(No Model.)

2 Sheets—Sheet 1.

G. P. OSBORNE.

SAFETY PLATE FOR RAILWAY RAILS.

No. 502,633. Patented Aug. 1, 1893.

Fig. 1.

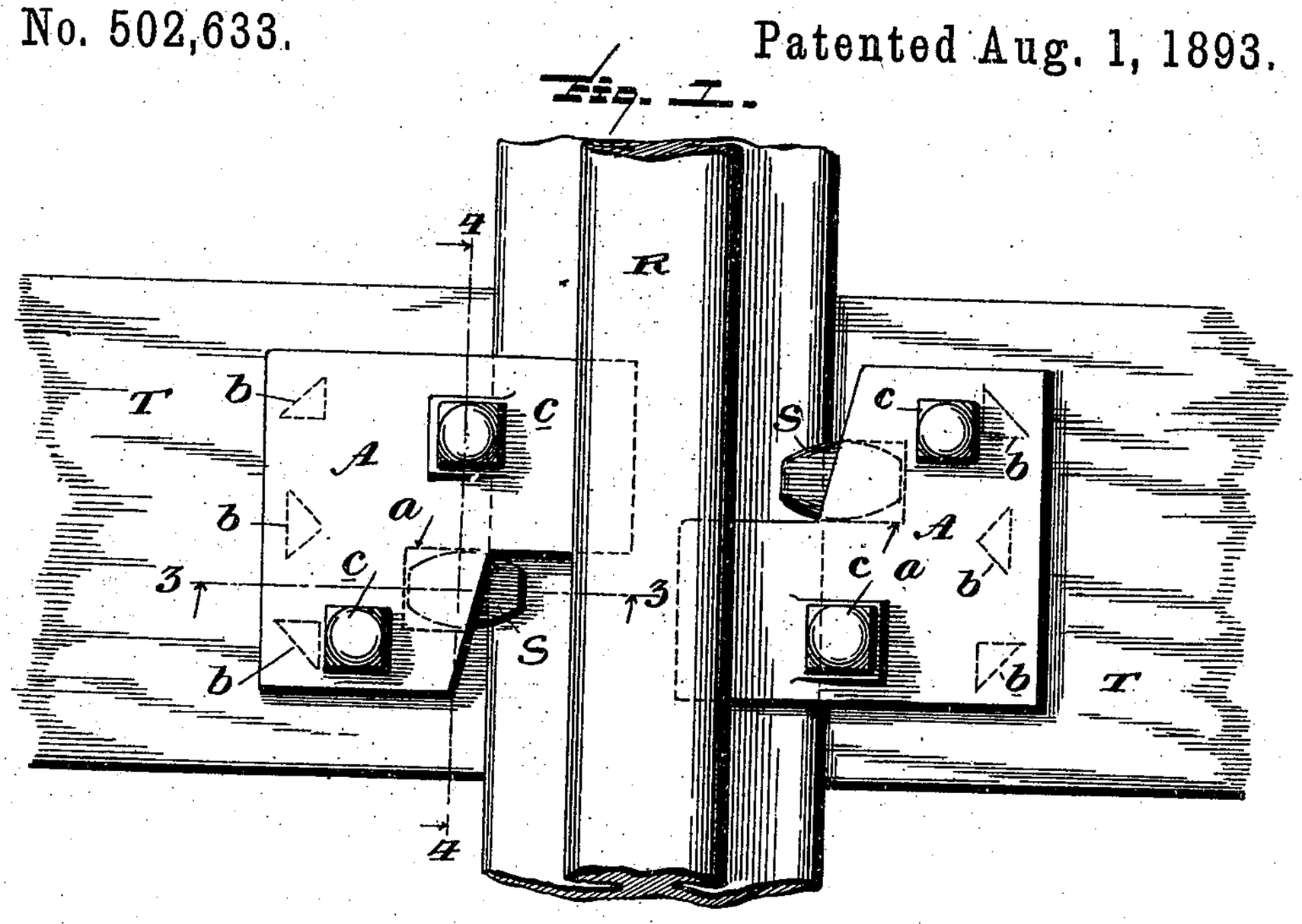
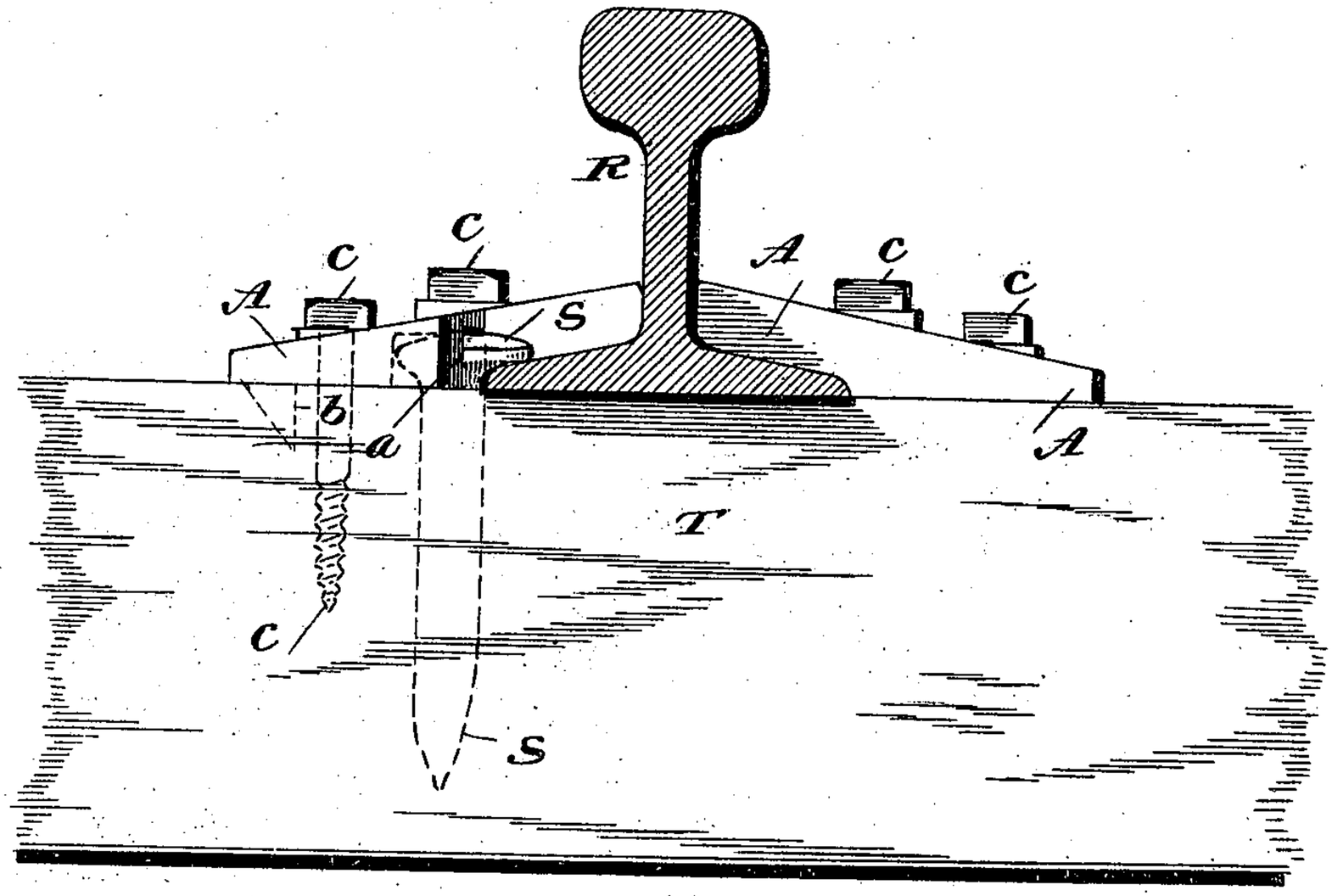


Fig. 2.



Witnesses:

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Edward Dice

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(No Model.) 2 Sheets—Sheet 2.

G. P. OSBORNE.

SAFETY PLATE FOR RAILWAY RAILS.

No. 502,633. Patented Aug. 1, 1893.

Fig. 3.

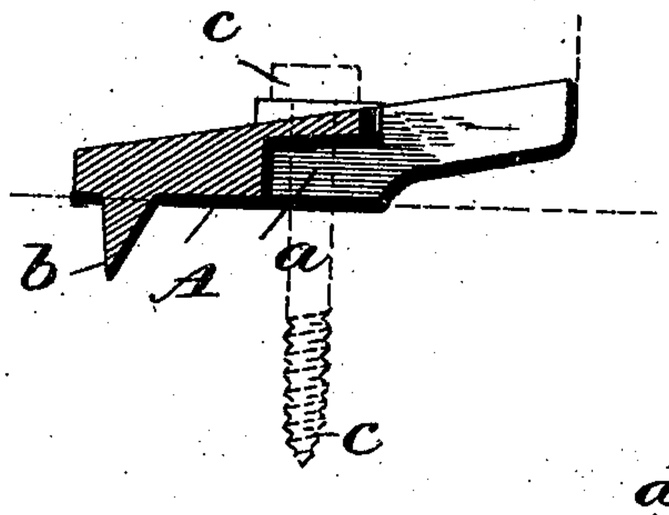


Fig. 4.

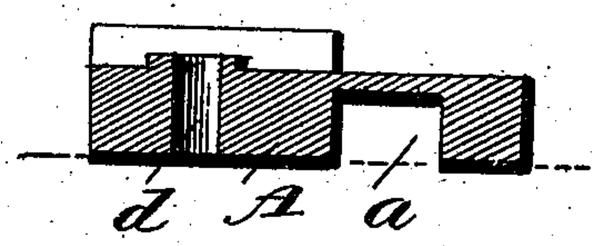


Fig. 5.

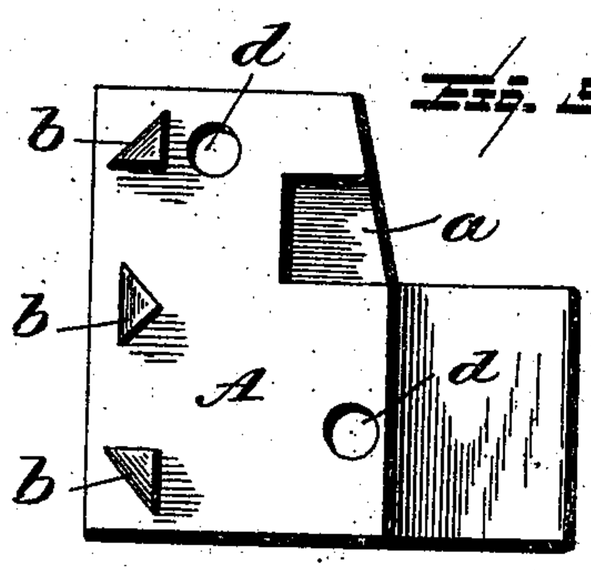


Fig. 6.

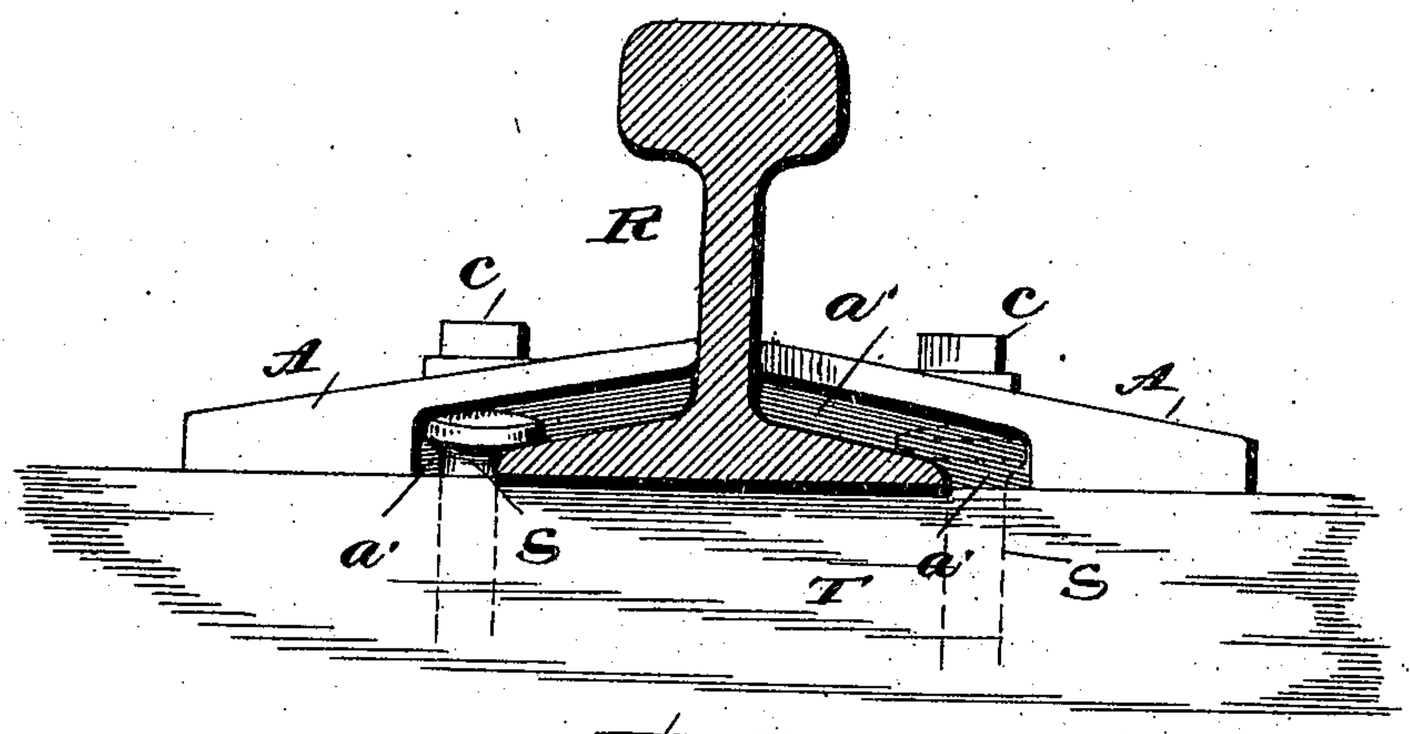
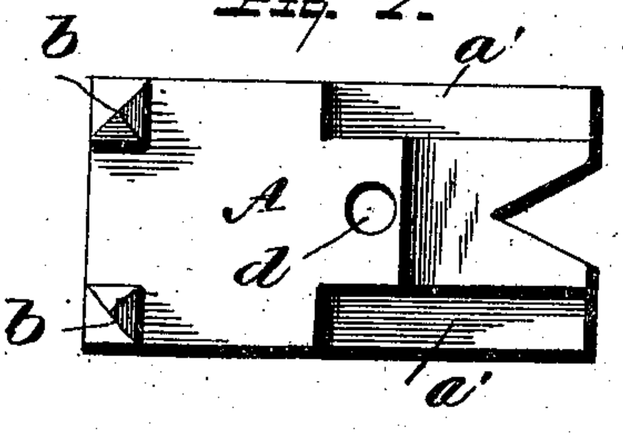


Fig. 7.



Witnesses,
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UNITED STATES PATENT OFFICE.

GEORGE P. OSBORNE, OF NEW YORK, N. Y.

SAFETY-PLATE FOR RAILWAY-RAILS.

SPECIFICATION forming part of Letters Patent No. 502,633, dated August 1, 1893.

Application filed May 6, 1893. Serial No. 473,263. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. OSBORNE, of the city, county, and State of New York, have invented certain new and useful Improvements in Safety-Plates for Railway-Rails, of which the following is a specification.

The safety plate in which my invention is comprised is one designed not only to hold and brace the rail itself but also to hold in place the spike by which the rail usually is fastened in the first instance to the tie. To this end I provide a plate which takes a flat seat on the tie, is so shaped at its inner end as to overlap, and bear or fit upon the upper face of the flange of the rail, as well as, preferably, to bear and fit against the rail web also, and is recessed or cut away to engage and bear against or upon the head of the spike that holds the rail to the tie. The plate also is provided upon its under face near its outer end with spurs which enter the tie and serve to assure the plate in position; and said plate is held in place by lag screws, or equivalent means, one at least of which preferably has its hole in the plate so located, that when the plate is in place, and the screw or its equivalent is driven home, the head of said screw will overlap the base of the rail.

The nature of my invention and the manner in which the same is or may be carried into effect will be understood by reference to the accompanying drawings in which—

Figure 1 is a plan of a portion of a railroad rail and tie provided with my improvements. Fig. 2 is a sectional end elevation of the rail with the plates applied thereto. Fig. 3 is a section of one of the plates on line 3—3 Fig. 1. Fig. 4 is a section of the same on line 4—4 Fig. 1. Fig. 5 is an under face view of the plate. Fig. 6 is a sectional elevation of a modification. Fig. 7 is an under face view of the form of plate shown in Fig. 6.

Like reference letters indicate corresponding parts in all the figures.

The plate has a body A which is formed to rest flat with its outer portion upon the tie T, and at the point where it meets the rail R (which in this instance is of the usual T form), it has an upwardly offset portion formed to fit and rest upon the flange of the rail which it overlaps, and to extend inwardly to meet and bear against the web of the rail. It thus gives lateral support to the web portion of the rail, and also holds the base—in this way supporting and materially strengthening the rail. It is recessed also at the point where it meets the head of the spike S, this recess being shown at *a* in the form of plate represented in Figs. 1 to 5. The recess preferably has the shape of a pocket which covers the top as well as the sides and outer end of the spike head, and fits snugly upon and around it; although if desired the recess might in any case have simply a slot form, which would leave the head uncovered. I consider however the pocket form of recess as preferable.

Upon the under side of the plate near its outer end are downwardly projecting spurs *b*, which preferably are pyramidal in form and of triangular cross section. In case where three spurs are used as in Figs. 1 to 5, the flat faces of these spurs in order to obtain the best results should be turned outward in substantially the position indicated in Fig. 5, so that one at least of these faces may be presented squarely to resist pressure from the rail outward whether that pressure be at right angles to the rail, or diagonal thereto. Substantially the same arrangement of them is followed where there are only two as in Fig. 7, their flat exterior faces being in this instance set quartering to the rail, as represented in the figure referred to. These spurs are driven into the tie at the time the plate is set in place, and by their action serve to prevent any spreading action. The spurs are within the compass of the plate so that when they are driven into place the holes made by them in the tie will be covered and shielded by the plate.

I prefer to hold the plates to the ties by lag screws or screw threaded bolts having square head; but any other fastening means such as bolts, spikes or the like can be employed.

In the plate shown in the Figs. 1 to 5 two bolts *c* are used, and for this purpose two bolt holes *d* are formed in the plate. One of these holes is placed so near the offset portion of the plate that when the plate is in place on the rail and the bolt is driven home, the head of the bolt will partly overlap the base of the rail, or rather that portion of the plate which rests on the flange of the rail—

this being a feature which I regard as material in order to obtain the most stable and secure kind of fastening.

In the form of plate shown in Figs. 6, and 7 there is but one bolt *c*. The spike receiving recess also in this instance of my invention is shown at *a'* as formed in the side edge of the rail, so as to take part only of the spike head; and it (like the recess *a*) has preferably the form of a pocket, although this (as in the other case) is not indispensable. The bolt head in every instance should have a flat horizontal seat—that is to say one parallel with the portion of the under face of the plate which rests on the tie.

I have shown in Figs. 6 and 7 two recesses *a'* one on each longitudinal edge of the plate. This however is only for convenience sake, to make it right or left handed, or in other words to enable it to fit the spike under any conditions.

In practice it may be found convenient to make the plate shown in Figs. 1 to 5 right and left handed also, or some of them may be right handed and some left handed. In practice it is usual in driving a spike to place it near to one or the other edge of the tie; and the plate therefore should have its spike recess located upon or near to its corresponding edge, so that the body of the plate may have its broad full bearing upon the tie.

The plate obviously may be used, with such modifications as will readily suggest themselves to those skilled in the art, with rails other than ordinary T-rails.

Having now described my invention and the best way now known to me of carrying the same into effect, what I claim herein as new, and desire to secure by Letters Patent, is—

1. The combination with a railway rail, a tie and a spike securing the rail to the tie, of a safety plate having a flat base which rests upon the tie, an offset portion which overlaps and bears upon the flange of the rail, a recess to engage the spike, and spurs projecting from the base to enter the tie, substantially as hereinbefore set forth.

2. The combination with a railway rail, a tie and a spike securing the rail to the tie, of a safety plate having a flat base which rests upon the tie, an offset portion which overlaps and bears upon the rail flange, and at its inner end meets and bears against the rail web, a recess to engage the spike, and spurs projecting from the base to enter the tie, substantially as hereinbefore set forth.

3. A safety plate for railway rails, having a flat base to rest on the tie, an offset portion to overlap and fit upon the rail flange, a recess to engage the spike, spurs projecting from the base to enter the tie, and one or more bolt holes to receive the bolts or screws by which it is held in place, substantially as hereinbefore set forth.

4. A safety plate for railway rails, having a flat base to rest upon the ties, an offset portion to overlap and fit upon the rail flange, and a pocket formed in said offset portion to receive the head of the spike by which the rail is secured to the tie, as and for the purposes hereinbefore set forth.

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

GEORGE P. OSBORNE.

Witnesses:
EWELL A. DICK,
OTTO E. BRAITMAYER.