

(No Model.)

W. A. LEE.  
SWITCH.

No. 455,838.

Patented July 14, 1891.

Fig. 1.

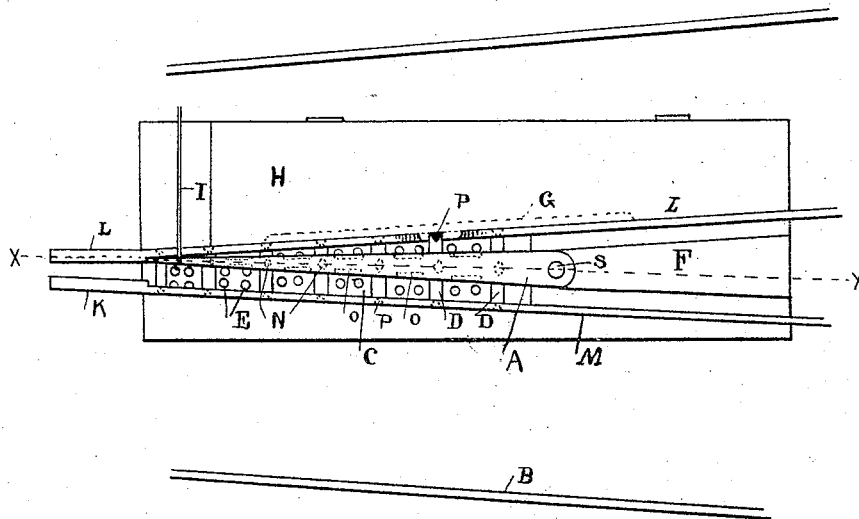


Fig. 2.

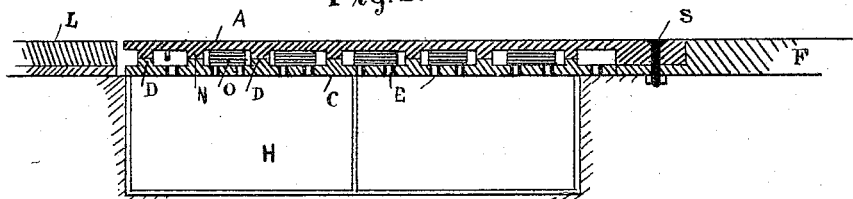
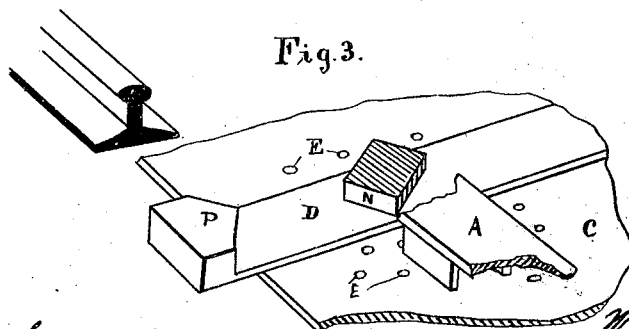


Fig. 3.



Witnesses

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Fig. 4.



Inventor

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# UNITED STATES PATENT OFFICE.

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## SWITCH.

SPECIFICATION forming part of Letters Patent No. 455,838, dated July 14, 1891.

Application filed March 4, 1891. Serial No. 383,793. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM A. LEE, a citizen of the United States, residing at the city of Peoria, in the county of Peoria and State of Illinois, have invented certain new and useful Improvements in Switches; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in railway-switches, by means of which a switch is provided, being simple in construction and efficient in its working.

More particularly my invention relates to a switch possessing all the ordinary advantages of switches generally, and with the additional advantage of being so constructed as to dispose of any dirt, dust, or débris that may accumulate between the rails, and upon the face of which a pivoted frog is designed to bear and move back and forth thereon, which is accomplished by the use of an open bottom opening into a box or receptacle immediately below.

That my invention may be more fully understood, reference is had to the accompanying drawings, in which—

Figure 1 is a top or plan view showing the main features of my invention. Fig. 2 is a vertical sectional view through the lines X X. Fig. 3 is a detail sectional view showing the perforated plate, upon which bears the rails and cross-pieces. Fig. 4 is a detail view showing a portion of the frog.

In Fig. 1, H represents a box or receptacle placed in an excavation immediately below the switch-point, (as best shown in Fig. 2,) upon which bears the rails and the movable frog or point which form this part of the switch.

K is a rail, and L M are guard-rails, to which are cast solid therewith the cross-pieces D D, &c., connecting the same, provided with pointed shoulders, as represented by P, (shown in Fig. 3,) these shoulders being provided upon either side extending inwardly from the guard-rails L M. The said shoulders P thus separating the cross-pieces and guard-rails provide spaces at the sides, through which dirt is pushed from off the lower face by

means of the frog, as will be hereinafter more fully explained. There is also provided the perforated bottom plate C, provided with perforations E E, &c., attached to the lower faces of the cross-pieces D D, &c., by means of suitable bolts, and may be detached therefrom, if desired.

A is a frog or point, pivoted as at S, with the free end designed to move back and forth upon the faces of the cross-pieces D D, &c., the same being provided with the diamond-shaped raises N, as shown in detail in Figs. 3 and 4, with the lower faces of the said diamond raises designed to bear upon the cross-pieces D D, &c., there being provided such diamond raises upon the lower face of the frog for every cross-piece D upon which it bears, the said frog also provided with the depending lugs O O, which extend downward almost, if not quite, to the perforated plate C, as best shown in Figs. 3 and 4, and also shown in Fig. 2, and occupy at intervals between the diamond raises N and also the spaces between the cross-pieces D D, &c., and are designed to push the dirt that may accumulate from off the perforated plate C and into the receptacle below.

I is a rod connected with the depending lug on the forward or free end of the frog A, designed to connect with some automatic shifting means that may be provided. G is a flange designed as a bearing for one edge of the lid of the box or receptacle H, the said box or receptacle being provided with suitable hand-hold or other means for raising the same.

The particular advantage derived from the use of such a switch as herein shown is apparent, as it will at once be seen that by the use of the same the switch is always rendered operative. For the mere purpose of a switch alone it is wholly unnecessary for me to particularly describe its operation; but the especial advantages gained by its use are, as before specified, the disposing of the dirt that may accumulate between the guard-rails and within the path of the frog or point as it moves back and forth between the same.

The dirt falling upon the switch accumulates upon the cross-pieces D D and the bottom plate C. Now as the frog moves back and forth or the free end thereof the dia-

mond-shaped portions N push the dirt from off the said cross-pieces upon the plate below and the lugs O O push the accumulated dirt from between the cross-pieces either through  
5 the perforation in the bottom or the openings in the sides into the box or receptacle below. Snow and ice will be removed in the same manner, as the ice forming upon the cross-pieces will be readily cut or broken by the  
10 sharp points of the diamonds N or the pointed shoulders P, thus rendering it practically impossible for a sufficient quantity of dirt, snow, or ice to accumulate to prevent the free operation of the switch, the box or receptacle  
15 below being of sufficient capacity to receive the dirt, snow, &c., thus deposited therein, and, when filled, by the removal of the lid the dirt therein accumulated may readily be removed. If desired, the perforated plate C  
20 may be wholly removed, as the same is only detachably connected to the cross-pieces D D.

Any suitable brace may be used, if found necessary, to support the span between the pivotal and the extremity of the free end of  
25 the frog to sustain the weight that may be designed to pass over the same.

The various parts of the switch may be solidly or detachably connected with each other, as may be desired, and the various parts there-  
30 of may be made of any suitable material, and the receptacle below may be of wood or iron or any suitable material, or may be merely an excavation walled in any suitable manner.

Having thus fully described my invention,

what I claim, and desire to secure by Letters Patent, is—

1. In a switch for railways, the guide-rails L M, connected by means of the cross pieces D D, &c., with pointed shoulders P between them, with the pivoted frog A, having the dia-  
40 mond raises N, and the depending lugs O O, all in combination, substantially as described and set forth.

2. In a railway-switch, the combination of the guide-rails L M, connected by means of the cross-pieces D D, with the intervals be-  
45 tween the said cross-pieces, with the pivoted frog A, provided with the diamond raises N, designed to bear upon the said cross-pieces, all substantially as described and set forth. 50

3. In a railway-switch, the guide-rails L M, connected by means of the cross-pieces D D, &c., with the pointed shoulders P between the same, the detachable perforated bottom plate C, the pivoted frog A, provided with the dia-  
55 mond raises N, and the depending lugs O O, and with the depending lug J at the extremity of the free end of the frog, which forms a connecting means with any automatic shifting device, with the box or receptacle attached to  
60 the under side of the switch, all in combination, substantially as described and set forth.

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

WILLIAM A. LEE.

Witnesses:

W. V. TEFFT,

W. I. SLEMMONS.