ELASTIC SPIKES FOR SECURING RAILROAD TRACKS

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Application May 27, 1953, Serial No. 357,773

Claims priority, application Switzerland May 30, 1952

6 Claims. (Cl. 238—349)

For several decades elastic spikes have been used for securing rails onto their ties, more particularly in the case of wooden ties.

In view of the favourable results obtained with railroad tracks secured over wooden ties, the use of elastic spikes has not yet widely spread in the case of railroad tracks secured over concrete ties. The reason for this fact consists in that the types of elastic spikes proposed hitherto do not sufficiently take into account the particular properties of concrete ties.

My invention has for its object an arrangement for securing rails through elastic spikes in a manner satisfying also the requirements of concrete ties.

This arrangement for securing rails according to my invention is characterized by the fact that the elastic spike is constituted by a rolled bar forming on one hand the actual point engaging the tie and, on the other hand, a medial loop-shaped part including an elastic strap section urging the rail onto its supporting tie. Preferably the rolled bar is bent in a manner such that its two ends engage each other and form together the point of the spike while the medial portion of the bar is shaped so as to form the above referred to loop.

It is of advantage to give this strap a shape such that its arms form a loop in the portions connected directly with the ends constituting the actual securing point, while said loops are interconnected by a U-shaped bridge member which urges the rail into engagement with the lower flange of the rail in its operative position.

I have illustrated by way of example in accompanying drawings three preferred embodiments of my invention. In said drawings:

Figs. 1 and 2 show the rail-securing means in accordance with the first embodiment respectively in side view and in transverse view, the tie, or the tie and the rail, being respectively shown cross-sectionally;

Fig. 3 is a view seen from above of the arrangement illustrated in Fig. 1;

Figs. 4, 5 and 6 illustrate in a similar manner the rail-securing means in accordance with a second embodiment;

Figs. 7 and 8 relate to a third embodiment.

Turning to Figs. 1 to 3, 1 designates a railroad tie, of concrete for instance, in which is provided, wherever the rail is to be secured, a bored plug 1a of wood or the like suitable material. The rail shown at 4 is held fast by securing means constituted by an elastic spike holding said rail on the tie 1 or else, on a carrier plate 1b laid over the latter. The elastic spike is constituted by a rolled bar bent several times and the ends 2 and 3 of which are folded so as to engage each other and to form the actual point which is to enter the tie, into the bore of the plug 1a of which it is urged. The medial section of the spike, connecting the two ends 2 and 3 assumes the shape illustrated in Figs. 1 to 3 so as to form an elastic strap which holds the rail 4 in intimate contact with the underlying tie 1. Each arm of this strap forms first, starting from the point element 2 or 3, a flat loop 2a or 3a projecting away from the rail 4, the two loops being interconnected on the opposite side of the point 2—3 so as to form a U-shaped bridge-piece 5 engaging the lower flange 4a of the rail 4 in order to urge the latter onto the rail-carrying tie by reason of the elastic action exerted by the strap which has just been described.

In order to prevent any shifting of the heads of the spikes as produced in the usual manner by the creeping of the rail, the two arms of the elastic strap merging into the ends or points 2 and 3 form first lateral elements facing opposite directions and the shape of which is such that they engage the lower flange 4a of the rail.
bar a shown at a-1 is deformed through compression and forging so as to produce, as in the preceding cases, an elastic strap as illustrated in Fig. 8.

The unslotted section a-2 of the rolled bar serves as a rail-securing point, while the slotted section a-1 forming the elastic strap serves, as in the precedingly described cases for urging the rail under pressure onto the tie.

What I claim is:

1. A resilient rail spike comprising a one-piece rolled bar the ends of which are side by side with each other forming a shank for engaging a tie, and the intermediate portion of which is bent in a three dimensional closed loop symmetrical with respect to a center line between said ends, said loop forming a resilient spike head for bearing against a rail flange when the rail is in position on the tie.

2. A resilient rail spike comprising a one-piece rolled bar the ends of which are side by side with each other forming a shank for engaging a tie, and the intermediate portion of which is bent in a three dimensional closed loop forming a resilient spike head for bearing against a rail flange when the rail is in position on the tie, said loop being formed by the intermediate portion extending from the ends of the bar which form the shank upwardly from the rail and then being bent toward the rail and downwardly to form a bent bridge over the flange of the rail to press down thereon; the portions of said loop between the ends of said bar and said bent bridge being symmetrical about a center line between said ends.

3. A resilient rail spike as claimed in claim 2 in which the intermediate portion extends from the ends of the bar which form the shank in diametrically opposite directions from the shank parallel to the edge of the flange of the rail and then upwardly and away from the rail.

4. A resilient rail spike as claimed in claim 3 in which the part of the loop extending in diametrically opposite directions from the shank curves downwardly for engagement with the side edge of the flange of the rail at least one point on each side of the shank.

5. A resilient rail spike as claimed in claim 2 in which the portion of the loop extending from the ends of the bar which form the shank extends upwardly as a continuation of the shank, curves away from the rail and then curves toward the rail and downwardly to form said bent bridge.

6. A resilient rail spike as claimed in claim 5 in which the portion of the loop extending from the ends of the bar which form the shank and which curves toward the rail and downwardly extends below the level of the flange of the rail and engages the side edge of the flange at least two points, one on each side of the shank, and then curves upwardly to form said bent bridge.

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