

W. Wharton Jr.

Railroad Frog

Patented Jan. 16, 1866.

N<sup>o</sup> 52,099.

Fig. 1.

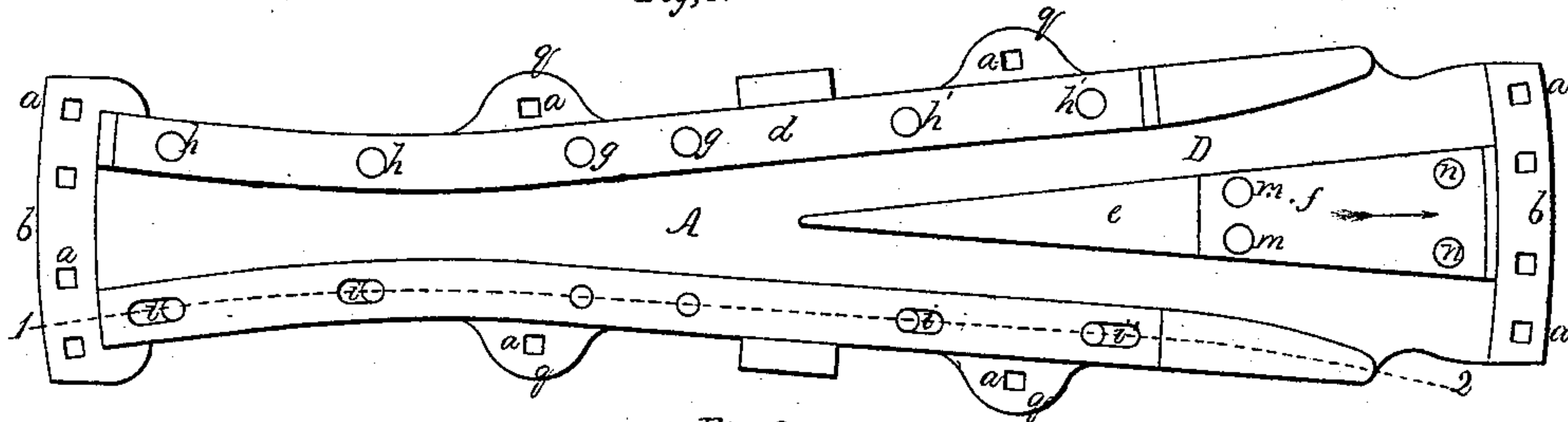


Fig. 2.

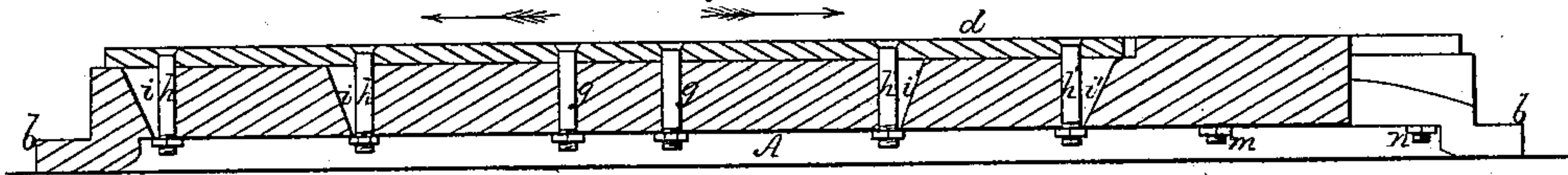


Fig. 3.

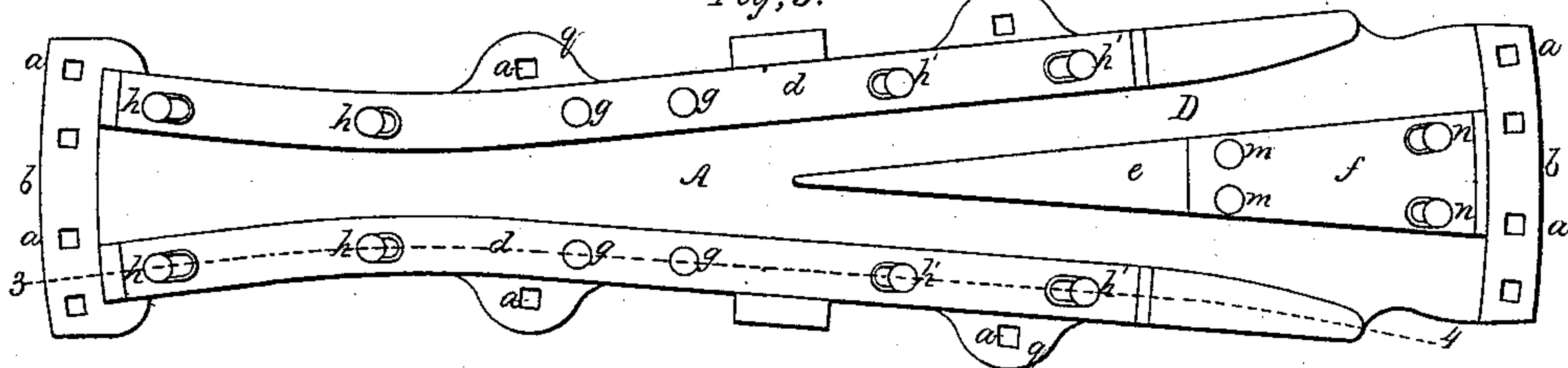


Fig. 4.

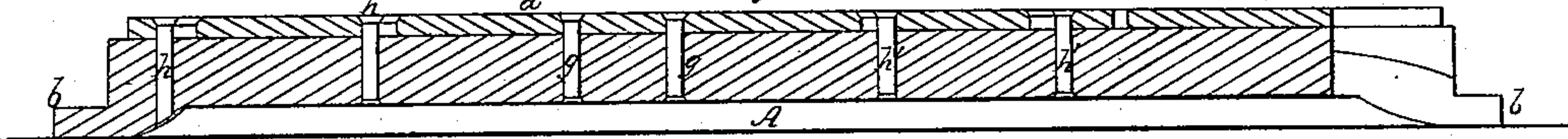


Fig. 5.

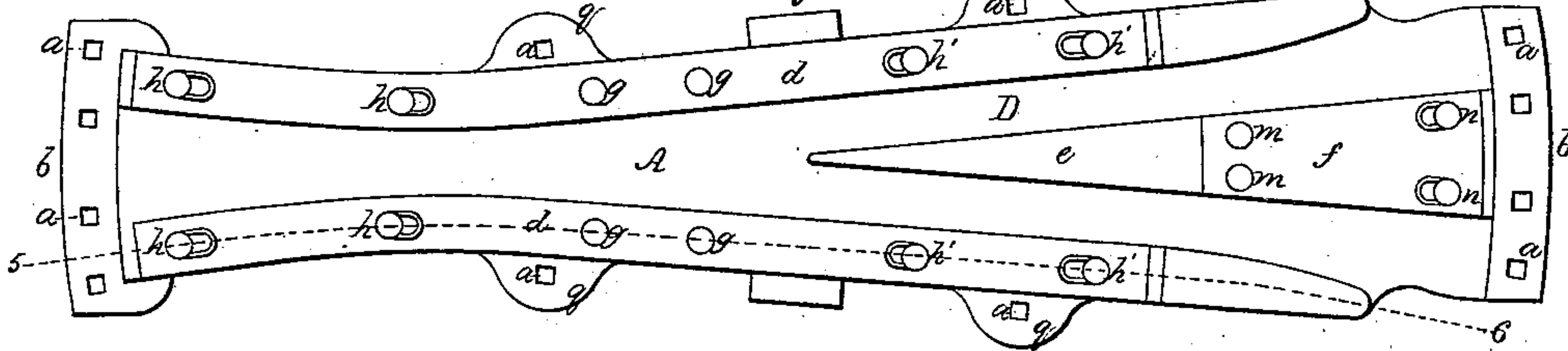
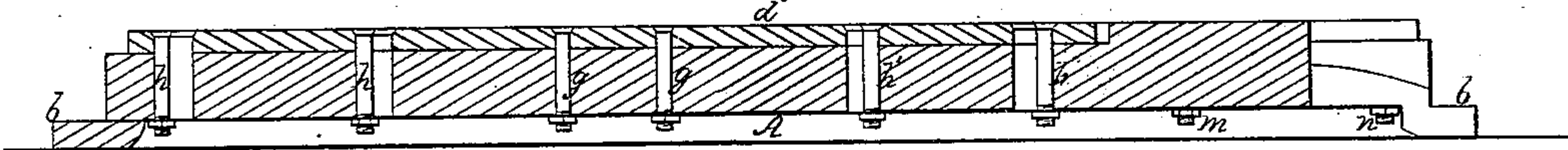


Fig. 6.



Witnesses.  
Wm. Sweet Seal.  
John Parker.

Inventor.  
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H. Howson.



# UNITED STATES PATENT OFFICE.

WILLIAM WHARTON, JR., OF PHILADELPHIA, PENNSYLVANIA.

## IMPROVEMENT IN RAILROAD-FROGS.

Specification forming part of Letters Patent No. 52,099, dated January 16, 1866.

*To all whom it may concern:*

Be it known that I, WILLIAM WHARTON, Jr., of Philadelphia, Pennsylvania, have invented an Improvement in Railroad-Frogs; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of the mode, substantially as described hereinafter, of securing steel plates to a railroad-frog, so that they may be elongated without losing their firm hold of the frog.

My invention has for its object the prevention of the loosening and breaking of the steel plates, owing to the tendency of the car-wheels to elongate them.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a plan view of my improved railroad-frog, with one of the steel plates removed; Fig. 2, a sectional elevation on the line 1 2, Fig. 1; Fig. 3, a plan view of a modification of my improved frog; Fig. 4, a sectional elevation on the line 3 4, Fig. 3; Fig. 5, a plan view of another modification of my improved frog; Fig. 6, a sectional elevation on the line 5 6, Fig. 5.

Similar letters refer to similar parts throughout the several views.

My improved frog consists, as usual, of a strong cast-iron plate, A, having at each end a flange, b, and at each side lugs q, in which are holes a a for receiving the spikes by which the frog is secured to the track. The frog has the usual treads, to each of which is secured a steel plate, d, the frog having also the usual point D, composed of the steel tip e and steel plate f. The above-mentioned parts are, as regards general arrangements, similar to those of ordinary frogs, and therefore demand no minute description. In ordinary frogs, however, the steel plates d d and f are permanently riveted to the cast-iron plate, so that no

longitudinal expansion of the plates is permitted.

The frequent passage of car-wheels over and in contact with the steel plates tends to elongate the same; but this tendency is resisted by the permanent rivets, which in time fail to retain a proper hold of the plates, the latter being finally either broken or becoming so loose as to render the frog unsafe. The object of my invention has been to overcome this difficulty.

On reference to Figs. 1 and 2, it will be seen that each plate d is secured to the frog by bolts g g, h h, and h' h', each bolt having a beveled head adapted to a countersink in the plate, and being furnished below with a suitable nut. The bolts g g may be termed "permanent bolts," as they fit snugly in the holes in the steel plate and frog. Each of the bolts h h and h' h', however, passes through an inclined hole, i, as best observed on reference to Fig. 2, the bolt fitting to the sides of the opening, so that it can have no lateral play.

It will be seen that the inclined holes for the reception of the bolts permit each steel plate d to be elongated in either of the directions pointed out by the arrows, Fig. 2, from that portion of the plate which is secured permanently to the frogs by the bolts g g. This elongation of the steel plates in no way affects their secure attachment to the frog, the slight movement of the bolts from a vertical to an inclined position having no tendency to weaken their hold of the plates.

It should be understood that the plate f is secured to the frog by two permanent bolts, m m, and two yielding bolts, n n—that is, bolts passing through inclined holes, as described above, so that the plate f can be elongated in the direction of the arrow.

In the modification illustrated in Figs. 3, 4, the bolts h h and h' h' pass through elongated holes in the steel plates, so that the latter can be elongated precisely as in the former case, and in the modification illustrated by Figs. 5 and 6 the holes for receiving the bolts h h and h' h' are elongated both in the steel plates and in the frog, with a result the same as that described above.

It will be evident that the number of bolts and the arrangement of permanent and yielding bolts, or bolts which permit the steel plates to yield, may be modified without departing from the main features of my invention.

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

The mode, substantially as herein set forth, of securing steel plates to a railroad-frog so

that they can be elongated without their firm hold of the frog being affected.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WM. WHARTON, JR.

Witnesses:

H. HOWSON,

W. J. R. DELANY.