

W. B. COOKSON, J. COOKSON & T. J. McTIGHE.

RAILROAD-FROG.

No. 175,552.

Patented April 4, 1876.

Fig. 1.

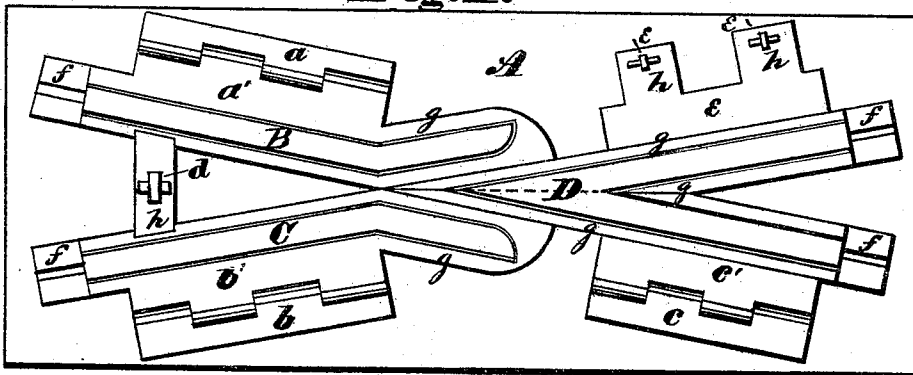


Fig. 2.

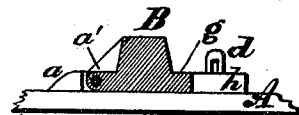
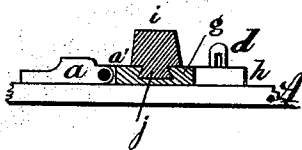


Fig. 3.

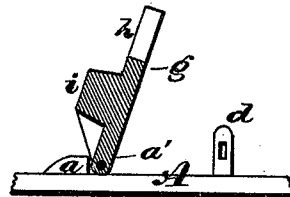
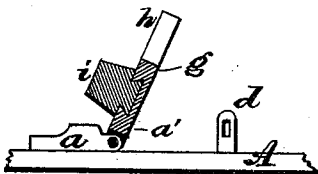
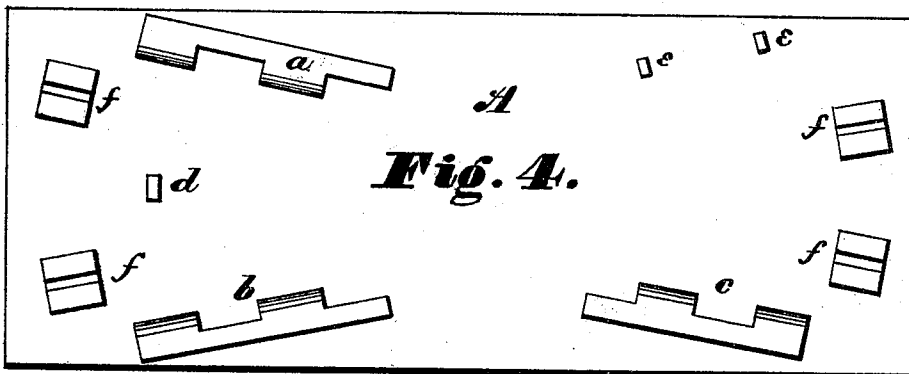


Fig. 4.



Witnesses

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Fig. 5.

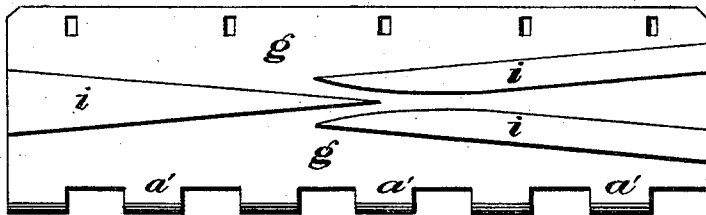


Fig. 6.

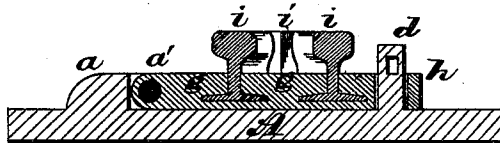
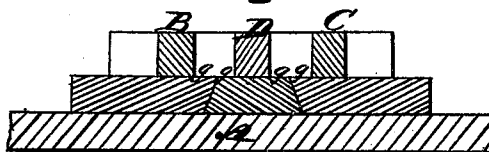


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE

WILLIAM B. COOKSON, JOSEPH COOKSON, AND THOMAS J. MCTIGHE, OF
PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN RAILROAD-FROGS.

Specification forming part of Letters Patent No. **175,552**, dated April 4, 1876; application filed
August 21, 1875.

To all whom it may concern:

Be it known that we, WILLIAM B. COOKSON, JOSEPH COOKSON, and THOS. J. MCTIGHE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Frogs; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a plan view of frog and bed-plate. Fig. 2 are sections, showing sliding cap and solid frog-rail. Fig. 3 are the same opened up for repairs. Fig. 4 is a plan view of bed-plate with its projections. Fig. 5 is a modification, showing the bed-flanges all in one with the removable rail-caps. Fig. 6 is a modification, showing how ordinary rails may be used and be removable. Fig. 7 is a vertical transverse section of the point of the frog.

This invention relates to railway-frogs; and has for its object the construction of a frog whose wearing-surfaces may be removed at pleasure and replaced by new ones without taking up the frog-plate, or removing the adjoining rails, or in any way obstructing the regular permanent way.

Heretofore, when any portion of a frog has required repairing, the whole frog and frog-plate had to be taken up, as well as the rails which chair on its ends. To do this, and then adjust the tracks correctly in replacing the repaired frog, takes up a great deal of very valuable time. This we propose to remedy by a frog which can either be repaired or renewed, substantially, all over while the frog lies in its bed, and without touching the adjoining rails. To these ends, then, our frog consists in a heavy bed-plate, having the rails or rail-caps thereof removable by means of hinges or hinged chairs and tenoned rail-caps, with the various modifications hereinafter described.

Referring to the accompanying drawings, A is a metal bed-plate, extending over a sufficient distance to give a firm foundation to the parts. It may be cast or wrought, as desired. Cast or forged with the plate A, or firmly bolt-

ed or otherwise attached to it, are one or more hinge-knuckles, *a b c*, and key-seats *d e*, and rail-chairs *f*. To the hinge-knuckles *a b c* are fitted the frog-rails B C D, having the intermediate knuckles *a' b' c'*. These frog-rails may be made in various modifications. The simplest form is to cast or forge the parts B C D separately but solid, each consisting of the rail proper, the bed-flange *g*, the hinge-knuckles, and the hasps *h*. In this form, if any part wear out, it is simply unshipped from its bearings and replaced by a new one.

Another form is to have the hasps *h*, knuckles, and bed-flanges, respectively, all in one, the bed-flanges grooved lengthwise, and the rail-cap *i*, with a corresponding tongue, *j*, fitting tightly into it. In this form the worn-out part is withdrawn by raising it on its hinges clear of the adjacent parts, sliding out the cap, and replacing by a new one, then lowering the whole into position, and keying the hasp down.

Another form is to have the groove in the bed-flange the same as the flange of an ordinary rail, and beveling the rail-head to the form of a frog-rail. This would be a cheap and ready means of adjustment.

Another form is to have all the bed-flanges in one piece and hinged on one side, with the grooves cut in them properly for the rail-caps or rails of last modification. In all cases the bed-flanges are necessary to shoulder against or overlap at their meeting-edges, so as to prevent lateral motion or oscillation at the point of greatest resistance—viz., when the wheel passes from one part to another.

If desired, the hinges may be dispensed with, and the parts made removable by keys and hasps at both sides, in which case the part to be replaced would be simply lifted out and replaced. The object of having the bed-flanges overlapping is to prevent the weight of wheels on one end of the "point" from throwing the other end upward, and thereby rendering the hinges liable to be broken.

In the modification showing the ordinary rail fitting in the grooved bed-flange, additional strength may be acquired by "fishing" the rail-joints, as usual.

The great advantage of our frog is, that repairs may be made on it while it lies in its

place, and so speedily that a broken cap may be replaced while a train is approaching. All the parts being made to gage, any part of one frog will fit in the corresponding place on another. Hence the frog rails or caps can be manufactured in quantities, and distributed along the line of a railroad, so that in an emergency a broken frog or a worn-out cap may in a moment be completely restored, and thus prevent blockading the track.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is as follows:

1. In combination with the permanent base or bed plate of a railway-frog, the removable wearing parts hinged or keyed thereto, or to intermediate bases, whereby said wearing parts may be removed and replaced without disturbing the base or adjacent parts, substantially as described.

2. In a railway-frog, the solid bed-plate A, having bolted, forged, or cast projections for hinges and keys, either or both, as specified.

3. In combination with the bed-plate A of a frog, the bed or chair flanges g, or solid frog-rails, hinged, keyed, or otherwise removably attached thereto, substantially as described.

4. In combination with the bed-plate A, the bed-flanges g, having their adjacent edges overlapping, as specified.

5. The tenoned rails or rail-caps, in combination with the hinged or keyed bed-flanges, having grooves to receive said rails, substantially as described.

In testimony that we claim the foregoing we have hereunto set our hands this 7th day of August, 1875.

WILLIAM B. COOKSON.
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Witnesses:

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