

A. A. MacDONALD.
RAILWAY SPIKE HOLDER.
APPLICATION FILED AUG. 21, 1911.

1,052,603.

Patented Feb. 11, 1913.

2 SHEETS—SHEET 1.

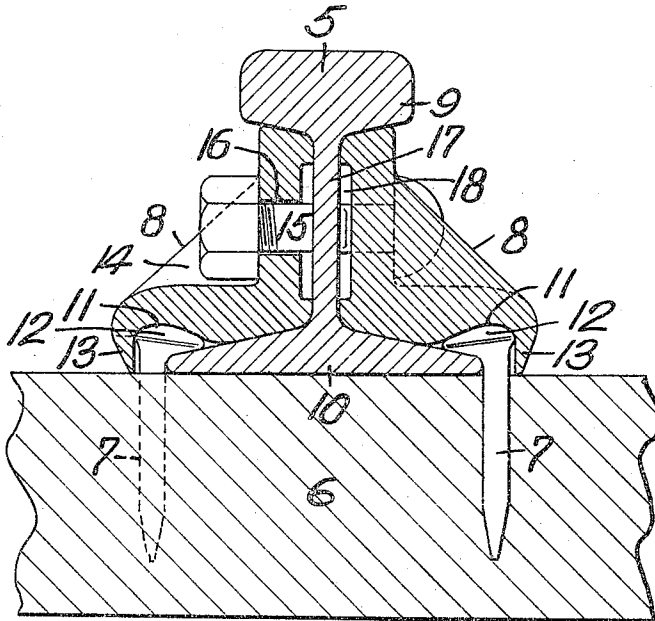


FIG. 1.

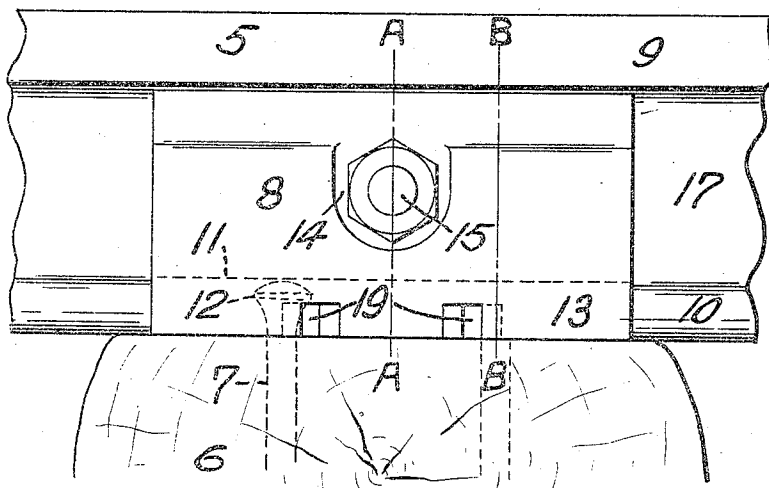


FIG. 2.

Witnesses

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Inventor

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2 SHEETS—SHEET 2.

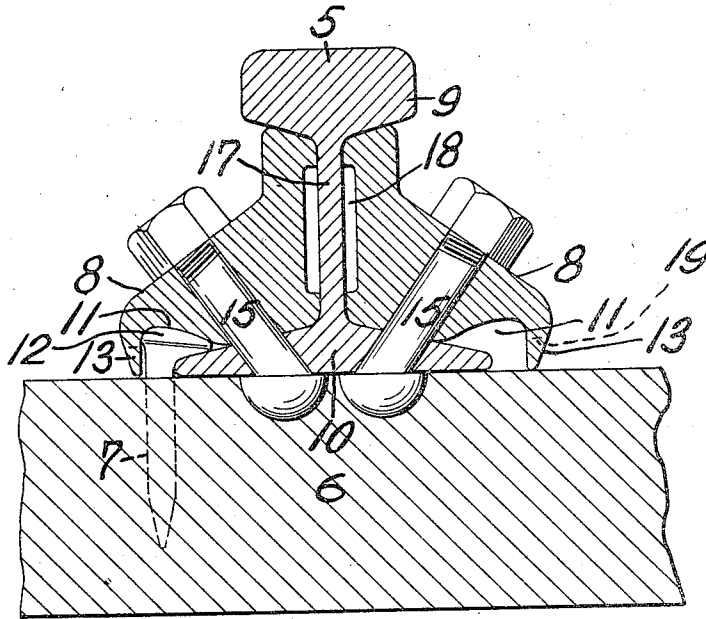


FIG. 3. 19 13

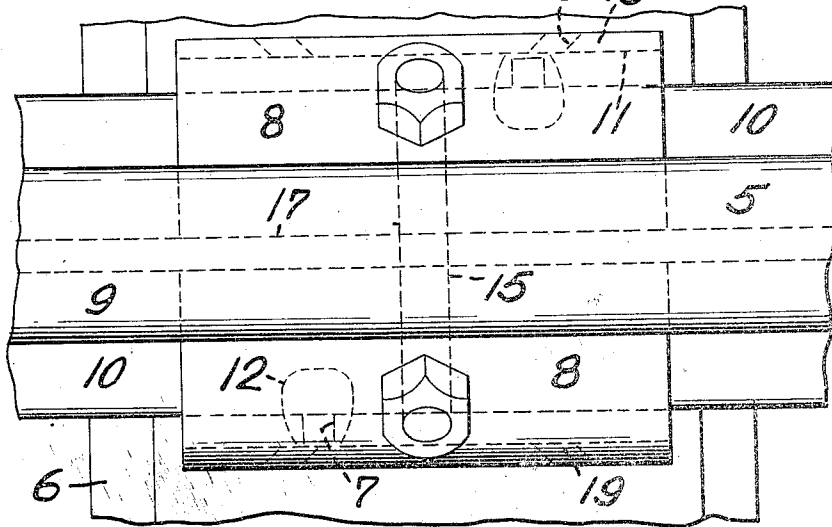


FIG. 4.

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UNITED STATES PATENT OFFICE.

ARCHIBALD A. MACDONALD, OF NEW GLASGOW, NOVA SCOTIA, CANADA.

RAILWAY-SPIKE HOLDER.

1,052,603.

Specification of Letters Patent.

Patented Feb. 11, 1913.

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To all whom it may concern:

Be it known that I, ARCHIBALD A. MACDONALD, of the town of New Glasgow, in the Province of Nova Scotia and Dominion of Canada, have invented new and useful Improvements in Railway-Spike Holders, of which the following is a full, clear, and exact description.

This invention relates to improvements in railway spike holders, and the object is to provide a simple and effective device for preventing the loosening of railway spikes. It is well known that this loosening is due mainly to two forces. The first of these is the bending of the rail as the wheels pass over the unsupported portion between the ties, and the second is the cutting of the rail into the tie so that the rail drops away from the heads of the spikes. There is in addition to these the everpresent factor of vibration, and also, in certain countries, of frost. This invention aims to overcome the action of these forces by placing a solid member between the heads of the spikes and the under side of the rail head, so that as the rail gradually sinks the spikes will be forced down and thus hold the rail tightly to the ties.

In the drawings which illustrate this invention:—Figure 1 is a transverse sectional view of a rail showing the spike holder in position thereon. Fig. 2 is a side elevation of the device. Fig. 3 is a view similar to Fig. 1, but showing a slight modification. Fig. 4 is a plan view of the device.

Referring to the drawings, 5 designates a rail of any suitable cross-section, 6 the tie on which it rests and 7 the spikes holding the rail to the tie. The invention consists of a short bar 8, of metal, rolled or otherwise formed to the cross-section shown on the right hand side of Fig. 1, this section being taken on the line B—B of Fig. 2; *i. e.*, through the body of the bar. This bar is made in various sizes to fit the various rail sizes, and fits snugly between the head 9 and flange or base 10 of the rail. On the lower face of the bar 8 is a groove 11 shaped to receive the head 12 of the spike 7. The outer wall of the groove is formed by a flange 13 of such depth that it is approximately in line with the lower face of the rail base. At intervals along the bar, recesses 14 are formed for the reception of the nuts and heads of the bolts 15, as shown in the left hand side of Fig. 1, the section

being taken on the line A—A of Fig. 2. The bolt 15 passes through the bars 8 and through the aperture 16 in the web 17 of the rail and attaches the bars to the rail. The inner side of the bar which abuts the web of the rail is provided with a groove 18, such as is usually found in fish plates and the like.

In the modification shown in Fig. 3 the bars 8 are not recessed for the bolt heads and nuts as the nuts lie against the outer sloping faces of the bars and the bolts themselves pass in an inclined direction through the bars 8 and through the base of the rail, the heads being under the rail. This modification may, if desired, be further modified by omitting the heads and forming the two bolts integral, as is indicated in dotted lines in Fig. 4. These latter constructions have the advantage that they do not weaken the rail web by necessitating bolt apertures therethrough at frequent intervals, while, at the same time, they hold the bars 8 securely in place so that the web of the rail is supported thereby fully as much as in the form first described.

In order that the railways' track inspectors may readily detect spikes which are broken I provide slots 19 cut angularly through the flange 13 of the bar 8 through which the back and one side of the spike may be seen, as shown in Figs. 2 and 4. By cutting the slots angularly two sides of the spike are exposed, whereas if the slots were transverse only one side would be exposed unless the slots were of considerable size. These slots are preferably only a part of the depth of the flange 13, so that the flange retains a good hold on the spike heads, as is best seen in Fig. 2, this hold being necessary to prevent independent lateral movement of the rail and spikes. In the manufacture, this bar 8 is preferably rolled to standard dimensions, and the recesses 14 and bolt apertures formed therein as desired. For ordinary use the bars are cut into short sections so as to nearly extend across the ties. Longer sections may, however, be made and used as fish plates.

In laying a track, the rails are spiked to the ties in the usual manner. Short sections of the bar 8, each having, preferably, a single bolt aperture are placed on opposite sides of the rail and clamped tightly in place by means of the bolt 15. As the groove 11 is formed throughout the length

of the bar, the exact location of the spike is immaterial, although somewhat limited if it is desired to have the spikes adjacent the slofs 19 in the bar flanges. As the rail sinks into the tie, the bars 8 form compression members extending from the head of the rail to the head of the spikes and drive the spikes down with the rail as the latter cuts into the tie, so that the rail is held tightly against the ties, and vibration thus materially reduced. As these bars are placed on opposite sides of the rail and bolted together, they form a tie between the spikes on both sides of the rail, thus holding the rail from creeping laterally and drawing the spikes, as occurs at curves in the track. This device will also support and relieve the web of the rail of much strain, especially at curves. The device may be used at every tie, or only on curves, as desired.

Having thus described my invention, I declare that what I claim is:—

1. In a railway spike holder, a substantially triangular bar having one side thereof formed to abut the web of a rail, and the second thereof formed to abut the flange of the rail, said bar having a groove formed in the second side thereof to receive spike

heads, an integral flange forming the outer wall of said groove extending below the body of the bar to approximately the level of the lower face of the rail flange, the third side on said bar being provided with recesses and apertures for the reception of attaching bolts.

2. In a railway spike holder, the combination with a railway rail and the spikes securing same of a substantially triangular bar, located on each side of said rail, said bars being shaped to fit snugly between the flange web and underside of the head of the rail, and having a groove formed therein for the reception of the spike heads, and bolts connecting said bars through the rail.

3. In a railway spike holder, a bar located on each side of the rail and extending from the underside of the rail head to the spike head, flanges integral with said bars, positioned to prevent lateral movement of the spikes, and bolts connecting said bars through the rail.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

ARCHIBALD A. MacDONALD.

Witnesses:

STUART R. W. ALLEN,
C. C. CARROLL.