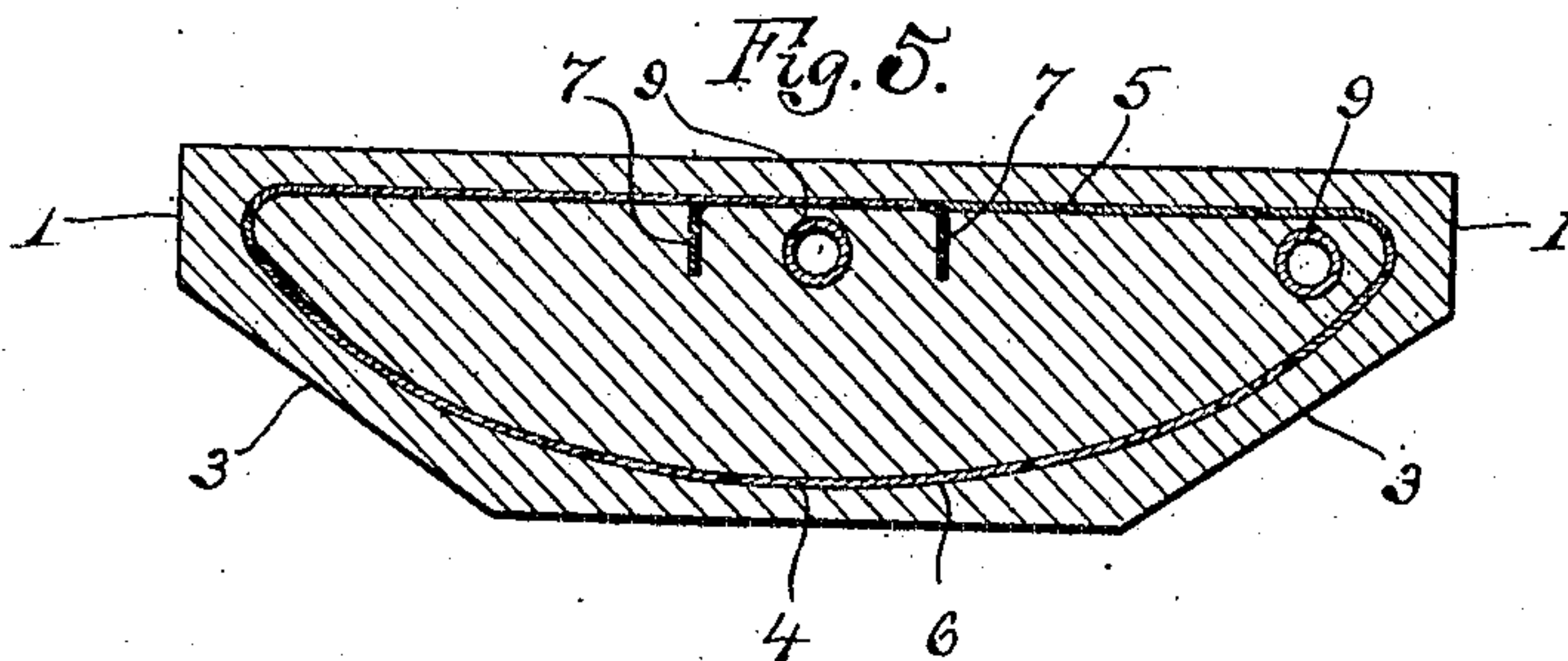
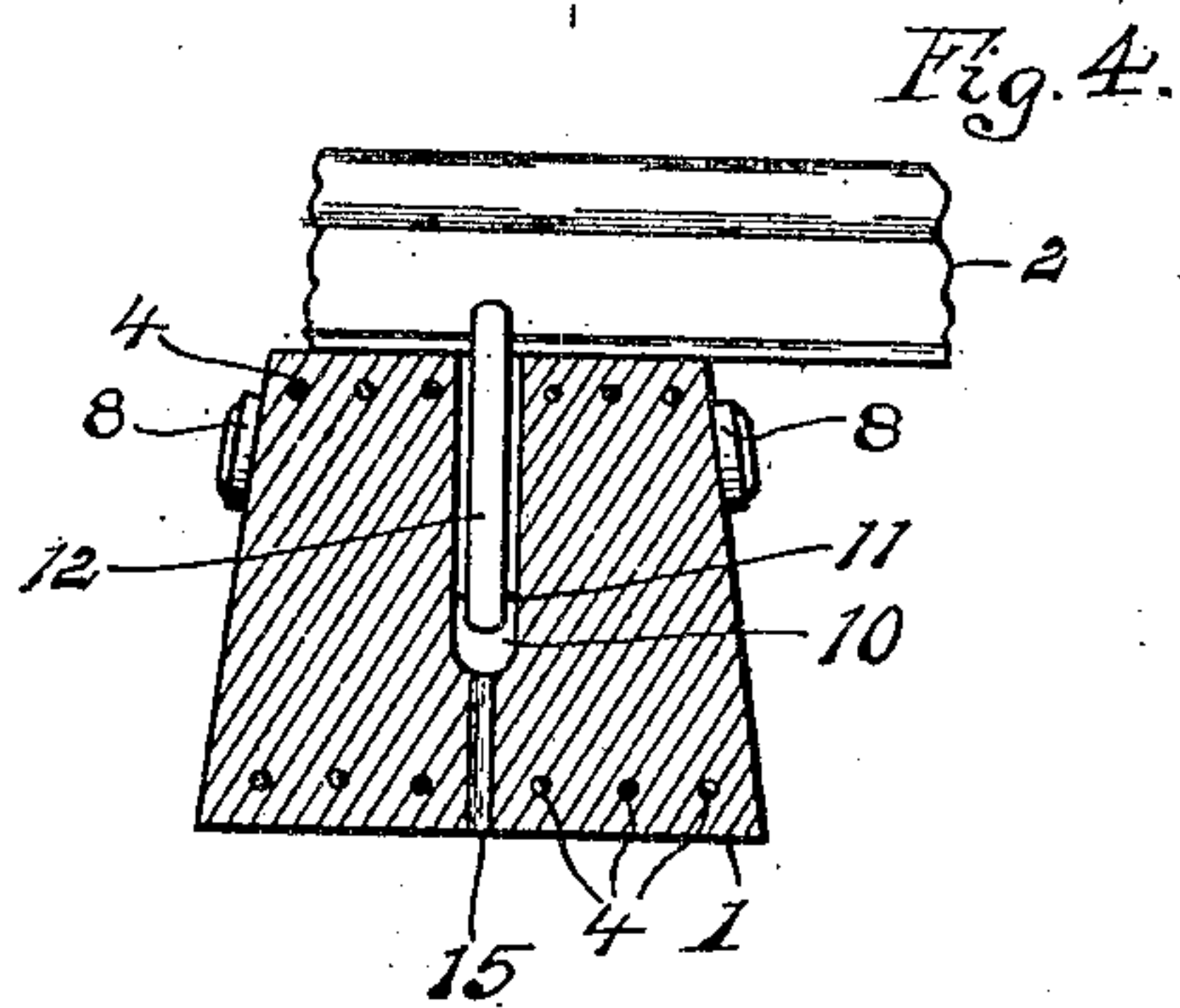
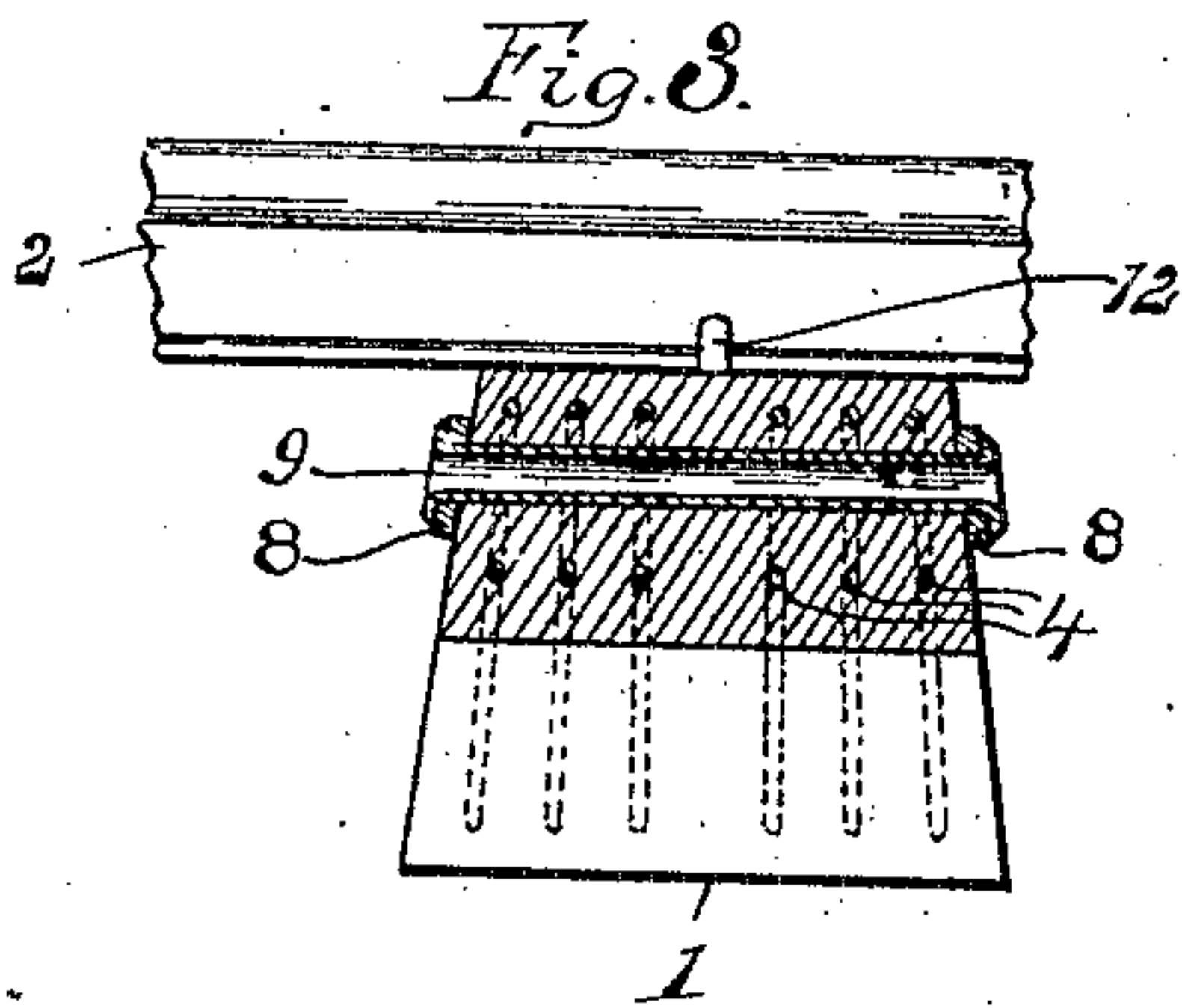
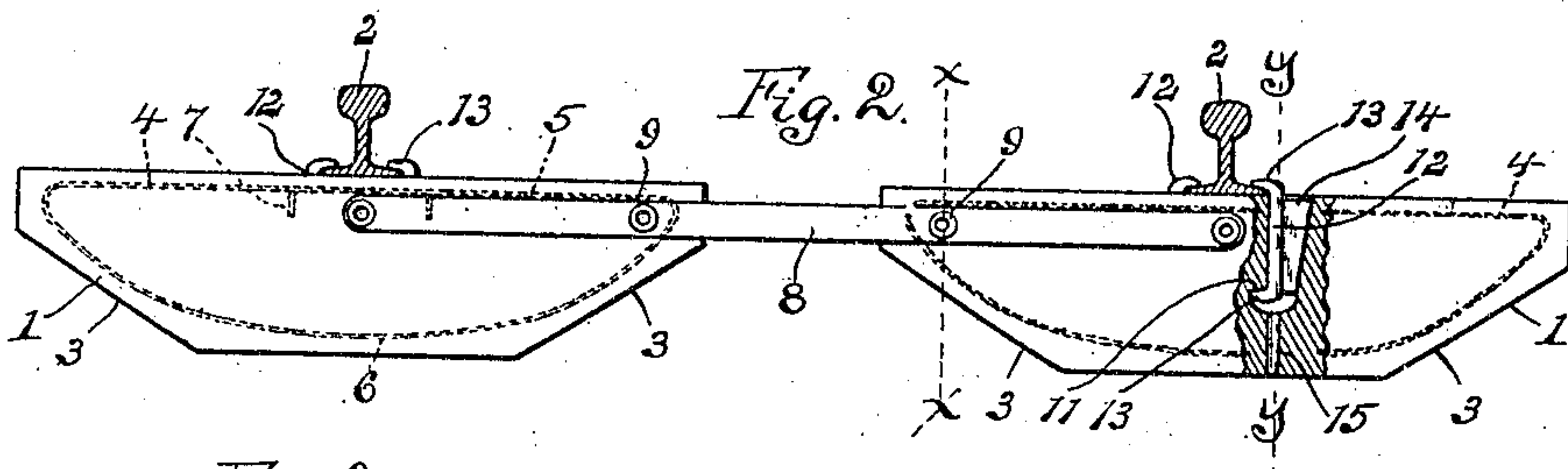
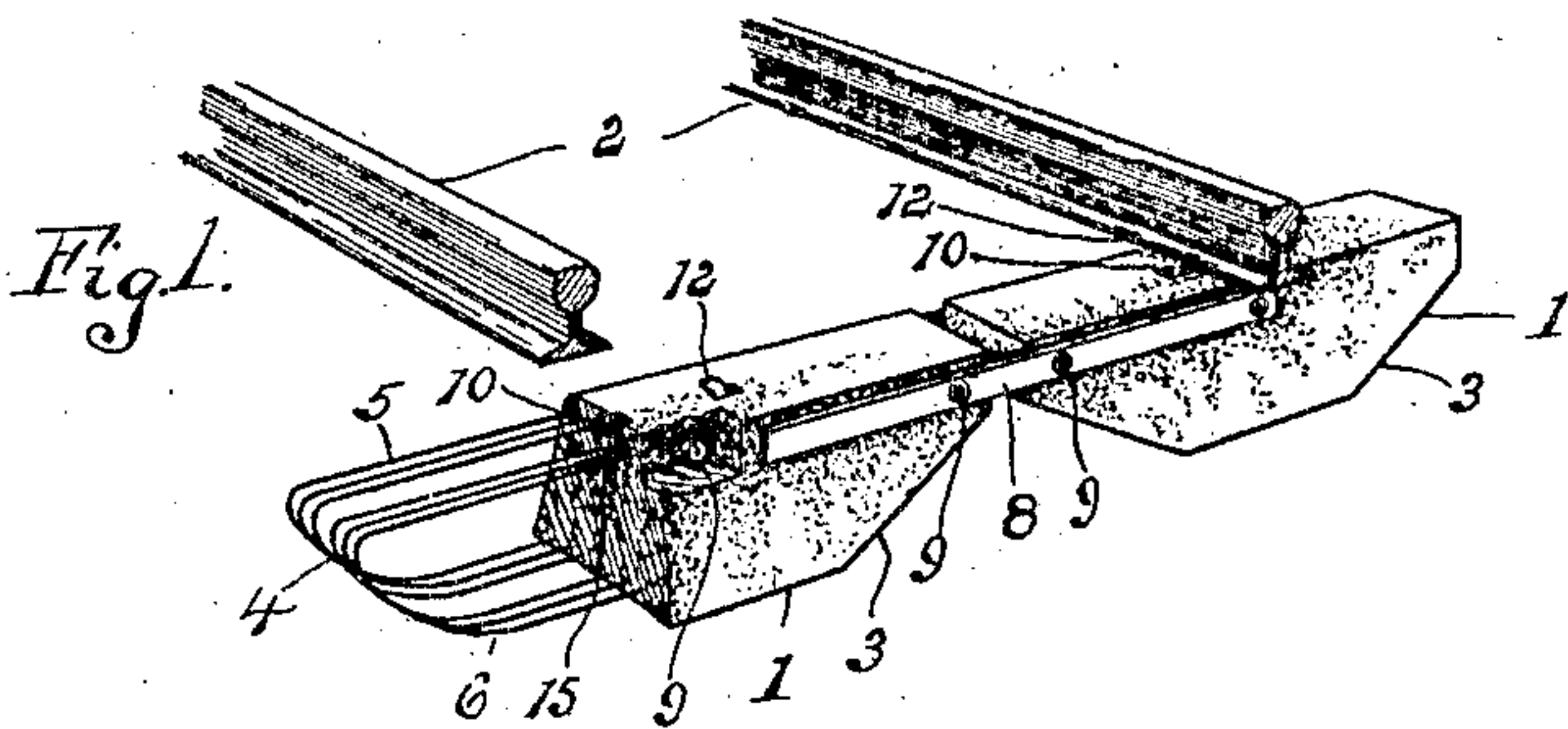


No. 849,721.

PATENTED APR. 9, 1907.

L. BLESSING.  
RAILWAY TIE.  
APPLICATION FILED DEC. 17, 1906.



WITNESSES:  
Gordon L. Bennett  
Anna M. Norris.

INVENTOR.  
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ATTORNEYS.



# UNITED STATES PATENT OFFICE.

LOUIS BLESSING, OF JACKSON, MICHIGAN.

## RAILWAY-TIE.

No. 849,721.

Specification of Letters Patent.

Patented April 9, 1907.

Application filed December 17, 1906. Serial No. 348,112.

*To all whom it may concern:*

Be it known that I, LOUIS BLESSING, a citizen of the United States of America, residing at Jackson, in the county of Jackson and State of Michigan, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to improvements in concrete railway-ties; and its object is to provide a very cheap, strong, and durable construction in which the tie is reinforced in the most efficacious manner and is made in  
15 two parts—one part for the support of each rail—so that if one part becomes broken or worn the damage may be repaired without the necessity for putting in an entirely new tie.

20 A further object of the invention is to provide a strong, cheap, and efficacious fastening for the rail and to provide certain other new and useful features in the construction, arrangement, and combination of parts, all  
25 as hereinafter more fully described, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a device embodying the invention with parts broken  
30 away to show the construction. Fig. 2 is a side elevation of the same with parts broken away to show the construction. Fig. 3 is a transverse section on the line  $x x$  of Fig. 2. Fig. 4 is a similar section on the line  $y y$ , and  
35 Fig. 5 is an enlarged longitudinal section of one of the blocks.

1 1 are two like blocks, formed of concrete or other suitable cementitious matter, each adapted to support one of the track-rails 2,  
40 which extends transversely thereof and rests thereon intermediate the ends of the block. The sides of each block extend outwardly and downwardly to give an extended lower surface, and the ends are each formed with  
45 an inwardly and downwardly slanting surface 3, which not only increases the extent of the lower supporting-surface, but also the end surface to prevent endwise movement when the tie is embedded in the road-bed.

50 Each block is reinforced to prevent its breaking by wire cables 4, embedded in the concrete and lying parallel with each other, each cable forming a loop, with a straight portion 5 extending longitudinally of the block  
55 near its upper surface, and a semicircular portion 6, uniting the ends of said straight por-

tion and extending around within the block adjacent to its lower surface, the end portions of each cable being overlapped at the middle of the straight portion of the loop beneath the rail and the extreme ends 7 preferably turned vertically downward to give the cable a firm hold in the cement, so that if the block should be broken transversely the cables will not fall out. These cables are  
65 also preferably formed of twisted strands of wire to give great tensile strength and so that the cement will embed itself in the grooves between the strands and firmly hold the cables without the necessity for providing supplemental means for engaging the concrete.

The two parts or blocks 1 are connected to form a rigid cross-tie by means of metal bars 8, one at each side, and these bars are rigidly secured to the blocks by tubular rivet members or pieces of pipe 9 passing through the blocks and through openings in the bars, the outer ends of the tubes being expanded or riveted down on the outer surface of the bars, thus dispensing with the necessity for bolts  
80 and nuts and firmly securing the bars in a manner to obviate the possibility of their becoming detached by vibration. Two of these tubular rivets are preferably used in each block, one passing through near the end  
85 of the block inside the reinforcing-loop and the other near its center beneath the overlapping end of the cables. By making the tie of two parts or blocks thus connected a rigid cross-tie is secured, and at the same time  
90 should one of the blocks become broken it may be readily removed and a new one put in its place, thus obviating the necessity for putting in a whole new tie, and the space between the blocks when the tie is embedded  
95 in the road-bed is filled with the earth, which assists in preventing endwise movement of the tie.

In each block at each side of the rail a chamber 10 is formed, extending downward  
100 therein, and the lower or inner end of this chamber is undercut at its side toward the rail to form a shoulder 11, and the opposite side of the chamber is formed with a slant extending downward and toward the rail from  
105 its outer or upper end. A rail-clamp 12, consisting of a short bar provided with a laterally-extending lug 13 at each end, is inserted in each chamber, with the lug at one end engaging the rail-flange and the other lug en-  
110 gaging beneath the shoulder 11, and this clamp is forced into contact with the rail and



shoulder and firmly held by a wedge 14, driven into the chamber and having a slanting side corresponding to the slant of the side of the chamber.

5 Holes 15, formed in the block, lead from the bottom of each chamber through the bottom of the block to drain off any water which might accumulate in the chamber.

10 The two blocks 3 may be pivotally connected by omitting one of the tubular rivets 9 in each block.

Having thus fully described the invention, what I claim is—

15 1. In a railway-tie formed of cementitious material, the combination of a series of reinforcing members embedded in the body of the tie and consisting of cables arranged with a straight portion extending adjacent to the upper surface of the body and a semicircular  
20 portion extending adjacent to the lower surface of the body and uniting the ends of the straight portion, the end portions of said cables being overlapped at the middle of the straight portion.

25 2. In a railway-tie formed of cementitious material, the combination of a series of reinforcing members embedded in the body of the tie and consisting of cables arranged with a straight portion extending adjacent to the  
30 upper surface of the body and a semicircular portion extending adjacent to the lower surface of the body and uniting the ends of the straight portion, the end portions of said cables being overlapped at the middle of the  
35 straight portion and the ends of said cables turned vertically downward.

3. In a railway-tie, the combination of blocks formed of cementitious material and

provided with inwardly and downwardly inclined ends, reinforcing-cables embedded in  
40 said blocks, each cable being arranged in the form of a loop with a straight portion extending adjacent to the upper face of the block and a semicircular portion extending adjacent  
45 to the lower face of the block and uniting the ends of the straight portions, a bar at each side of the blocks, and tubular members extending through the blocks and bars and riveted at their outer ends to secure the bars  
50 to the blocks.

4. In a railway-tie, the combination of blocks formed of cementitious material and provided with inwardly and downwardly inclined ends and a plurality of chambers extending downward therein each having a  
55 hole leading from its bottom through the block, reinforcing-cables embedded in said blocks, each cable being formed of twisted strands of wire and arranged in the form of a loop with overlapping ends, a bar at each  
60 side of the blocks to unite the same and hold them apart, tubular members extending through the blocks inside the reinforcing-loops and through the bars to secure the bars  
65 to the blocks, a clamp in each of the chambers in the blocks having laterally-extending lugs, and a wedge in each chamber between one side thereof and the clamp to secure the clamp therein.

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

LOUIS BLESSING.

Witnesses:

OTTO F. BARTHEL,  
ANNA M. DORR.