

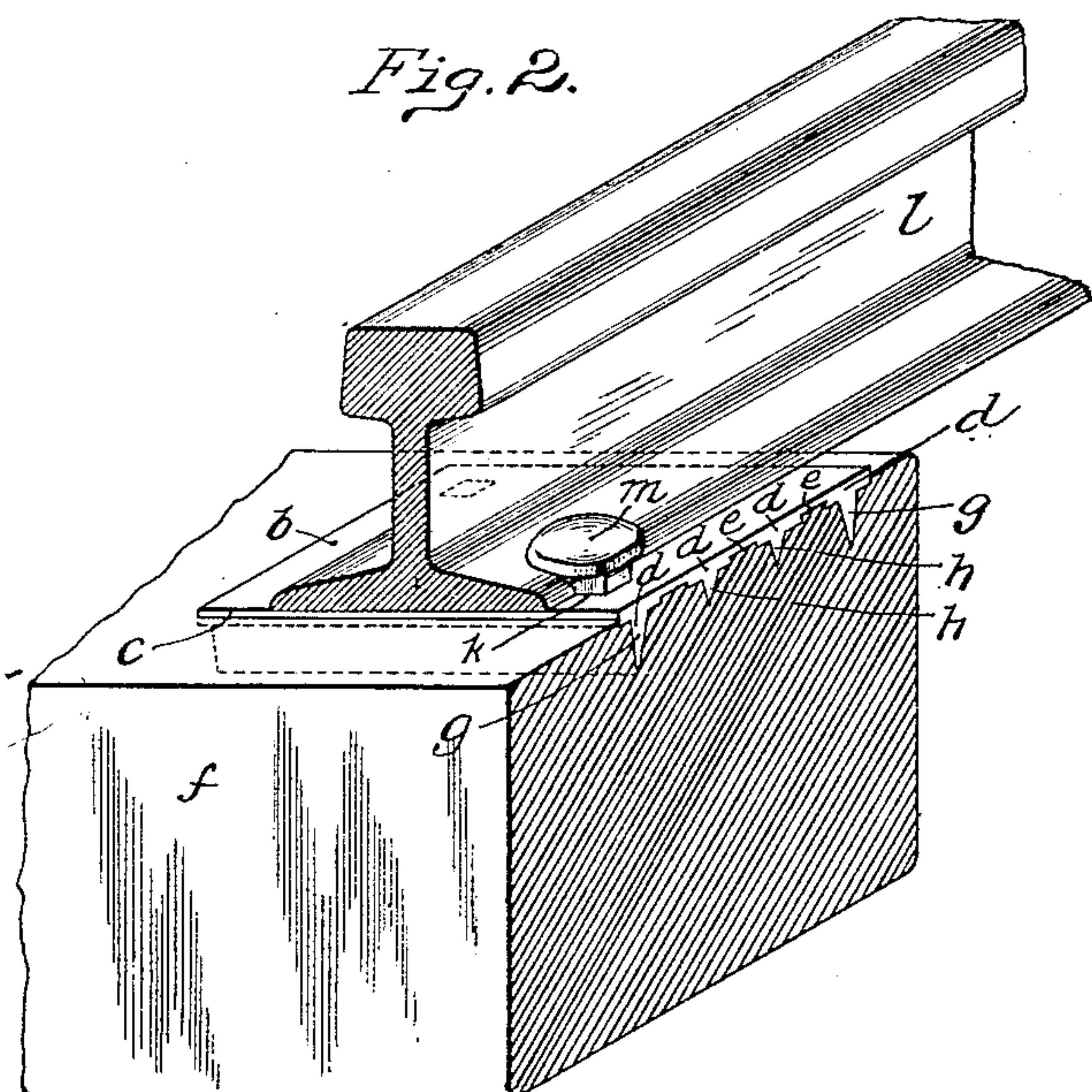
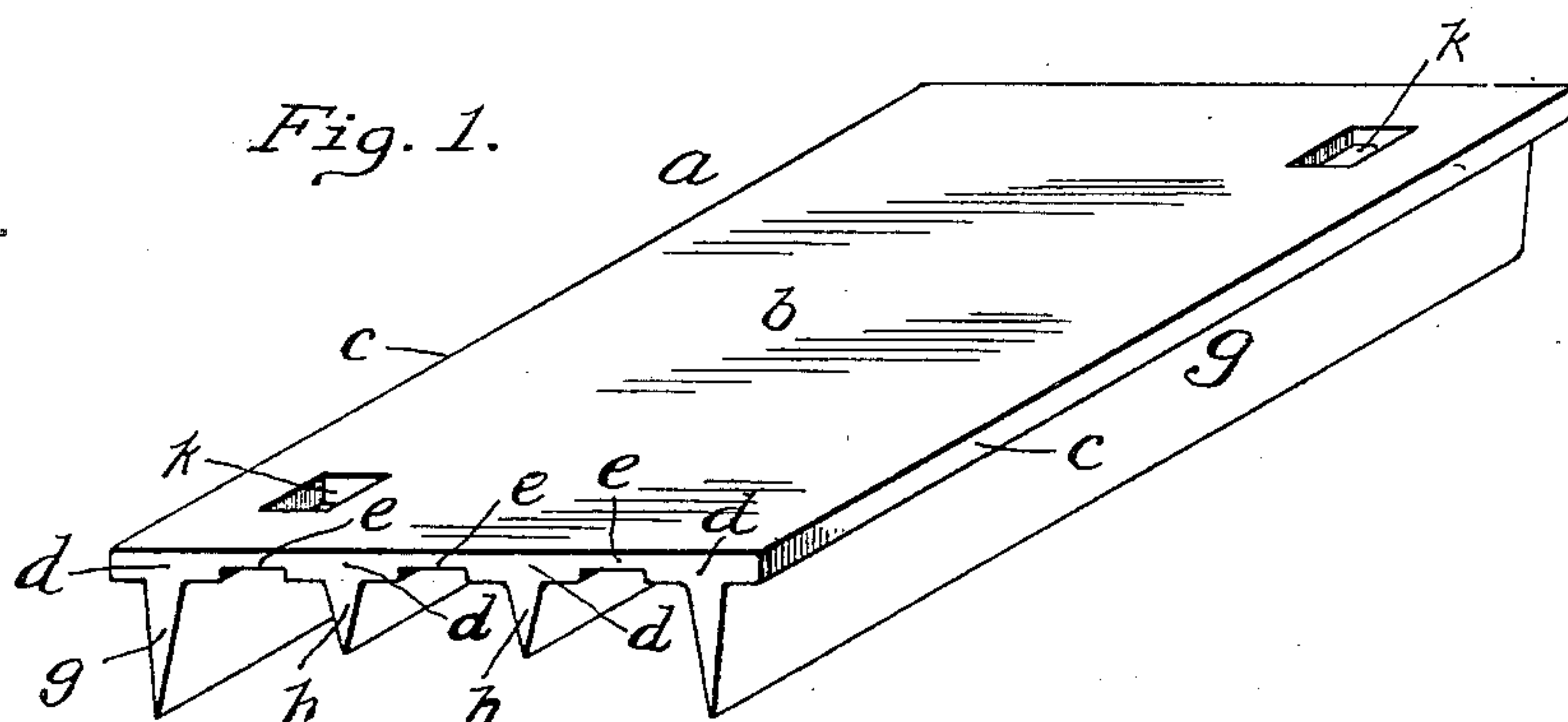
No. 625,552.

Patented May 23, 1899.

W. GOLDIE.  
TIE PLATE.

(Application filed Apr. 7, 1899.)

(No Model.)



Witnesses:

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# UNITED STATES PATENT OFFICE.

WILLIAM GOLDIE, OF PITTSBURG, PENNSYLVANIA.

## TIE-PLATE.

SPECIFICATION forming part of Letters Patent No. 625,552, dated May 23, 1899.

Application filed April 7, 1899. Serial No. 712,107. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM GOLDIE, a resident of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Tie-Plates; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to tie-plates, its object being to provide an efficient and cheap form of tie-plates for use with straight tracks or those where there is little curve, so that the lateral strain upon the rail is slight.

The invention relates to the same general class of tie-plates as shown in Letters Patent No. 610,179, granted to me September 6, 1898. In that patent is shown a rail-sustaining plate formed of two or more thick rigid rail-sustaining bars connected by one or more thin webs and downwardly-projecting flanges below and extending along the bars and adapted to enter the tie longitudinally of the tie. The patent shows the tie-plate in two forms—one form having a flat end face from which the flanges project downwardly and the thicker portions of the bars projecting above the thin webs, while the other shows the thickened portions of the bars projecting both above and below the webs.

The object of the present invention is to improve this class of tie-plates, so as to provide the strength obtained by the use of the bar portions in line with the flanges and the thin connecting-webs between the same and yet to provide for a better bracing of the outer flanges against spreading strain and to provide a plate which will more easily seat itself on a tie having an uneven surface and will force the wood of the tie more closely into contact with the flanges.

To these ends my invention consists, generally stated, in a rail-sustaining plate having a body flat on its upper surface and composed of two or more thick rail-sustaining bar portions connected by one or more thin webs, the thick bar portions extending below the web portions and vertical tie-entering flanges projecting downwardly from the thick bar portions.

To enable others skilled in the art to make and use my invention, I will describe the same

more fully, referring to the accompanying drawings, in which—

Figure 1 is a perspective view of the tie-plate, and Fig. 2 shows the same where the rail is resting thereon and the tie-plate is embedded in the tie.

Like letters of reference indicate like parts in each.

The tie-plates are formed by rolling bars to the desired section, cutting them to length, and punching them. The plates have the body portions *a* with a flat upper surface *b*, which extends out to the outer edge *c* of the body portion of the plate. The body of the plate is composed of the bar portions *d* and the web portions *e*, which connect the bar portions, the plate shown having four bar portions and three thinner web portions, the web portions connecting the upper portions of the bar, as shown, so as to give the flat upper surface, while the bar portions extend below the web portions in proportion as the bar portions are thicker than the webs. Extending along the bar portions and projecting below them are flanges to take into the wooden tie *f*, the plate having the outer flanges *g* and the inner flanges *h*, it being possible to roll the outer flanges of considerable depth and the custom being to form them deeper than the inner flanges. The flanges are formed as near as practicable midway of the bar portions. Extending through the body of the plate between the flanges are the spike-holes *k*.

When the tie-plate is in use, it can be driven to place in the tie by any suitable hammers or mallets and the rail *l* then be placed over the plate and the spikes *m* driven through the spike-holes *k* into the tie *f*, so as to fasten the rail down to the tie. The weight of the passing train will then cause the plate to embed itself firmly in the tie, after which when the plate is properly seated the spikes can be driven down firmly to permanent position. On account of the irregular lower surface of the plate it obtains a better bearing on the ordinary tie, which is generally of uneven surface, the plate becoming embedded in the tie more easily than if its under surface were entirely flat. At the same time the plate concentrates the weight of the passing train on



the timber immediately in contact with the depending flanges, as the portion of the timber of the tie pressed down by the downwardly-projecting bar portions is thereby compressed and forced into more intimate contact with the flanges, so that the flanges have greater adhesion upon the tie, and as these bar portions can project farther down on account of the forming of the flat top face of the plate this compressing action of the plate upon the wood directly above the flanges to this extent increases the hold of the plate. At the same time the tendency of the weight of the passing train to cause the outward spread of the outer flanges from each other is practically overcome, as not only the top portions of the bars are in contact with the base of the rail when the plate is forced down to permanent place, but the top faces also of the thin web portions are in contact with the rail-base, and because these thin web portions are raised proportionately higher from the flanges and are practically braced by their contact with the rail there is practically no leverage action upon the web portions because of the point of fulcruming of the web portions at the top face of the plate. In the same way, as the plate itself extends on the same level out to the outer edge of the body and the ex-

treme outer edges of the plates are in contact with and braced by the rail there is a bracing action between the rail and plate which overcomes the natural tendency of the outer flanges to spread. The plate is therefore stronger in proportion to its weight and gives a stronger bracing to the flanges and overcomes the tendency toward spreading of these flanges when forced down under the heavy weight of the train, while it combines therewith such compression of the wood fiber or timber as gives greater adhesion for the flanges.

What I claim as my invention, and desire to secure by Letters Patent, is—

A rail-sustaining plate having a body flat on its upper surface and composed of two or more thick rail-sustaining bar portions connected by one or more thin webs, the thick bar portions extending below the web portions, and tie-entering flanges projecting downwardly from the thick bar portions, substantially as and for the purposes set forth.

In testimony whereof I, the said WILLIAM GOLDIE, have hereunto set my hand.

WILLIAM GOLDIE.

Witnesses:

JAMES I. KAY,  
ROBERT C. TOTTEN.