

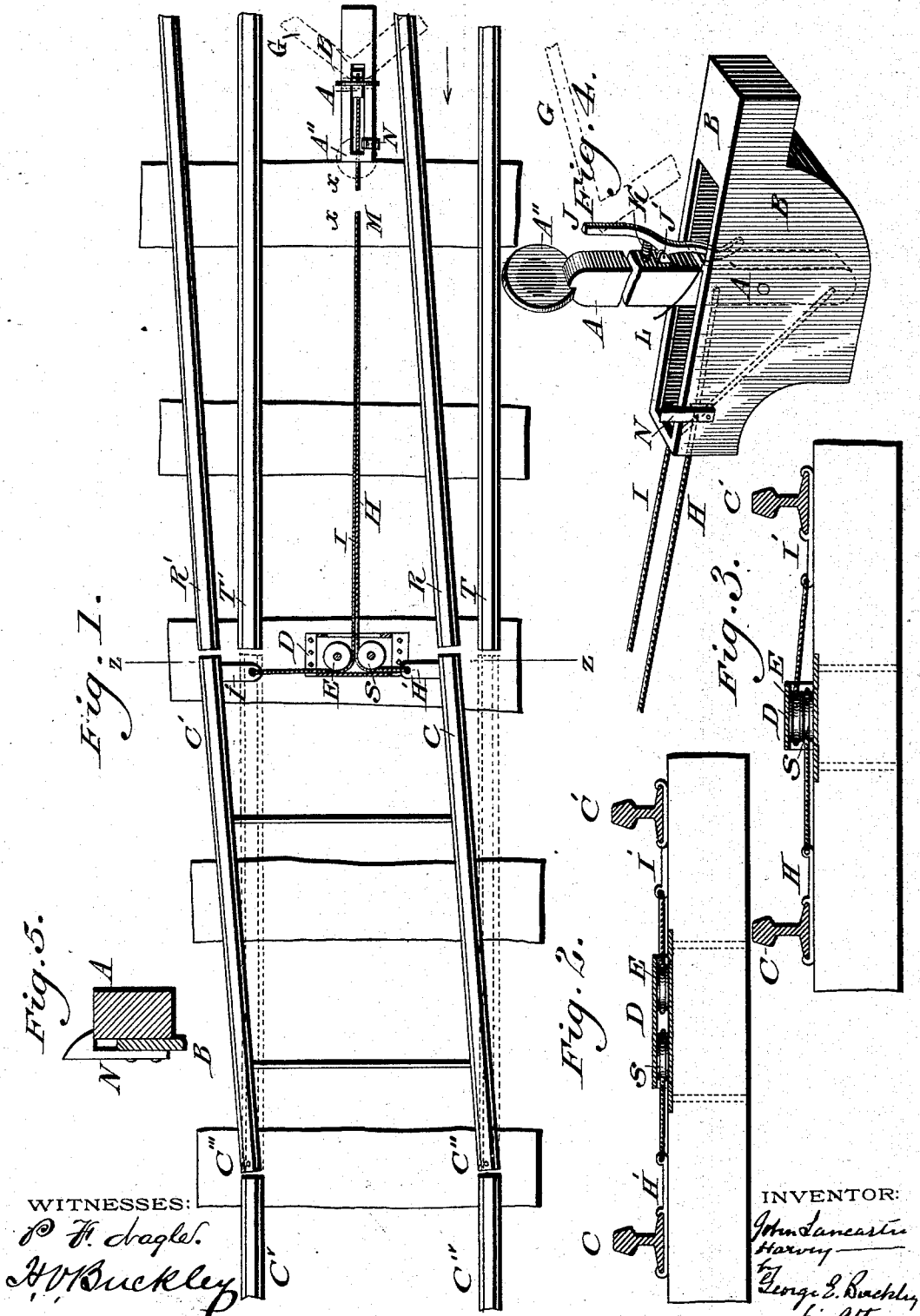
(No Model.)

J. L. HARVEY

AUTOMATIC SAFETY SWITCH FOR RAILWAYS.

No. 413,396.

Patented Oct. 22, 1889.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN LANCASTER HARVEY, OF PHILADELPHIA, PENNSYLVANIA.

AUTOMATIC SAFETY-SWITCH FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 413,396, dated October 22, 1889.

Application filed January 30, 1889. Serial No. 298,035. (No model.)

To all whom it may concern:

Be it known that I, JOHN LANCASTER HARVEY, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have made certain new and useful Improvements in Automatic Safety-Switches for Railways, of which the following is a description, reference being had to the accompanying drawings.

The nature of my invention will fully appear from the following description and claims.

Figure 1 is a plan view of my device; Fig. 2, a partial elevation and part vertical cross-sectional view on the line $z z$ of Fig. 1; Fig. 3, a similar view showing a modification of my device; Fig. 4, a perspective view of the pivoted actuating signal lever and box; Fig. 5, a detached broken cross-sectional view showing the spring-catch to hold the lever down while a train is passing over it.

A is the lever, pivoted within box B at A'; A'', the indicator or signal; C C', the section of switch-rails having their fulcrums at C'' C'''; C^{iv} C^v, the two rails of a single-track road; D, the box within which the two wire-cable-carrying pulleys E S are pivoted.

H is a wire cable secured at one end to the lever A above pivotal pin A' and at the other to the ear or lug H' after passing around pulley S; I, a wire cable secured to the lever A below the pivotal point A' of the latter at one end and at the other to the lug or ear I' after passing around pulley E.

Lugs H' and I' are secured, respectively, to the shifting ends of rails C C'.

G represents the pilot or cow-catcher of the locomotive.

J is a bent rod pivoted at J' to the lever, and provided with a spiral spring K between its upper part and the lever A. It latches over the cross-bar L in box B to hold the lever in position when the latter is upright. This rod is curved outwardly at its lower extremity, so as to slide back over cross-bar L when the lever is raised from a horizontal to an upright position.

A'' is an ordinary sheet-iron danger-signal to indicate from a distance whether the lever is raised or lowered. Spring K acts also as a cushion to lessen the shock of the stroke of the pilot G upon the lever or its rod J.

The modification illustrated in Fig. 3 simply shows the pulleys E and S set one above the other in box D, instead of side by side, as in Figs. 1 and 2. T' T' are continuations of the main track C^{iv} C^v; R R', the siding-track.

For convenience in the illustration I have in Fig. 1 shown the box B to appear to be located between rails R and T'; but the break in the cable at M is intended to indicate that in practice this box is located farther from the switch, so that it will be located between tracks T and R to avoid its being struck by a train running off on the siding from tracks C^{iv} C^v.

N is a spring with a catch or lip on its upper end to engage over the edge of the lever when the latter is down.

The operation is as follows: The switch being open, as shown in Fig. 1, in the absence of my device a train traveling in the direction of the arrow on the main track would be derailed at the switch; but where my mechanism is used its pilot will strike the bar J, depress lever A, draw on cable I, and thus slacken cable H. This will operate to force the switch-rails to the position shown in dotted lines in Fig. 1, and thus close the switch, allowing the train to pass onto rails C^{iv} C^v in safety, the lever A being retained in place by spring-catch N to hold the switch closed while the train passes over it.

What I claim as new is—

1. The combination, with switch-rails C C' and track T T', of pivoted lever A, cables H I, passing over pulleys S E and secured, respectively, to lugs H' I' of the shifting ends of the switch-rails and at their other ends to the lever A, one above and the other below the pivoted point A' of the latter, substantially as described.

2. The combination, with switch-rails C C' and track T T', of pivoted lever A, cables H I, passing over pulleys S E and secured, respectively, to lugs H' I' of the shifting ends of the switch-rails and at their other ends to the lever A, one above the other below the pivoted point A' of the latter, and rod J, with its spring K and bar L to sustain the lever in an upright position, substantially as described.

3. The combination, with switch-rails C C'

and track T T', of pivoted lever A, cables H
I, passing over pulleys S E and secured, re-
spectively, to lugs H' I' of the shifting ends
of the switch-rails and at their other ends to
5 the lever A, one above and the other below
the pivotal point A' of the latter, and spring-
catch N to hold the lever down when the
switch is closed, substantially as described.

In witness that the above is my invention
I have hereunto set my hand.

JOHN LANCASTER HARVEY.

Witnesses:

GEORGE E. BUCKLEY,
H. V. BUCKLEY.