

(No Model.)

2 Sheets—Sheet 1.

J. C. STUART.

SAFETY APPLIANCE FOR RAILWAY SWITCHES.

No. 573,494.

Patented Dec. 22, 1896.

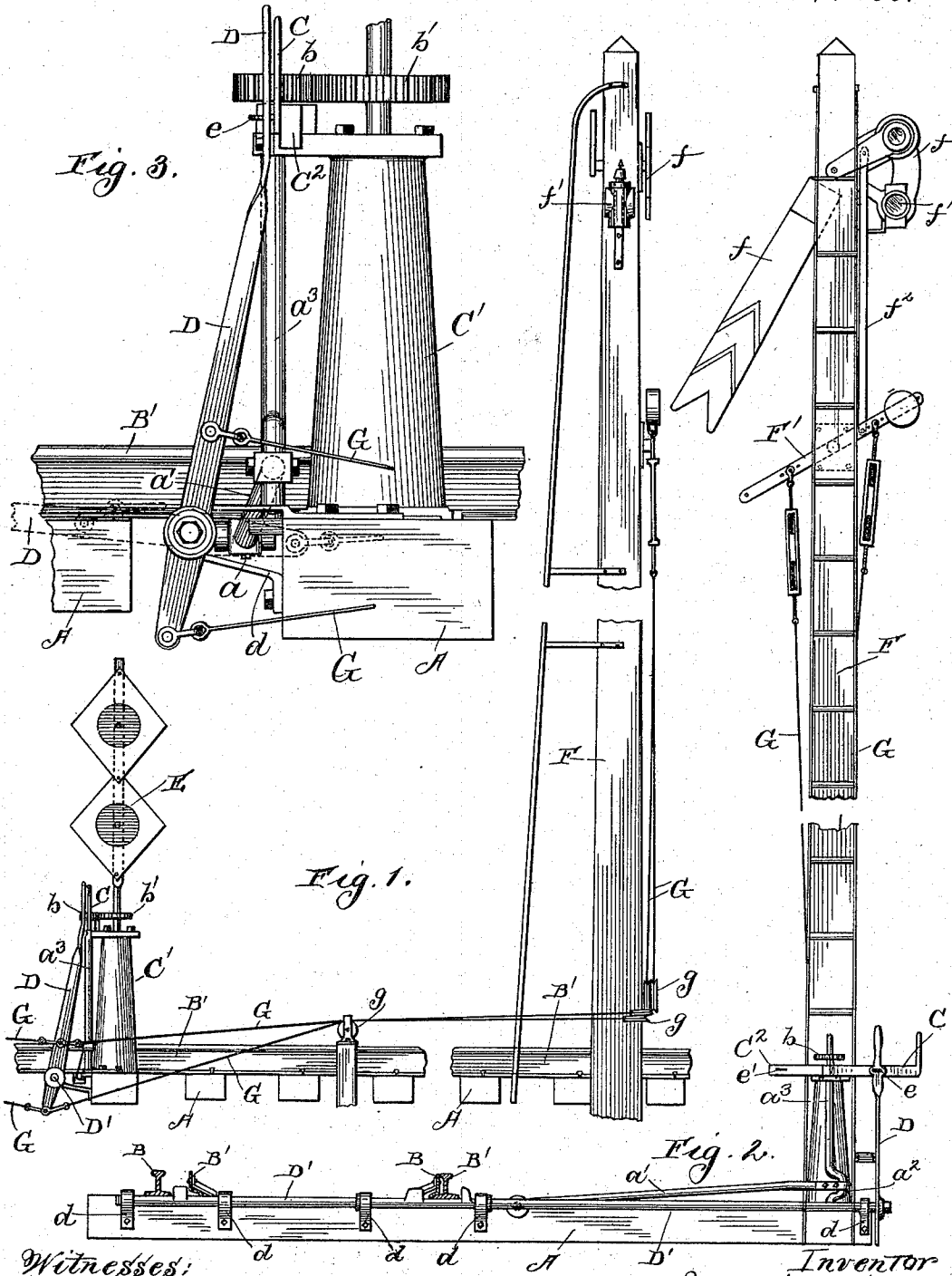


Fig. 1.

Fig. 2.

Witnesses:

R. J. Jacker.
J. H. Harrison,

Inventor

Jno. C. Stuart
By Jno. H. Whipple
atty

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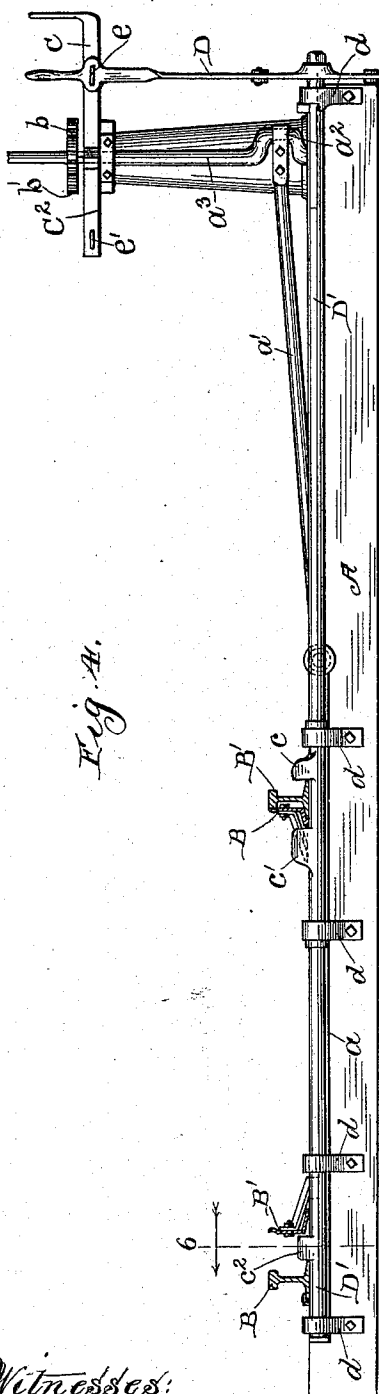


Fig. 5.

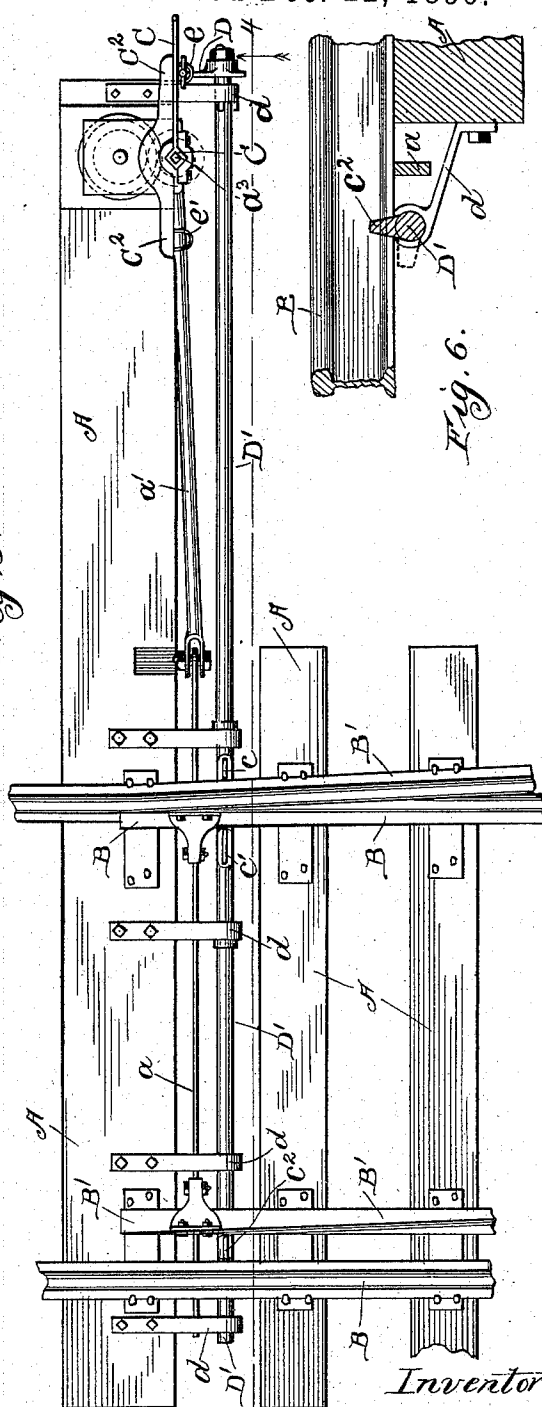


Fig. 6.

Witnesses:

W. J. Jaeger,
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UNITED STATES PATENT OFFICE.

JOHN C. STUART, OF CHICAGO, ILLINOIS.

SAFETY APPLIANCE FOR RAILWAY-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 573,494, dated December 22, 1896.

Application filed June 4, 1896. Serial No. 594,229. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. STUART, of Chicago, in the State of Illinois, have invented certain new and useful Improvements in Safety Appliances for Railway-Switches, of which the following is a specification.

My invention relates to switch and signal appliances; and the object of my improvements is to provide means, in conjunction with both the switch and its operating mechanism and the signal-operating mechanism, whereby the switch and signal may be so connected as to be locked together when the switch is closed and so connected when the switch is open that the signal cannot be moved to the position indicating that the switch is closed until after the switch has actually been closed. I attain this object by the appliances illustrated in the accompanying drawings, in which—

Figure 1 is an elevation of the switch and signal represented as placed at the side of the track; Fig. 2, a similar elevation to that shown in Fig. 1 viewed at right angles to the position seen in Fig. 1 and representing the switch and signal in connection with a cross-section of the track. Fig. 3 is an enlarged fragmentary elevation showing the switch post or standard and the signal and switch levers and their connection and arrangement relative to one another in enlarged view. Fig. 4 is a cross-section of the track on the line 4 4 of Fig. 5, looking in the direction of the arrows and showing the connection of the switch and signal operating levers with the movable rails. Fig. 5 is a plan of the track at the switch in connection with the switch and signal mechanisms. Fig. 6 is a detail showing a section on the line 6 6 of Fig. 4, looking in the direction indicated by the arrows.

In the drawings, A designates the ties, B the main-track rails, and B' the switch-track rails. One of the switch-track rails and one of the main-track rails are beveled to a point and movable relatively to the other switch-track rail and the other main-track rail, which are stationary. The movable rails are connected together by a rod *a*, which is attached to a link *a'*, which extends to and connects with a crank *a²* on a vertical shaft *a³*, with which the switch-lever C is connected, so that by revolving said lever said movable rails

may be shifted to open or close the switch. As shown in the plan view, Fig. 5, the switch is closed.

D designates the signal-lever, which is attached to the end of a shaft D', journaled in brackets *d*, secured to the tie A so as to revolve without being movable endwise. Said shaft is provided with lugs *c*, *c'*, and *c²*. The lugs *c* and *c'* are adapted to turn up on the outside of the stationary switch-track rail B' and the movable beveled main-track rail B when the switch is closed, and at the same time the lug *c²* comes up between the movable switch-track rail B' and the stationary main-track rail B on the opposite side of the track, so as to securely lock the switch closed at both sides of the track. When the signal-lever is turned down to the position shown on dotted line, Fig. 3, said lugs *c'* and *c²* are brought into a horizontal position, so that the movable rails can slide over or upon them, the lugs being extended through the entire space in which the rails move and coming under the movable rails when the switch is open, so as to strike them and prevent the signal-lever from being turned up while the switch is open. The shaft *a³* is journaled in brackets upon the switch post or stand C', and has a pinion *b* at the top, which engages with a pinion *b'* for working a signal-board E on the switch-post, but not connected with the main signal.

The switch-post is provided with a cross-piece C² at the top, which has staples *e* and *e'* at its opposite ends, and the switch-lever C and signal-lever D both are provided with slots adapted to engage the staple *e*, so that both can be locked in connection therewith, the switch-lever alone being adapted to work in connection with staple *e'*.

F designates the signal-post, which is provided with the usual signal-boards *f* or lamp *f'*, pivoted to the post and adapted to be moved or displayed in different positions to indicate when the switch is open or closed. Said signals are connected by a wire or cord *f²* with a weighted lever F', adapted to counterbalance them so that they can be shifted in position by the application of a slight force. This force can be exerted by means of wires or cords G, connected with the signal-lever and weighted lever and run upon pulleys *g*

at the points where it is found necessary to run the wires around angles or curves.

It is contemplated that a signal-post is to be placed near the track in both directions from the switch and connected with the signal-lever in the manner shown.

The operation is as follows: The switch being closed and locked, to unlock and open it the lock is removed from the staple *e*. The signal-lever D is then turned down, the effect of which is to turn down the lugs *c c' c²* and free the movable rails and also to put the signal in the position showing that the switch is open, even before the opening takes place. Then the switch-lever C is swung around horizontally to engage with the staple *e'*. The effect of this movement of the switch-lever is to shift the movable rails into position to open the switch and also to bring them upon the lugs *c' c²*, so that the signal-lever D cannot be turned up or the signal reversed or brought to the position showing the switch closed until the switch-lever C is swung back into engagement with staple *e* and thereby closing the switch, thus preventing the "closed" signal from being given before the switch is actually closed.

What I claim is—

1. In a safety appliance for railway-switches the combination with a suitable stand C' of a switch-lever in connection with the stand and having link connection with the switch-rails, a signal-lever in connection with the stand and having link connection with a switch-signal, and a locking device in connection with the stand, the operative relation of the switch-lever with regard to the signal-lever being as

specified whereby said levers when operated to close the switch and indicate that condition are thrown into connection with the locking device.

2. In a safety appliance for railway-switches the combination with a suitable stand of a switch-lever in connection with the stand and having link connection with the switch-rails, a signal-lever in connection with the stand and having link connection with a switch-signal and a rock-shaft in connection with the signal-lever and switch-rails and provided with locking-lugs adapted to engage the switch-rails, the operative relation of the signal-lever with regard to the switch-lever being as specified whereby said levers when operated to close the switch and indicate that condition are brought together.

3. In a safety appliance for railway-switches the combination with a suitable stand of a switch-lever having link connection with the switch-rails, a signal-lever in connection with the stand and having link connection with a switch-signal, a rock-shaft in connection with the switch-rails and signal-lever and having locking-lugs adapted to engage the switch-rails, and a locking device in connection with the stand, the operative relation of the switch-lever with regard to the signal-lever being as specified whereby said levers when operated to close the switch and indicate that condition are brought into connection with the locking device.

JOHN C. STUART.

Witnesses:

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ELLIS LEVY.