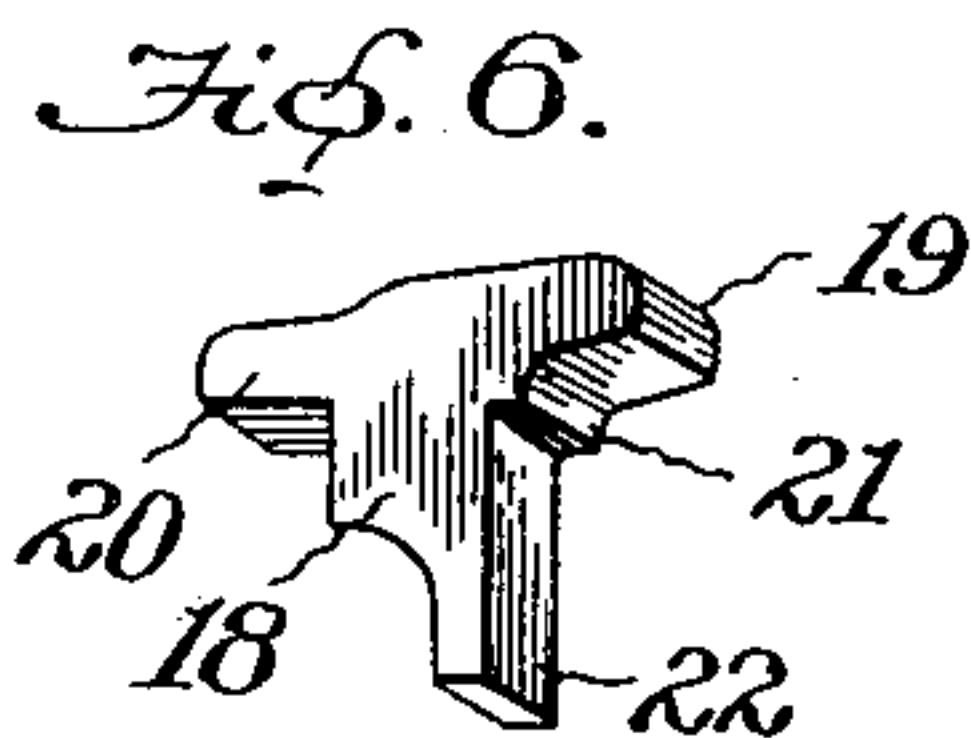
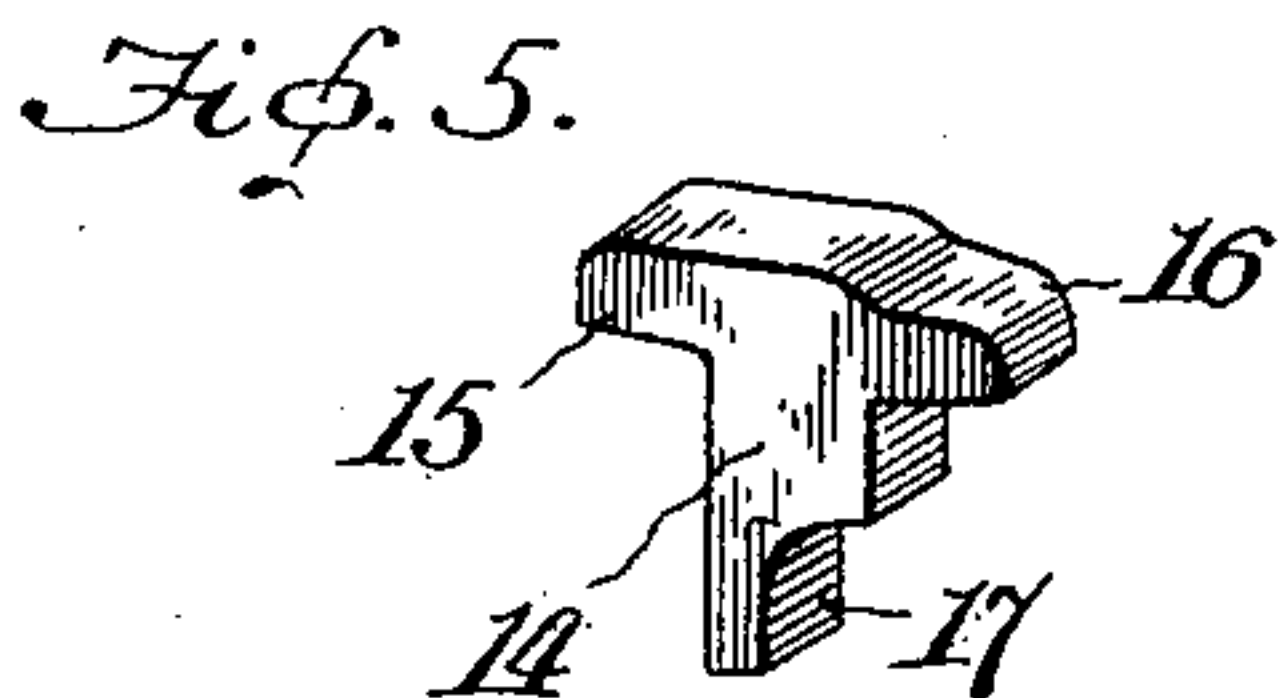
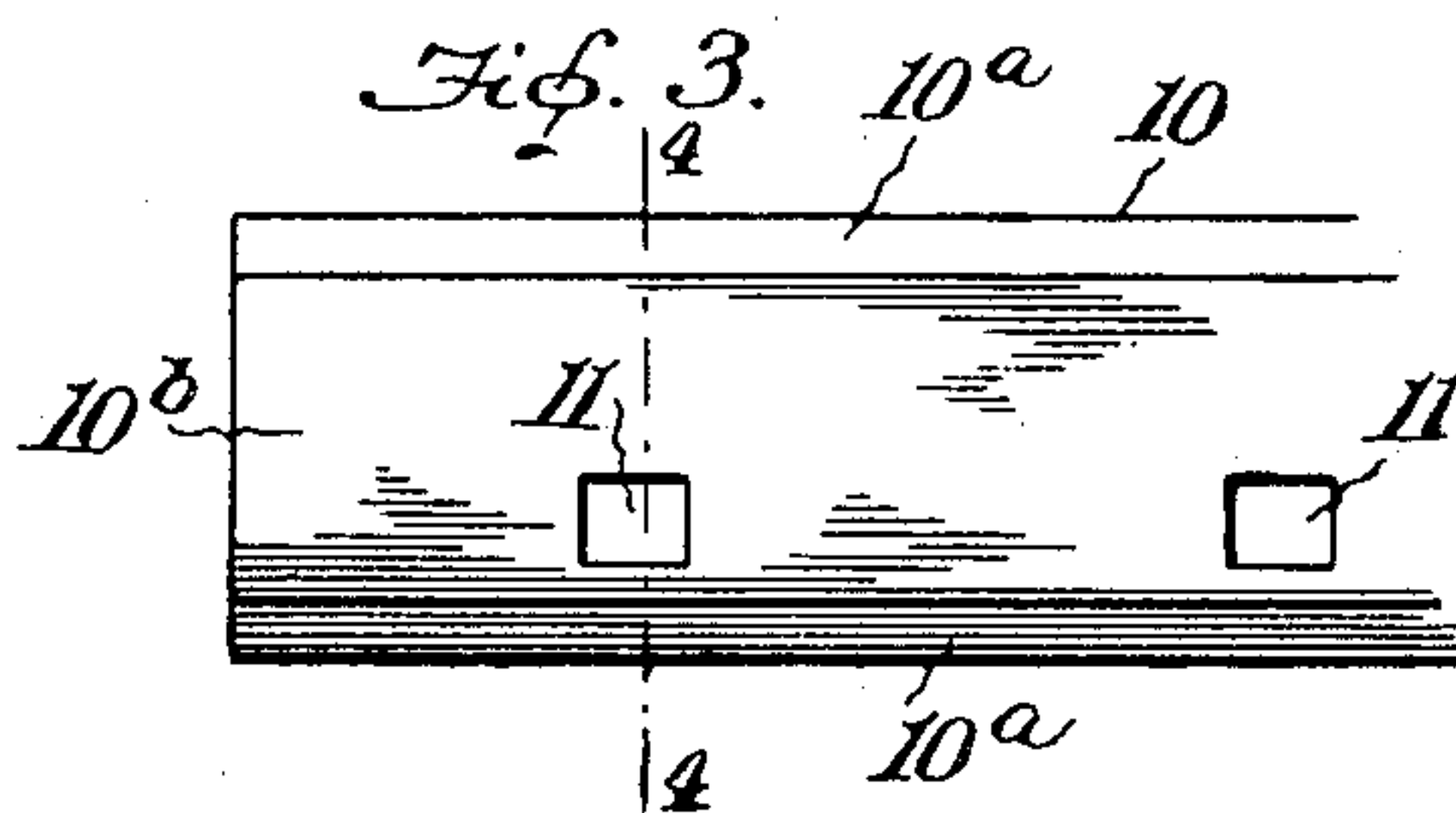
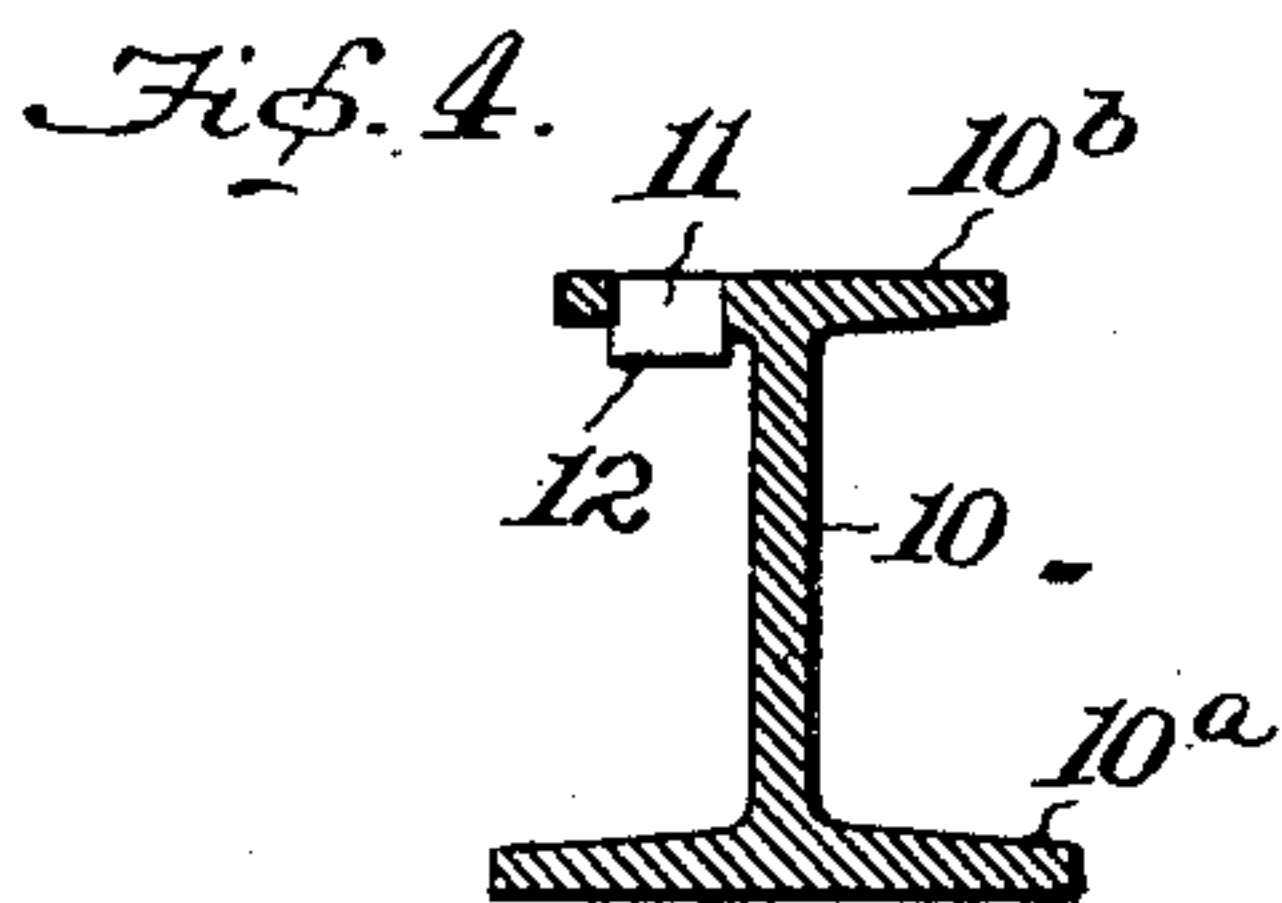
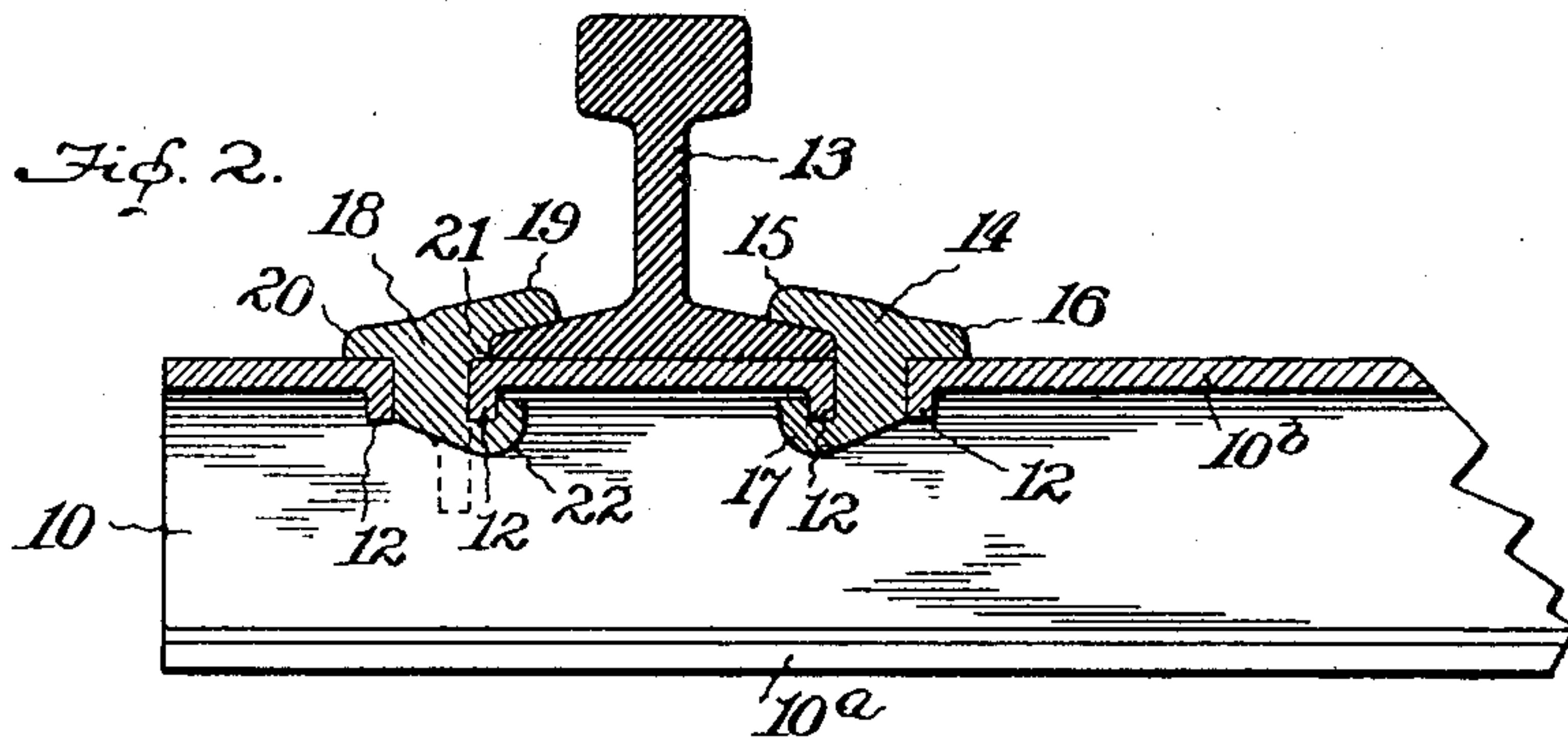
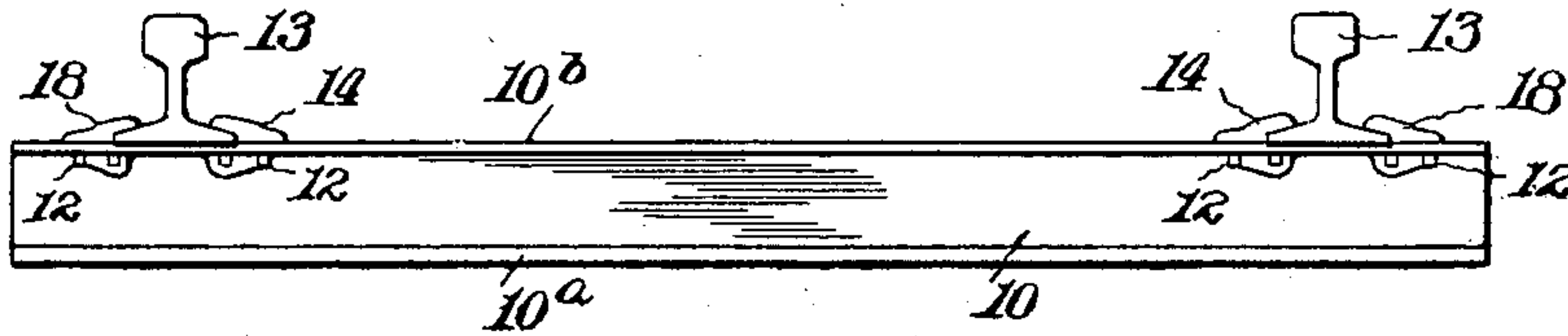


No. 898,080.

PATENTED SEPT. 8, 1908.

W. J. WILSON.
METAL RAILROAD TIE.
APPLICATION FILED JUNE 18, 1907.

Fig. 1.



Witnesses

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UNITED STATES PATENT OFFICE.

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METAL RAILROAD-TIE.

No. 898,080.

Specification of Letters Patent.

Patented Sept. 8, 1908.

Application filed June 18, 1907. Serial No. 379,591.

To all whom it may concern:

Be it known that I, WALTER J. WILSON, a citizen of the United States, residing at Homestead, in the county of Allegheny and State of Pennsylvania, have invented certain Improvements in Metal Railroad - Ties, of which the following is a specification.

My invention is an improvement in metal railroad ties, and includes particular means for rigidly securing the rails to such a tie.

The primary objects of my invention are to provide a metal railroad tie which can be cheaply manufactured, is light and durable in construction, and in which proper bearing surfaces are provided for the roadbed and for the rails, in combination with means for rigidly and securely connecting the rails to the tie, said means being so constructed and applied as not to require the use of screws, bolts and nuts, or other such fastening devices which are liable to become loose.

With these primary objects in view my invention consists in the combination with a metal railroad tie having openings in the upper side thereof, of securing blocks or fasteners for the rails, said blocks extending through the openings in the tie and having tongues which are bent to engage the tie.

My invention further consists in the particular construction of the tie, in combination with the particular construction of the rail securing devices or blocks; all as hereinafter fully described and specifically set forth in the appended claims.

In the accompanying drawings, which form a part of this specification: Figure 1 is a side elevation of a metal railroad tie constructed in accordance with my invention, and including the rail securing devices. Fig. 2 is an enlarged sectional view of one end of the tie, to show the application of the rail-securing devices. Fig. 3 is a plan view of one end of the tie. Fig. 4 is a sectional view through the tie, on the line 4—4 of Fig. 3. Figs. 5 and 6 are detail perspective views of the rail securing devices or blocks.

Like numerals of reference indicate like parts in all the figures of the drawings.

In carrying out my invention I construct the railroad tie 10 of a metal I-beam, the horizontal base-flange 10^a of which is slightly wider than the upper horizontal flange 10^b, the said base-flange being of such width as to give a wide bearing in the roadbed, while the upper flange is sufficiently wide to provide a suitable seat for the rail, said latter flange

being thickened at its juncture with the central or body portion of the I-beam or tie.

For the purpose of receiving the rail fastening devices, hereinafter described, the top flange of the I-beam or tie 10 is provided with openings 11, and in forming these openings the metal is not removed but is bent downward to provide the short depending flanges 12. It will be understood that a pair of openings is formed at each end portion of the tie, and the openings of each pair are spaced apart a distance slightly greater than the width of the base-flange of the rail 13, the latter being seated on the tie between said openings, as shown in Fig. 2.

14 designates one of the rail securing devices or blocks the body portion of which is shaped to fit snugly within the opening 11. The upper end of this block is provided at one side with a rail engaging jaw 15, and at the opposite side with a member 16, the latter being adapted to bear upon the upper side of the tie. The lower end of the block or fastener 14 is reduced in thickness so as to provide a tongue 17, said tongue being adapted to be bent for engagement with the metal tie, in the present instance engaging one of the depending flanges 12, as shown clearly in Fig. 2 of the drawings. 18 designates the other rail securing device or block, the same being also provided with a rail-engaging jaw, as 19, and with a member, as 20, to bear upon the tie; but in this instance there is an offset 21 at the inner end of the rail-engaging jaw 19 so that when the block is in place the edge of the rail 13 will be located a slight distance from the edge of the opening in which said block is placed. This offset provides for changing the gage of the track, according to which side of the rail this particular block is placed. The block 18 is also provided with a tongue, as 22, at its lower end adapted to be bent against the underside of the tie or in engagement with one of the flanges 12, to hold said block in place.

In fastening a rail to the tie said rail is placed so that it will rest upon the tie 10 between the openings 11 therein, and the blocks 14 and 18 are then inserted in the openings 11 and each driven down until the rail-engaging jaw thereof grips the base-flange of the rail and the opposite member bears closely against the upper side of the tie. The tongue at the lower end of the block is then bent so as to embrace one of the depending flanges 12, and in this operation the

block is clamped tightly against the rail and tie forming a rigid connection. The opposite flanges 12 provide large bearing surfaces for the body portion of the block which fits
 5 between the same tightly, and the member opposite the rail-engaging jaw and which bears upon the tie serves to reinforce the connection, forming practically an additional clamping jaw. In this manner each
 10 block is securely locked in engagement with the rail and tie and there are no wedges or bolts and nuts to become loose.

In applying the fastening blocks to the rails of a straight track the block 18, having
 15 the offset 21, is placed at the outer side of the rail, and this provides a track of the usual gage. Now when it is desired to widen the gage of the track, for instance on a curve, as is usual, the said block 18 having the offset
 20 is placed on the inner side of the rails and the latter will then be shifted outward laterally the width of the offset; it being understood, of course, that the fastening devices for each rail are then arranged in this manner so that
 25 both rails are moved outward the width of the offset.

In the use of the ordinary wedges, or bolts and nuts, employed as fastening devices for rails, the same become loosened by the constant jar incident to the passing of the rolling stock over the rails, and the purpose of my invention, therefore, is to provide a rail fastening means which will firmly and rigidly
 30 connect the rails to the tie and in such manner that the fastenings cannot become loose.

It will be noted that by providing the blocks with a large area of bearing within the openings in the tie, in conjunction with the bearing member opposite the rail-engaging
 40 jaw but very little strain is exerted on the fastening tongue, but the strength of the latter is such as to withstand a maximum strain.

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

1. In a railroad tie and rail securing device therefor, the combination, of a metal tie having an upper horizontal portion with an opening therethrough alongside the rail, and
 50 flanges struck from said upper portion and projecting downwardly at opposite sides of the opening, said flanges extending parallel with the rail; together with a securing block comprising a body portion adapted to closely
 55 fit the opening in the tie and bear against the opposite flanges, a jaw on the block adapted to impinge on the rail, an opposite member on said block adapted to bear on the tie, and a reduced portion or tongue forming the
 60 lower portion of the block and adapted to be bent into engagement with one of the flanges of the tie, substantially as shown and described.

2. In a railroad tie and rail securing device

therefor, the combination with a metal tie 65 having an upper horizontal portion with openings therethrough, said openings being substantially alike in shape, of a pair of rail securing blocks each adapted to engage
 either one of the openings and having a jaw 70 which engages an edge of the base-flange of the rail, and an offset on the rail-engaging jaw of one of the blocks whereby the position of the rail on the tie may be changed by reversing the blocks with respect to the sides 75 of the rail; together with means for fastening the blocks to the tie, substantially as shown and described.

3. In a railroad tie and rail securing device therefor, the combination with a metal tie 80 having an upper horizontal portion with openings therethrough at opposite sides of the rail and a depending flange at either side of each opening, said openings being alike in shape, of a pair of rail securing blocks each 85 adapted to engage in either one of the openings in the tie and having a rail-engaging jaw and a depending reduced portion or tongue adapted to be bent into engagement with one of the depending flanges at the sides of 90 the opening, and an offset on the rail-engaging jaw of one of the blocks, whereby the position of the rail on the tie may be changed laterally by reversing the blocks with respect to the sides of the rail, as herein shown and 95 described.

4. In a railroad tie and rail securing device therefor, the combination with a metal tie having an upper horizontal portion with openings therethrough at opposite sides of 100 the rail and flanges depending at opposite sides of each opening, said flanges extending parallel with the rail, of a pair of rail engaging blocks, one of which comprises a body portion adapted to fit either opening between the flanges, a gripping jaw adapted to engage the base-flange of the rail, a member opposite the jaw adapted to bear on the tie, and a reduced lower portion projecting below the upper portion of the tie and adapted to 110 be bent into engagement with one of the depending flanges thereon, and the other rail engaging block constructed similar to the first mentioned block and having in addition a shoulder on the rail gripping jaw which will 115 position an edge of the rail a slight distance from the body of the block, whereby the position of the rail on the tie may be shifted laterally by reversing the blocks with respect to the sides of the rail, as herein shown and 120 described.

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

WALTER J. WILSON.

Witnesses:

SAMUEL C. BOOT,
 W. F. COOK.