

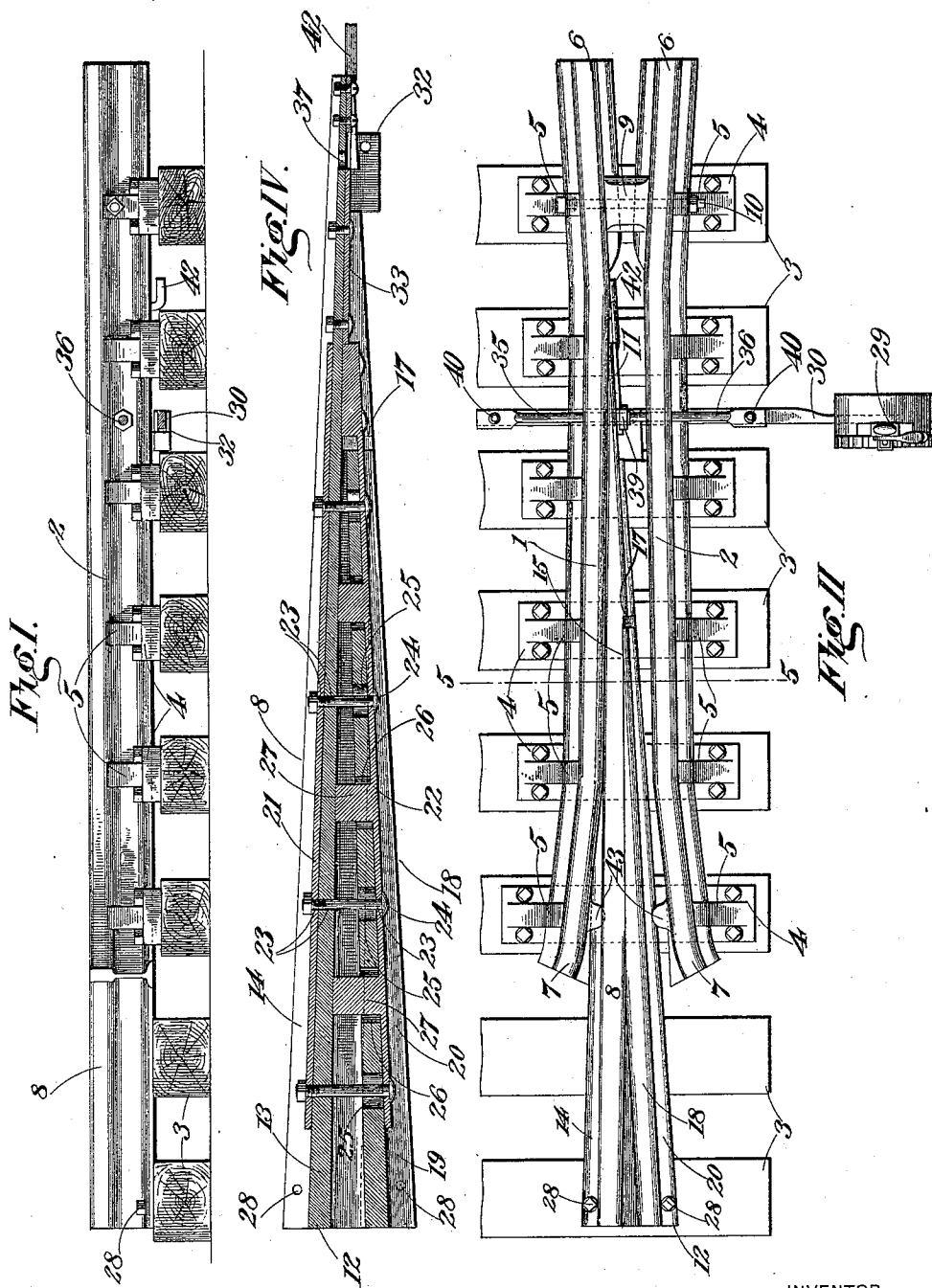
(No Model.)

2 Sheets—Sheet 1.

W. E. DAVIN.
RAILROAD FROG.

No. 565,438.

Patented Aug. 11, 1896.



WITNESSES

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Snack

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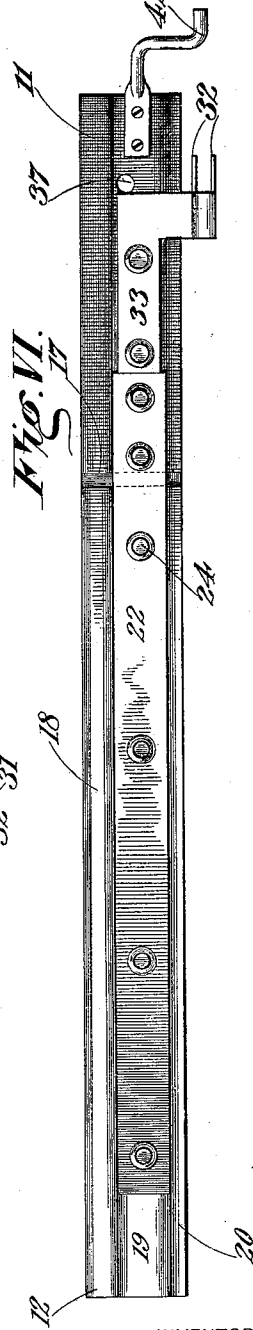
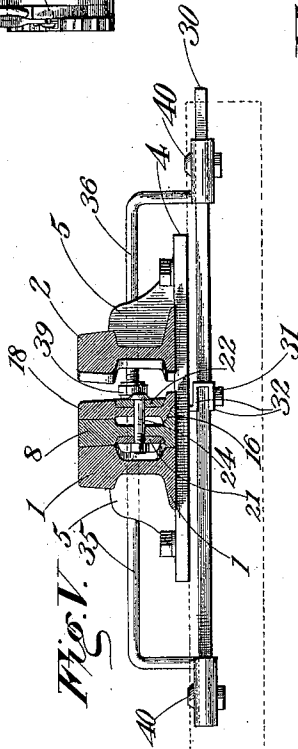
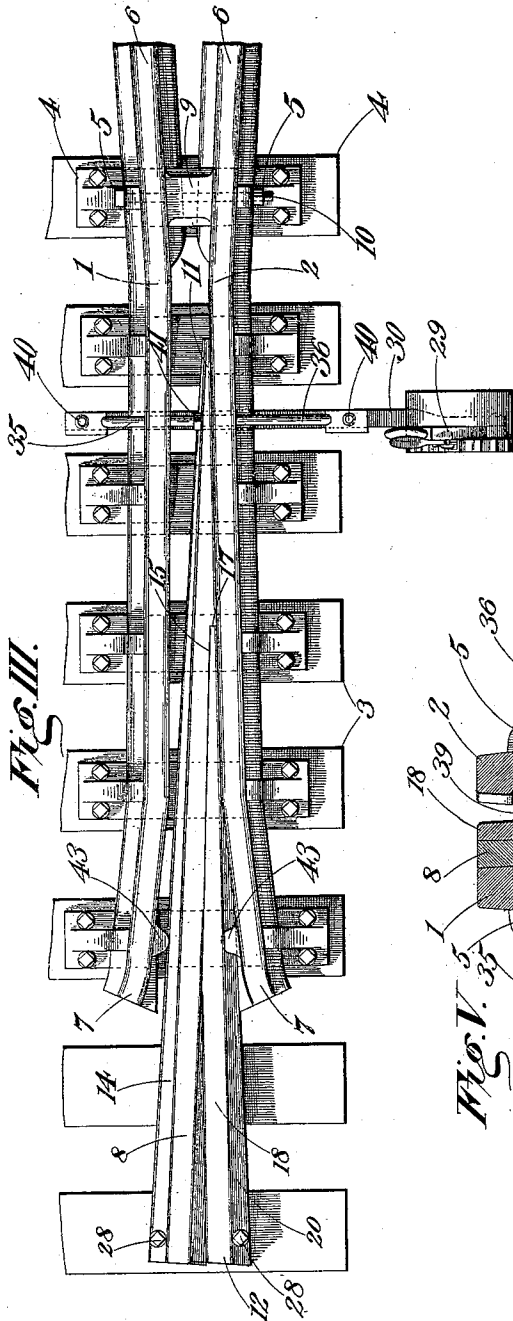
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WITNESSES

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UNITED STATES PATENT OFFICE.

WILLIAM E. DAVIN, OF EDGINGTON, WEST VIRGINIA.

RAILROAD-FROG.

SPECIFICATION forming part of Letters Patent No. 565,438, dated August 11, 1896.

Application filed October 8, 1895. Serial No. 565,037. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM E. DAVIN, of Edgington, county of Brooke, State of West Virginia, have invented certain new and useful Improvements in Railroad-Frogs, of which the following is a specification, reference being had to the accompanying drawings.

The object of my invention is to produce improvements in that class of frogs known as "movable point-frogs," whereby, at comparatively small cost, a simple, strong, and durable article of the kind may be produced, and one which, in practice, will give a level wheel, both for the main tracks and for the turnout or switch tracks.

In the accompanying drawings, Figure I is a side elevation of my frog. Fig. II is a top plan view thereof showing the frog-point against one of the wing-rails. Fig. III is a similar view showing it shifted to the other wing-rail. Fig. IV is a longitudinal vertical section of the frog-point, looking downwardly upon it. Fig. V is a transverse section on the line 5 5 of Fig. II. Fig. VI is a side elevation of the frog-point detached, looking toward the movable side thereof.

Referring to the figures on the drawings, 1 indicates one of the wing-rails of my frog, and 2 the other. They are designed to be secured to a road-bed, as by any suitable and ordinary means, upon ties 3. I, prefer, however, for the sake of stability and rigidity, to secure them upon chairs 4, as by means of malleable-steel braces 5, secured to the chairs and to the respective rails by suitable means, as, for example, by bolts or rivets, or other usual fastening appliances for similar purposes. The opposite ends 6 and 7, respectively, of each of the wing-rails are deflected or bent, the deflections 7 being designed to accommodate between them the movable frog-point 8. Between the deflections 6 I provide a spacing-block 9, provided with a transverse bore or aperture through which and through the adjacent opposite braces 5 a bolt 10 is passed, thereby effecting a secure union between the ends 6 of the wing-rails and one which serves equally to prevent their movement to or from each other at that end.

The thin end 11 of the movable frog-point 8 extends between the deflected ends 7 of the wing-rails, thence between the wing-rails to

a point approximate to the ends 6 thereof. From the thin end 11 the frog-point tapers toward its heel 12 at an angle of divergence of its sides, so proportioned to its own length and the adjustment of the wing-rails to one another as to secure a straight guide through the frog to the flange of a passing wheel, whether the frog-point is shifted against one or the other of the wing-rails, as shown in the two positions illustrated in Figs. II and III of the drawings. In order to accomplish this, and at the same time secure a level track for all passing wheels, I provide in proximity to the heel 12 a double pivotal connection between the frog-point and the road-bed. The double connection to the road-bed or tie would be such as to secure a rigidly-incorporated piece in a fixed immovable position.

To render the frog operative, therefore, I construct the frog-point of two members, both firmly secured to each other against transverse displacement, but one movable upon the other. To one of these members I secure one of the pivotal connections and to the other the other pivotal connection. Through the longitudinal movement in this way obtained the point 11 may be shifted between the wing-rails at pleasure.

The method or manner of constructing the frog-point which I prefer is illustrated in the drawings, in which—

13 indicates the web of the rail 8, and 14 the base thereof.

15 indicates a recess located upon one side of the rail 8 and defined by a beveled or slanting shelf 16 upon the base 14 thereof. The forward end of the recess 15 is preferably limited by a shoulder 17, somewhat remotely approximate to the point 11.

The rail 8 with its web and base constitutes one element, as above suggested, of the frog-point. The other element 18, with its web 19 and base 20, is made to fit in the recess 15 and to complete the frog-point as if it were a part cut out from the recess 15, constitutes the other element. Suitable mechanism for uniting the two elements are in practice necessary. For this purpose I prefer to provide against the web 13 between the rail 8 and the base 14 a strap 21, and upon the opposite side a similar strap 22, fitting against the web 19. Each of the straps and each of the webs are

pierced by transverse bolt-holes 23, through which bolts 24 are inserted for securing the parts together. The bolt-holes in the web 19, however, are oblong to permit the relative
 5 change of position between the rails 8 and 18 through the movement of the frog-point, such oblong apertures being specially designated in the drawings by the numeral 25.

To secure the requisite freedom of movement, together with sufficient rigidity in the whole, I provide in the web 19 oblong openings 26, through which spacing blocks or bolsters 27, secured to the strap 22, pass and come to abutment against the web 13, against
 15 which they are firmly forced by the bolts 24, which secure the two elements of the frog together.

The base 14 and the base 20 are pivotally secured to the road-bed, as by bolts 28 or other suitable means passing through or secured to one of the ties.

By the construction above described a thoroughly reliable, perfectly rigid, and durable frog-point is secured, the thin end 11 of
 25 which may be readily shifted between the wing-rails 1 and 2, whereby a straight guide through the frog is provided by the outer edges of the rails 8 and 18, respectively, the one serving as a guide when the point is in the position shown in Fig. II, and the other serving as a guide when it is in the position shown in Fig. III.

In addition to the foregoing, suitable mechanism for shifting the point must be provided.

35 The particular form of switch-lever or switch-stand is not material, one form being indicated at 29 in the drawings. To this lever a transversely-movable rod 30 is operatively secured, so that by the movement of the
 40 switch-lever reciprocatory motion transverse to the frog may be imparted to it. The rod 30 is secured by suitable means, as, for example, a bolt 31, between the clamping-plates 32, that are supported horizontally from the angle-plate 33, that is bolted to the web 13 between the end 11 and the shoulder 17. In addition to the clamping-plate connection I prefer also to employ, for the sake of securing evenness of movement under all conditions, a direct connection through the web 13.
 50 For this purpose I employ a two-part rod, the parts of which are indicated by 35 and 36. The ends of this rod are screw-threaded and are adapted to pass through the rails 1 and 2 and through an aperture 37 in the web 13 approximate to the end 11, but far enough removed from it to secure sufficient thickness of metal to afford the requisite strength. The opposite screw-threaded ends of the rods 35
 55 and 36 are secured together, as by a nut or thimble 39. Each of the parts is bent downwardly toward the rod 30 and each is provided with terminal clamping-plates adapted to clip upon the rod 30. These, when in place, are secured, as by bolts 40. By this method a
 65 double connection is secured between the movable point and the switch-rod, and one

which, through the movement of the nut or thimble 39 on one side of the flange 13 and an adjustment-nut 41 on the other side thereof, serves not only to prevent twisting strain upon the frog in shifting it, but also affords means for adjusting the connection of the frog with the rod 30, so as to keep it at all times true and upright.

A projection 42 is shown upon the extreme end of the frog-point and is designed for connecting the lock-bar when an interlocking frog is employed. The connecting mechanism, however, being of well-known and ordinary construction and not constituting a part of my invention, does not herein require further illustration or description.

43 indicates abutment-blocks located upon the deflected ends 7 near their extremities and designed to afford support for the frog-point when it is shifted to one side or the other.

I do not limit my invention to the details of construction herein shown and described, but reserve the right to modify and vary them at will within the scope of my invention, and particularly as suggested by the flexible language employed throughout the specification, the object of the illustration and specification being to show a preferable, but not exclusively available, form of embodiment of my invention.

What I claim is—

1. In a railway-frog, the combination with wing-rails, of a frog-point composed of two tapering members independently pivoted respectively, and secured together in longitudinally-movable relation, substantially as specified.

2. In a railway-frog, the combination with wing-rails, of a frog-point composed of two parts secured in juxtaposition throughout their length and longitudinally movable with respect to each other, substantially as specified.

3. In a railway-frog, the combination with wing-rails, of a frog-point composed of two parts secured together in longitudinally-movable relation, each of said parts of the frog-point being independently pivoted, substantially as specified.

4. In a two-part frog-point, the combination with a rail and recess therein, constituting one member, of a second member fitting within the recess and movably secured to the first member, substantially as set forth.

5. In a two-part frog-point, the combination with a rail and recess therein, constituting one member, of a second member, oblong apertures in the second member, a strap, bolsters and bolts adapted to enter, respectively, the oblong recesses in the two members, and passing through the first member, to secure the parts together, the second member being movable with respect to the first, substantially as set forth.

6. The combination with wing-rails, and a movable frog-point, of a switch-rod movable

transversely with respect to the wing-rails, of
a two-part rod passing through the wing-rails,
and through the end of the frog, means for
uniting the two-part rod and adjusting its
5 position with respect to the frog, and means
for uniting the two-part rod to the switch-rod,
substantially as set forth.

7. The combination with wing-rails and a
movable frog, of a switch-rod movable trans-
10 versely underneath the wing-rails depending
mechanism connecting the frog with the
switch-rod, and a two-part rod united to the

switch-rod and adjustably secured to the
switch-rod, transversely movable through the
wing-rails, and adjustably secured to the frog 15
through the wing-rails, substantially as set
forth.

In testimony of all which I have hereunto
subscribed my name.

WILLIAM E. DAVIN.

Witnesses:

JOHN Z. ROSS,
J. K. MILLER.