To all whom it may concern:

Be it known that I, JOHN W. STEPHENSON, a citizen of the United States, residing at Toledo, Lucas county, Ohio, have invented a new and Improved Guard-Rail Tie-Plate, of which the following is a specification, reference being had to the accompanying drawings, forming a part of the specification, in which—

Figure 1 is a plan of my device; Fig. 2 is an elevation thereof; Fig. 3 is a partial plan with the shims removed; Fig. 4 is a partial elevation of Fig. 3, and Fig. 5 is a plan, partly in section, of a modified form of my device.

My invention relates to guard-rails and is adapted to provide a tie-plate which not only provides adequate fastening and bracing of the guard-rail, but also permits the guard-rail to be moved relatively of the main-rail to compensate for wear either on the head of the main-rail or on the head of the guard-rail, or on both.

My invention is also designed to remove the necessity of unsiping or moving the guard-rail after wear, and consists in providing means for holding and adjusting the guard-rail without the use of spikes engaging the tie, and it also provides an easy and quick adjustment of the guard-rail so that an unskilled laborer can without difficulty maintain the proper gage.

Referring to the drawings, 2 represents a tie-plate which is suitably secured to the ties by spikes through the spike holes 3. The tie-plate is provided with upwardly and inwardly inclined projections 4, and with a centrally located abutment 5, against which the guard-rail 6 and the main-rail 7 are designed to bear. The base flange 8 of the guard-rail 6 is preferably cut away so that the head of the guard-rail may be maintained at the proper distance from the head of the main-rail 7. The projections 4 have inwardly inclined walls 9 which are also inclined longitudinally of the rail, and which with the bases of the rails 6 and 7 form guide-ways for the rail engaging members 10. The rail engaging members 10 are adapted to grip the rails between their heads and base flanges, and are secured in the guide-ways by means of the bendable keys 11 which are adapted to be driven through the slots 12 in the rail engaging members and into the curved key-ways 13, which are located at the forward ends of the guide-ways upon the casting 2. These bendable key members have suitable driving heads 14. I have shown and described these bendable key members in my patent, Reissue No. 13,679, dated June 3, 1913.

To compensate for wear of the heads of both rails, I provide shims 15 and 16 having lips 17 and 18, and heads 19 and 20, which are adapted to be inserted between the bases of the rails 6 and 7 and the abutment 5, and the abutment 5 is suitably cut away on its under-surfaces to provide seats for the shims 15 and 16.

I prefer to use and to adjust my device in the following manner: When the rails are first put into place upon the trackway, I preferably insert the shims 15 and 16 on either side of the shank of the abutment 5 in such manner that the heads of the rails will be adjusted the proper distance apart. When the heads of either the main-rail or the guard-rail, or both, become so worn that the gage between these two rails is no longer maintained, I take one of the shims. For example, when the wear is either wholly or for the most part on the head of the guard-rail 6, I take out the shim 17 to permit the adjustment of the gage between the guard-rail and the main rail, and without disturbing the main-rail, and when the wear is mainly upon the head of the main-rail 7, I take out the shim 18, thus permitting adjustment of both the gages between the guard-rail and the main-rail, and between both of the main rails. I then drive the rail engaging member 10 on the same side of the abutment from which I remove the shim, driving the rail engaging member farther into the guide-way and moving the rail laterally against the abutment 5 and reestablishing the gage.

When further wear has been occasioned on the rail heads so as to necessitate a second reestablishment of the gage, I then take out the other shim and drive the rail engaging member 10 on that side of the abutment 5 farther into its guide-way, thus driving the other rail up against the abutment 5, and a second time reestablish the gage, as is shown in Figs. 3 and 4.

In Fig. 5 I show a modified form of my device in which I employ a tapered shim 21 by which any desired number of readjustments can be made by withdrawing the shim the desired distance and then driving
in the rail engaging member 10'. The face of the abutment 5' and the corresponding face of the shim 21 are preferably roughened so that the shim 21 will at all times and in all positions be securely held in its seat between the abutment and the guard-rail 6'.

It is obvious that one or more shim members may be used for adjusting the gage of rails and that other changes may be made in my device without departing from my invention.

What I claim is:

1. In a guard-rail support, a base member adapted to support the main-rail and the guard-rail, an abutment on said base member adapted to co-act with the base flanges of said rails, rail engaging members adapted to support the outer sides of the rails and to be secured to the base member by bendable key members,

2. In a guard-rail support, a base member having a central longitudinal abutment thereon, rail engaging members adapted to operate in guide-ways between projections on said base member and the webs of the rails, and bendable key members adapted to secure the rail engaging members to the base member.

3. A tie-plate having means for securing a main-rail and a guard-rail thereon, an abutment secured to said tie-plate projecting upwardly between the base flanges of said rails, guide-ways extending longitudinally of the rails between projections on the tie-plate and the webs of the rails, rail engaging members adapted to operate in said guide-ways and to be secured therein by bendable key members, and means for adjusting the gage between the main rail and the guard-rail to compensate for wear.

4. A tie-plate having supports for a guard-rail and a main-rail, mechanism for adjusting the gage of the rails comprised of a shim and rail braces, the rail braces being secured to the tie-plate by bendable key members.

5. A tie-plate having supports for a guard-rail and a main-rail, a shim adapted for insertion between an abutment on said plate and one of said rails and comprising means for adjusting the gage of the rails to compensate for wear, rail engaging members for fastening the rails to the tie plate and bendable locking means for securing the rail engaging members to the tie-plate.

6. A tie-plate having supports for a guard-rail and a main-rail, mechanism comprised of a tapered shim member for adjusting the gage of the rails, and rail engaging members for securing the rails to said plate, the rail engaging members having bendable locking means co-acting with said plate.

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Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D.C."