

No. 713,933.

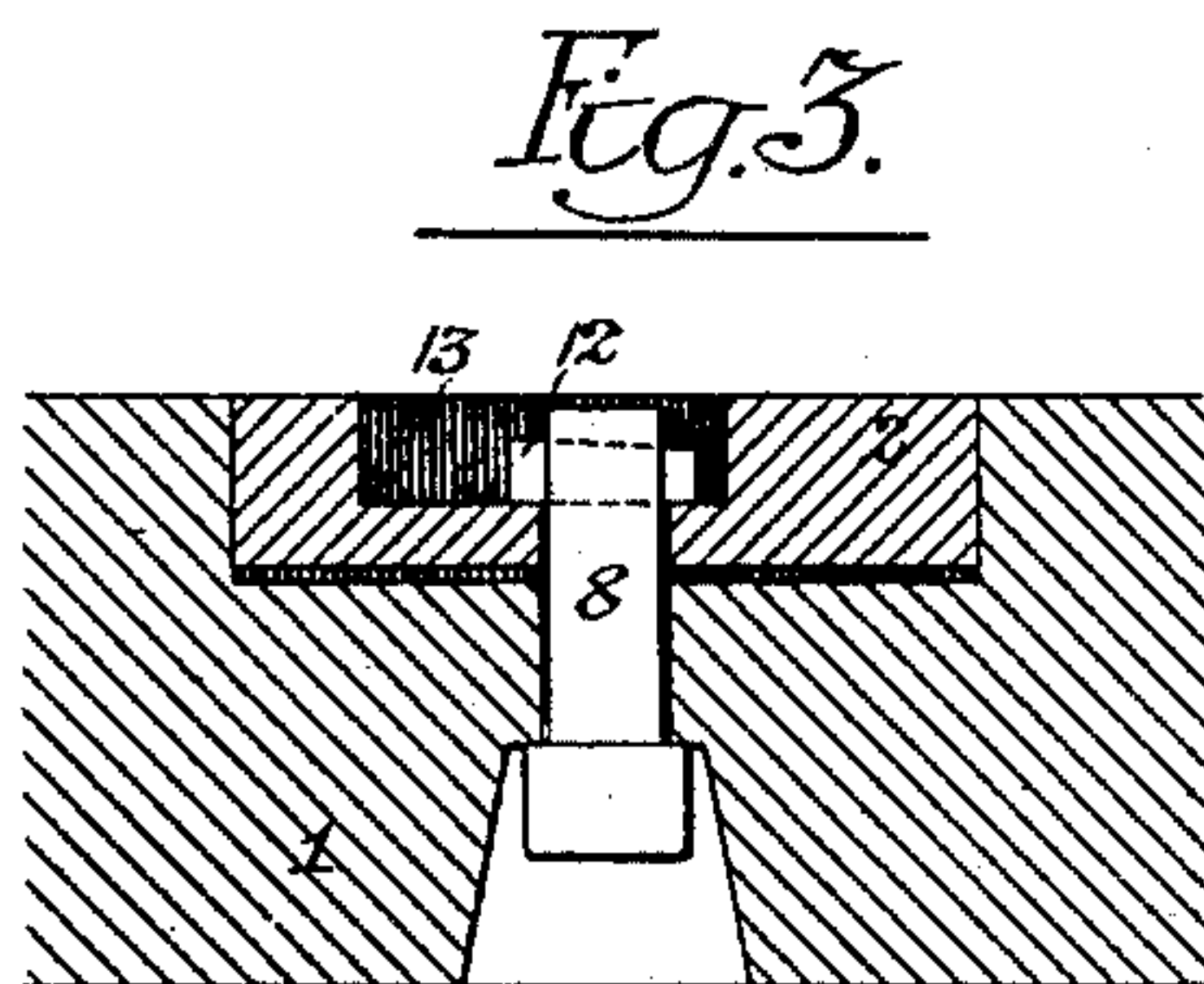
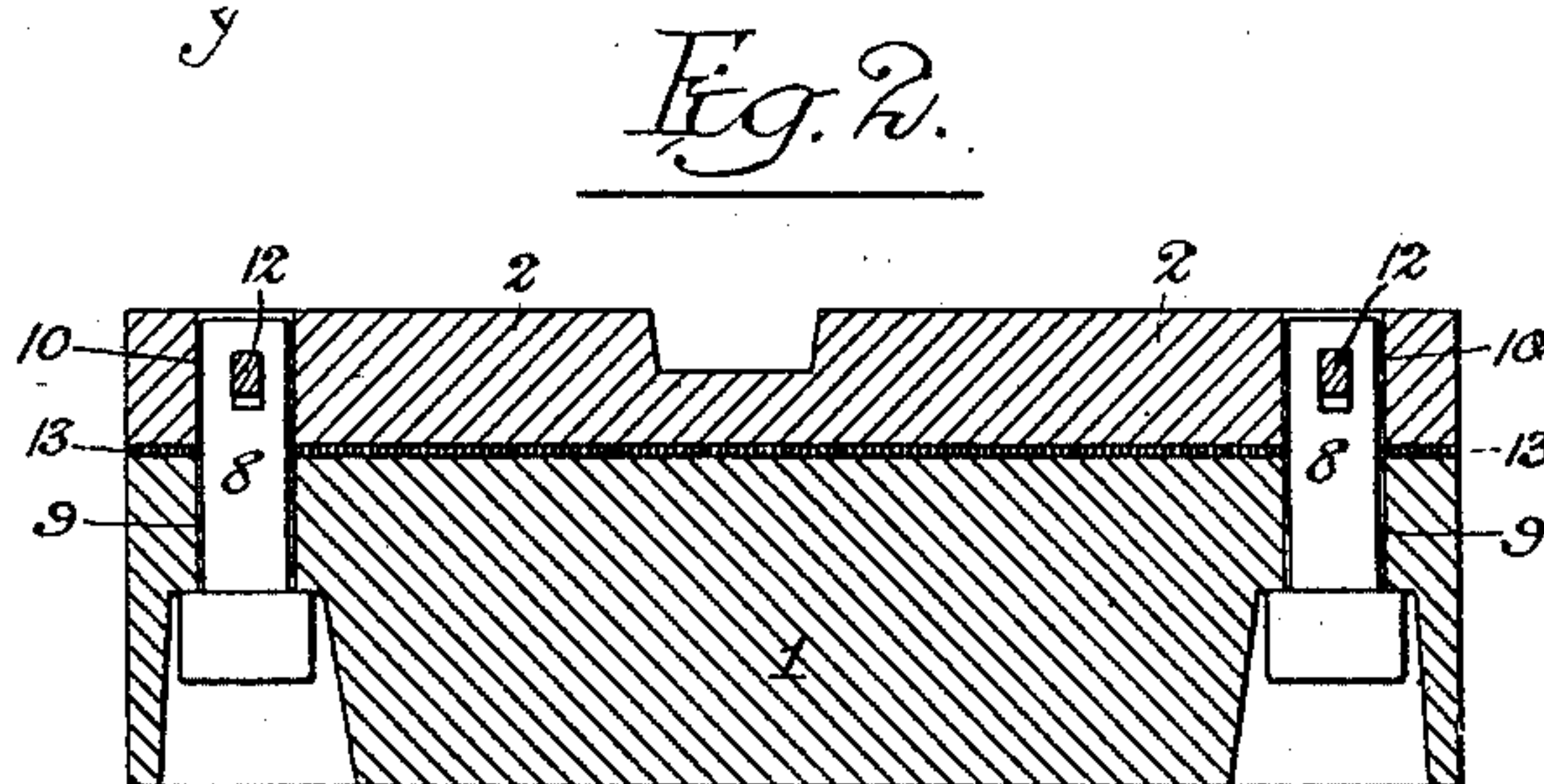
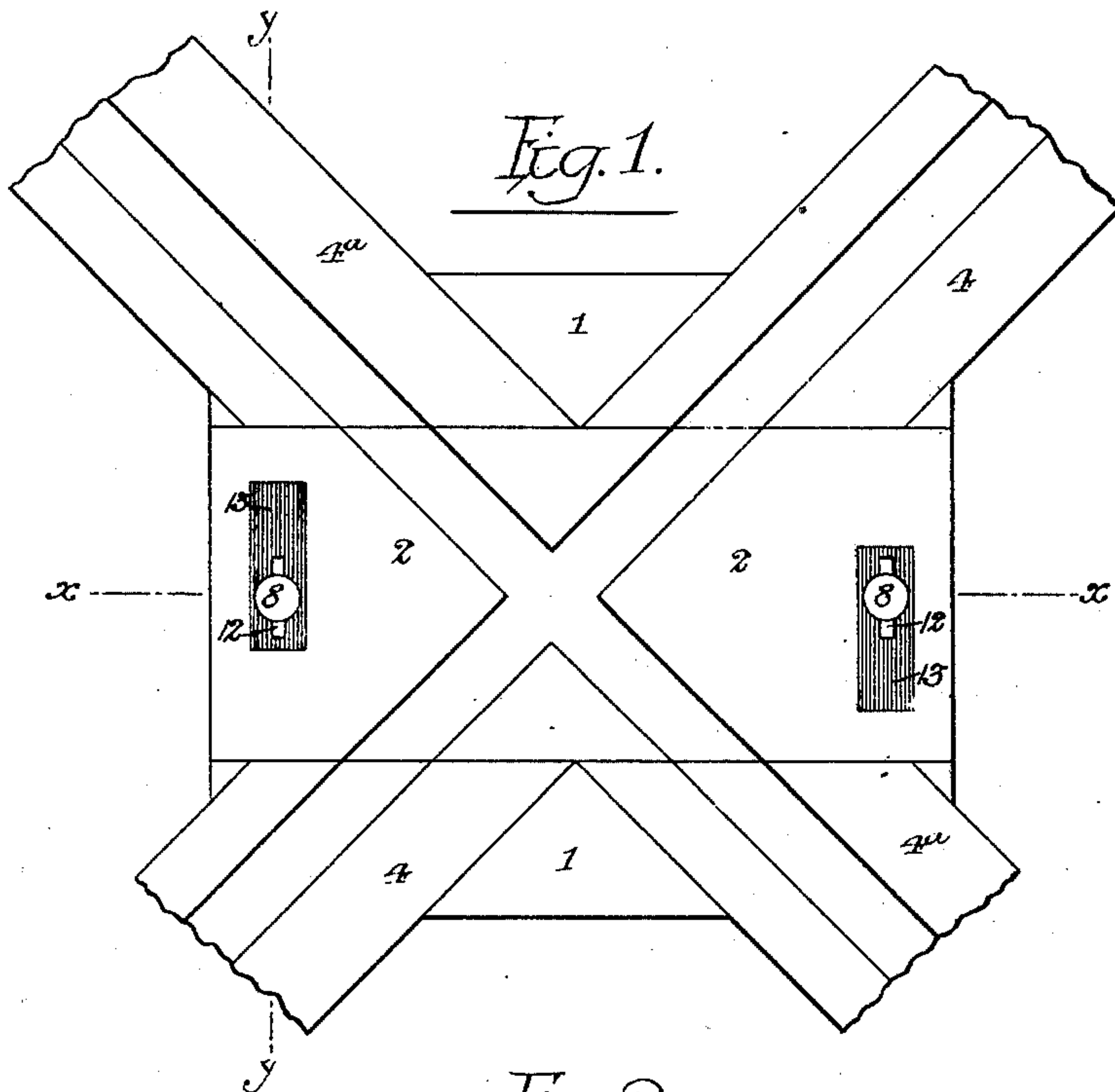
Patented Nov. 18, 1902.

V. ANGERER.  
RAILWAY TRACK STRUCTURE.

(Application filed July 29, 1902.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:-

Frank L. Graham  
Herman E. Mettles.

Inventor:-

Victor Angerer,  
by his Attorneys;  
Howan & Howan

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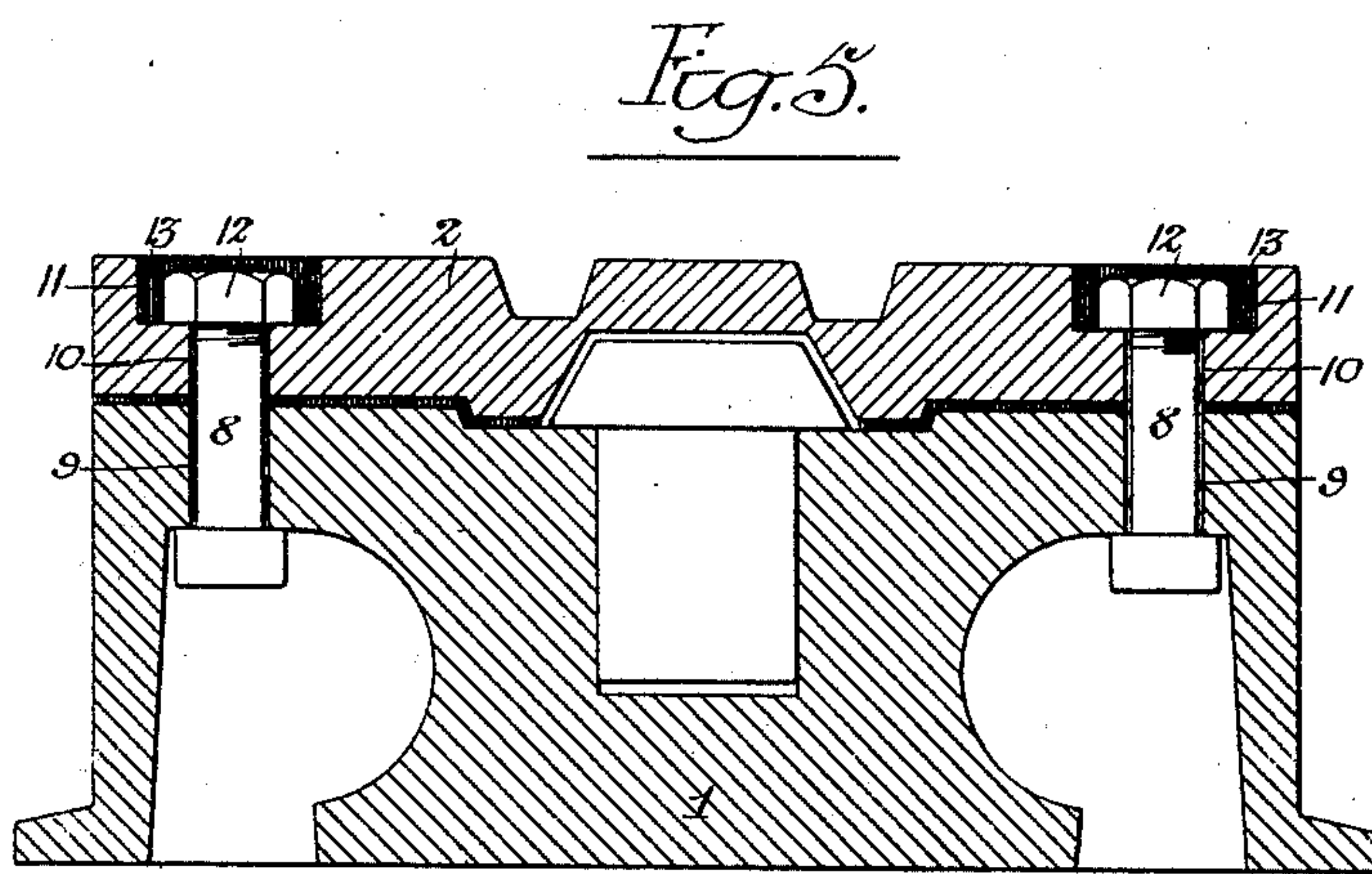
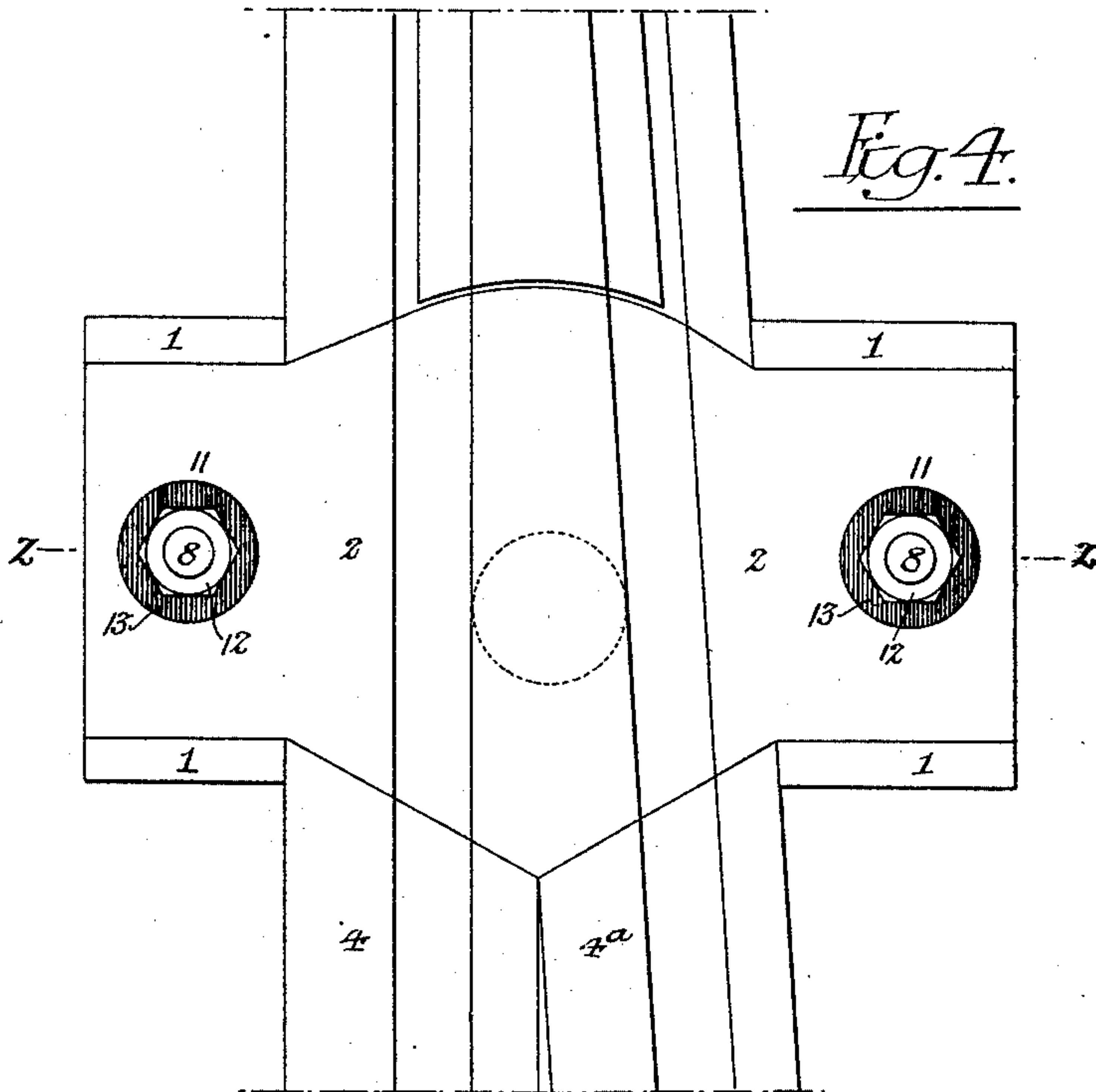
V. ANGERER.

RAILWAY TRACK STRUCTURE.

(Application filed July 29, 1902.)

(No Model.)

2 Sheets—Sheet 2.



Witnesses:-

Frank L. Graham.  
Herman E. Metier.

Inventor:-

Victor Angerer,  
by his Attorneys;  
Howson & Howson



# UNITED STATES PATENT OFFICE.

VICTOR ANGERER, OF RIDLEY PARK, PENNSYLVANIA, ASSIGNOR TO WILLIAM WHARTON, JR., & COMPANY, INCORPORATED, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## RAILWAY-TRACK STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 713,933, dated November 18, 1902.

Application filed July 29, 1902. Serial No. 117,502. (No model.)

*To all whom it may concern:*

Be it known that I, VICTOR ANGERER, a citizen of the United States, residing at Ridley Park, Delaware county, Pennsylvania, have invented certain Improvements in Railway-Track Structures, of which the following is a specification.

My invention relates in general to railway-track structures, and in particular to that portion at or adjacent to the crossing or intersection of one rail with another; and it pertains to that class of track structures wherein such portion is provided with a removable and replaceable plate of hardened metal for the purpose of better resisting the excessive wear due to the passing of the car-wheels over these portions. It has been the practice to provide such places of excessive wear with plates of harder material than that which composes the adjacent rails, but in so doing the wear-plate has either been permanently inserted into the body portion in such a manner that it could not be renewed without renewing the whole structure, or else in the cases wherein it was intended that the wear-plate might be separated from the body portion and renewed, the operation of separation and renewal was usually difficult and expensive. The principal object of my present invention is to avoid this expense, difficulty, and inconvenience by providing a securing device for the wear-plate which is readily accessible from the top of the structure, so that the worn-out wear-plate may be removed and a new one substituted without disturbing the body portion of the structure, or the street-pavement, or the surrounding earth, all of which is obviously very advantageous.

My invention accordingly consists of a track structure comprising a body portion or base provided upon its top portion with a wear-plate of comparatively hard material and a locking device for securing the wear-plate to the base in such manner that the locking device will be accessible from the top of the structure for the purpose of securing or releasing the wear-plate, and the invention further comprises the improvements to be presently described and finally claimed.

The nature and scope of my invention will

be further understood from the following description and the accompanying drawings, forming a part hereof, in which—

Figure 1 is a top or plan view of a railway-crossing frog embodying one form of my invention. Fig. 2 is a cross-section on the line  $x x$  of Fig. 1. Fig. 3 is a cross-section on the line  $y y$ , Fig. 1. Fig. 4 is a top or plan view of the heel portion of a protected heel-tongue switch with my invention applied thereto, and Fig. 5 is a cross-section on the line  $z z$ , Fig. 4.

1 is the body portion or base of the structure upon which is superimposed the hard wear-plate 2 for the purpose of taking the excessive wear which is present in a track structure at points where one rail intersects or crosses another rail.

4 4<sup>a</sup> are track-rails converging and finally uniting with each other by becoming embedded in the casting which forms the body portion or base 1.

The removal of the wear-plate has heretofore usually been accomplished only by a difficult operation, which often resulted in a blocking of the railway-cars and which involved the removal of some of the street-pavement and a digging away of the earth surrounding the structure, all of which was expensive and unsatisfactory. In my improved track structure these difficulties are overcome, and the wear-plate may be removed and replaced so quickly as not to delay the movement of the cars or interfere with the ordinary street-traffic, and, furthermore, without the expense which is incident to the removal of the street-pavement and the digging away of the surrounding earth.

By the employment of my improved track structure the operation of removing and replacing the wear-plate is so simplified that the work can be readily accomplished during the ordinary working hours of the day, whereas it has heretofore been usual to perform this operation only during the night after midnight, at which time the cars pass less frequently and the ordinary street-traffic is comparatively slight.

As shown in the drawings, the attachment of the wear-plate to the base is accomplished



by means of bolts 8 8, each of which passes, respectively, through an opening 9 9 in the base and a corresponding opening 10 10 in the wear-plate. The openings 10 10 through the wear-plate are countersunk or chambered at the top, as shown at 11 11, for the reception of the nuts or keys 12 12 of the bolts 8 8. The bolts, the nuts or keys, and the chambered openings are preferably so proportioned that the top of the bolts and nuts or keys shall lie flush with or a little below the top surface of the wear-plate when all of the parts have been tightly drawn up.

13 is a liner of soft metal, such as zinc or the like, which is interposed between the parts in a molten state and which upon cooling and hardening properly beds the wear-plate upon the base. By permitting this molten material to flow into the openings 9 9 in the base and 10 10 in the wear-plate in such a manner as to surround the bolts 8 8 and to fill the chambered openings 11 11 of the wear-plate and to embed therein the nuts or keys 12 12 much greater solidity of the structure is secured, and the nuts or keys are absolutely prevented from loosening under the influence of the jarring caused by passing wheels.

In the operation of removing the wear-plate it is only necessary that the liner or filling material be removed from the chambered openings 11 11 by chipping out or melting, whereupon the nuts or keys 12 12 can be easily removed and the wear-plate raised up and out by the application of proper prying-tools thereto. In reverse order a new wear-plate may be placed in position on the base, both operations being completed without disturbing the pavement or portions of the structure other than the wear-plate itself and its securing-bolts and without having materially in-

terfered with either the regular movement of the cars or the ordinary traffic of the street.

I have used in the claims the term "fastening device," meaning any device, such as a nut or wedge, which is adjustable in respect to the bolt.

It will be apparent to those skilled in the art to which my invention relates that modifications in the details may be made without departing from the spirit thereof, and accordingly I do not limit myself to the precise construction and arrangement of parts hereinabove set forth, and illustrated in the accompanying drawings; but,

Having described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A track structure comprising a base and a wear-plate, a bolt projecting upwardly through the base and the wear-plate and into a cavity in the upper surface of the said wear-plate, a fastening device resting in the cavity of the wear-plate, and a liner interposed in a molten state between said wear-plate and base.

2. A track structure comprising a base and a wear-plate, a bolt projecting upwardly through the base and the wear-plate and into a cavity in the upper surface of the said wear-plate, a fastening device resting in the cavity of the wear-plate, and a liner interposed in a molten state between said wear-plate and base, and a lock for the fastening device inserted in the cavity in a molten state.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

VICTOR ANGERER.

Witnesses:

WILL. A. BARR,  
JOS. H. KLEIN.