No. 636,607. Patented Nov. 7, 1899.

B. WOLHAUPTER.

RAILWAY TIE PLATE.

(Application filed Oct. 24, 1896.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

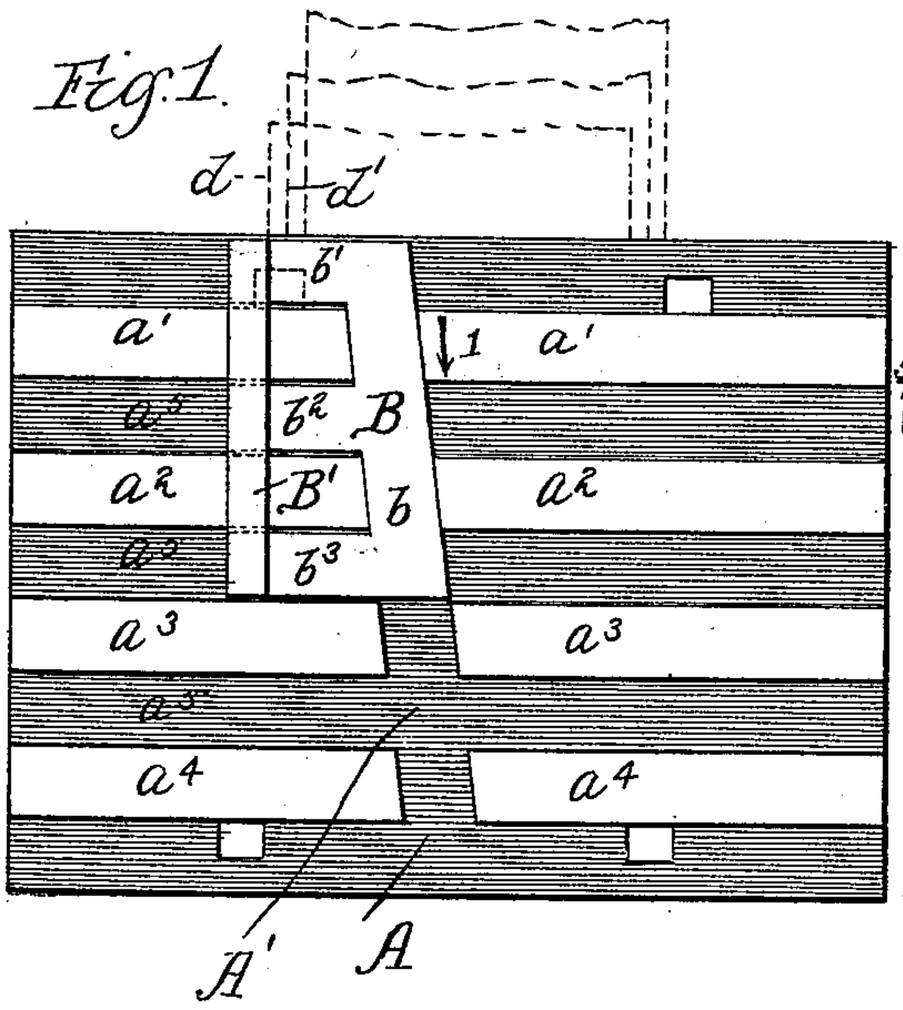


Fig. 4.

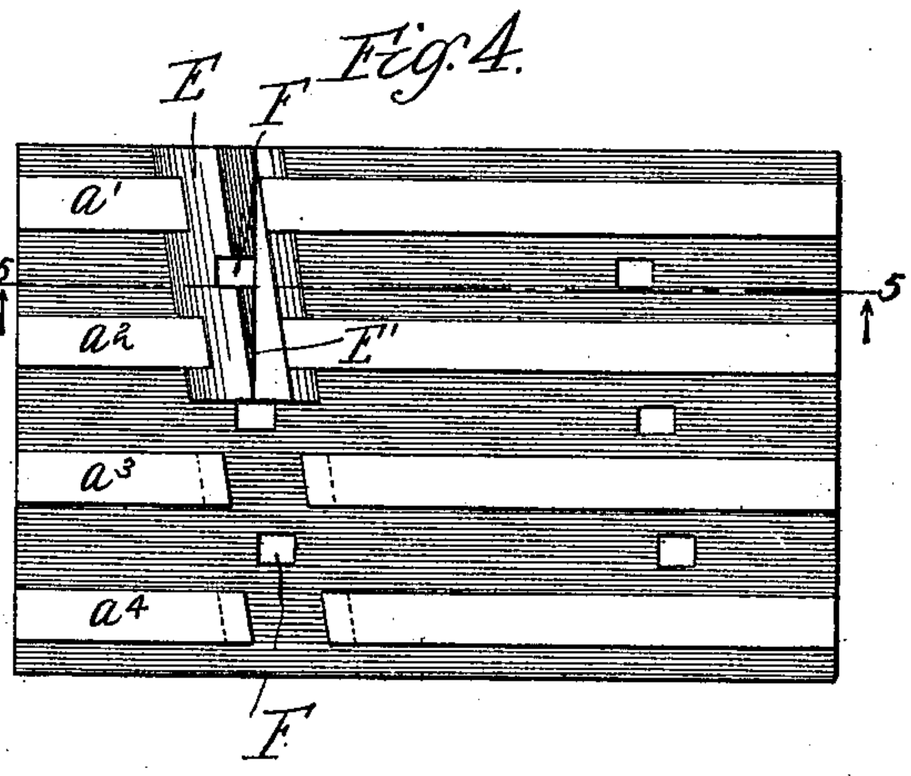


Fig. 2.

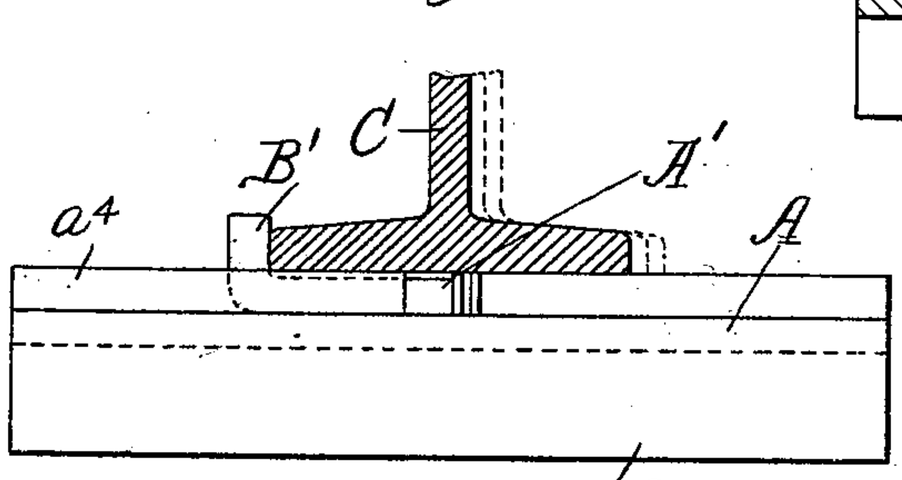


Fig. 6.

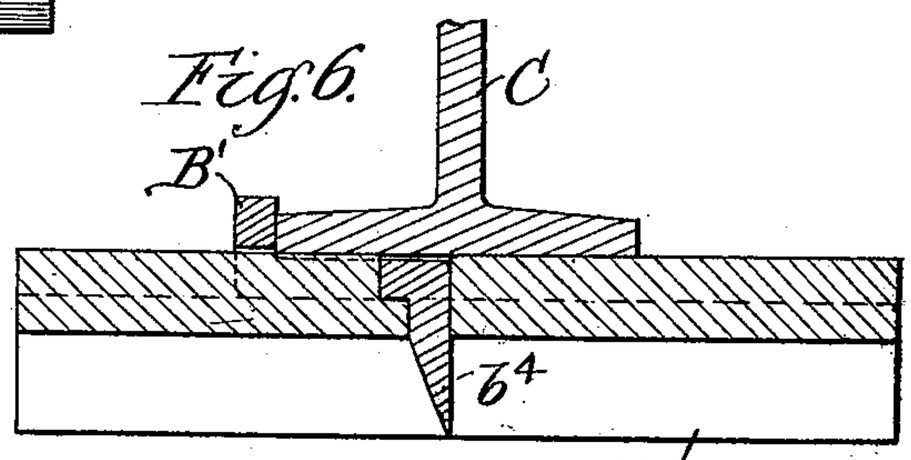


Fig. 5.

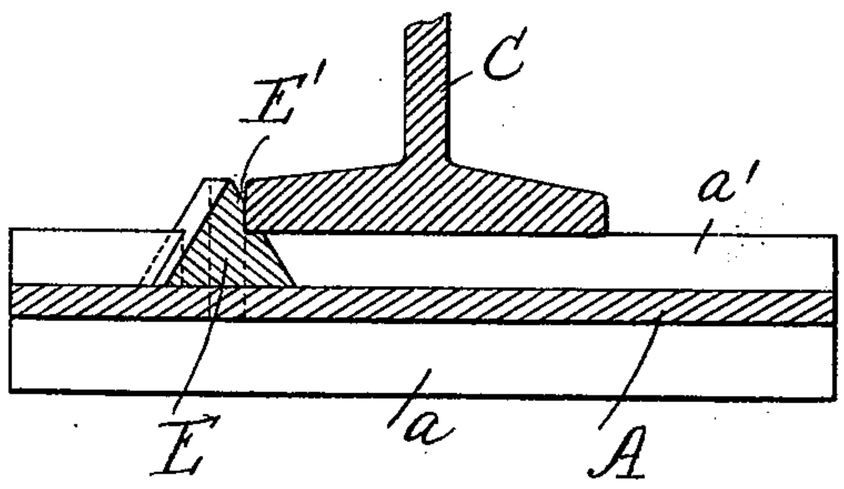


Fig. 3.

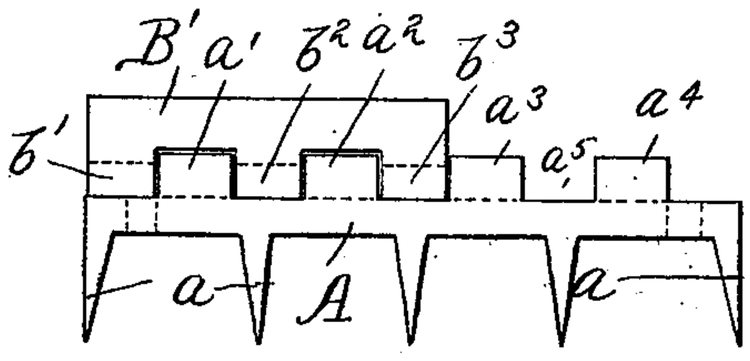
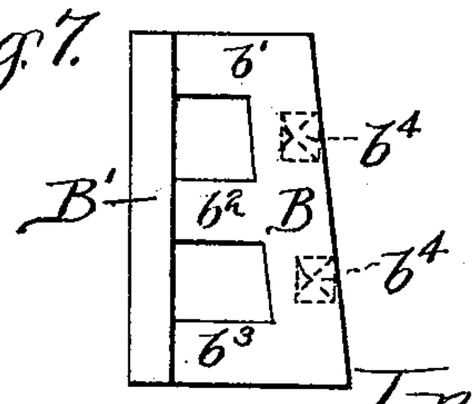


Fig. 7.



Witnesses.
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No. 636,607. Patented Nov. 7, 1899.

B. WOLHAUPTER.

RAILWAY TIE PLATE.

(No Model.) (Application filed Oct. 24, 1896.) 2 Sheets—Sheet 2.

Fig. 8.

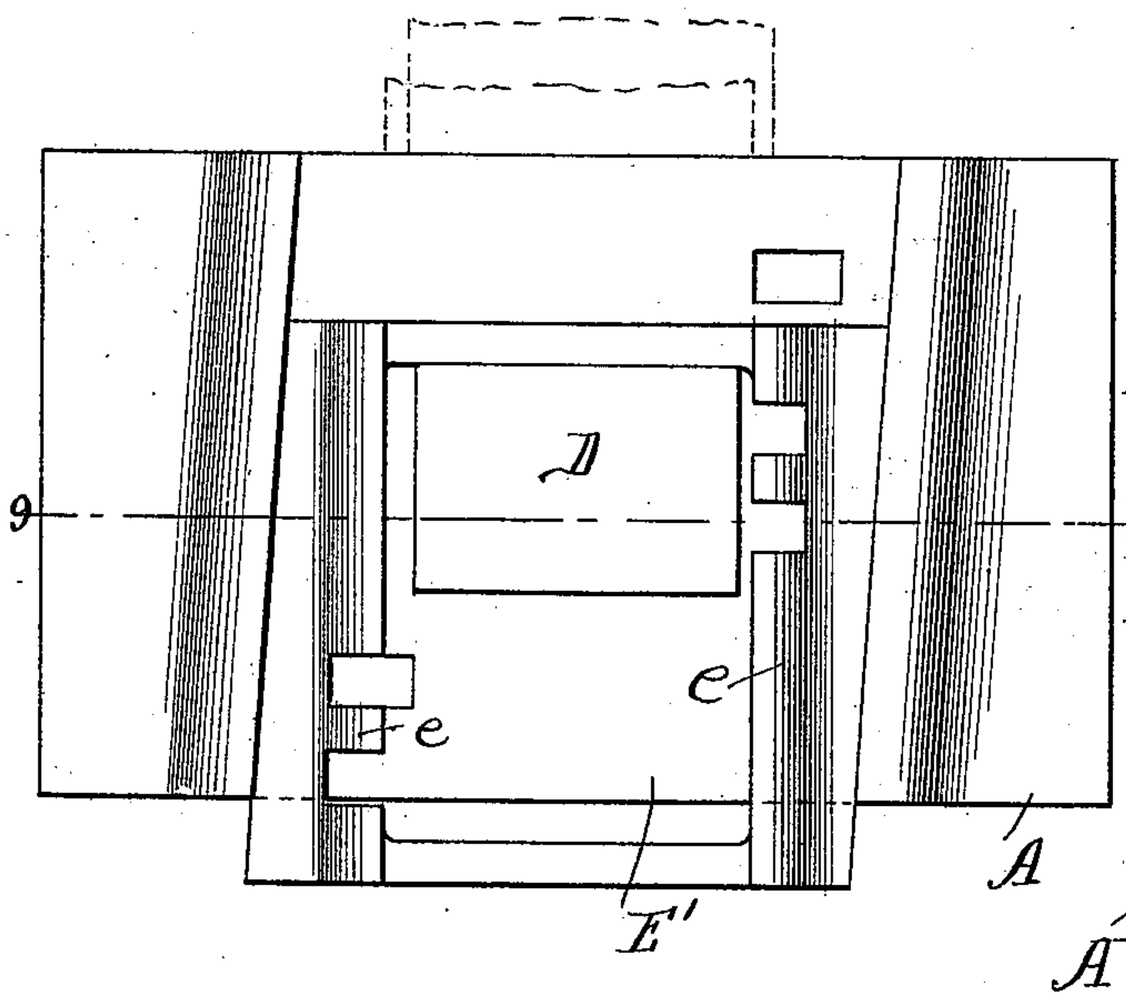


Fig. 10.

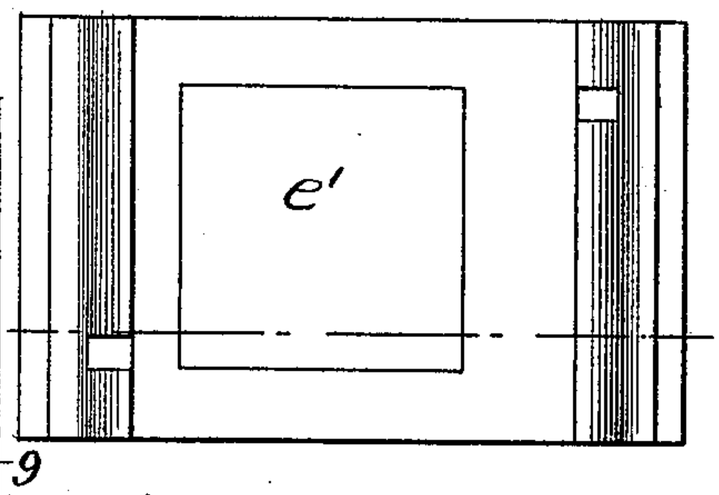


Fig. 11.

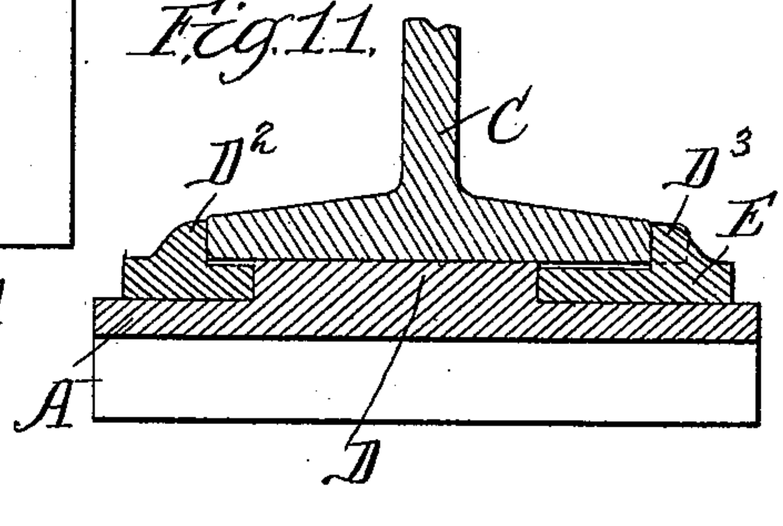


Fig. 9.

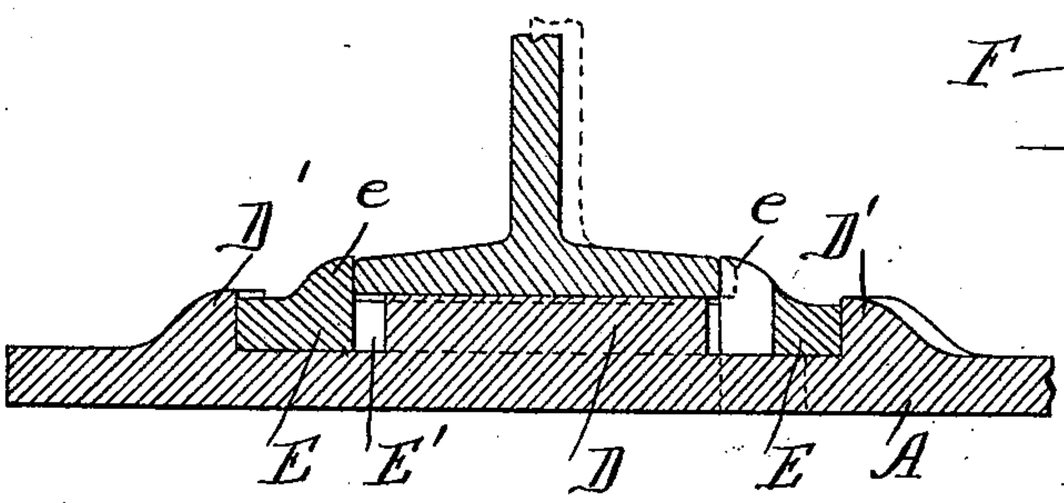


Fig. 12.

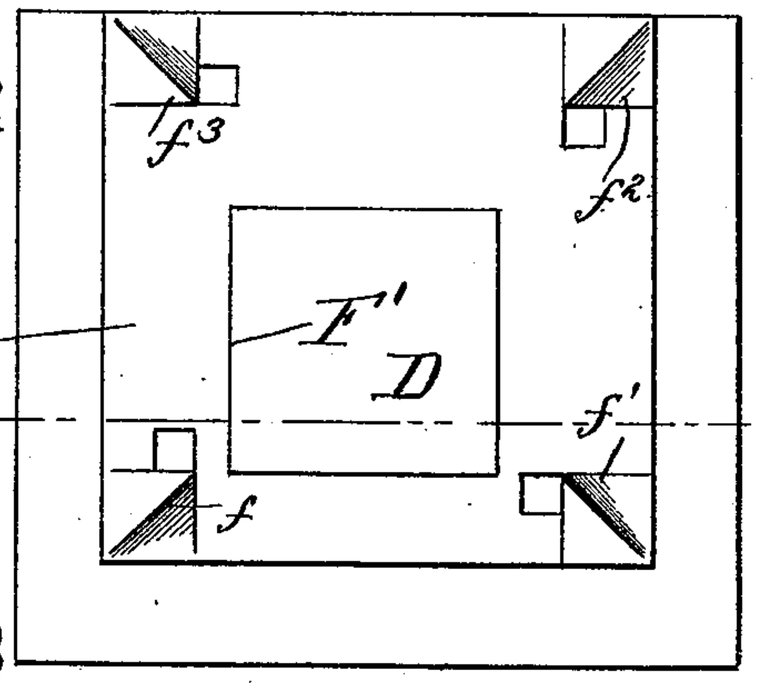
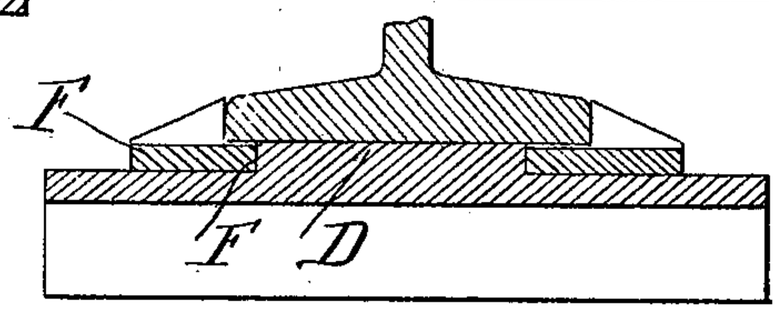


Fig. 13.



Witnesses.
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Inventor.
by Benjamin Wolhaupter
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UNITED STATES PATENT OFFICE.

BENJAMIN WOLHAUPTER, OF CHICAGO, ILLINOIS.

RAILWAY-TIE PLATE.

SPECIFICATION forming part of Letters Patent No. 636,607, dated November 7, 1899.

Application filed October 24, 1896. Serial No. 609,878. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN WOLHAUPTER, a citizen of the United States, residing at Chicago, county of Cook, State of Illinois, have invented a certain new and useful Improvement in Railway-Tie Plates; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to that class of railway-tie plates wherein is provided some sort of adjustment whereby the rail may by the adjustment of the plate be returned to its normal gage after the gage has been widened by the constant passage of trains or for other reasons. Heretofore in the construction of these adjustable plates it has been customary to provide integral with the plate a rail-abutting flange and to make the plate adjustable on the tie. With this mode of adjustment the plate is necessarily lifted out of the tie and therefore loosened from it. It has been found by experience, however, that it is very injurious to the tie for a tie-plate to be loosened. In other words, in all successful plates they become part and parcel of the ties themselves, and loosening them for adjustment is therefore objectionable.

My present invention contemplates a construction wherein the plate having been once set or applied to the tie is not disturbed when the adjustment is effected; but the rail-abutting flange, instead of being made integral with the plate, is separable therefrom and adjustable thereon, so that when the plate has been set to the original gage and the constant passage of the trains has moved the plate along the tie, and thus widened the gage, instead of removing the plate it is only necessary to adjust the rail-abutting flange, and thus carry the rail back to the normal gage.

The invention consists in a combination of devices and appliances hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of a plate embodying my invention. Fig. 2 is an edge elevation of the plate, showing a portion of the rail in section. Fig. 3 is an edge elevation of the plate at right angles to Fig. 2. Fig. 4 is a plan view of a variation. Fig. 5 is a sectional view on the line 5 5 of Fig. 4. Fig. 6 is an end elevation, with parts in section, of a variation. Fig. 7 is a plan view of the same. Fig. 8 is a plan view of still another form of plate embodying my invention. Fig. 9 is a sectional view on the line 9 9 of Fig. 8. Fig. 10 is a plan view of the upper plate embodied in a form slightly varied from the construction shown in Fig. 8. Fig. 11 is a sectional view on the line 11 11 of Fig. 10. Fig. 12 is a plan view of still another form of upper plate. Fig. 13 is a sectional view on the line 13 13 of Fig. 12.

In carrying out the invention, A represents the plate proper, preferably, although not necessarily, provided on its under side with flanges a, more or less sharpened to adapt them to enter the tie and hold the plate in the desired position. It is obvious that the plate may or may not be provided with these flanges and that they may, if provided, extend either parallel with the grain of the tie or across the grain of the tie, and it is also obvious that instead of flanges other tie-engaging devices might be provided. The top of the plate shown in Figs. 1, 2, and 3 is provided with a series of ridges a', a^2, a^3, and a^4. These flanges may of course be increased or decreased in number, depending on the width of the plate. Cut through these flanges on a diagonal line is a channel A'. B is what I will term the "adjustable rail-abutting flange." It is formed with a portion b, adapted to lie in the channel A', and with portions b' b^2 b^3, adapted to lie in the channels a^5 between the ridges a' to a^4. The rail-abutting flange B has an upward-turned flange B', that directly receives the lateral thrust of the rail C. The method of using the plate may be described as follows: Suppose it is originally laid with the adjustable flange B located as shown in Fig. 1. Now we will suppose that the constant pounding of the passing trains moves the plate, say, the distance between the dotted lines d and d', or suppose the rail-head wears and widens the gage the distance between the dotted lines d d'. The rail is lifted until adjustable flange B can be lifted clear of the flanges a' a^2 a^3, and the flange B is then moved in the direction of the arrow 1, Fig. 1, until the portion b^3 rests in the space

a^5 between the flanges a^3 and a^4. This carries the rail laterally the distance between the dotted lines d d', or, in other words, restores the rail to its normal gage of track. Still another adjustment may be gained by carrying the rail-abutting flange B another notch in the direction of arrow 1 until the flange b^3 rests at the edge of the plate. It will be observed that the rail-abutting flange B does not carry the weight of the rail at all, as the latter rests upon the flanges a' to a^4, and yet the rail-abutting flange B is firmly locked in position because it is below the rail C and is prevented from lateral movement by the portion b abutting the ends of the flanges a' to a^4. In Figs. 4 and 5 I have shown a slight variation in the form of the rail-abutting flange in that instead of the upward-turned flange B' being above the flanges a' to a^4 the flange is so shaped that its base is dovetailed under the flanges a' to a^4 and the flange which directly receives the thrust of the rail projects up directly from the body of the flange as a whole. The rail-abutting flange as a whole is marked E, and the flange which directly receives the thrust of the rail is marked E'. In this form (shown in Figs. 4 and 5) the flange E is held against longitudinal movement by the spike passing through it and into the tie, and this flange E can therefore be adjusted any desired distance, depending upon the distance between the spike-holes F.

In Figs. 6 and 7 I have shown a slight variation in the form of the abutting flange B B' in that it is provided with depending projections or spikes b^4, which pass through suitable orifices in the plate A and enter the tie, thus serving not only to hold the flange B B' in place, but also the plate itself.

In Figs. 8 to 13, inclusive, I have shown a form of plate and adjustable flange differing quite materially from the construction shown in Fig. 1, but still embodying the same idea of an adjustable rail-abutting flange on a main plate. In these latter constructions, however, I have really provided a main plate which is engaged to the tie and a superimposed adjustable plate carrying the rail-abutting flange.

I will now describe these latter constructions. As in the former figures, A represents the main plate, which is provided with a central boss or elevation D, which directly carries and bears the rail. This main plate is also provided with flanges D'. E is another plate provided with the flanges e and with a central opening E', adapted to embrace the boss D. It will be observed with reference to Fig. 8 that the ridges or flanges D' are not parallel with the length of the rail, but are parallel with each other and are arranged on a plane at a greater or less angle with the longitudinal plane of the rail. It will also be observed that the ridges e are parallel with the longitudinal plane of the rail and are substantially far enough apart to embrace the rail between them. Again, it will be observed that the plate E is embraced between the flanges D', and the edges of the plate E are so arranged or cut as to have their planes parallel with the flanges d' when the flanges e are parallel with the rail. Thus it will be seen that with the rail resting on the boss D and embraced by the flanges e if the plate A is stationary on the tie and the plate E is moved in a direction parallel with the rail it will shift the rail in either lateral direction, according to the longitudinal direction in which the plate E is shifted. An adjustment of the rail-abutting flange e is thus obtained and the same results accomplished as in the construction set forth on Sheet 1. In Figs. 10 and 11 I have shown a construction wherein there is the same boss D as in Figs. 8 and 9; but the shape of the upper plate E is somewhat different, the opening e' therein being substantially the same size and shape as the boss D, and the plate is provided with the rail-abutting flanges D^2 D^3, which embrace the rail. The adjustment is obtained by making the flange D^2, we will say, nearer the opening E' than the flange D^3, so that if the rail is set to the proper gage originally it is afterward shifted by raising the rail and reversing the position of the plate E end for end. Thus the rail is moved laterally with respect to the main plate A without disturbing the latter. In Figs. 12 and 13 there is substantially the same construction as shown in Figs. 10 and 11, except that instead of reversing the plate E end for end, and thus obtaining a single adjustment, the upper plate in the construction shown in Figs. 12 and 13 can be revolved a quarter-turn and three adjustments thus obtained. This is accomplished by making the upper plate F with an opening F', that fits over the boss D, and providing the plate F with abutments f f' f^2 f^3 and making these abutments variable distances from the opening E', so that when the rail is elevated and the plate E is revolved a quarter-turn it will bring a different pair of abutments f to f^3 against the edges of the rail than previously held the rail.

It will thus be seen that in each of the above-described constructions when the plate has once been laid on the tie and from the pressure of the passing trains has become embedded in and made a part and parcel of the tie even though it is thrust laterally by the thrust of the rail it need not be withdrawn from the tie to adjust the rail; but the rail-abutting flange can be adjusted, leaving the body of the plate practically integral with the tie and in much better shape to resist the lateral thrust of the rail than as though it had been loosened and moved. It is obvious that the form of the rail-abutting flange might be varied materially without departing from the spirit of my invention—as, for instance, it might be so shaped as to have an upwardly-turned flange for both sides of the rail, and the rail-abutting flange might be engaged to

the body of the plate in many different ways, since the essential feature of the invention lies in the provision of a rail-abutting flange which instead of being integral with the body of the plate is adjustable thereon.

I would at this point call attention to the fact that in no one of the constructions above described is the weight of the rail borne by the rail-abutting flange, but that in each instance the rail rests directly on the plate proper and is simply held against lateral shifting by the rail-abutting flange.

What I claim is—

1. A railway-tie plate consisting of a plate proper adapted to sustain the rail and adapted to be engaged to the tie and a rail-abutting flange or projection engaged to said plate but adjustable bodily thereon, substantially as described.

2. A railway-tie plate consisting of a plate proper adapted to sustain the rail and adapted to be engaged to the tie and a rail-abutting flange or projection located above the plate and engaged to said plate but adjustable bodily thereon, substantially as described.

3. A railway-tie plate consisting of a plate proper adapted to sustain the rail and having tie-engaging devices on its under side and a rail-abutting flange or projection engaged to its upper side said plate and rail-abutting flange or projection engaged together but said flange adjustable bodily on said plate, substantially as described.

4. A railway-tie plate consisting of a plate proper adapted to sustain the rail and having a tie-engaging device on its under side extending parallel with the grain of the tie and a rail-abutting flange or projection engaged to its upper side, said plate and rail-abutting flange or projection engaged together but said flange adjustable bodily on said plate, substantially as described.

5. A railway-tie plate consisting of a plate proper having tie-engaging devices on its under side and a rail-abutting flange or projection engaged to the upper side, a portion of said rail-abutting flange or projection being below the rail but above the plate, substantially as described.

6. A railway-tie plate consisting of a plate proper having tie-engaging devices on its under side and a rail-abutting flange or projection engaged to the upper side, a portion of said rail-abutting flange or projection being below the rail but above the plate, said flange being adjustable on the plate, substantially as described.

7. A railway-tie plate consisting of a plate proper adapted to be engaged to the tie and a rail-abutting flange or projection engaged to the upper side of the plate and adjustable with respect thereto, said plate also provided with a stationary projection or projections on its upper side adapted to carry the weight of the rail, substantially as described.

8. A railway-tie plate consisting of a plate proper provided with one or more upwardly-projecting ridges or flanges adapted to carry the weight of the rail and a rail-abutting flange or projection separate from the rail-sustaining flange but engaged and held from lateral thrust thereby, substantially as described.

9. A railway-tie plate consisting of a plate proper provided with one or more upwardly-projecting ridges or flanges adapted to carry the weight of the rail and a rail-abutting flange or projection separate from the rail-sustaining flange but adjustably engaged and held from lateral thrust thereby, substantially as described.

10. A railway-tie plate consisting of a plate proper provided with a series of rail-sustaining flanges, a diagonal channel extending through said flanges and a rail-abutting flange having a portion to receive the lateral thrust of the rail and another portion to rest in said diagonal channel, substantially as described.

11. A railway-tie plate consisting of a plate proper a rail-abutting flange or projection separate therefrom but engaged thereto, said flange or projection provided with a depending projection or spike adapted to pass through the plate and into the tie, substantially as described.

12. A railway-tie plate consisting of a plate proper a rail-abutting flange or projection separate therefrom but adjustably engaged thereto said flange or projection provided with a depending projection or spike adapted to pass through the plate and into the tie, substantially as described.

In testimony whereof I sign this specification in the presence of two witnesses.

BENJAMIN WOLHAUPTER.

Witnesses:

DE WITT W. CHAMBERLIN,

ESTHER M. ROTHELLE.