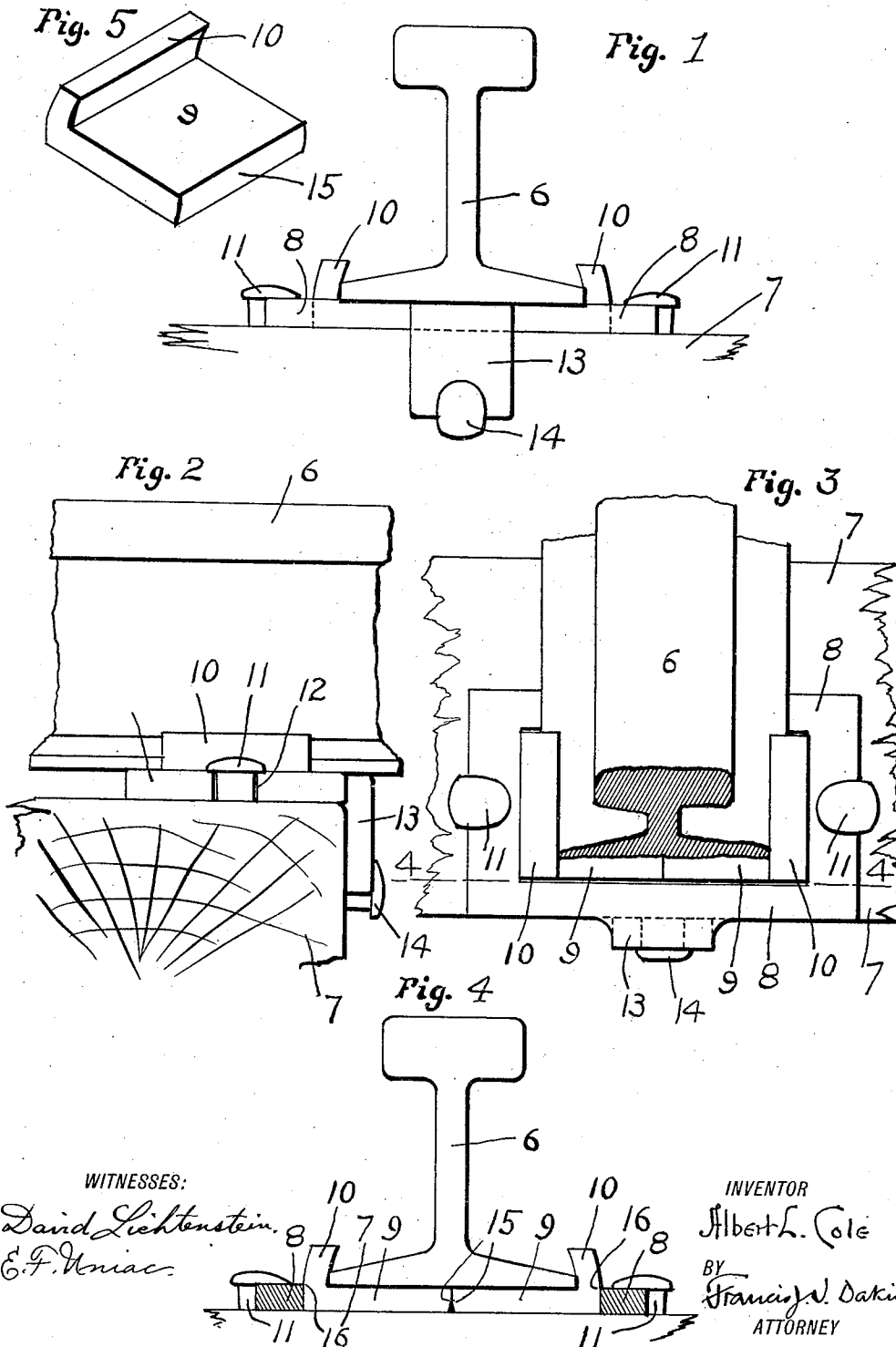


A. L. COLE.
 INTERLOCKING TIE PLATE FOR RAILS.
 APPLICATION FILED FEB. 6, 1913.

1,062,693.

Patented May 27, 1913.



UNITED STATES PATENT OFFICE.

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INTERLOCKING TIE-PLATE FOR RAILS.

1,062,693.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed February 6, 1913. Serial No. 746,434.

To all whom it may concern:

Be it known that I, ALBERT L. COLE, a citizen of the United States, residing at Auburndale, in the county of Middlesex and State of Massachusetts, have invented a new and useful Interlocking Tie-Plate for Rails, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to tie plates for railroad rails and this application is for a specific embodiment of the invention which is described and claimed broadly in a prior application filed by me December 2, 1912, Serial No. 734,483.

The object of this invention is to provide a tie plate for locking a rail to the sleeper to prevent either lateral or longitudinal movement of the rail.

Another object of the invention is to provide a tie plate of such construction that the weight of the train upon the rail serves to lock the tie plate more securely and thereby to tighten its grip upon the rail.

A further object is to provide a tie plate of low cost and simple construction which can be easily applied and easily removed.

An additional object of this specific form of the invention is to provide means whereby the tie plate may be so securely fastened to the sleeper that it cannot be moved except by moving the sleeper.

In the accompanying drawings illustrating this form of my invention Figure 1 is a front side elevation of a tie plate secured in position upon a sleeper and gripping the end of a rail; Fig. 2 is an end elevation of the same showing in side elevation the rail in position; Fig. 3 is a plan view of the same showing the end of the rail broken away and in section; Fig. 4 is a longitudinal vertical sectional view on line 4-4 in Fig. 3, and Fig. 5 is a view in perspective of one of the clamps.

In the drawings 6 designates a railroad rail of usual construction, and 7 a sleeper. The tie plate comprises a frame 8 preferably rectangular in plan and having a central space to receive two gripping clamps 9. The clamps which are flat, substantially square in plan, each have at the outer end a flange 10 curving upwardly and inwardly and are of such size as to fit closely within the frame in order that there may be no

lateral movement with relation to the frame when the clamps are in position.

The frame 8 may be provided at its two ends, or at any other suitable points with recesses 12 to receive spikes 11 for the purpose of securing it firmly to the sleeper. On one side the frame is provided with a downwardly turned lip 13 for the purpose of engaging the side of the sleeper and this lip is provided at its lower end with a recess to receive a spike 14 which is driven into the sleeper in a substantially horizontal direction in order to fasten the frame more securely to the sleeper. In some cases it may be unnecessary to spike the lip to the sleeper but where the frame is subjected to severe or other unusual strain it will be found advisable to use a spike.

In the use of my tie plate the frame is adjusted in position on the sleeper with the lip 13 engaging that side of the sleeper which is toward or opposed to the direction of the strain. Where a rail is used for traffic in one direction only, the lip is on the side of the sleeper nearest the approaching trains, but where the rail is used for traffic in both directions, as upon a single track line, one tie plate may be arranged with the lip on one side of the sleeper and the next tie plate with the lip on the opposite side of the sleeper so that the lip is arranged alternately, first on one side and then on the other side of the sleepers. In some cases it may be necessary to slightly hollow the sleeper where the tie plate is placed to avoid lowering one sleeper below the adjacent ones, as my invention will probably be used not on every sleeper, but at intervals along the road. After the frame has been placed in position the two clamps which have been arranged within the central space in the frame are held with their inner ends slightly elevated to permit the track to be dropped downwardly between the flanges. In this connection it may be noted that the flanges of the two gripping clamps curve inwardly to such an extent that when the clamps are in position the foot or base of the rail is gripped between them and the upper edges of the flanges curve inwardly over the edges of the foot or base of the rail, thereby preventing its withdrawal or tipping over. The amount of curvature of the flanges should be such that when in position they

project inwardly over the foot or base of the rail and yet not so much as to prevent the rail being dropped between the flanges when the inner ends of the clamps are slightly elevated. After the track has been allowed to drop so as to rest upon the flanges and frame and adjust itself, the frame may be spiked to the sleeper at both ends or at other suitable places, and lastly, a spike may be driven in, if desired, to hold the lip firmly to the sleeper.

It is important that the clamps when in the final position as shown in Fig. 4 particularly, should grip firmly the foot or base of the rail and to accomplish this result it is necessary that the clamps fit tightly within the frame, and that their inner ends be in engagement at all times. For this reason the edges of the inner ends of the clamp are curved on a radius centered at approximately point 16, whereby when the inner ends of the clamps are depressed by the weight of the train on the rail the flanges are turned inwardly, thereby gripping the rail more firmly. This is an important feature of my invention because it is essential that the rail should be held firmly against lateral or longitudinal displacement at the moment when the strain is greatest, that is, when a train is passing over the rail.

It is to be observed that one of the important and specific features of the tie plate herein described consists in providing the frame with a downwardly turned lip engaging one side of the sleeper to which the tie plate is applied, and it is apparent that a tie plate having this feature cannot be moved especially in a longitudinal direction with respect to the rail without moving the sleeper, especially if the lip is spiked or

otherwise secured to the sleeper. This specific form of construction is especially adapted for use on steep grades where the strain on the rail, due to the constant application of brakes is unusually severe.

What I claim is:—

1. A tie plate for railroad rails comprising a frame having a downwardly turned lip to engage one side of the sleeper, and vertically movable means within said frame for gripping the foot of a rail.

2. A tie plate for railroad rails comprising a frame having a downwardly turned lip to engage one side of a sleeper and means within said frame for gripping the foot of a rail, said means being so formed that an increase of weight on the rail serves to increase their grip upon the rail.

3. A tie plate for railroad rails comprising a frame having a downwardly turned lip to engage one side of a sleeper, and gripping members within said frame, but not secured thereto, for gripping the foot of a rail.

4. A tie plate for railroad rails comprising a frame having a downwardly turned lip to engage one side of a sleeper, and two gripping members within said frame; said members being movable in a vertical direction and each having a flange for gripping the foot of a rail.

In testimony whereof, I hereunto set my hand in the presence of two subscribing witnesses, this the fourth day of February, 1913.

ALBERT L. COLE.

Witnesses:

CHARLES F. RICHARDSON,
E. F. UNIAC.