plate for a rail end. By reason of this construction, it will be observed that the flange or flange portion 14 of each side plate forms a narrow continuation of the base plate and consequently materially reinforces and trusses the latter.

When the side joint plates are applied and the several joint bolts 15 tightened, a well defined space or interval is left between the longitudinal edge 13 of each base plate and the directly opposite girder flange 14 of the opposite side plate. This space ordinarily provides an air gap of sufficient width to secure proper insulation at this point in the base structure of the joint, though any suitable insulating means or expedients may be utilized, if desired, for more effectively providing insulation at the points referred to. Also, any approved means may be employed for effectively insulating the joint bolts 15, but this may be accomplished by employing the flanged or headed insulating bushings 16 fitted in the bolt holes 17 of the side joint plates 3 and 4, and whose flanges or heads are interposed between the heads and nuts of the bolts and the outer faces of the side joint plates, as plainly shown in Fig. 1 of the drawings.

To complete the general insulation of the type of joint described, continuous side insulating sheets 18 are interposed between the sides of the rails and the rail adjoining faces of the side joint plates 3 and 4. In this form of the invention the insulating sheets are shown as extending continuously across the joint between the rail ends, and from end to end of the side joint plates, while at the same time following the contour of the inner sides of said joint plates so as to insulate them from the rail heads, webs, and base flanges.

Another feature to observe in connection with the form of joint just described is that the same presents a construction well adapted to be supported or seated, as an entirety, upon a single track tie 19 located within the transverse vertical plane of the joint between the rail ends as illustrated in Fig. 1 of the drawings.

The modified form of the invention shown in Figs. 4 and 5 of the drawings embodies the same mechanical elements as the form of joint illustrated in Figs. 1, 2, and 3 of the drawings, but an economical and effective arrangement of the insulation is suggested wherein instead of employing a full length side insulating sheet such as shown in Fig. 1 of the drawings, each of the side joint plates 3 and 4 is fitted with what may be termed a one end insulation. That is, with each of the plates 3 and 4 there is associated a short length insulating sheet 20 arranged upon the inner face of the non-supporting end of the side plate, that is the end which is not equipped with a base member or base plate for one of the rail ends. Hence, as clearly shown in Figs. 4 and 5, each of the side plates 3 and 4 is recessed at the head and foot thereof, as indicated at 21, to admit flush within the recessed portions, the short length insulating sheet 20, which sheet of insulation is arranged at one end to overlap the insulating end post 22 between the rail ends, and its bottom edge is formed with a pendent insulating lip 24 extending into the

space between the girder flange 14 and the opposing longitudinal edge 13 of the base plate 9 carried by the opposite side joint plate.

Various other modifications in both the mechanical and insulating features of the herein described joints will suggest themselves to those skilled in the art without further description, and it will therefore be understood that changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

I claim.

1. In an insulated rail joint, the service rails, side angle bars engaging beneath the rail heads and each provided at its bottom edge with a short length base plate for supporting one rail end only, and means for insulating one rail from the other.

2. In an insulated rail joint, the service rails, side angle bars, each angle bar being provided with inner and outer reinforcements along its bottom edge and also with an integral base plate for one rail end, and means for insulating one rail from the other.

3. In an insulated rail joint, the service rails, side angle bars engaging beneath the rail heads and each of which is provided at its bottom edge with an integral short length base plate for one rail end, and means for insulating one rail from the other including an insulating piece between the separate base plates.

4. In an insulated rail joint, the service rails, side angle bars engaging beneath the rail heads and each of which is provided with a short length base plate for one rail end, and insulation between each rail end and one end portion of one angle bar.

5. In an insulated rail joint, the service rails, side angle bars engaging beneath the rail heads and each of which is provided with a short length integral base plate for one rail end, and a one-end insulation for each angle bar, the insulation for one angle bar being diagonally opposite that for the other.

6. In an insulated rail joint, the service rails, side angle bars engaging beneath the rail heads and each of which is provided with an integral short length base plate for one rail end, insulation between the rail ends and the angle bars, and transverse insulation between the inner ends of the base plates.

7. In an insulated rail joint, the combination with the rails and a single track tie, of side bars engaging beneath the rail heads and each provided with a short length base plate for one rail end, and both of said plates being arranged for support on said single tie, and means for insulating one rail from the other.

8. In an insulated rail joint, the combination with the rails and a single track tie, of continuous side angle bars engaging beneath the rail heads and each provided with a short length base plate for one rail end, both of which plates are adapted to be carried on said tie, insulation between the angle bars and the rail sides and an insulating piece between the separate base plates.

9. In an insulated rail joint, the service rails, side angle bars engaging beneath the rail heads and each of which is provided with a short length integral base plate for one rail end, and a one-end insulation for that part of each angle bar not provided with a base plate.

10. In an insulated rail joint, the rails, continuous side angle bars engaging beneath the rail heads and each of which is provided with a short length integral base plate for one rail end, each base plate being adapted to afford one rail end a support on both sides of the meeting point of the rail ends, and means for insulating one rail from the other.

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

BENJAMIN WOLHAUPTER.

Witnesses:

KATHERINE McNALLY,  
E. F. SCHERMERHORN.