

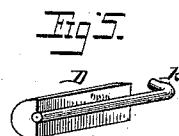
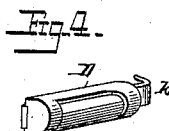
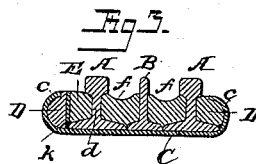
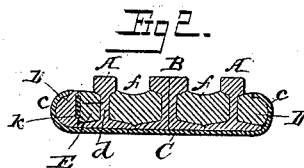
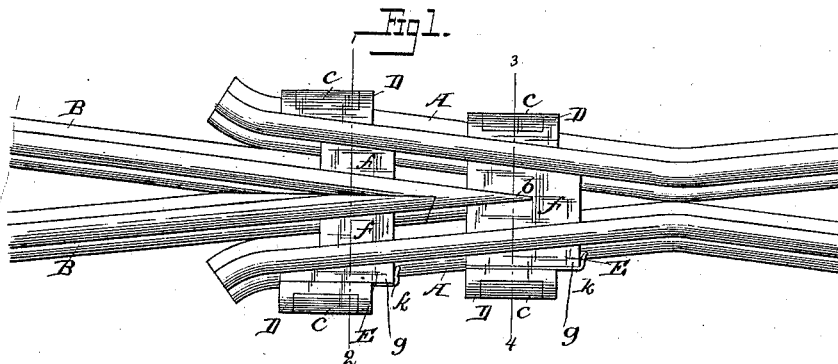
(No Model.)

W. P. DODSON.

RAILWAY FROG.

No. 344,087.

Patented June 22, 1886.



Attests:
John G. Hinkley
A. C. Lammann.

Wilson P. Dodson,
Inventor:
By Foster & Freeman
attys.

UNITED STATES PATENT OFFICE.

WILSON P. DODSON, OF PHILADELPHIA, ASSIGNOR OF ONE-HALF TO
ALEXANDER H. EGE, OF MECHANICSBURG, PENNSYLVANIA.

RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 344,087, dated June 22, 1886.

Application filed January 16, 1886. Serial No. 188,768. (No model.)

To all whom it may concern:

Be it known that I, WILSON P. DODSON, of Philadelphia, in the State of Pennsylvania, have invented a certain new and useful Improvement in Railway-Frogs, of which the following is a specification.

The object of my invention is to construct a frog that shall combine simplicity and flexibility of structure with durability and efficiency in the performance of its required functions, an end that I attain by the use of clamping-bars, distance or filling blocks and wedges, while at the same time dispensing with the use of bolts entirely, as hereinafter described, and shown in the accompanying drawings.

In referring to the drawings, Figure 1 shows a plan view of my improved frog. Fig. 2 is a transverse section on line 1 2 of Fig. 1, taken through the longest clamp longitudinally. Fig. 3 is a section on line 3 4 of Fig. 1, taken through the shorter clamp. Fig. 4 is a detached view of the block and keeper when the latter is made of a flat bar and bent at its thinner or free end. Fig. 5 is a modification of Fig. 4 when the keeper is made of a round bar.

A A are the outer curved or wing rails of the frog, and B B the inner rails, converging to and terminating in the point or tongue *b* of the frog. The rails constituting the frog rest upon clamping-bars C, of which at least two are used in each structure. Said clamping-bars terminate in flanges *c c*, that are curved upward when in position at a greater or less degree of curvature, as shown in Figs. 2 and 3. Outer or clamp-receiving blocks, D D, are terminally supplied upon their outer edges with beads or fillets of such superficial breadth and thickness as to admit (between the same) of a centrally-located seat of such uniform breadth and depth as may receive therein the upturned and curved flanges of the clamping-bars C C, said seats being of such convexity as to engage snugly the concave inner surfaces of the same. Said clamp-receiving blocks D D are also rabbeted or channeled longitudinally upon their inner and opposite plane surface for the reception of the keeper *k*, which is riveted fast or otherwise attached

to the outer or receiving blocks, D D, preferably at the one extremity thereof, while the other or free end of said keeper extends beyond the opposite ends of said blocks for a purpose hereinafter more fully set forth.

Wedge-shaped blocks E E are inserted between the clamp-receiving blocks D D and the outer surface of the web *d* of one or both of the wing-rails. Said blocks E E are also grooved longitudinally, if necessary, for a partial reception therein of the keeper *k* when the latter is in place for the performance of its function. Said wedge-shaped blocks E E are also more or less convex throughout their length upon the side next the wing-rails A A' while being also upon the opposite side beveled transversely at a small angle from the upper horizontal surface thereof downward, for purposes of engagement with the oppositely-located and reversely-beveled faces of the blocks D D, a construction that contributes to prevent the upward movement of the same when the blocks D D and E E are forced to their respective seats of rigid contact, as hereinafter more fully set forth. By this convexity of surface said wedges admit not only of being fitted into the shanks or longitudinal depressions on the outer sides of said wing-rails, but also, in conjunction with the oppositely inclined and transversely beveled plane sides of said wedges E E, of being driven into close contact with the inward lateral inclined faces of the clamp-receiving blocks D D. In the construction of my keeper *k*, I further remark that I make it preferably of flat bar metal and riveted fast or otherwise attached at or near the extremities thereof to the said blocks D D, while the opposite or free end of the keeper *k* extends beyond the broader end of the wedges when the latter are in position. If in practice it should be found necessary to use some device to counteract the possible tendency of the interposed wedges working upward, it may be found of advantage to groove also the contiguous faces of the wedges in such relation with grooves in the blocks D D that the oppositely-located grooves may be in the same horizontal plane, so that said keeper *k* will be embraced within and at the same time hold into alignment said grooves, while in addi-

tion performing its primary function of retaining the wedges E E in place, (after having been driven thereto,) in consequence of having the free ends thereof bent transversely across the broader ends of said wedges E E.

In order to understand more clearly the relation of the co-operating parts in binding the constituent elements of the structure together, it will suffice to place the same in position in detail as required in use.

Having first located the tongue *b* of the frog, composed of the rails B B, at the proper interval distance from the wing-rails A A, the distance or filling blocks *f* are interposed, and the binding-bars C are placed beneath and inclosing the same with the curved ends *c* of the latter turned upward. The convex rabbeted seats of the clamp-embracing blocks D D are then so placed as to engage closely the said concave terminals, while the fillet-edges of said blocks embrace the lateral edges of the same. The plano-convex wedges E are then interposed between the outer webs of the wing-rails A and the said blocks D, and upon being driven home by the sledge force, the constituent parts of the frog are forced into such close juxtaposition that the structure becomes in effect a solid piece of mechanism. In further security, in order to retain the wedges D in place, the free end of the keeper *k* is bent transversely across the broader end, *g*, of the said wedges.

If, after long usage, from constant abrasion of the parts in contact the same should work loose, it becomes necessary to restore said parts to their original condition, in order to provide against the possibility of accident. In this event, in order to avoid this contingency the keeper is first bent back from its transverse contact with the larger end of the wedge E, when the latter is driven forward to such an extent that all slack engagement is made taut, when the said keeper is again bent forward at a different point of flexure than previously

and in close proximity to the end of said wedge. Thus the latter is again guarded from a retrograde movement by said transverse stop, and the frog becomes again as rigid as when originally constructed.

Without limiting myself to the precise construction and arrangement of parts shown, I claim—

1. The combination, with a railway-frog, of a clamping-plate having turned-up ends, side blocks, each recessed to receive said ends, and each with a vertical inner face, an interposed wedge adjacent to each block, with a flat face coincident with that of the block and locking devices, substantially as described.

2. The combination, with the rails and distance-pieces of a frog, of the clamping-plates C, clamp-engaging blocks D, wedges E, and flexible keepers *k*, connected to the blocks, substantially as described.

3. The combination of the clamping-plates, wedges, and side blocks, and flexible strips or bars connected to the side blocks, substantially as and for the purpose set forth.

4. The combination of the longitudinally and superficially grooved clamp-engaging or embracing block D, the flanged clamping-plates C, the plano-convex wedges E, and the flexible keeper *k*, and the plain block-fillings or distance-pieces *f*, as and for the purpose set forth.

5. The combination of the flanged clamping-plates C, the longitudinally and superficially grooved clamp-embracing block D, the plano-convex wedges E, and the flexible keeper *k*, terminally attached to the clamp-embracing block D, as and for the purpose set forth.

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

WILSON P. DODSON.

Witnesses:

LEDRU R. MILLER,
JAMES M. BUDD.