

H. O. CRIPPEN.
SPIKE.
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1,059,121.

Patented Apr. 15, 1913.

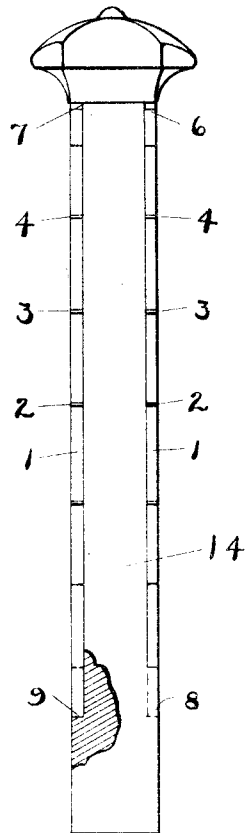


FIG. 1.

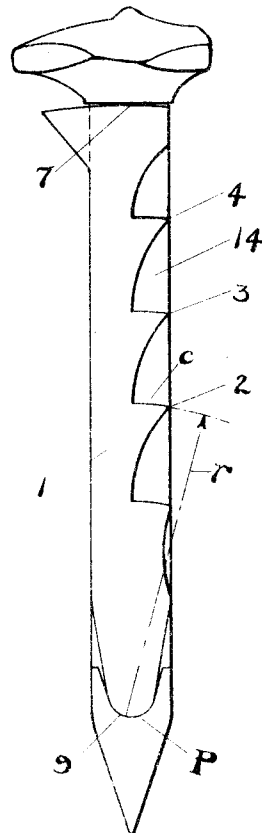


FIG. 2.

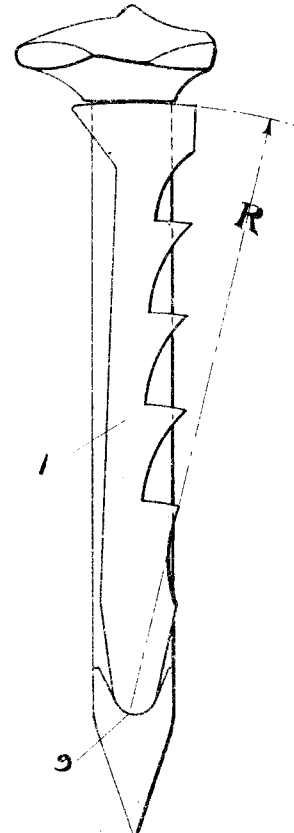


FIG. 3.

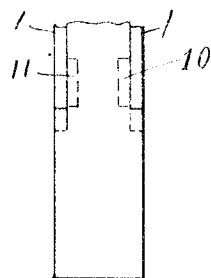


FIG. 4.

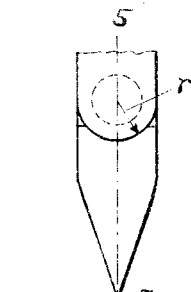


FIG. 5.

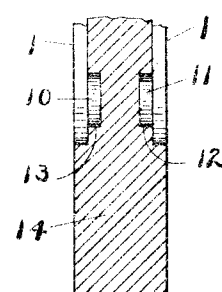


FIG. 6.

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SPIKE.

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To all whom it may concern:

Be it known that I, HERBERT O. CRIPPEN, a citizen of the United States, residing in New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Spikes, of which the following is a specification.

My present invention relates to an improvement in rail spikes similar to that shown in United States Patent No. 963,280, issued to me on July 5, 1910.

The spike disclosed in the above noted patent performs its functions satisfactorily, which is also true of the present improvement, but the present invention has the added improvement of being cheaper to manufacture. When such devices are used in large quantities a slight saving in cost on each spike means considerable saving in the aggregate.

Another advantage in the present construction is embodied in the method by which the spur toothed side plates are held to the sides of the spike in their normal inoperative position, thus doing away with rivets or like fastening means.

In the accompanying drawings, Figure 1 is a rear elevation of the spike. Fig. 2 is a side elevation of the same showing the spike ready for use. Fig. 3 is a side elevation showing the spike as it appears when in use. Fig. 4 is a side elevation of a fragment of a spike showing a modification. Fig. 5 is a side view of the same. Fig. 6 is a sectional view taken on the line 5-5, Fig. 5.

In the present construction I have found it advantageous to make the side plates 1-1, Figs. 1, 2 and 3, of a tough metal, preferably blanked out of flat sheet stock and having a plurality of teeth or spurs 2, 3 and 4 thereon. Owing to the peculiar action of these side plates when they are driven into the tie and have their cam faces forced down upon the flange of a rail, it is necessary to shape these spurs so that when driven into the wood they assume a position similar to that indicated in Fig. 3, with the least amount of tearing of the fiber of the wood. I have therefore arranged that these spurs 2, 3, and 4 shall be made somewhat radial, as indicated at *r*, Fig. 2; the curve *c* resulting therefrom being a development of the radius *r* from the pocket *p* near the bottom of the spike.

The spike herein disclosed is similar to

the well known type of spike with the exception that both sides thereof are cut away equal to the thickness of the side plates, thereby leaving two oppositely placed shoulders 6 and 7 directly under the head, and a pair of oppositely arranged curved seats 8 and 9 near the point thereof which is in the form of a barb. The spur plates 1-1 are so arranged as to length that they are tightly fitted between the shoulders 6 and 7 and the curved pockets 8 and 9, so that in assembling these two plates may be forced into place under pressure, thereby being retained in their normal inoperative position. The spur plates 1-1 at their upper edges are curved with a radius *R*, which radius is developed from the rocking points 8 and 9. The said shoulders 6 and 7 being cut straight across the spike, it is obvious that a slight oscillation of the spur plate 1, Fig. 3 may take place when wedged out by the flange of the rail without the said spur plate dropping out of position owing to the fact that the spike and plate are inclosed all around by the tie into which it is driven.

In Figs. 4, 5, and 6, is shown a modification at the lower portion of the spike, all other construction on the spur plates 1-1 being the same as previously described, with the exception that the spur plates have at the bottoms thereof a pair of teats 10 and 11 arranged on their inner surface, the said teats fitting into corresponding depressions 12 and 13 in the body 14 of the spike. The bottom of the spur plate is rounded concentric to the said teats, as at *r*, Fig. 5, thereby affording a point of rotation for the spur plates 1-1. The spur plates in this modification are wedged into position as described for Figs. 1, 2, and 3, and they are intended to be maintained in their normal operative position by this wedging action. It is also entirely possible that the spur plates 1-1 may be loose and unattached to the spike, and may be applied to the spikes by hand as they are required.

Having thus described my invention, I claim:

1. A spike comprising a body having on one side a locking plate, the body having at the lower end an extension containing a recess into which the lower end of the plate projects and fits movably to permit the plate to rock on the body, the body having an abutment below the head against which the upper end of the lock plate abuts to re-

tain the plate in position and permit swinging of the plate laterally along the engaging face of the body, the locking plate having one or more teeth along one side edge, and having a projection on the opposite side edge at the upper end adapted for engagement with the base of a rail whereby to swing the plate between the recess and the abutment and force the toothed edge outward into the tie.

2. A spike comprising a body having on one side a locking plate, the body having at the lower end an extension containing a curved recess into which the lower curved end of the plate projects and fits movably to permit the plate to rock on the body, the body having an abutment below the head against which the upper end of the lock plate abuts to retain the plate in position and permit swinging of the plate laterally along the engaging face of the body, the locking plate having one or more teeth along one side edge, and having a projection on the opposite side edge at the upper end adapted for engagement with the base of a rail whereby to swing the plate between the recess and the abutment and force the toothed edge outward into the tie.

3. A spike comprising a body having on one side a locking plate, the body having at the lower end an extension containing a recess into which the lower end of the plate projects and fits movably to permit the plate to rock on the body, the body having an abutment below the head against which the upper end of the lock plate abuts to retain the plate in position and permit swinging of the plate laterally along the engaging face of the body, the locking plate having one or more teeth along one side edge, and having a projection on the opposite side edge at the upper end adapted for engagement with the base of a rail whereby to swing the plate between the recess and the abutment and force the toothed edge outward into the tie, the plate having a teat on its inner face near its lower end, the body having a shallow cavity into which the teat projects to form a pivot on which the plate swings.

4. A spike comprising a body having on one side a locking plate, the body having at the lower end an extension containing a curved recess into which the lower curved end of the plate projects and fits movably to permit the plate to rock on the body, the body having an abutment below the head against which the upper end of the lock plate abuts to retain the plate in position and permit swinging of the plate laterally along the engaging face of the body, the locking plate having one or more teeth along one side edge, and having a projection on the opposite side edge at the upper end adapted for engagement with the base

of a rail whereby to swing the plate between the recess and the abutment and force the toothed edge outward into the tie, the plate having a teat on its inner face near its lower end, the body having a shallow cavity into which the teat projects to form a pivot on which the plate swings.

5. A spike comprising a body having on each of two opposite sides a locking plate, the body having at the lower end on each of said sides an extension containing a recess into which the lower end of the plate projects and fits movably to permit the plate to rock on the body, the body having on said sides an abutment below the head against which the upper end of the lock plate abuts to retain the plate in position and permit swinging of the plate laterally along the engaging face of the body, each locking plate having one or more teeth that lie along the adjacent side edges, and each having a projection on the opposite side edge at the upper end adapted for engagement with the base of a rail whereby to swing each plate between the recess and the abutment and force the toothed edge outward into the tie.

6. A spike comprising a body having on each of two opposite sides a locking plate, the body having at the lower end on each of said sides an extension containing a curved recess into which the lower curved end of the plate projects and fits movably to permit the plate to rock on the body, the body having on each said side an abutment below the head against which the upper end of the lock plate abuts to retain the plate in position and permit swinging of the plate laterally along the engaging face of the body, each locking plate having one or more teeth that lie along the adjacent side edges, and having a projection on the opposite side edge at the upper end adapted for engagement with the base of a rail whereby to swing the plate between the recess and the abutment and force the toothed edge outward into the tie.

7. A spike comprising a body having on each of two opposite sides a locking plate, the body having at the lower end on each of said sides an extension containing a recess into which the lower end of the plate projects and fits movably to permit the plate to rock on the body, the body having on said sides an abutment below the head against which the upper end of the lock plate abuts to retain the plate in position and permit swinging of the plate laterally along the engaging face of the body, each locking plate having one or more teeth that lie along the adjacent side edges, and each having a projection on the opposite side edge at the upper end adapted for engagement with the base of a rail whereby to swing each plate between the recess and the

abutment and force the toothed edge outward into the tie, the plate having a teat on its inner face near its lower end, the body having a shallow cavity into which the teat projects to form a pivot on which the plate swings.

8. A spike comprising a body having on each of two opposite sides a locking plate, the body having at the lower end on each of said sides an extension containing a curved recess into which the lower curved end of the plate projects and fits movably to permit the plate to rock on the body, the body having on each said side an abutment below the head against which the upper end of the lock plate abuts to retain the plate in position and permit swinging of the plate laterally along the engaging face of the body, each locking plate having one or more teeth that lie along the adjacent side edges, and having a projection on the opposite side edge at the upper end adapted for engagement with the base of a rail whereby to swing the plate between the recess and the abutment and force the toothed edge outward into the tie, the plate having a teat on its inner face near its lower end, the body having a shallow cavity into which the teat projects to form a pivot on which the plate swings.

9. A spike comprising a body having on one side a locking plate that is curved at each end, the body having at the lower end an extension containing a curved recess into which the lower curved end of the plate projects and fits movably to permit the plate to rock on the body, the body having a curved

abutment below the head against which the upper curved end of the lock plate abuts to retain the plate in position and permit swinging of the plate laterally along the engaging face of the body, the locking plate having one or more teeth along one side edge, and having a projection on the opposite side edge at the upper end adapted for engagement with the base of a rail whereby to swing the plate between the notch and the abutment and force the toothed edge outward into the tie.

10. A spike comprising a body having on each of two opposite sides a locking plate curved at each end, the body having at the lower end on each of said sides an extension containing a curved recess into which the lower curved end of the plate projects and fits movably to permit the plate to rock on the body, the body having an abutment below the head on each said side against which the upper end of the lock plate abuts to retain the plate in position and permit swinging of the plate laterally along the engaging face of the body on each side, each locking plate having one or more teeth that lie along the adjacent side edges and having a projection on the opposite side edge at the upper end adapted for engagement with the base of a rail whereby to swing the plate between the notch and the abutment and force the toothed edge outward into the tie.

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