N. BAYUK.

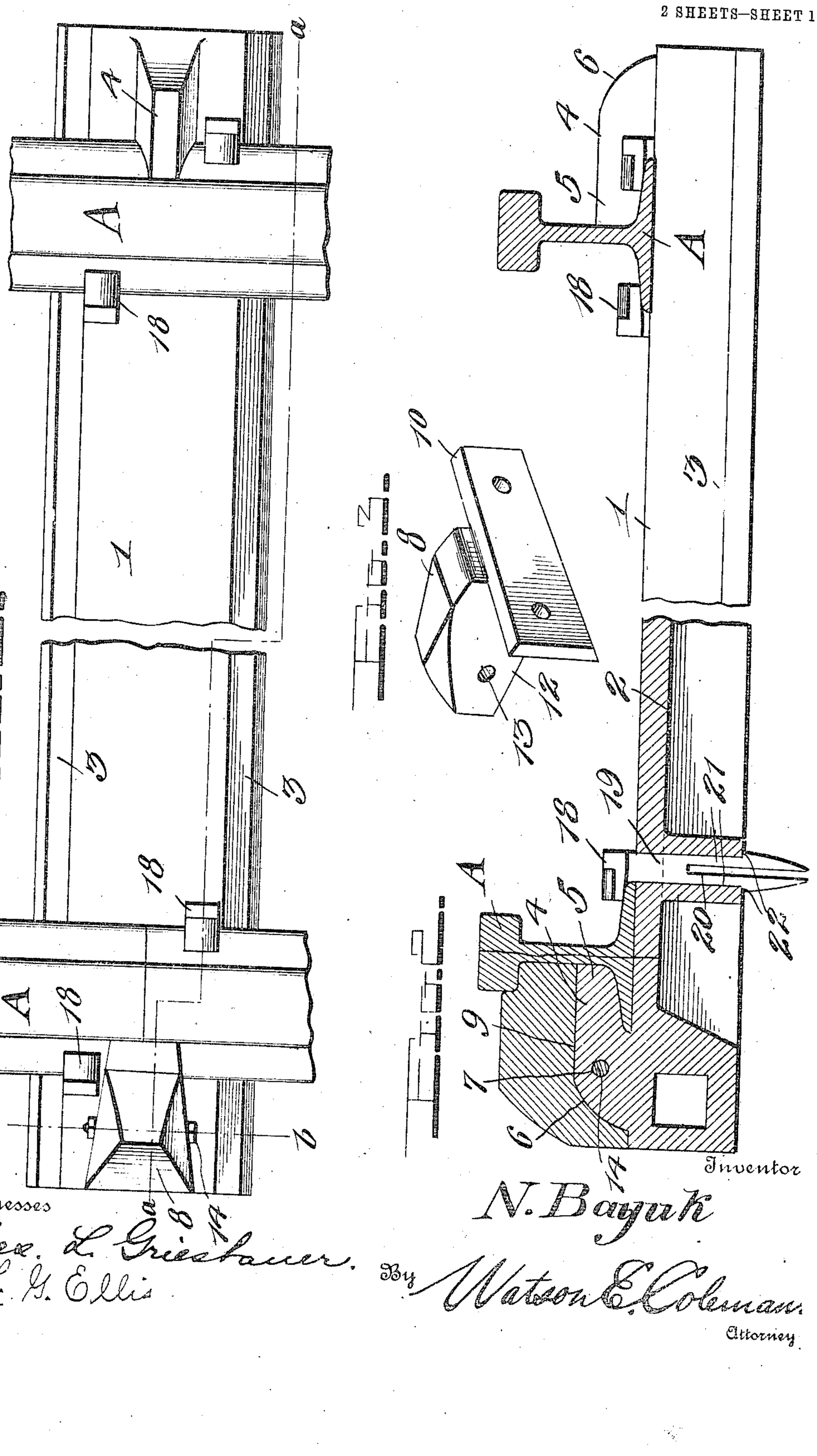
RAILWAY TIE AND RAIL FASTENER.

APPLICATION FILED MAR. 18, 1911.

998,669.

Patented July 25, 1911.

2 SHEETS—SHEET 1.



Witnesses

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2 SHEETS—SHEET 2.

FIG. 4.

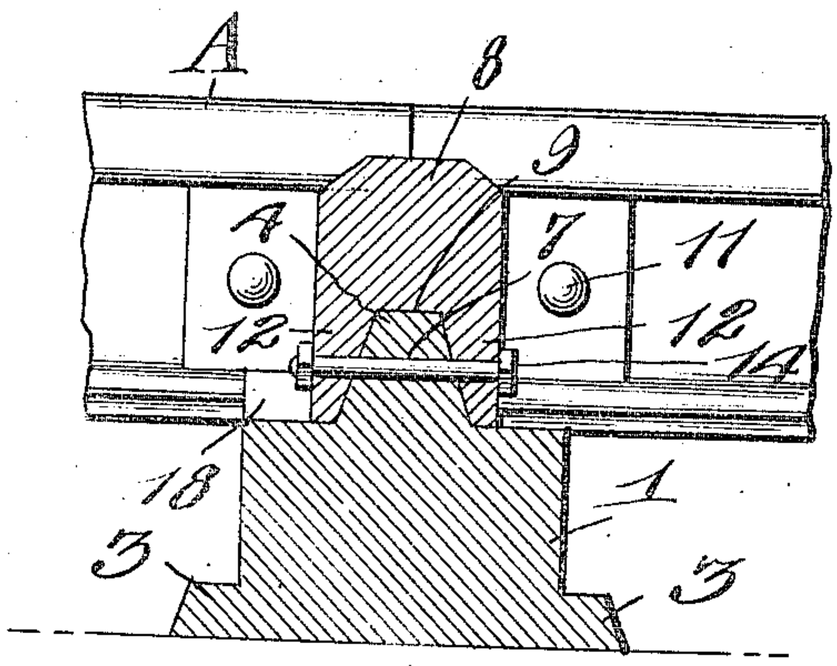


FIG. 5.

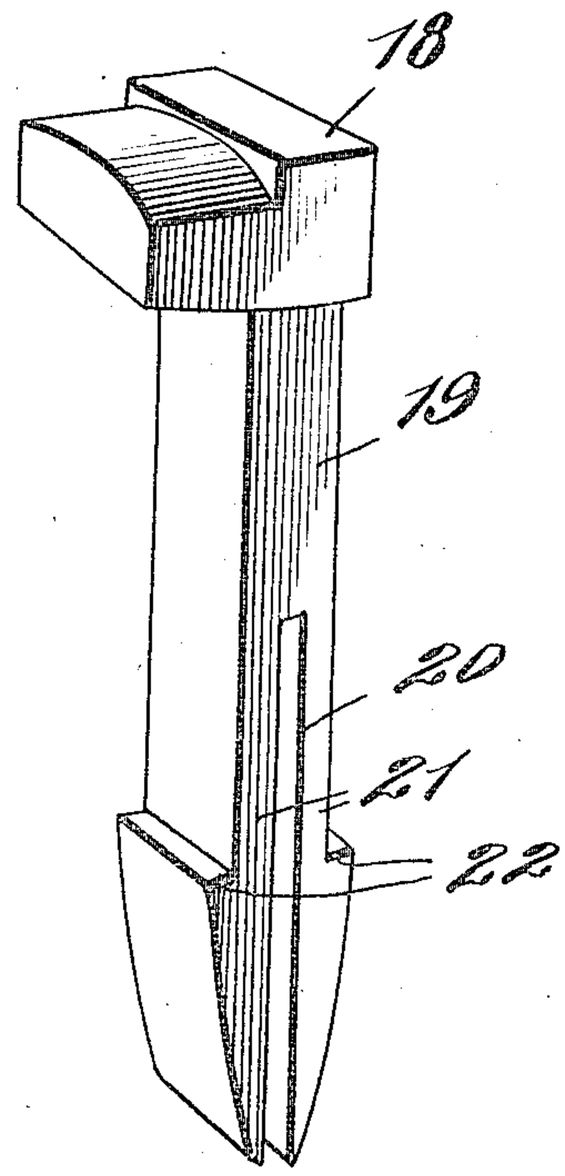


FIG. 6.

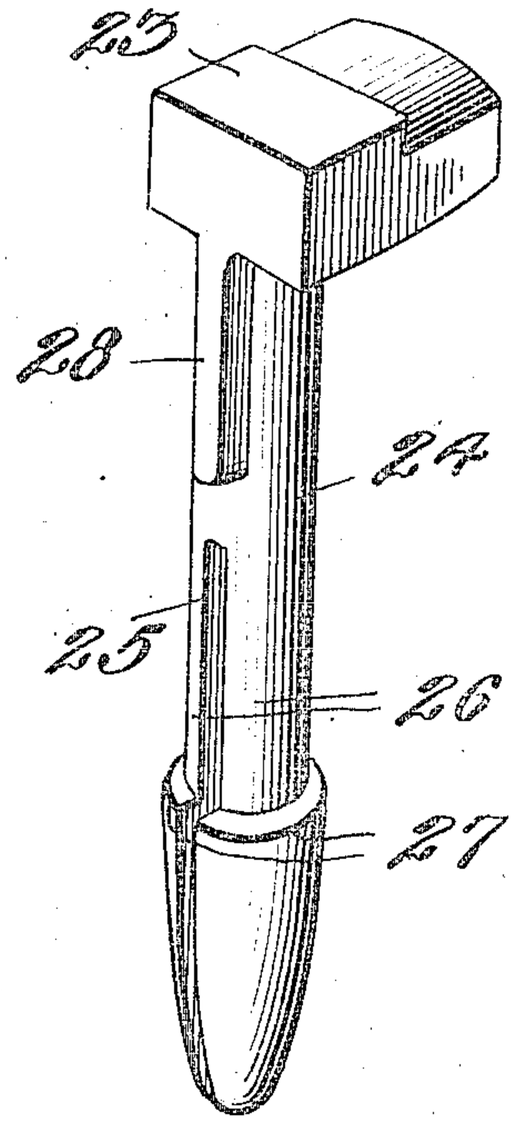
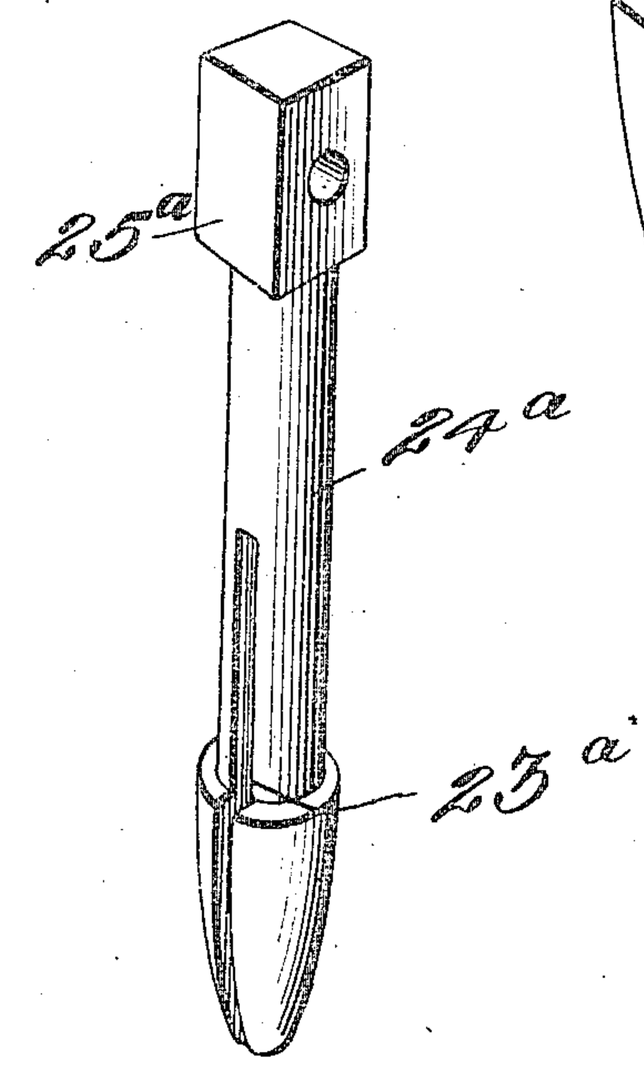


FIG. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

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RAILWAY-TIE AND RAIL-FASTENER.

998,669. Specification of Letters Patent. Patented July 25, 1911.

Application filed March 18, 1911. Serial No. 615,229.

To all whom it may concern:

Be it known that I, NICKOLAS BAYUK, a citizen of the United States, residing at McKinley, in the county of St. Louis and State of Minnesota, have invented certain new and useful Improvements in Railway-Ties and Rail-Fasteners, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to improvements in railway ties and railway rail fasteners, and consists in the construction, combination and arrangement of devices, hereinafter described and claimed.

One object of the invention is to provide an improved form of railway tie which is provided on its upper side with flange hooks to bear on the outer sides of the bases of the rails, so as to prevent the rails from spreading.

A further object of the invention is to provide an improved rail securing cap which coacts with one of the flange hooks of the tie, to provide a novel and extremely strong, durable and efficient joint between the rails.

A further object of my invention is to provide, in connection with the tie, spikes of novel form, which when driven down through the tie and caused to engage the base flanges of the rails, automatically lock themselves in place so that they cannot be withdrawn from the tie.

In the accompanying drawings—Figure 1 is a plan of a railway tie constructed in accordance with my invention. Fig. 2 is partly an elevation and partly a vertical sectional view of the same. Fig. 3 is a detail perspective view of the cap which coacts with one of the flange hooks of the tie to form a joint for a pair of rails. Fig. 4 is a transverse sectional view of the same. Figs. 5, 6 and 7 are detail perspective views of different forms of my improved self locking spikes.

My improved railway tie 1, is made of metal, preferably iron or steel, and is hollow and provided with a chamber 2, in its under side. The tie is also provided at opposite sides with extended base flanges 3. On the upper side of the tie, near its ends, are medially disposed flange hooks 4, which are cast or otherwise formed integral with the tie, and the inner opposing ends or bills 5 of which overhang the tie, and are adapted to bear on the upper side of the outer base flange of the rail A. These flange hooks are wedge-shaped, that is to say, their side walls taper inwardly or toward the center of the tie, and also converge upwardly. The outer ends of the flange hooks are rounded as at 6. One of the flange hooks is provided with a transverse opening 7.

In connection with the last named flange hook I provide a locking cap 8 which has on its under side a wedge shaped recess 9, of a size and shape adapting it to receive the said flange hook so that the cap can be seated on the flange hook. The said cap is provided at its inner end with a transverse bar 10 to bear against the outer side of the shanks of a pair of meeting rails between the heads and base flanges of the rails, to act as a fish bar for the rails, the said bar 10 being secured to the rails by bolts 11, and extending across the joint between the rails and firmly securing them together. The side walls 12 of the cap are provided with openings 13 which register with the opening 7 of the last named flange hook, and a suitable bolt 14 is passed through the said registering openings and serves to effectually secure the cap on the said flange hook.

It will be understood that owing to the shape of the flange hook and the corresponding shape of the recess, in the cap, the latter is prevented from having lost motion in any direction on the flange hook, and hence its bar being bolted to the meeting rails, the joint between the rails is rendered extremely secure and the rails are prevented from spreading or overturning.

The inner flanges of the rails are secured on the tie by spikes which I will now describe, the tie being provided with suitably shaped vertical openings to receive the shanks of the spikes.

Some of the spikes are also employed for engaging the outer base flanges of the rails at points to one side of the flange hooks.

The spike shown in detail in Fig. 5 of the drawings is provided with a head 18 to bear on a base flange of a rail, and has at the outer end of the head a shank 19 which is cross sectionally rectangular. In the lower portion of the shank is a split or kerf 20 of suitable length whereby a pair of spring arms 21 are provided which are separated by the split or kerf. These spring arms have their lower ends pointed and each of the said

arms is provided on its outer side with a shoulder 22. When this form of spike is employed, the opening in the tie through which the spike is driven is also cross sectionally rectangular, and is of suitable size to receive the shank of the spike. As the spike is driven down through the opening, the lower ends of its spring arms bear against each other, to afford clearance for the shoulders 22, and when the spike has been driven through the opening so as to bring its head into engagement with the base flange of the rail, the lower ends of the arms of the spike spring apart so as to engage their shoulders 22 with the under side of the tie, the length of the shank above the said shoulders being sufficient to thus cause the shoulders to clear the lower side of the tie. It will be understood that owing to the engagement of these shoulders, with the bottom of the tie, it will be impossible to draw the spike from above, and hence it will be rendered extremely difficult, and practically impossible for lawless persons to draw the spikes and loosen or remove the rails in order to cause a wreck or prevent the running of trains.

The form of spike shown in Fig. 6 is provided in addition to its head 23, with a shank 24 which is cylindrical in form and is provided with a kerf 25 extending from its lower end and forming a pair of spring arms 26. These spring arms are provided at their lower ends with shoulders 27. On the outer side of the shank of the bolt and in the angle between the shank and the head, is an integral spline 28. This spike as will be understood is used in connection with a cylindrical opening in the tie, and the spline engages a groove at one side of the opening, and acts to prevent the spike from turning. When the spike is driven home as in the first instance, the shouldered lower ends of its spring arms 26, spring outwardly and engage the lower side of the tie, thereby locking the shank to the tie and prevent it from being withdrawn.

The form of my improved spike shown in Fig. 7, has a cylindrical shank 24^a, provided with a kerf 23^a, and shouldered spring arms, and a head 25^a, of the spike is provided with a transverse opening through which a bolt or other device will be passed.

I claim:—

1. In combination with a railway tie, having a flange hook on its upper side, to bear over a base flange of a rail, a cap having a recess in its under side, to fit on the said flange hook, the said cap being further provided at its inner end with a bar to bear against one side of the rail, and means to secure the cap on the flange hook.

2. In combination with a railway tie, having a flange hook on its upper side to bear over a base flange of a rail, a cap having a recess in its under side, to fit on the said flange hook, the said cap being further provided at its inner end with a bar to bear against one side of the rail, the said flange hook and cap being provided with coincident transverse openings, and securing means for engagement with said openings to lock the cap on the flange hook.

3. A railway tie having a flange hook on its upper side, to bear on a base flange of a rail, said flange hook having side walls converging toward the center of the tie and also converging upwardly, and a cap having a recess corresponding in size and shape with the flange hook to enable the cap to fit on the flange hook, said cap having means at its inner end to bear on the outer side of a rail.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

NICKOLAS BAYUK.

Witnesses:
JOHN AGNITH,
ALBIN MURNIK.