(No Model.)

F. HARDY.

RAILWAY FROG OR SWITCH.

No. 531,797. Patented Jan. 1, 1895.

Fig. 1.

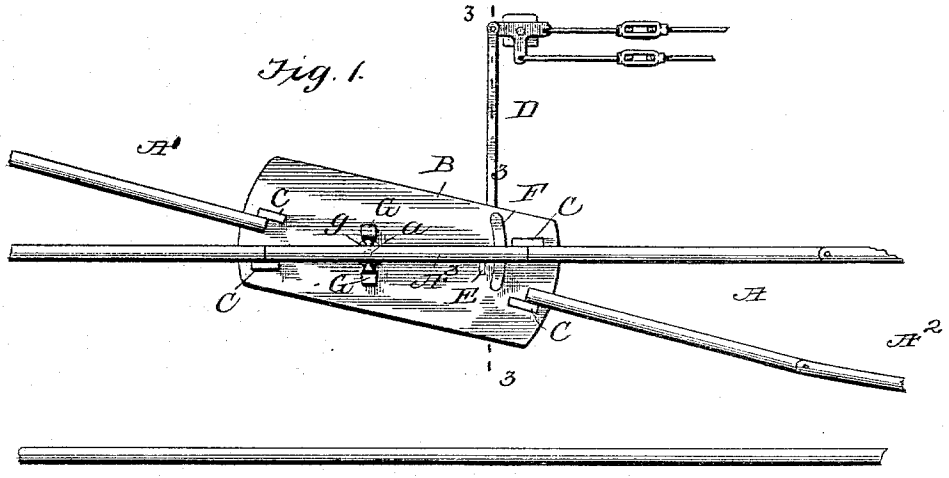


Fig. 2.

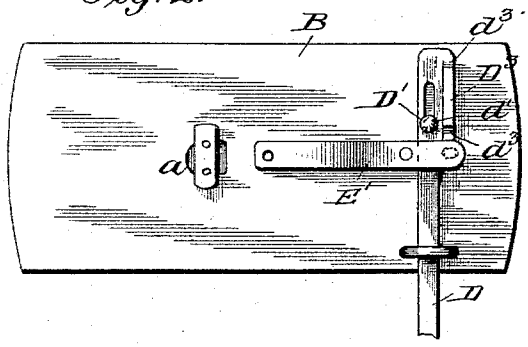
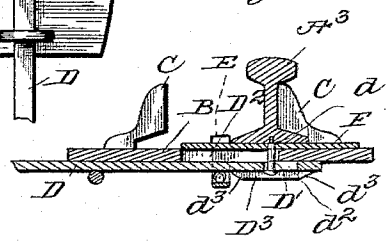


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

FREDERICK HARDY, OF BIRMINGHAM, ALABAMA.

RAILWAY FROG OR SWITCH.

SPECIFICATION forming part of Letters Patent No. 531,797, dated January 1, 1895.

Application filed April 12, 1894. Serial No. 507,294. (No model.) Patented in Canada May 7, 1894, No. 45,970.

To all whom it may concern:

Be it known that I, FREDERICK HARDY, a citizen of the United States, residing at Birmingham, in the county of Jefferson, State of Alabama, have invented certain new and useful Improvements in Railway Frogs or Switches, (patented in Canada May 7, 1894, No. 45,970;) and I 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 appertains to make and use the same.

This invention is an improved device for operating and locking frogs and switches, and relates particularly to certain improvements upon Patent No. 516,599, dated March 13, 1894.

This invention is also intended to operate both stub and split point switches and it may be used upon switches and it can be used either singly or in combination.

The object of the invention is to provide a simple and reliable device for operating the switch or frog rail and also to provide means whereby the rail is released prior to the thrust of the operating rod upon said rail and for locking the rail the moment the thrust is completed.

Another object is to so construct the parts that friction is reduced to a minimum and a still further object is to provide for the exclusion of stones, dirt, ice, &c., which would prevent the successful operation of the various parts.

With these objects in view my invention consists in the peculiar construction and novel combination of the various parts all of which will be fully described hereinafter and pointed out in the claim.

In the drawings forming a part of this specification, Figure 1 is a plan view showing my device applied to a frog. Fig. 2 is a bottom plan view of the bed plate operating rod and spring locking bar. Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

Referring to the drawings, A indicates an ordinary track provided with a siding A′, a switch rail A^2 being used in connection with a movable frog rail A^3 the same as shown in my prior patent before referred to. The bed plate B is preferably made flat and the rail A^2 secured directly thereto by a pivotal connection *a*, but if desired the plate can be formed with a depression and the rail secured as shown in my prior patent. The rail thus pivoted is free to swing from side to side in a horizontal plane and when resting upon the flat plate as preferred it has a firm support throughout its entire length. To limit the movement of this rail and bring it into alignment with main and side rails I arrange the four stop plates or shoulders C one near each corner of the bed plate B, and it will be noticed that these stops C are of such length that they rest beside the fixed rails bracing them and also act as stops for the movable rail. For the purpose of operating the movable rail I employ a rod D which moves transversely to the line of track and is connected at its outer end with any suitable bell crank or pitman. The free end of this rod is connected with one end of the movable rail by means of a pin D′ which passes through a slot D^2 in the bed plate and enters the base of the rail. The pin has a shoulder *d* to limit its upward movement and it also has a head *d′* which prevents the rod dropping therefrom, said rod being slotted longitudinally at d^2 to receive this pin, and to permit the rod to have a slight movement prior to the shifting of the rail. A projection D^3 is formed upon the lower face of the rod D, said projection being arranged adjacent to the slot d^2 and has inclined faces d^3 at its opposite ends.

A locking bolt E carried at the end of a spring bar E′ passes through the bed plate on the central line of the same and projects upward therefrom so that when the rail is shifted from one position to the other the bolt will spring in place upon one side or the other of the rail and lock it in this position and against the corner stops. The spring bar is also provided with a roller where the projection passes thereover so that very little friction occurs during the operation of said parts.

A shield plate F is secured to the base of the rail by means of the pin *d*, said shield being shaped to cover the slot in the bed plate and thus prevent stones, dirt, ice, &c., accumulating in said slot. The shield is of such length that the slot is always covered during any movement of the rail.

The rail is preferably pivoted remote from

the end connected with the rod D and on each side of said rail at the pivotal point I secure the bearing block G G having knife edges *g* which contact with the web of the rail and serve as an additional pivotal bearing to secure stability and ease of movement.

Now in operation the parts are arranged as described and when it is desired to shift the position of the frog or switch rail the rod is moved transversely. This causes the inclined face projection on said bar to engage the spring bar and retract the locking bolt. The slot in the bar permits this to be done before the rail is moved so that no binding against the bolt takes place. The bolt being withdrawn a continued movement of the bar shifts the rail and as soon as it passes beyond the bolt the spring forces the same up so that the rail is locked against the shoulder plates or braces which being wide and against the fixed rails bring the movable rail into proper alignment. These braces being extended on each side, along the line of the rails, and bolted to the ends of the fixed rails, apply the principle of the fish-plate to holding the ends of the fixed and movable rails in line and a recess being made under these braces permits any gravel or dirt that may accumulate at the ends of the movable rail to be pushed out of the way.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination with the fixed rails, of the flat bed plate and movable rail mounted thereon, the operating rod arranged upon the under side of the bed plate and slotted longitudinally near its free end, a bolt passing through said slot and also through a curved slot in the bed plate, into the base of the movable rail, a spring bar secured to the under side of the bed plate, a locking bolt carried at the free end of said spring bar and projecting through the bed plate beside the base of rail to lock the same and a projection formed upon the under side of the operating rod beside its longitudinal slot, said projection being longer than the slot and having its ends beveled whereby as the bar is moved back and forth the locking bolt will be withdrawn in advance of the movement of the rail, a shield secured to the base of the rail and adapted to cover the slot in the bed plate, and a roller carried by the spring bar for engagement with the projection on the operating rod substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

FREDERICK HARDY.

Witnesses:
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M. D. ORCUTT.