

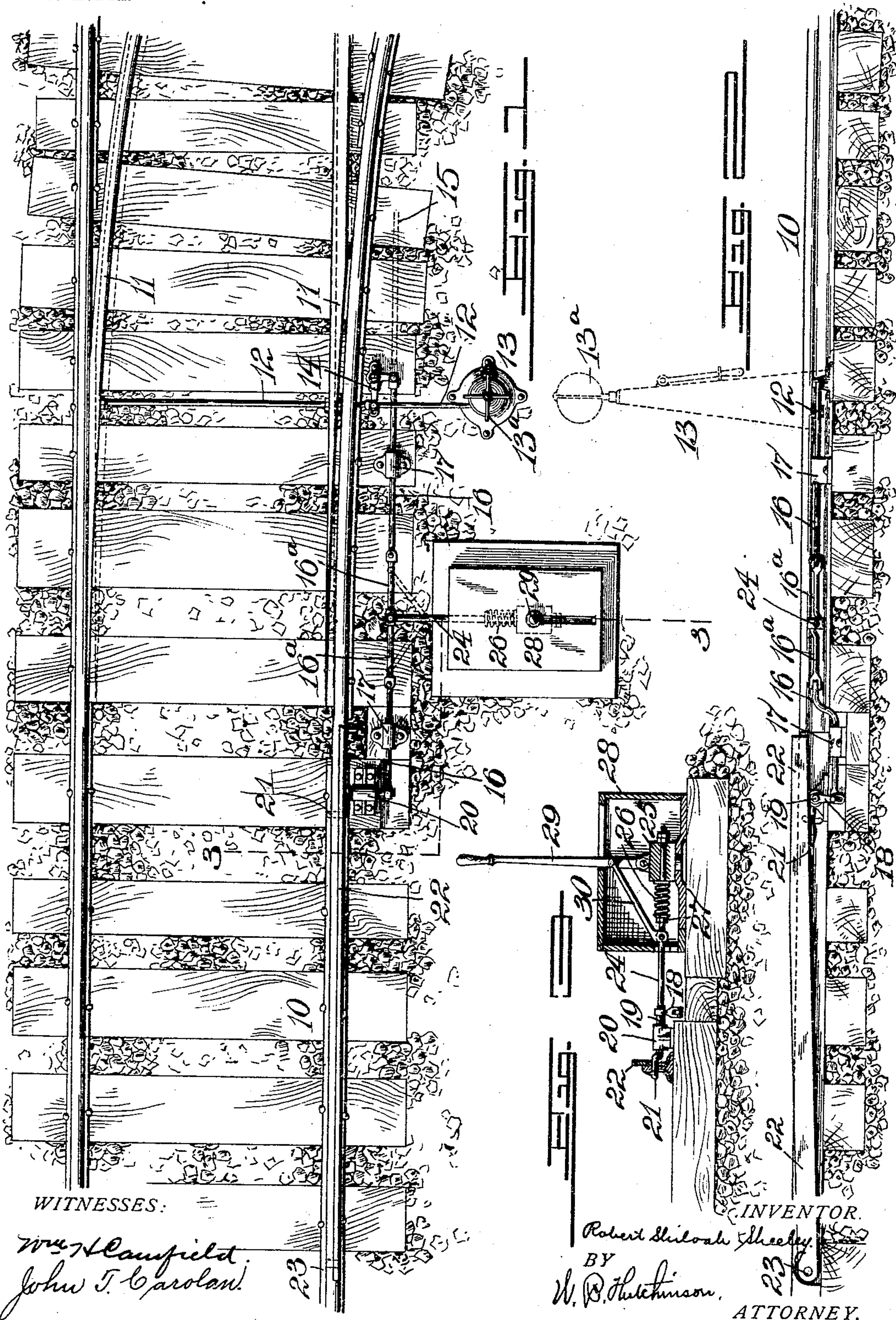
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PATENTED JULY 26, 1904.

R. S. SHEELEY.
RAILWAY SWITCH.

APPLICATION FILED JAN. 2, 1904.

NO MODEL.



UNITED STATES PATENT OFFICE.

ROBERT SHILOAH SHEELEY, OF GALESBURG, ILLINOIS.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 765,718, dated July 26, 1904.

Application filed January 2, 1904. Serial No. 187,574. (No model.)

To all whom it may concern:

Be it known that I, ROBERT SHILOAH SHEELEY, of Galesburg, in the county of Knox and State of Illinois, have invented a new and Improved Railway-Switch, of which the following is a full, clear, and exact description.

My invention relates to improvements in railway-switches; and the object of my invention is to produce a simple form of apparatus which can be used independently or as an adjunct to an ordinary switch and which will act positively and automatically to prevent open switches, and consequently to prevent a train from running accidentally through a switch.

My invention is intended to facilitate switching operations, but to avoid accidents; and one object of the invention is to construct the apparatus so that if a switch is left open by any means the weight of a train will positively close it.

Another object of my invention is to construct the apparatus so that it can be easily operated independently of the ordinary switch-stand and signal or can be conveniently attached thereto, and if attached thereto to provide means whereby the switch-stand can be worked as usual or the switch operated independently of it.

With these ends in view my invention consists of certain features of construction and combinations of parts, which will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of a common form of switch, showing my improved attachments connected therewith. Fig. 2 is a detail side elevation of the switch mechanism, and Fig. 3 is a cross-section on the line 3-3 of Fig. 1.

I have shown the customary railway-track 10, which is provided with the usual switch-rails 11, arranged in precisely the customary way where the siding connects with the main track, and the invention, as will presently appear, can be applied to any usual form of switch. As shown, the switch-rails are op-

erated by the switch-rod 12, which extends across the track and is operated from a switch-stand 13 of the usual construction, the stand having also the customary signal 13^a at the top. The rod 12 and the switch connected therewith are also adapted to be operated, as usual, by means of the bell-crank 14, at one side of the track, and the rod 15, (shown in dotted lines,) which is adapted to connect, as usual, with the ordinary switch-tower. Up to this point the mechanism described forms no part of my invention and may be departed from at will.

Connecting with the bell-crank 14 I provide slide-rods 16, which run in suitable bearings or guides 17 and which form practically continuations of the rod 15, so that the said rods 16 and the mechanism connected therewith to operate them can be arranged on either side of the switch. The rods 16 have toggle-sections 16^a connected therewith, which are adapted to be operated to slide the rods endwise, as will presently appear, and it will be noticed that the rod-sections 16 form practically for operating purposes one rod. One of the sections 16 connects with a crank 18, which is attached to a rock-shaft 19, journaled in a suitable support 20 at right angles to the track-rail, and this shaft has a second crank 21, extending through a slot in the track-rail and supporting a striking-plate 22, which is pivoted at one end, as shown at 23, and which fits snugly against the side of the rail, so as to form practically a part thereof. It will be seen that when the striking-plate 22 is depressed the pressure on the crank 21 tilts the shaft 19 and throws back the crank 18, so as to push longitudinally on the rod-sections 16 and actuate the bell-crank 14 and switch-rod 12, so as to close the switch, and as the whole weight of the train strikes this plate 22 it will be seen that the action must be positive.

For operating the rod-sections 16 and the switch manually the toggles 16^a are connected with a rod 24, which slides in suitable supports at right angles to the track and has its outer end carried in a slide-block 25 or equivalent device, and between the slide-block and a collar 27 on the rod is arranged a stiff spring

26, the tension of which is such as to normally hold the toggles 16^a straight, so as to extend the rod-sections 16. The block 25 and spring 26 are preferably arranged in a
 5 suitable housing 28, which is slotted suitably to provide for the movement of the rod 24 and also for the lever 29, by which the rod 24 can be operated, the lever and rod 24 being connected by a suitable link 30; but while
 10 I have shown a simple and convenient means for working the rod 24, and consequently the toggles 16^a, it will be understood that many equivalent devices might be substituted without affecting the principle of the invention.
 15 Generally in operating the switch the lever 29 would be used and the switch-stand 13 would be ignored, and, in fact, its only function would be to have the signal 13^a operate as usual; but so far as the stand itself is con-
 20 cerned it might be dispensed with.

From the foregoing description it will be seen that the switch is always closed, or, at least, that it will be closed at the time the train strikes the switch, and if, therefore, it is
 25 desirable to have the train take a siding the switchman must grasp the lever 29 and hold the switch open while the train takes the siding. In this way it will be seen that accidents caused by an open switch are practically
 30 impossible. When the switch is to be thrown open, the lever 29 is pulled back against the tension of the spring 26, which pulls out the toggle-sections 16^a and shortens the rod or rods 16, thus pulling on the bell-crank 14 and
 35 throwing the rod 12 and the switch-rails 11 to the open position shown in the drawings. This action also depresses the striking-plate 22.

It will be readily seen from the above description that my invention is extremely simple and that it can be operated manually when

necessary and must be operated automatically by the train.

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

1. In an apparatus of the kind described, the combination with the usual switch mechanism, the striking-plate alongside the track-rail, and the rock-shaft operated by the striking-plate, of the connecting-rod leading from the rock-shaft to the usual switch mechanism, toggles arranged in the connecting-rod, and mechanism for straightening and bending the toggles, to connect and disconnect the striking-plate and the switch mechanism.

2. The combination with the usual switch mechanism, the striking-plate held parallel with the track-rail, and the rock-shaft actuated by the striking-plate, of the connecting-rod leading from the switch mechanism to the rock-shaft, the toggle-sections forming part of the connecting-rod, a lever mechanism for working the toggles, and spring-actuated means for closing the toggles, the bent position of the toggles disconnecting the striking-plate and the switch mechanism.

3. In an apparatus of the kind described, the combination with the usual switch mechanism, a striking-plate alongside the track-rail, and a rock-shaft operated by the striking-plate, of a connecting-rod leading from the rock-shaft to the switch mechanism, toggles arranged in the connecting-rod, and manually-operated mechanism for bending the toggles to open the switch and disconnect the striking-plate from the switch mechanism.

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Witnesses:

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 FRANK L. ADAMS.