

J. DAMPMAN.  
RAILROAD SWITCH.

No. 79,812.

Patented July 14, 1868.

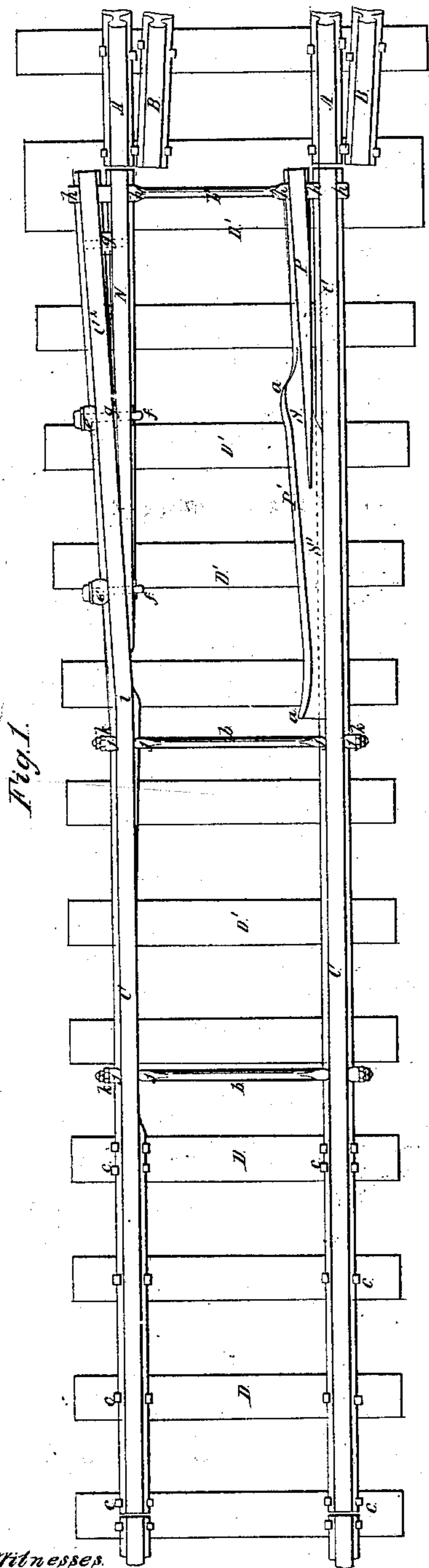


Fig. 1.

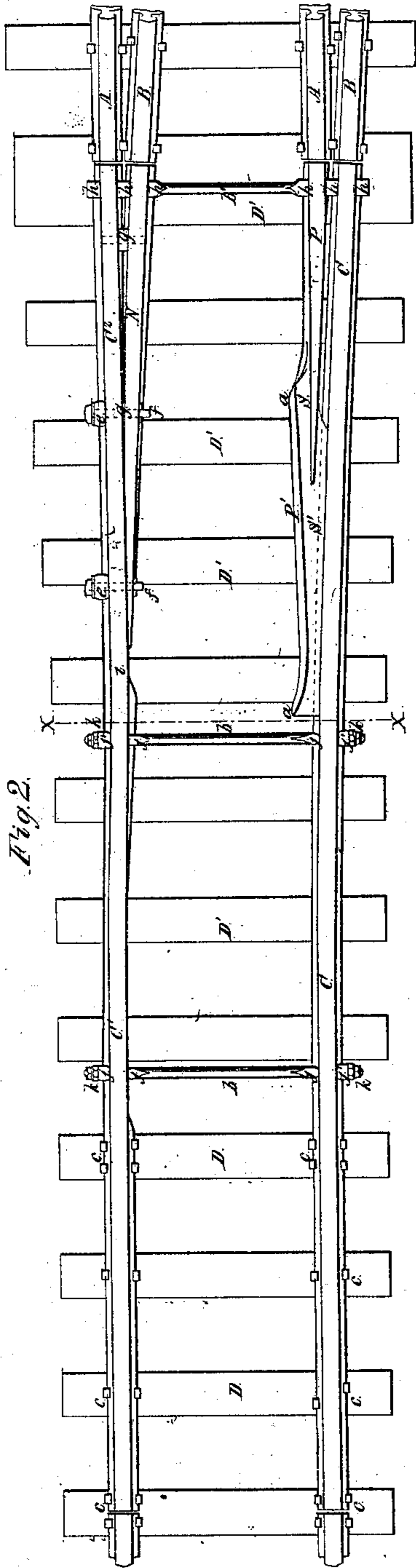


Fig. 2.

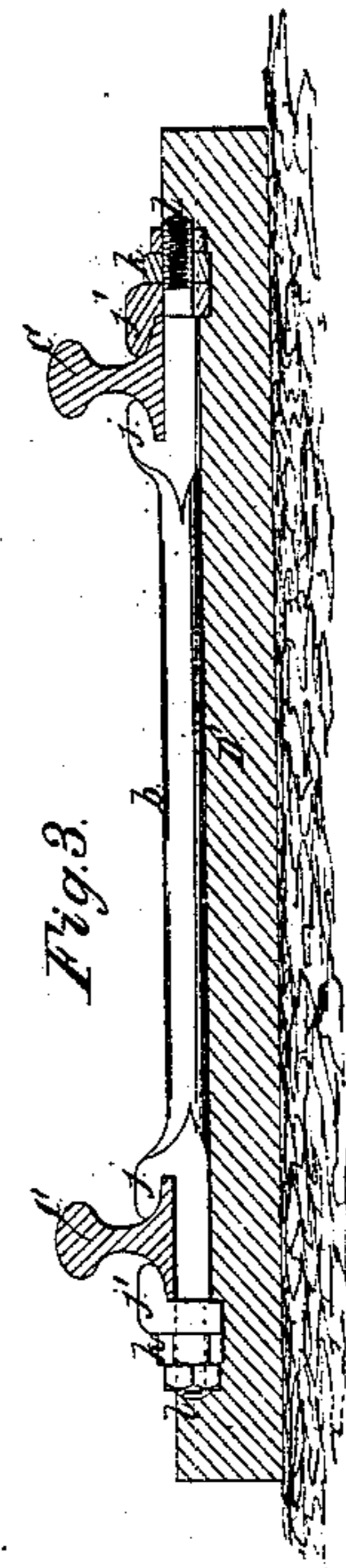


Fig. 3.

Witnesses.  
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*Letters Patent No. 79,812, dated July 14, 1868.*

## IMPROVED RAILROAD-SWITCH.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES DAMPMAN, of Lebanon, in the county of Lebanon, and State of Pennsylvania, have invented certain new and useful Improvements on Railroad-Switches and ties therefor; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a plan-view of the improved switch applied to the main-track rails at a turnout or siding, showing the switch-rails adjusted for the main track.

Figure 2 is a similar view, showing the switch-rails adjusted for the siding track.

Figure 3 is an enlarged view, showing the construction of the improved tie-rod, and the manner of applying it to the rails.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain new and useful improvements on railroad-switches, which are applied at the junctions of sidings with main tracks, for the purpose of allowing trains to leave a main track and pass safely upon a siding, and also to pass from a siding upon a main track.

The nature of my invention consists in bending a part of the rail-section on one side of a switch, so as to adapt it to serve as a safety-rail for the main-track rail when the switch is adjusted for a siding, and in applying on the inner side of such bent portion an auxiliary pointed and movable rail-section, in such manner that, when the switch is adjusted for the main track, this pointed and movable section will form a part of the main-track rail, and when the switch is adjusted for a siding, this pointed and movable section will form a junction or continuation of the siding and main track, and, while in this position, will yield, and allow a train running upon the main track to pass safely over the switch, as will be hereinafter explained.

And in conjunction with said bent-rail section and movable safety-rail on one side of the switch, the invention consists in the employment of a straight-rail section on the opposite side of the switch, and in securing to the inner side of this section a pointed safety-rail and frog or guard, so constructed and applied, that, should the switch be adjusted for a siding, and a train pass upon it from one direction, the pointed safety-rail and its frog will guide the wheels safely upon one of the switch-rails, while the pointed movable section on the opposite side of the switch will spring inward, and allow the flanges of the wheels to pass between it and its safety-rail, as will be hereinafter described.

The invention further consists in a switch-tie rod, which is so constructed that while it will firmly gripe both sides of the base of each switch-rail, and tie the rails securely together, it can be readily applied to or removed from said rails without removing them from their places upon the bed of the switch, as will be hereinafter described.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, figs. 1 and 2, I have shown my switch in two positions. Fig. 1 shows it adjusted for the main-track rails A A', and fig. 2 shows the same parts adjusted for the siding or turnout-rails B B'. The objects which I have accomplished by my improved switch are simplicity, in that there are very few parts composing the switch, and these parts can be made and put together in a substantial and durable manner; freedom from derangement by clogging with ice and snow, in that the several parts of the switch are made and put together in such manner that such obstructions cannot find a lodgment; and safety, in that the switch cannot be so adjusted as to endanger a train passing over it, whether it be adjusted for the main track or siding.

The two main rails C C' of the switch are spiked down firmly to the cross-ties D D, at c c c, so that in vibrating or adjusting those end, which are not spiked down the rails will spring, and, for this purpose their bases may be reduced in width near the holding-down spikes c. The rail C', on one side of the track, is bent outward from the point z to its free extremity, so that when the two rails are adjusted for the siding, the bent portion, C', will be in line with a main-track rail, A', and the rail C will be in line with the siding-rail B; and

when the switch is adjusted for the main track, the bent portion,  $C^2$ , will be outside of the line of the main track, and the rail  $C$  will be in line with main-track rail  $A$ .

To the inner side of the bent portion,  $C^2$ , of switch-rail  $C^1$ , a short rail-section,  $N$ , is secured by means of transverse bolts  $f$  and interposed filling-blocks  $g$ , as shown in figs. 1 and 2. This rail-section is pointed at one end, so that it shall fit snugly into the bend at  $z$ , and form a straight continuation of the straight portion of the rail  $C^1$ , thereby occupying the position which the portion,  $C^2$ , would occupy if it was not bent as shown. This section  $N$  therefore forms a continuation of the main-track rail  $A'$  and switch-rail  $C^1$ , when the switch is adjusted for the main track; and when the switch is adjusted for the siding, said section  $N$  forms a continuation of the siding-rail  $B'$  with said rail  $C^1$ , as shown in the drawings.

The bolts  $f$ , which connect the parts of rails  $C^2$   $N$  together, are somewhat longer than the width of the webs of the rails, and India rubber or other suitable springs,  $e$ , are interposed between the heads of said bolts and the bent portion,  $C^2$ , for the purpose of allowing the pointed end of the rail-section  $N$  to yield laterally inward, should the flanges of wheels pass between the section  $N$  and bent portion  $C^2$ , which would occur should a train pass over the switch running in one direction on the main track when the switch is adjusted for the siding, as shown in fig. 2.

On the inner side of the switch-rail  $C$ , opposite the yielding pointed rail-section  $N$ , is a safety-rail,  $P$ , which is constructed upon and forms an extension of one end of a frog,  $P'$ . This frog and its rail are secured rigidly to the rail  $C$  in any suitable manner. I prefer to use bolts passing transversely through the frog and rail  $C$ , and also employ a transverse tie-rod,  $b'$ , which is slipped upon the ends of rails  $C^2$   $N$   $P$   $C$ , and constructed with jaws, which will embrace and firmly hold said parts against lateral thrust.

The rail-extension  $P$  is tapered to a point which terminates upon the recess or channel  $S'$  of the frog  $P'$ , in the middle of the width of said channel. The inner edge of this rail  $P$  is parallel to the bent portion,  $C^2$ , of rail  $C^1$ , and forms, in conjunction therewith, a continuation of the main track  $A$   $A'$  upon the switch, when the latter is adjusted, as shown in fig. 2.

The elevation  $a$  on the frog serves as a guard for the flanges of car-wheels after leaving the safety-rail  $P$ , at the same time that the rail-section  $N$  is sprung inward, as above described.

By means of the bent portion,  $C^2$ , the rail-section  $N$ , the safety-rail  $P$ , and the guard  $a$ , a train running on the main track will be conducted safely over the switch in one direction, when the switch is adjusted for the siding.

The ends of the channel in the frog are made flaring, and otherwise so formed that neither snow nor ice will materially clog this passage. There is a space left between the safety-rail  $P$  and rail  $C$ , for the purpose of preventing accumulation of snow and ice, and also to receive the flanges of car-wheels. The channel  $S'$  is made so that the frog will support a car-wheel by its flange, until the tread of such wheel passes upon and is supported by the rail  $C$ , thus preventing the wheel from losing its support while passing from the pointed end of safety-rail  $P$  to and upon the rail  $C$ . The pointed rail  $P$  is intended also to prevent flat wheels from dropping into the neck of the frog.

At intermediate points between the laterally-vibrating portions of the switch, tie-rods,  $b$ , are interposed, which are constructed with embracing lips,  $j$   $j'$ , upon them, for receiving the rail bases, and preventing lateral spreading or contraction of the rails.

The rod  $b'$  may be slipped upon the ends of its rails, and for this reason it may be constructed with permanent gripping-jaws  $h$   $h$  upon it; but this could not well be done with the tie-rods  $b$ , without removing the switch-rails from their places. Each tie-rod  $b$  is constructed with two lips or gripping-jaws,  $j$   $j$ , permanently upon it, and on the ends of this rod screws  $l$  are formed, for receiving movable gripping-jaws,  $j'$   $j'$ , and clamping-nuts,  $k$   $k$ , as shown in fig. 3. The rod  $b$  is applied to the switch-rails before the jaws  $j'$   $j'$  are slipped upon it, which can be readily done by holding the rod obliquely between the switch-rails, so as to bring the flanged bases thereof in the jaws  $j$   $j$ , and then adjusting the rod in proper position, after which the jaws  $j'$   $j'$  are adjusted in place upon the screw-ports  $l$   $l$ , and set up tightly to the rail-bases, by means of nuts  $k$   $k$ . Pins, keys, or jaw-nuts will prevent the nuts  $k$   $k$  from becoming loose.

Tie-rods thus constructed will practically serve the purpose for which they are used, and may be removed and replaced at pleasure, without taking up the switch-rails.

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

1. The bent switch-rail  $C^1$   $C^2$ , and straight rail  $C$ , in combination, when the former has the tapering section  $N$  applied to it by means of rods  $f$  and springs  $e$ , and the latter has the frog  $P'$  and pointed rail-extension  $P$  applied to it, all substantially in the manner and for the purpose described.

2. The frog  $P'$ , and pointed rail-extension  $P$ , constructed and adapted to serve the purposes substantially as described.

3. The switch-rod  $b$ , constructed with removable shoulders  $j$   $j$ , and with removable gripping-jaws  $j'$ , and screw-threads and retaining-nuts, substantially as described and shown.

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Witnesses:

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