

H. R. LUTHER.  
RAILWAY TRACK STRUCTURE.  
APPLICATION FILED JAN. 26, 1907.

917,957.

Patented Apr. 13, 1909.  
2 SHEETS—SHEET 1.

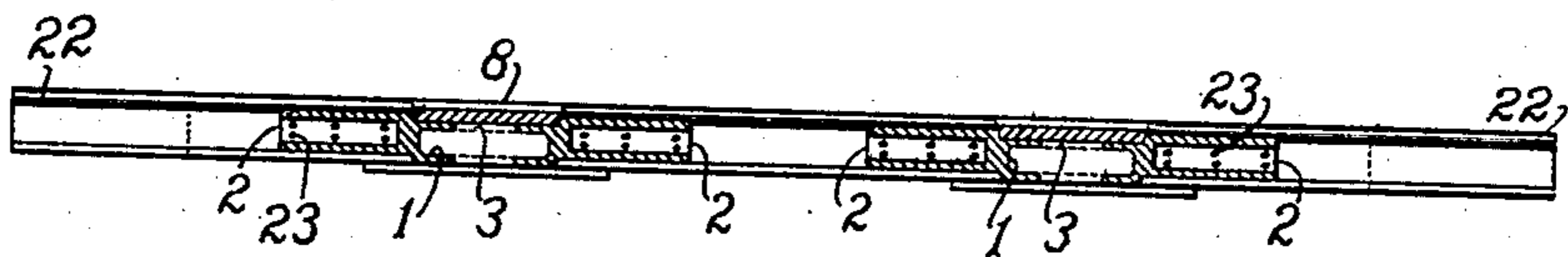
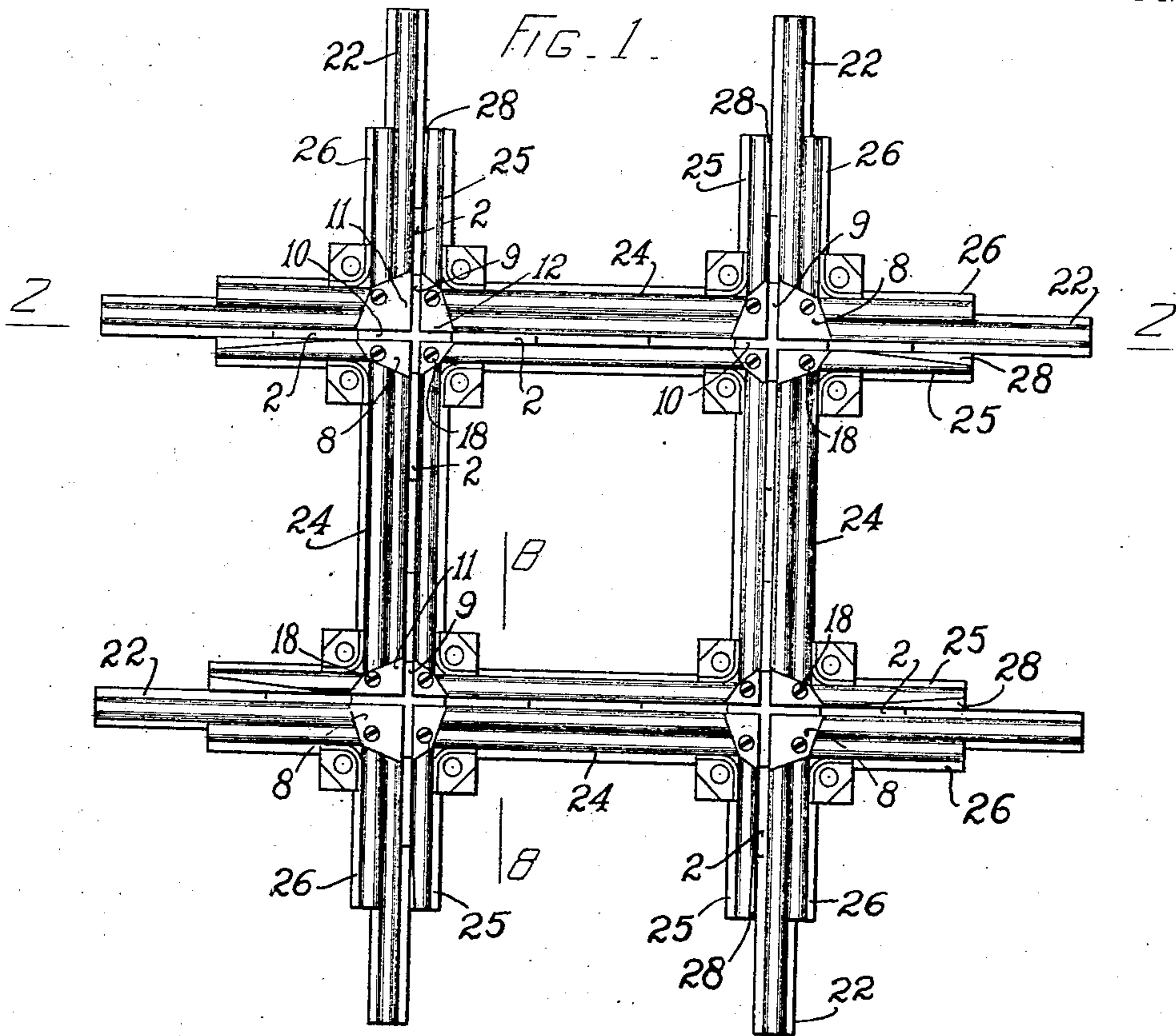


FIG. 2.

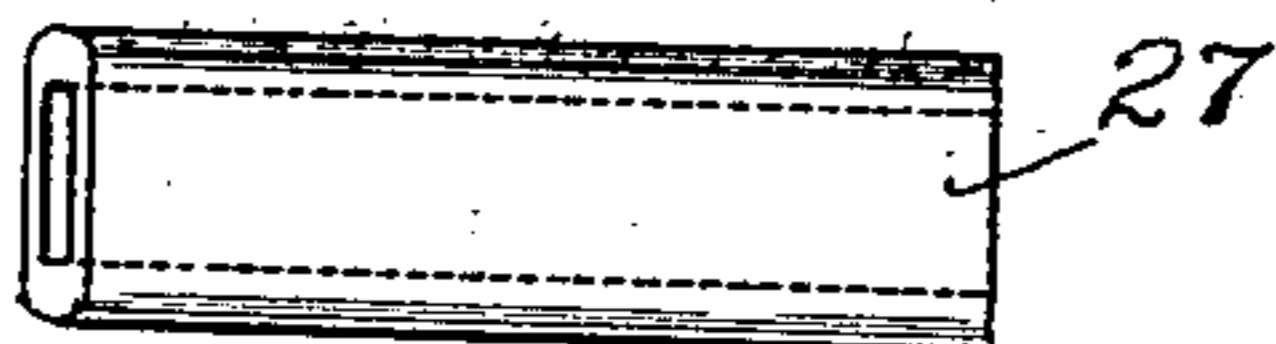


FIG. 3.

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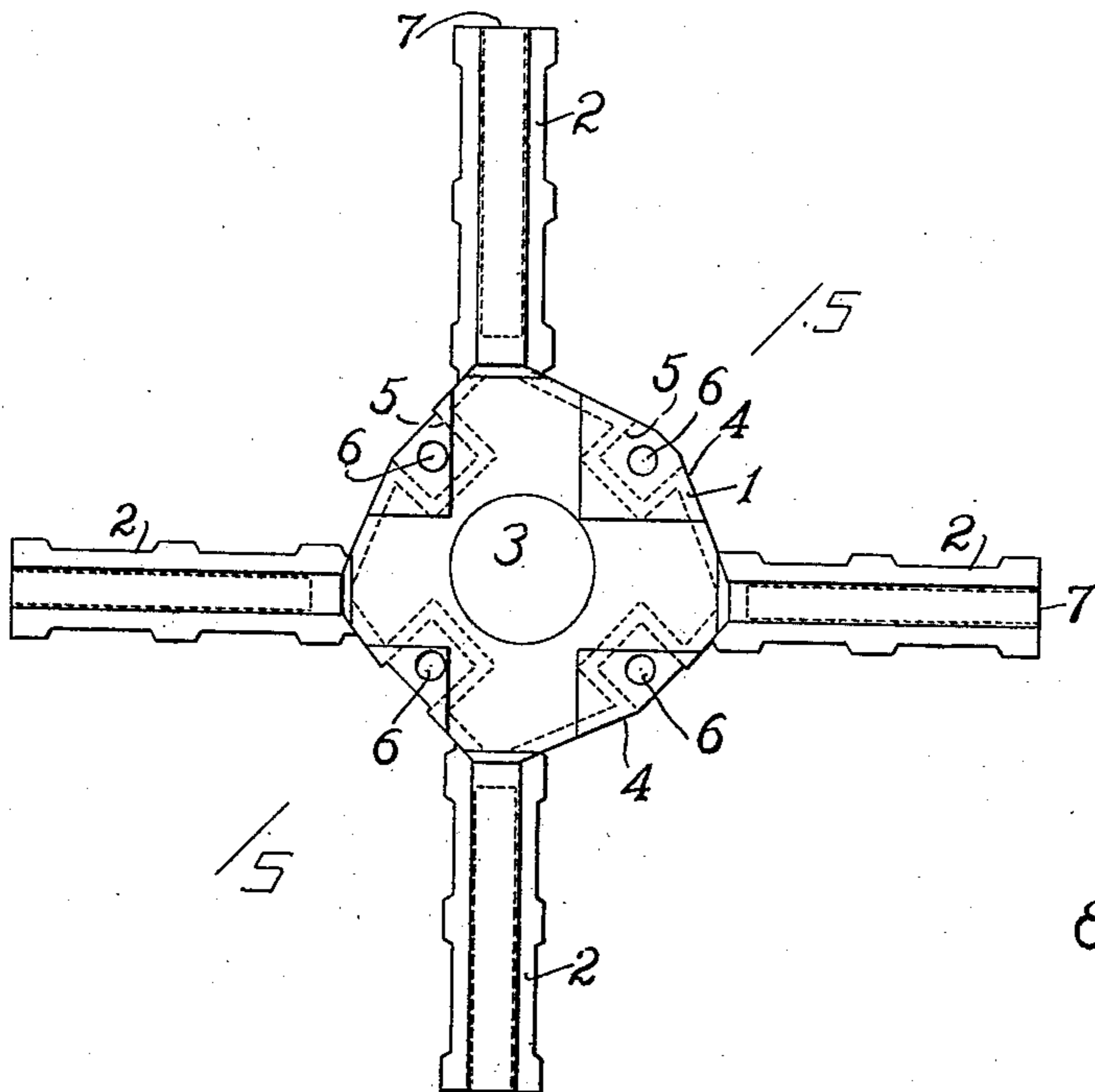


FIG. 3.

FIG. 6.

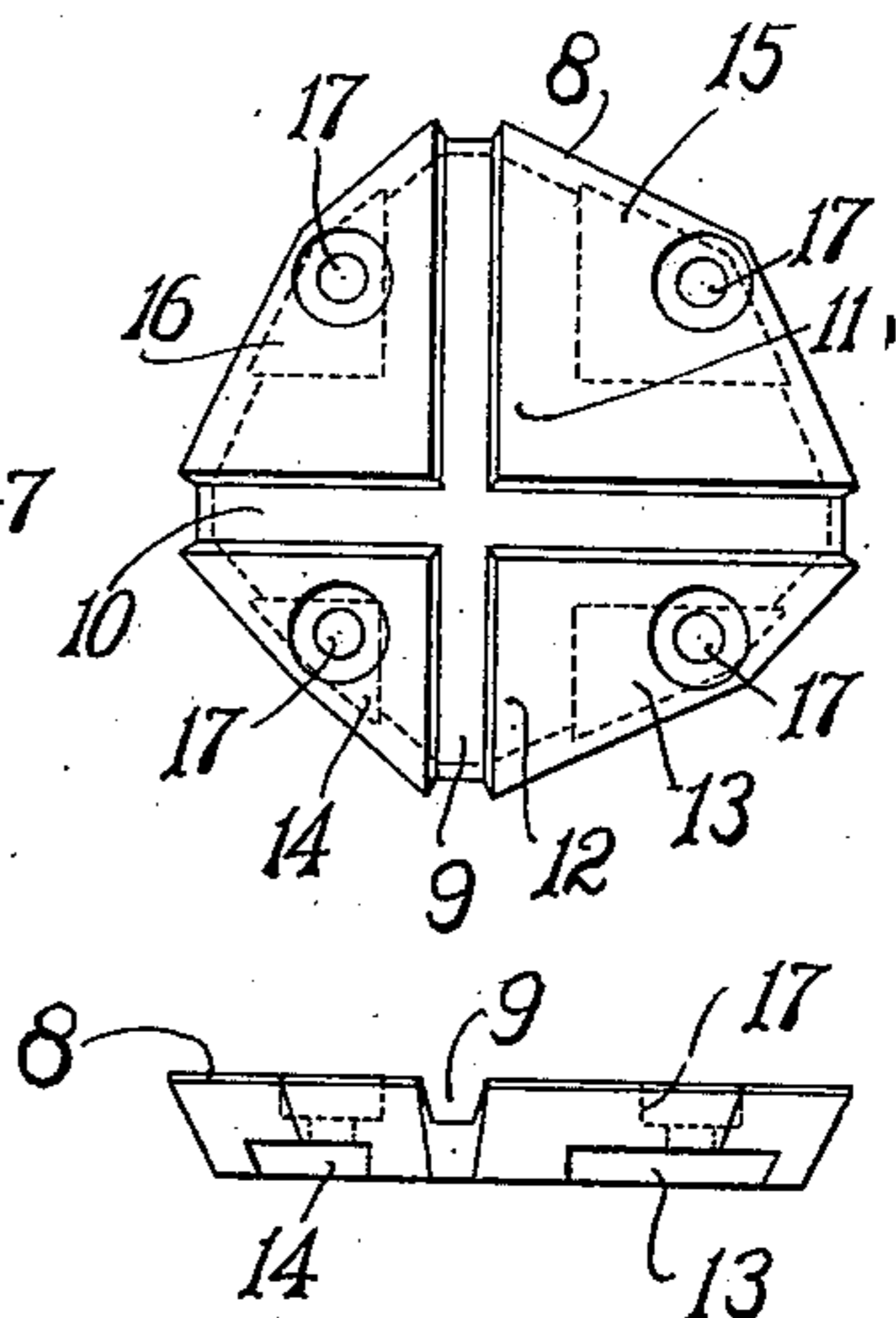


FIG. 7.

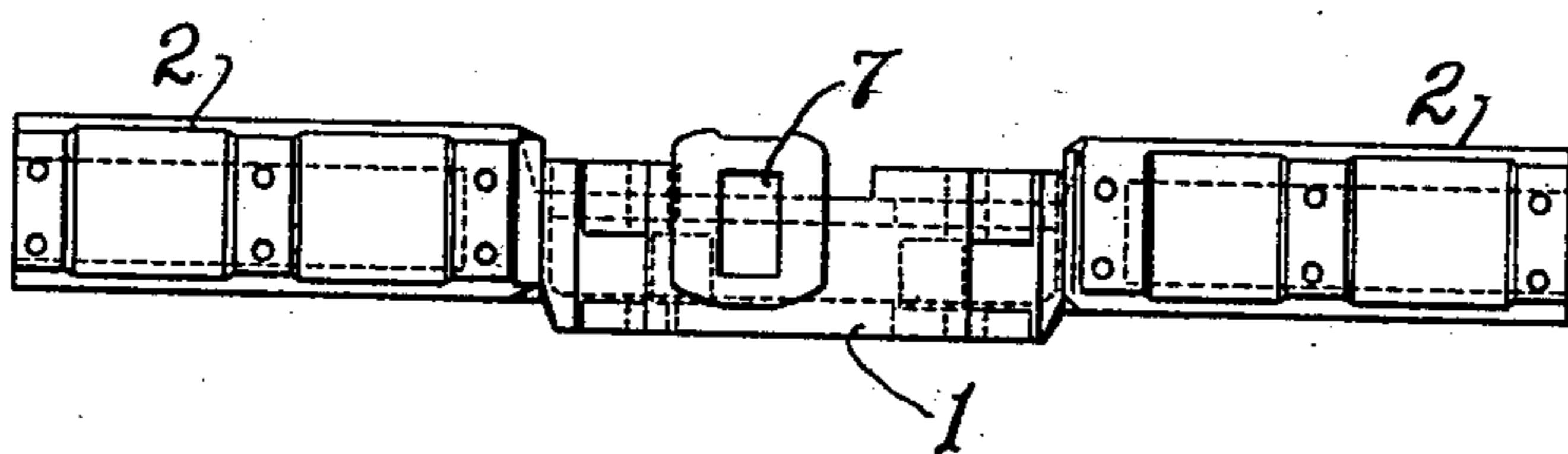


FIG. 4.

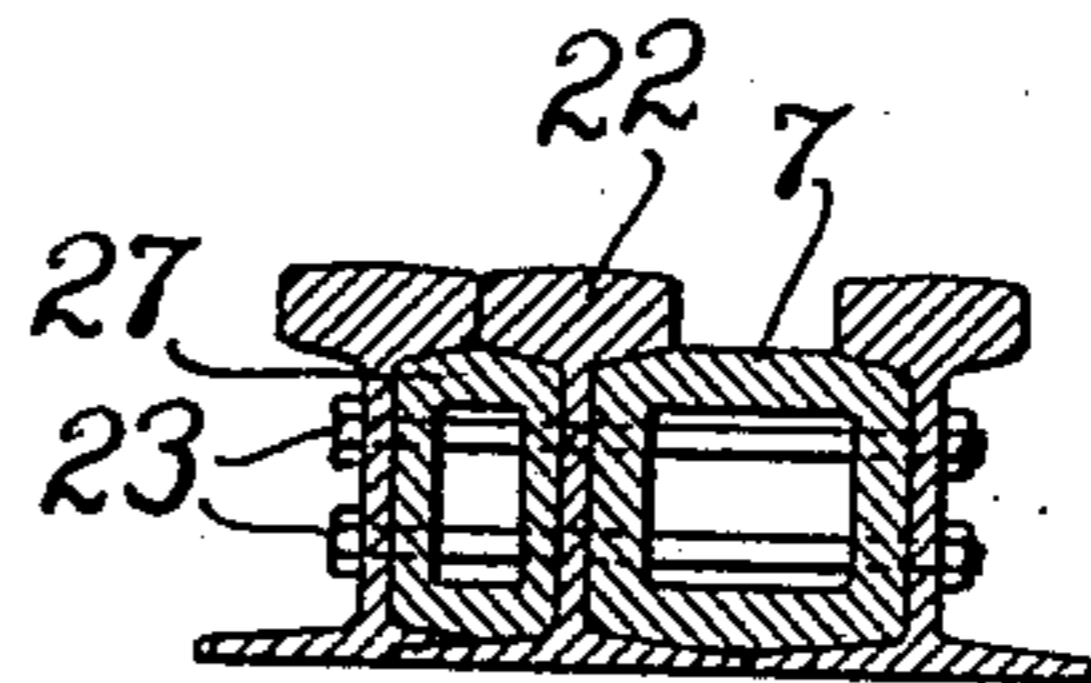


FIG. 8.

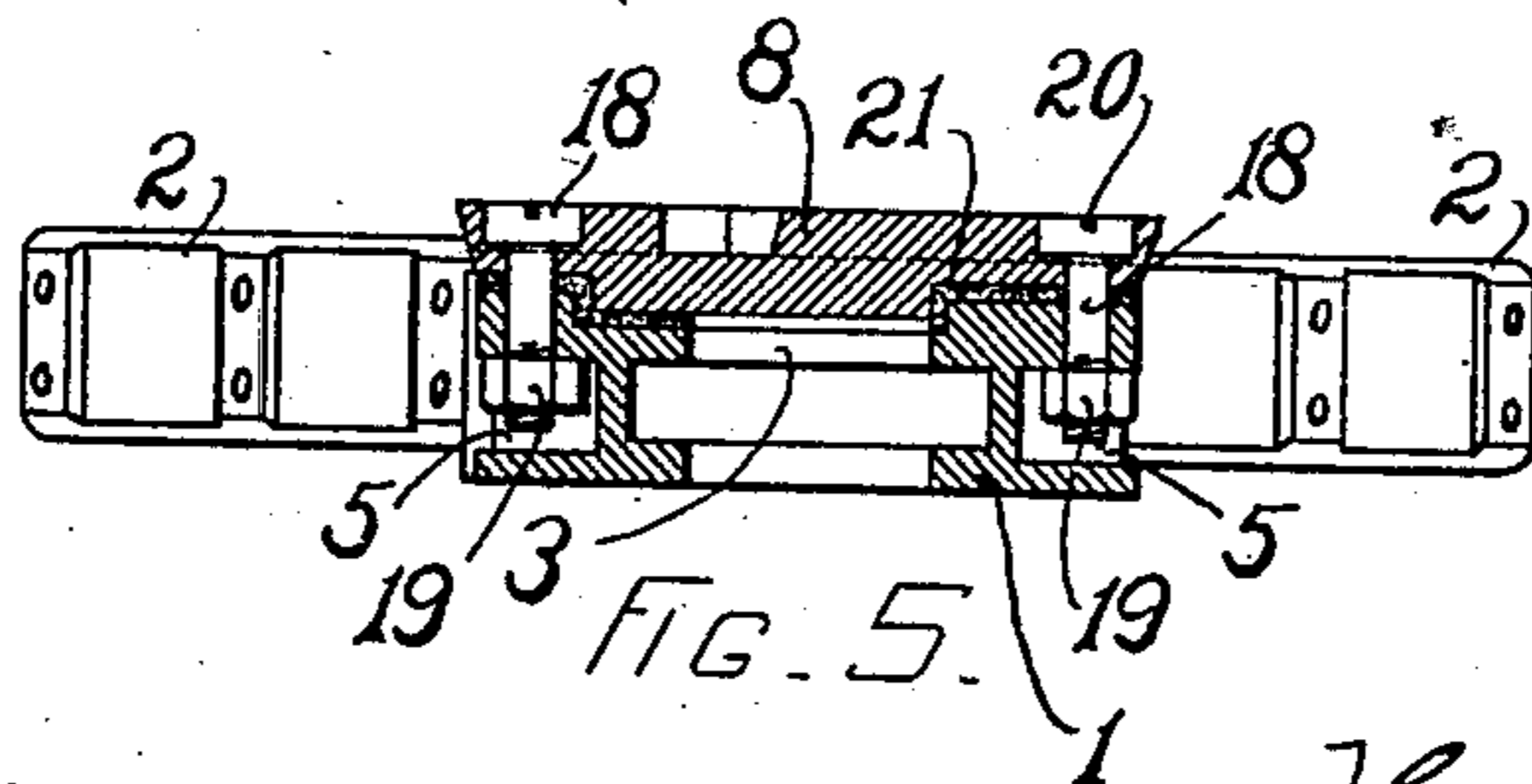


FIG. 5.

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# UNITED STATES PATENT OFFICE.

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## RAILWAY-TRACK STRUCTURE.

No. 917,957.

Specification of Letters Patent.

Patented April 13, 1909.

Application filed January 26, 1907. Serial No. 354,174.

*To all whom it may concern:*

Be it known that I, HENRY R. LUTHER, a citizen of the United States, and a resident of Newton, county of Middlesex, and State of Massachusetts, have invented certain new and useful Improvements in Railway-Track Structures, of which the following is a specification, reference being had to the drawings accompanying the same and forming a part thereof.

My invention relates to railway track structures such as crossings, switches and mates which are provided with hard wear resisting center-plates attached thereto at points where the tracks cross or meet.

The object of my invention is to provide a railway track structure having a cast body part to which the rails and center-plates are attached in manner to be readily detached, when desired, for repairs, and in which said parts are securely held against any possibility of being loosened by wear incident to the use of the structure.

Another object of my invention is to so arrange and construct the parts as to eliminate the necessity for machining the body part and center-plate to fit the one to the other; the parts being so constructed and arranged that the plate is held in position by hard spelter and bolts.

In the drawings forming a part of this specification—Figure 1 represents a plan of a crossing embodying my invention where two tracks cross at approximately right angles. Fig. 2 is a sectional view through line 2—2, Fig. 1. Fig. 3 is a plan of the cast body part of my structure. Fig. 4 is a side elevation of the cast body part of the structure. Fig. 5 is a sectional elevation of my structure through line 5—5, Fig. 3, showing the center-piece secured to the structure by being embedded in the spelter and held by bolts. Fig. 6 is a plan view of the center-plate. Fig. 7 is a side elevation of the center-plate. Fig. 8 is a sectional elevation of my structure through line 8—8, Fig. 1, showing the arrangement of the rail sections and the method by which they are secured to the cast body part; and Fig. 9 is an elevation of a filling-piece used in the construction of a crossing or mate.

In the drawings, the cast body part is represented by the reference numeral 1. The body part is preferably made of a steel casting, and is provided with the projections 2, 2, 2, 2, when made for a crossing. The

body part 1 is also provided with the circular central opening 3, the four raised portions 4, 4, etc., the four recesses 5, 5, etc., and the four holes 6, 6, etc. The projections 2, 2, etc., are cored as indicated by the numerals 7, 7, etc. The object of coring the recesses 7, 7, etc., is to lighten the structure and at the same time make it stronger.

8 represents a center-piece of the form used in connection with the crossing represented in Fig. 3. Said center-plate 8 is provided with flange-ways 9 and 10, approximately at right angles to each other, and the bearing-surfaces 11 and 12 which form track surfaces and points to serve as a bearing for the flange of the wheels when passing over the intersection of the tracks. The center-plate 8 is also provided with dovetailed recesses 13, 14, 15 and 16 in which the spelter will be locked, thus firmly uniting the center-plate to the spelter. The plate is also provided with four bolt holes 17, 17, etc.

In assembling the structure, the plate is properly alined in the body part, shims put in of a sufficient thickness to cause the track surfaces 11 and 12 of the plate to properly aline with the tread of the rails. Four bolts 18, 18, etc., are then inserted in the holes 17, 17, etc., the nuts 19, 19, etc., inserted in the pockets 5, 5, etc.; said pockets 5, 5, etc., being of a sufficient width, depth and thickness to receive the body of the nut and prevent it from turning around; the bolts 18, 18, etc., are provided with means as a wrench to tighten them from the top. The spelter 21 is then flowed in the space between the plate and the body part of the casting and into the recesses 13, 14, 15 and 16 in the center-plate, and the central opening 3 and recesses of the body part, thus securely bonding the plate 8 to the body part 1. Rails 22, 22, etc., are then attached to the body part by the bolts 23, 23, etc., the web, head and foot of the rails fitting the sides of the extension pieces 2.

In a crossing of the kind described in Fig. 1, additional tread surfaces are provided by securing rail sections 24, 24, etc., and the rail sections 25, 25, and 26, 26, etc., to said extension rails 22, 22, and to the extensions 2 of the body part. This is accomplished by providing the filling-pieces 27 between said rails 22, 22, etc., and the rails 24 and 26, etc., the same being secured by said bolts 23, 23, etc., as shown in Fig. 8. The object of providing the rail 24, 24, etc.,

and 26, 26, etc., is to provide a broader tread for the rails at the point of intersection where the greatest wear occurs; and the object of the short rail sections 25, 25, which  
 5 are slightly chamfered off at the points 28, 28, etc., is to guide the flanges of the wheels and prevent them jumping the track through the shock that might occur when  
 10 the forward pair of wheels on a truck pass the opening at the intersection of the track surfaces.

Having described my invention, what I claim is:—

1. In a railway track structure, a cast  
 15 body part; extensions on said body part provided with bearing portions shaped to fit the web between the flange and the head of the rail; a pocket in said body part formed to receive a center plate; an opening in the  
 20 center of said pocket extending to the bottom of the body part; a center plate provided with track surfaces shaped to fit in said pocket and be embedded therein by spelter; recesses in the bottom of said plate  
 25 and in the bottom of the pocket to receive the spelter so that said spelter will serve to hold said plate in alinement with the abutting rails; and bolts for detachably securing said center plate to said body part.

30 2. The combination in a railway track structure of a body part; extensions formed upon said body part having projecting bearing surfaces shaped to fit between the head and the flange of the rail, to which the abut-  
 35 ting rails may be detachably secured; a pocket in said body part having recesses therein; a center plate provided with track surfaces and recesses in its bottom so formed as to receive and be embedded in spelter and  
 40 to be held in proper alinement by said spelter; and bolts for securing said center plate to said body part.

3. The combination in a railway track structure of a cast body part; extensions in-  
 45 tegral with said body part having projecting bearing surfaces to fit the web between the head and the flange of the rail, to which the rails may be detachably bolted by bolts passing through said extensions and the  
 50 webs of the rails; a pocket in said body part; a center plate having track surfaces thereon arranged to fill the space between the ends of the rails and formed with re-  
 55 cesses in its bottom so that it may be embedded in spelter in said pocket and its track surfaces held in alinement with the track surfaces on the abutting rails; and bolts for securing said center plate to said  
 body part.

4. In a railway track structure, compris-  
 60 ing a crossing having a body part formed with extensions; projecting bearing portions formed on said extensions; tread rails secured to said extensions; supplemental  
 65 tread rails secured to said first-mentioned tread rails by means of filling pieces; guard rails attached to the opposite side of said extensions of the body part by means of  
 70 bolts passing through the track rails, supplemental tread rails, guard rails, extensions and filling pieces; a center plate embedded in spelter in the pocket in said body part  
 75 and held in alinement by means of said spelter; and bolts detachably securing said center piece in place.

In testimony whereof, I have hereunto set my hand, in the presence of two subscribing witnesses, this the 23d day of Jany., A. D. 1907.

HENRY R. LUTHER.

Witnesses:

CHAS. W. WOLCOTT,  
 RICHARD P. ELLIOTT.