

W. McKEE.

TIE PLATE.

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956,499.

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Fig. 1.

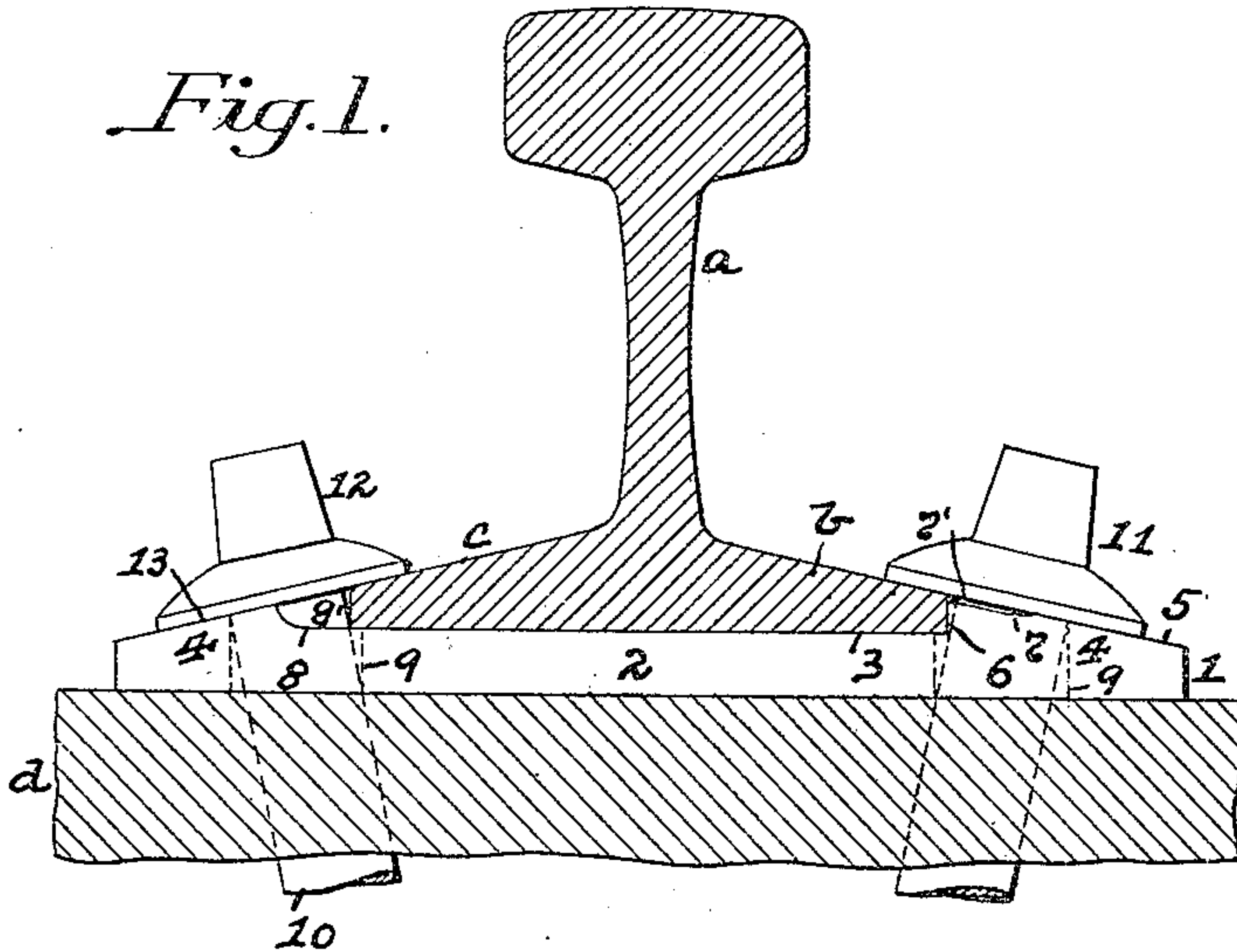


Fig. 2.

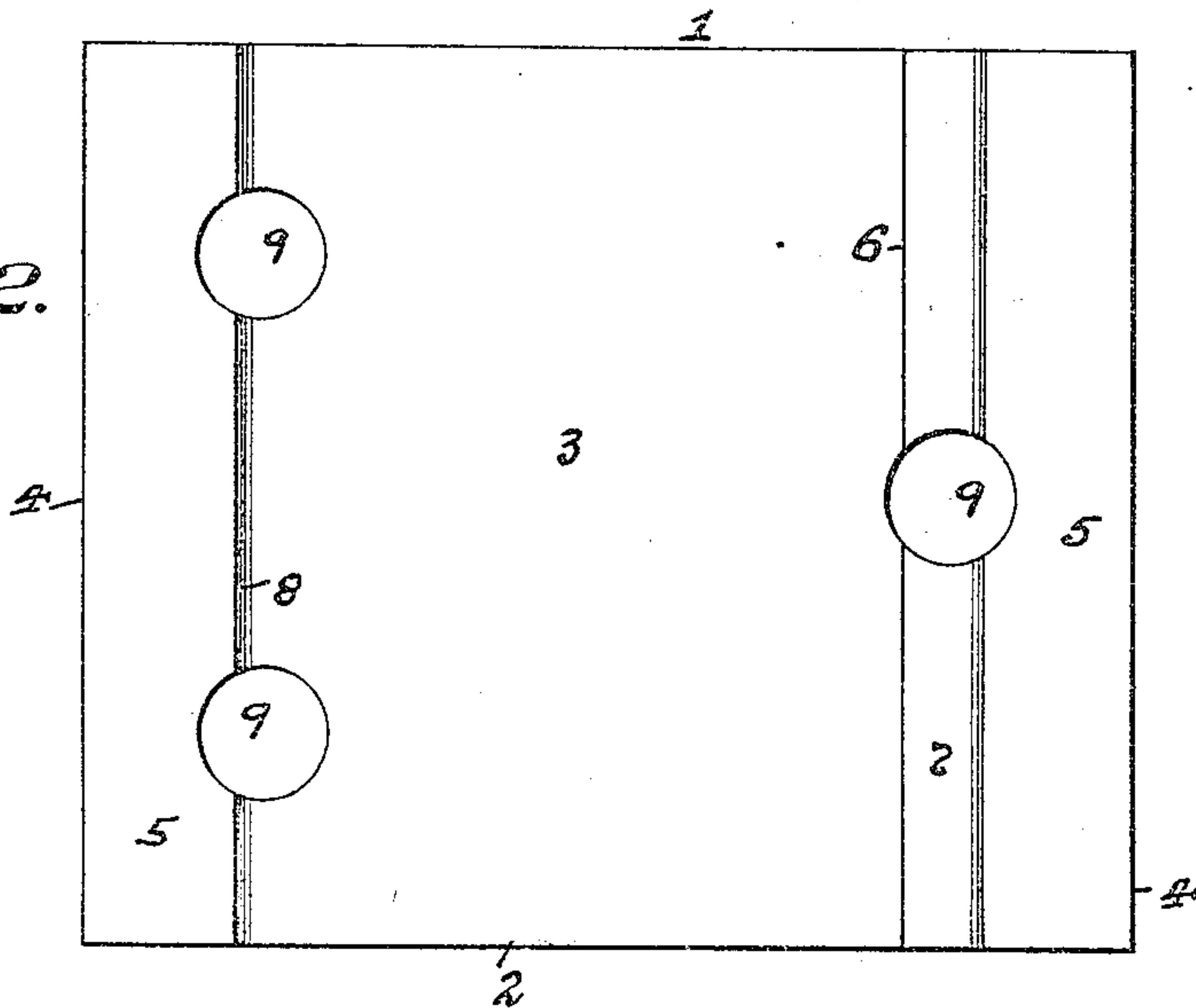
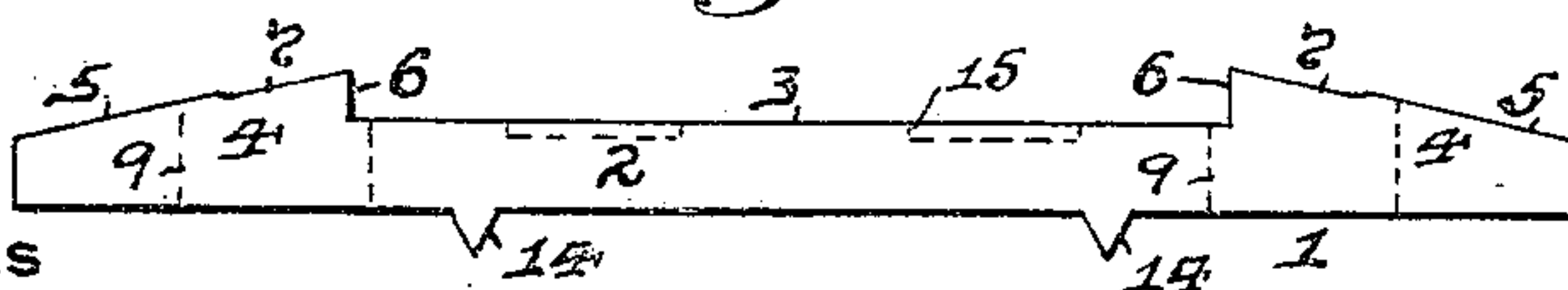


Fig. 3.



WITNESSES

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TIE-PLATE.

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To all whom it may concern:

Be it known that I, WILLIS MCKEE, a resident of Elyria, in the county of Lorain and State of Ohio, have invented a new and useful Improvement in Tie-Plates; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to tie-plates, and has special reference to what are known as tie-plates for use in connection with railway rails.

The object of my invention is to provide a cheap, simple and efficient form of a tie-plate, which will allow for the proper supporting of the rail thereon, will maintain the rail and plate in their proper positions when on the tie, and will enable the securing of the rail thereon in various variations of thickness of rail base or flange, as well as one which will allow the rail to be removed at one side of the same when desired for any purpose without interfering with to any great extent, or removing the rail securing spikes at the other side of the same.

My invention consists, generally stated, in the novel arrangement, construction and combination of parts, as hereinafter more specifically set forth and described and particularly pointed out in the claims.

To enable others skilled in the art to which my invention appertains to construct and use my improved tie-plate, I will describe the same more fully, referring to the accompanying drawing, in which—

Figure 1 is an end elevation of my improved tie-plate, showing the same in position with the rail and tie. Fig. 2 is a top plan view of the plate. Fig. 3 is an end elevation of another form of my improved plate.

Like symbols of reference herein indicate like parts in each of the figures of the drawing.

As illustrated in Figs. 1 and 2 of the drawing, 1 represents my improved tie-plate, which is preferably formed of metal, such as steel, and is provided with the body portion 2 having the rail-bearing surface 3 on the upper face of the same. On each side of the rail-bearing surface 3 are the longitudinal spike-bearing portions 4, which have their top surfaces 5 formed on the same downward incline and on the same plane as the upper surface *c* on the flange *b* of the rail *a* to be employed therewith, as

hereinafter described. One of the spike-bearing portions 4 extends outwardly from and forms part of the rail-abutting shoulder 6 which extends upwardly from one side of the rail-bearing surface 3, and such spike-bearing portion has its inclined top surface 5 depressed, as at 7, from said shoulder to a point beyond the center line of the spike employed therewith, as hereinafter described, while the other spike-bearing surface is recessed or cut-away, as at 8, in order to form a space 8' between the end of the rail flange *b* and said bearing surface when the rail *a* is in place. After the plate 1 has been so formed, spike holes 9 are formed therein in any suitable manner, which holes extend through the bearing portions 4 and body portion 2 on the plate for the reception of the shanks 10 on the screw-spikes 11, and such holes are of sufficient size, so that such spike may enter the tie *d* employed therewith at an incline toward the center of the plate and under the rail *a* when the parts are in position. The heads 12 on the spikes 11 are provided with the flat circular surface 13 on their under sides, so that when the plate 1 is in position on the tie *d*, as shown in Fig. 1, and the rail *a* is in position on the bearing surface 3 of said plate and against the shoulder 6, the spikes 11 when screwed down to the position shown will enable the outer portions of their head surfaces 13 to be brought into surface contact with and bear against the inclined surfaces 5 on the bearing portions 4 of the plate, while the inner portions of said head surfaces will extend over and be brought into like contact with the top *c* on the rail flange *b*. When the spikes 11 are thus placed in position in connection with the plate 1, rail *a* and tie *d*, a slight space 7' will be formed by the depressed portion 7 on the spike bearing surface 5 of the plate from the shoulder 6 beyond the center line of the spike 11 and thereby insure the bearing of the spike head 12 against the rail flange *b* on one side of the head and against the bearing surface 5 on the opposite side of the same. In case it is desired to remove the rail *a* from the plate 1 for any purpose, the screw-spikes 11 on the side of the plate carrying the cut-away portion 8 are removed from the plate 1, rail *a* and tie *d* through the holes 9, and then such rail can be slid along its bearing surface 3 on the

plate and from under the head 12 on the spike 11 at the other side of the same so that the flange *b* on such rail at the cut-away portion can be lifted through said space 8' formed by such cut-away portion, which will free the other side of such rail flange from its spike head 12 and thereby permit the removal of the rail from the plate. In replacing a rail on the plate 1, the rail flange on the same can by a reverse operation be placed in the bearing surface 3 on the plate and slid along the same, so that one side of said flange will come under the spike head 12 on such side, while the cut-away portion 8 on the other side of the plate will enable the rail to be dropped down onto its bearing surface 3 and thereby allow the rail flange at the other side of the plate to come against the shoulder 6 and under the spike head 12. When the rail *a* is thus placed in position on the plate 1, the other spikes 11 are again inserted in the holes 9 and through the bearing portion 4 and space 8' formed by the cut-away portion 8 on the plate and into the tie *c* so that the heads 12 on such spikes will bear against the bearing surface 5 and rail flange *b*, as before described. It will be evident that in thus removing the rail *a* from the plate 1 the spike 11 adjacent to the shoulder 6 on said plate can be retained in its original securing position if desired in such rail removal and in the insertion of a rail, or if desired, the spike can be slightly raised for such removal, and then after the insertion of the rail to place on the plate such spike can be forced down to place for engagement with its bearing surface 5 and rail flange *b*, as before described.

In Fig. 3, my improved tie-plate 1 is shown as being provided with the depressed portions 7 on each of its spike bearing portions 4 to form the space 7' between the spike heads 12 and said bearing portions on both sides of the plate, in which case such plate will have a shoulder 6 on each side of its rail-bearing surface 3, and the cut-away portion 8 on said plate to form the space 8' will be dispensed with. Ribs 14 can also be formed on the under side of the plate, as shown in said figure and running longitudinally of the same for taking into the tie and the depressions 15, shown in said figure by dotted lines can also be formed in said plate to lighten the same.

Various other modifications and changes in the design and construction of my improved tie-plate may be resorted to without departing from the spirit of the invention, or sacrificing any of its advantages.

It will thus be seen that my improved tie-plate can be formed by straight rolling from a metal billet or bar, and into lengths for the proper shape required easily and quickly and then such lengths cut across the same in

any suitable manner to form the plate, and that such plate can be formed by other methods or processes and from materials, other than steel, if desired. The plate so formed will enable the spike heads to bear directly against their bearing surfaces and rail flange at all times and through various slight variations in thickness of such rail flange due to the mill practice in rolling such rail, as well as enabling the rail to be removed and inserted on the plate without necessitating the removal of the spikes at one side of the same. It will also be seen that my improved tie-plate will give a broad bearing surface for the spike heads when the spikes are in position for securing the rail and plate together on the tie and will enable such heads to be drawn down firmly on their plate bearing surfaces and also upon the rail flange at all times through the recessed portion in the bearing surfaces being outwardly or beyond the center line of the spike holes.

What I claim as my invention and desire to secure by Letters Patent is—

1. A tie-plate for rails provided with base flanges, said plate having a rail abutting shoulder on the same, and a bearing surface beyond said shoulder and having its top surface on the same plane as the upper surface of the rail flange for forming a surface contact with the spike-head, said surface having a depressed portion thereon to form a space between said rail flange and said bearing surface for permitting said head to engage with the rail flange.

2. A tie-plate for rails provided with base flanges, said plate having a rail abutting shoulder thereon and spike holes within the plate, and a bearing portion beyond said shoulder and having its top surface on the same plane as the upper surface of the rail flange for forming a surface contact with the spike-head, said surface having a depressed portion thereon to form a space between said rail flange and said bearing surface and extending outwardly of the center line of said holes for permitting said head to engage with the rail flange.

3. A tie-plate for rails provided with base flanges, said plate having a rail abutting shoulder at one side of the same and a bearing surface beyond said shoulder, and a bearing surface on the other side of the plate and in the same position with the first named bearing surface with respect to the rail and both of said surfaces having their top surfaces in the same plane as the upper surface of the rail flange for forming a surface contact with the flat under face of a spike-head, said last named surface being provided with a recessed portion at its inner side to form a space between said surface and the rail flange for the removal and insertion of the rail.

4. A tie-plate for rails provided with base flanges having inclined upper surfaces, said plate having a rail abutting shoulder on the same, and a bearing portion beyond said shoulder and having its top surface inclined on the same angle as the upper surface of the rail flange and in the same plane for forming a surface contact with the spike head, said surface having a depressed portion thereon to form a space between said rail flange and said bearing surface for permitting said head to engage with the rail flange.

5. A tie-plate for rails provided with base flanges having inclined upper surfaces, said plate having a rail abutting shoulder thereon and spike-holes within the plate, and a bearing portion beyond said shoulder and having its top surface inclined on the same angle as the upper surface of the rail flange and in the same plane for forming a surface contact with the spike head, said surface having a depressed portion thereon to form a space between said rail flange and said bearing surface and extending outwardly of

the center line of said holes for permitting said head to engage with the rail flange.

6. A tie-plate for rails provided with base flanges having inclined upper surfaces, said plate having a rail abutting shoulder at one side of the same and a bearing surface beyond said shoulder, and a bearing surface on the other side of the plate in the same position as the first named bearing surface with respect to the rail and both of said surfaces having their top surfaces inclined in the same angle as the upper surface of the rail flange and in the same plane for forming a surface contact with the flat under face of a spike-head, said last named surface being provided with a recessed portion at its inner side to form a space between said surface and the rail flange for the removal and insertion of the rail.

In testimony whereof, I, the said WILLIS McKEE, have hereunto set my hand.

WILLIS McKEE.

Witnesses:

L. A. OBITTS,
J. L. BIRDSALL.