

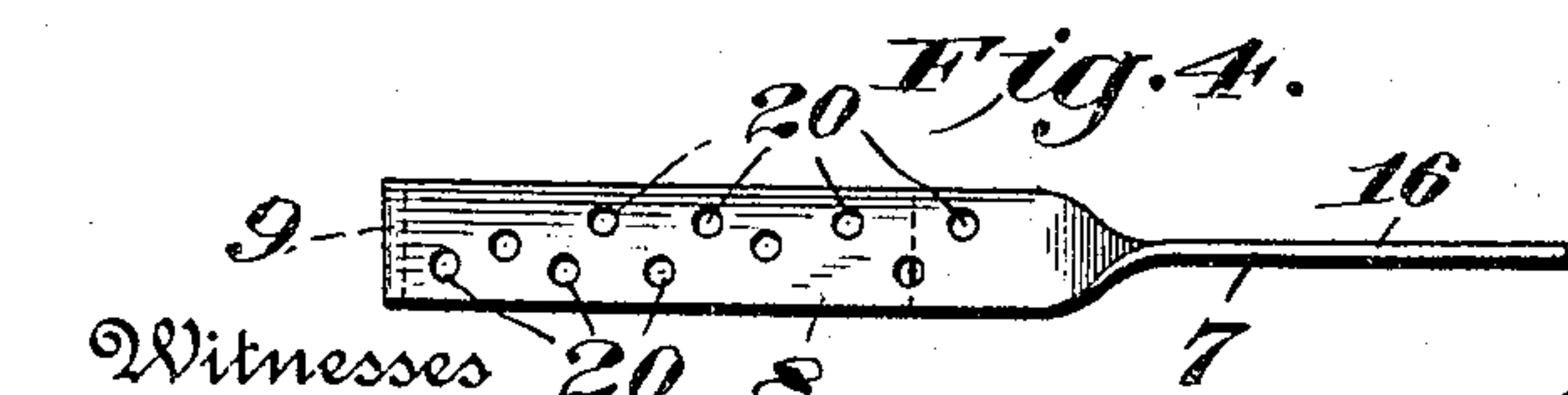
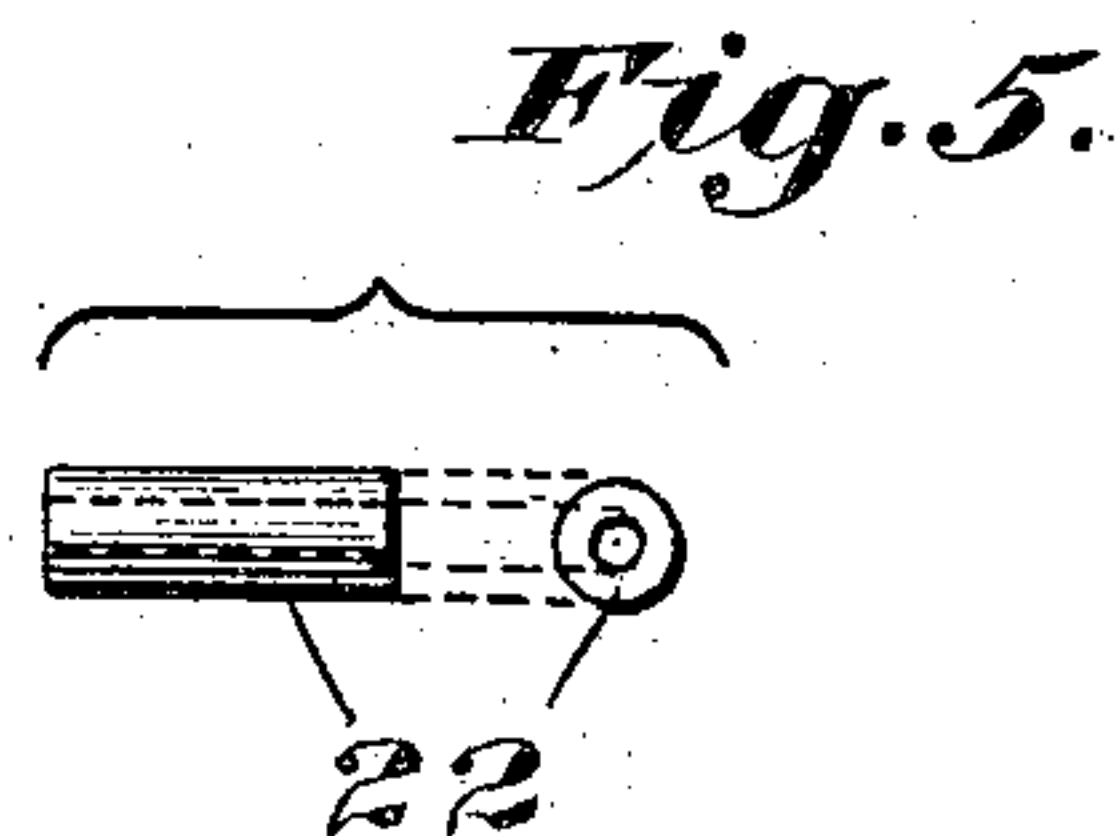
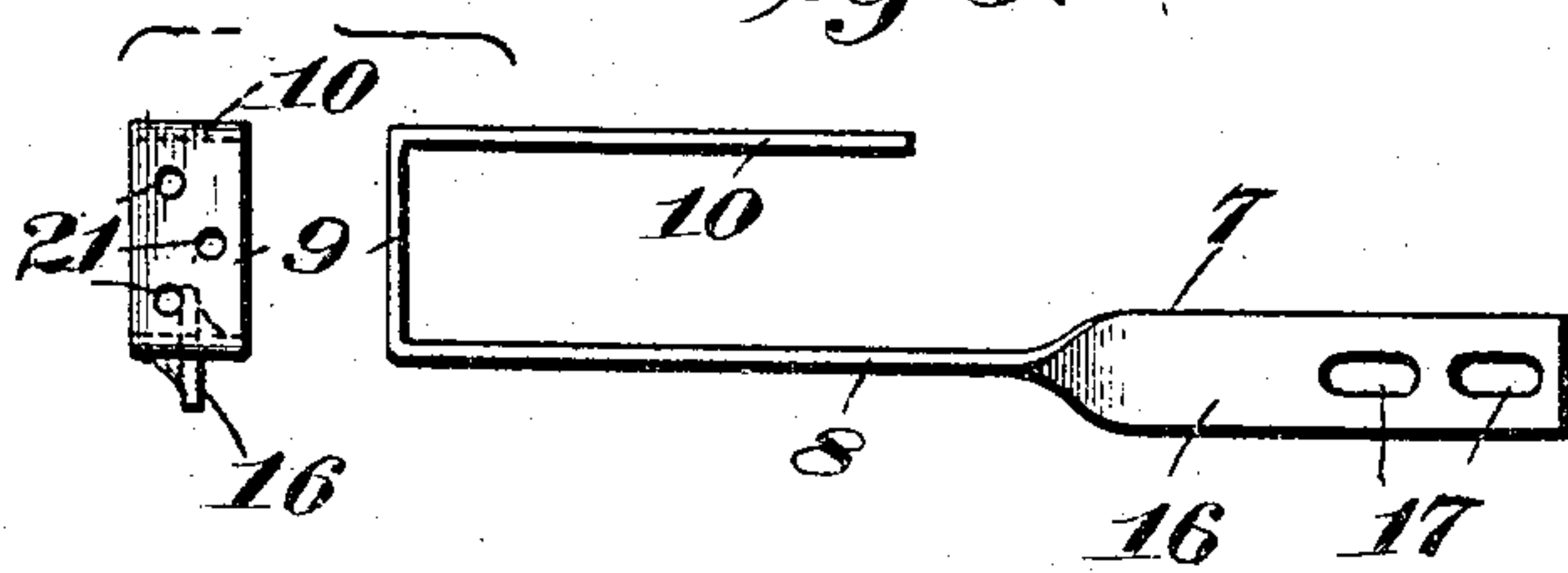
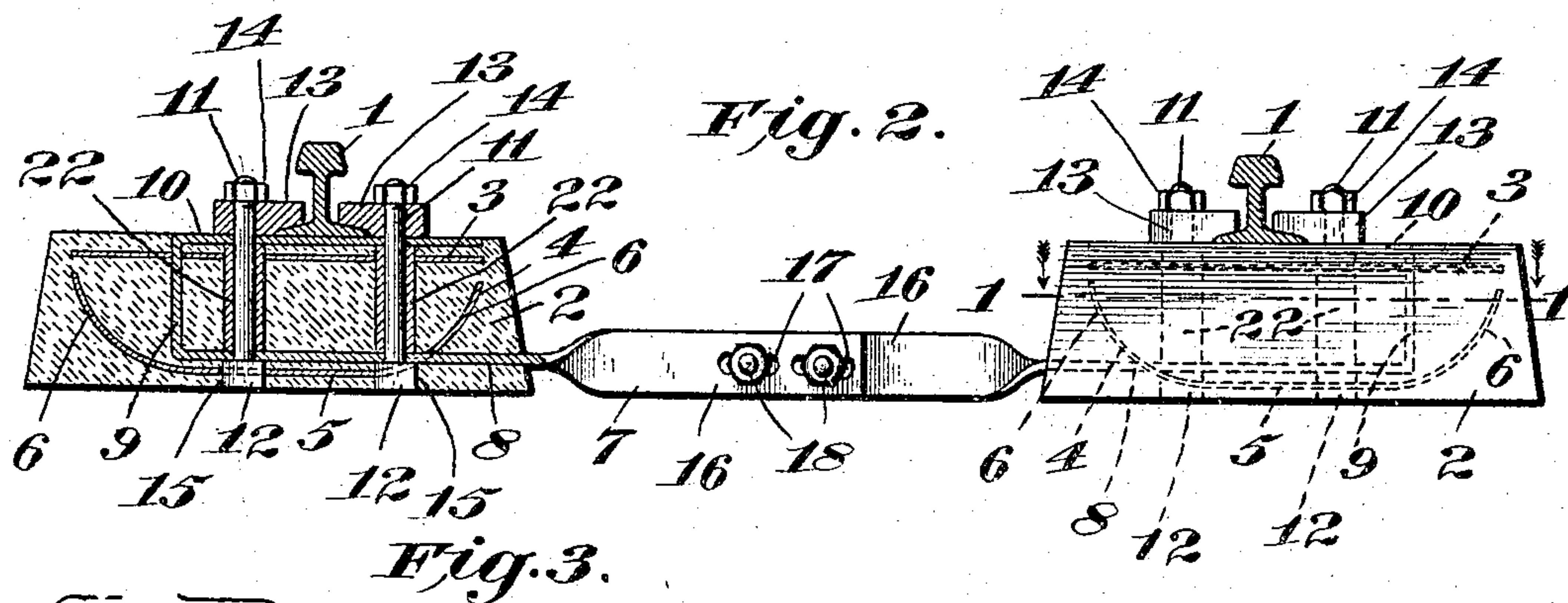
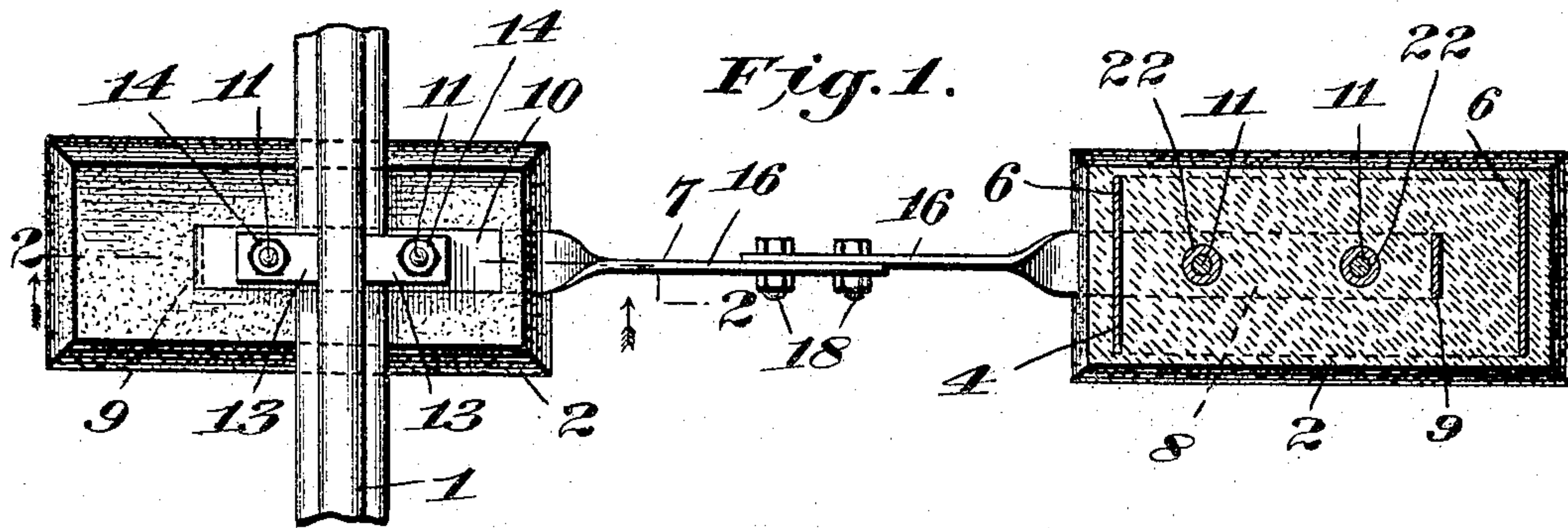
No. 767,240.

PATENTED AUG. 9, 1904.

C. H. QUIMBY.
METAL AND CONCRETE RAILWAY TIE.

APPLICATION FILED JAN. 11, 1904.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

CHARLES H. QUIMBY, OF PHILADELPHIA, PENNSYLVANIA.

METAL-AND-CONCRETE RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 767,240, dated August 9, 1904.

Application filed January 11, 1904. Serial No. 188,521. (No model.)

To all whom it may concern:

Be it known that I, CHARLES H. QUIMBY, a citizen of the United States, residing at Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Metal-and-Concrete Railway-Ties, of which the following is a specification.

This invention relates to metal-and-concrete railway-ties.

The present invention is an improvement on the metal-and-concrete railway-ties set forth in my patent dated December 29, 1903, No. 748,307, and has for its objects the provision of improved means to prevent cracking of the concrete block if the rail-clip bolts are drawn too tight and also to strengthen the block and to more firmly bind the embedded portions of the bars connecting the concrete blocks to said block.

Another object is to improve the form of the concrete blocks to facilitate their withdrawal from the molds in manufacturing.

To accomplish the foregoing objects, I provide sleeves or pipe-sections through which the rail-clip bolts pass and which are interposed between the upper and lower horizontal portions of the flat connecting-bars embedded in the blocks and provide perforations in the lower horizontal portion and the vertical portion of said flat bars to better bind the same to the concrete block. The sides of the concrete blocks are made sloping to facilitate their withdrawal from the molds in being manufactured.

The details of the improvement are set forth fully hereinafter and recited in the appended claims.

In the accompanying drawings, Figure 1 is a plan view with one of the blocks in section on the line 1 1 of Fig. 2; Fig. 2, a side elevation with the other block in vertical section on the line 2 2 of Fig. 1; Figs. 3 and 4, details of the flat portions of the brace or connecting bars which are embedded in the concrete block, and Fig. 5, details of the sleeve or pipe which surrounds the bolts between the flat portions of the brace.

The rails are shown at 1.

The tie has concrete blocks 2, which need

be only of sufficient size to properly support the rails and which have their several sides made sloping to facilitate withdrawal from the molds when these blocks are being made. Embedded in each block 2 and extending horizontally just below the rail is a rectangular sheet of expanded metal 3, and below this sheet 3 and embedded in the block is another sheet of expanded metal 4, having a horizontal portion 5 disposed just above the base of the block and upwardly-extending wings 6. Both sheets of expanded metal are of substantially the width of the block 2 considered lengthwise of the track; but I wish it understood that they could be made narrower, if desired. The upper sheet 3 and the part 5 of the lower sheet 4 bind the concrete together and resist breaking or separation thereof laterally, and the wings 6 prevent breaking or separation of the concrete in a vertical direction. The various strains and pressures occasioned by the train-load are thus satisfactorily prevented from rupturing the concrete blocks 2.

The blocks 2 are joined together by a brace or tie 7, composed of twin flat bars, each having a horizontal portion 8, embedded in the concrete block between the sheets 3 and 4, a vertical portion 9, and a rebent flat horizontal portion 10, located on top of block 2 and constituting a seat or chair for the rail 1. Bolts 11 extend upwardly through the blocks 2 and parts 8 and 10 and are provided with clips 13 to engage the rail-base and nuts 14 to clamp said clips. The shanks of the bolts pass through round openings in the blocks 2 and portions 8 and 10, while the heads 12 lie against the portions 8 and are located in openings 15, which are of substantially the same size and shape as the heads and prevent turning of the bolts. The bolts are adapted to be removed from the blocks by drawing them down through the openings, and the openings provide a convenient exit for any water which might collect.

The bars 7 are twisted to provide flat vertical portions 16, having slots 17, through which pass clamping-bolts 18. Provision is thus made for any needed adjustment to suit the gage—as, for instance, on curves—while this connection also permits detachment, so

that the tie can be knocked down into convenient shape for transportation.

As thus far described the invention is in substance the same as the construction shown
5 and claimed in my patent of December 29, 1903, No. 748,307.

The present improvements consist in the following features: In the lower horizontal portions 8 of the brace 7 holes or perforations 20
10 are provided, and perforations 21 are made through the vertical portion 9. These openings 20 and 21 permit the concrete to pass thereinto when the brace 7 is being molded in the block 2 during the manufacture thereof,
15 and thus the portions 8 and 9 are firmly bound to the concrete block, giving a construction which has practically the same properties as if the metal and concrete were in one piece, insuring rigidity and solidity.

20 Another improvement embodied in the present invention is the provision of sleeves or pipe-sections 22, embedded in the block 2, with their ends abutting the portions 8 and 10 of the brace 7, through which the bolts 11
25 pass. These pipes or sleeves act as a strengthening means for the block 2 and prevent cracking of the block if the nuts 14 are drawn too tight.

Having thus described my invention, what
30 I claim as new, and desire to secure by Letters Patent, is—

1. In a railway-tie, the combination with rail-blocks, of a tie or brace connecting said blocks and having horizontal end portions extending into said blocks and provided with
35 vertical openings or perforations to cause a binding thereof with the block.

2. In a railway-tie, the combination with rail-blocks, of a tie or brace connecting said
40 blocks and having end portions extending into said blocks in a general horizontal direction and thence extending in a general up-and-down direction in the blocks, both of said portions being provided with openings or perfora-
45 tions to insure their binding with the block.

3. In a railway-tie, the combination with rail-blocks, of a tie or brace connecting said blocks and having end portions extending into said blocks in a general horizontal direction
50 and thence extending in a general up-and-down direction and thence laterally below the rail, the horizontally and upwardly extending portions being provided with openings or perforations to insure binding thereof with
55 the block.

4. In a railway-tie, the combination with a rail-block, of a brace for the block having upper and lower portions, a sleeve or tube in

the block and between the said upper and lower portions of the brace, and a fastener for
60 holding the rail which passes through said sleeve or tube.

5. In a railway-tie, the combination with a rail-block, of a brace for the block having upper and lower portions, a sleeve or tube in
65 the block and between the said upper and lower portions of the brace, said tube or sleeve having its ends abutting the upper and lower portions of the brace, and a fastener for holding the rail which passes through said sleeve
70 or tube.

6. In a railway-tie, the combination with a rail-block, of upper and lower plates, a rail seated on the upper plate, a tube or sleeve extending between the plates and abutting
75 them, within the block, and a fastening for the rail which passes through the tube or sleeve.

7. In a railway-tie, the combination with a rail-block, of a brace for the block having a
80 substantially horizontal portion embedded in the block, a plate on the block and forming a seat for the rail, a tube or sleeve in the block and having its ends abutting the block and the horizontal portion of the brace, and a fastener
85 passing through the tube or sleeve adapted for engaging the rail.

8. In a railway-tie, the combination with a rail-block, of a brace for the block having a substantially horizontal portion extending
90 into the block and provided with an upwardly-extending portion and terminating in an upper substantially horizontal portion forming a seat for the rail, a tube or sleeve extending between the two substantially horizontal por-
95 tions of the brace, and a rail-fastener extending through said tube or sleeve.

9. In a railway-tie, the combination with a rail-block, of upper and lower plates, sleeves or tubes in the block and on opposite sides of
100 the rail and interposed between the upper and lower plates, and rail-fastenings extending through said tubes or sleeves on opposite sides of the rail.

10. In a railway-tie, the combination with a
105 rail-block, of a rail on said block, tubes or sleeves in the block and on opposite sides of the rail, and rail-fastenings extending through said tubes or sleeves and engaging opposite
110 sides of the rail.

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

CHARLES H. QUIMBY.

Witnesses:

CHARLES S. WAGONER,
HERBERT E. PERKINS.