

W. R. THOMAS.
SWITCH SIGNAL.

Patented Jan. 12, 1892.

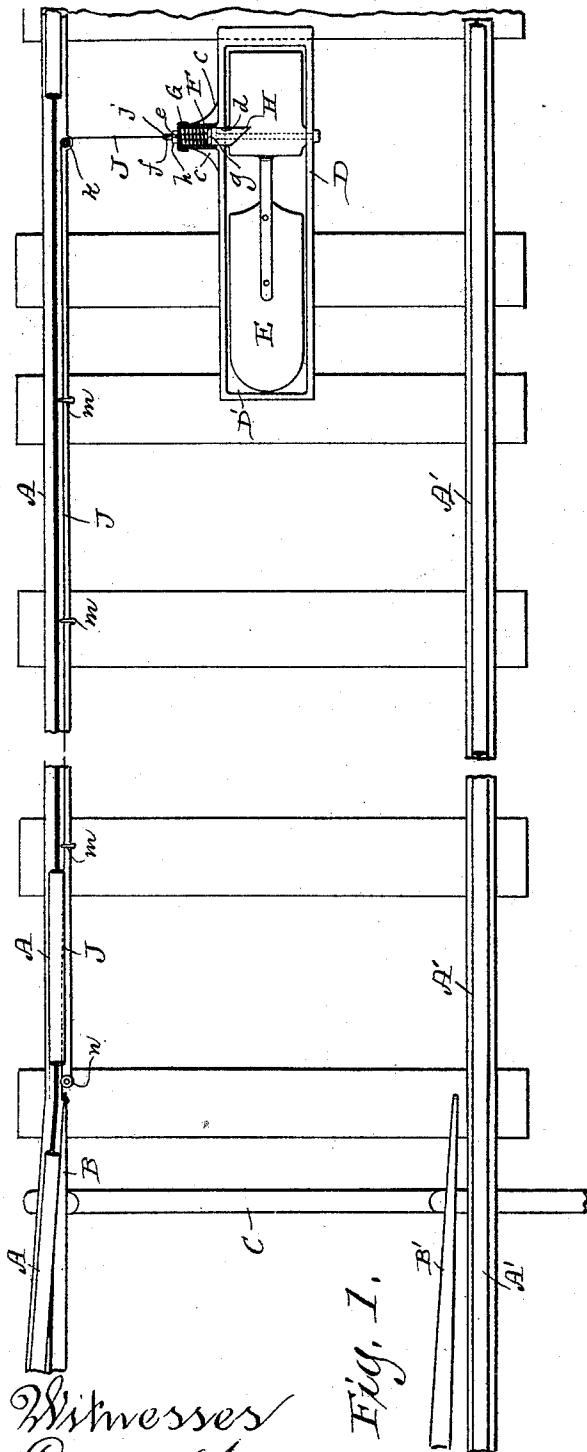


Fig. 1.

Witnesses
Geo. W. Louny
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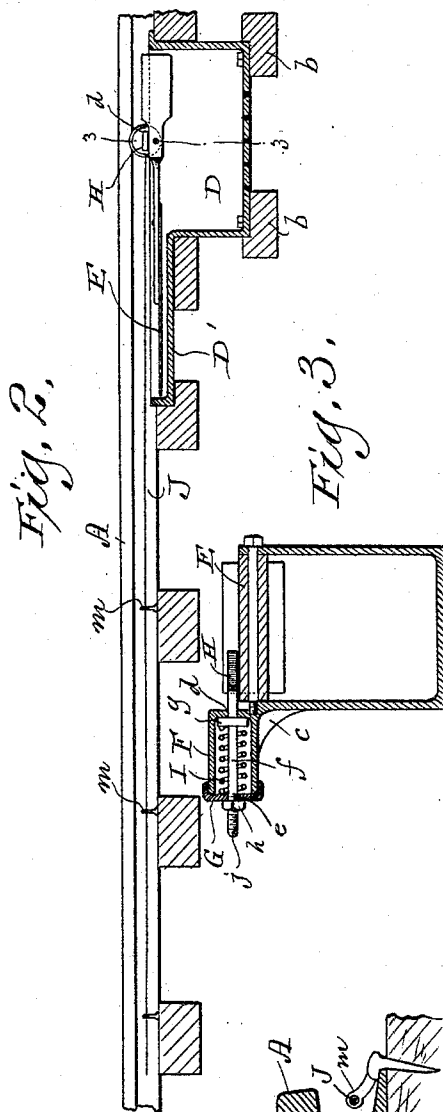


Fig. 2.

Fig. 3.

Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM R. THOMAS, OF WATERTOWN, WISCONSIN.

SWITCH-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 466,968, dated January 12, 1892.

Application filed July 15, 1891. Serial No. 399,603. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. THOMAS, a citizen of the United States, and a resident of Watertown, in the county of Jefferson, and in the State of Wisconsin, have invented certain new and useful Improvements in Switch-Signals; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention has for its object to improve the switch-signal set forth in my patent, No. 424,148, dated March 25, 1890, said switch-signal being a counterweighted device pivotally arranged between the rails of a track and held in a horizontal position when a switch communicating with the track is closed, but which assumes a vertical position when the switch is open. My present invention therefore consists in certain peculiarities of construction and combination of parts, to be hereinafter described with reference to the accompanying drawings and subsequently claimed.

In the drawings, Figure 1 represents a plan view of a signal proper in position between the rails of a main track, a switch distant from the signal, and a mechanism governed by the switch to normally retain said signal in a horizontal position, but which permits of the same assuming a vertical position at certain times; Fig. 2, a vertical longitudinal section through certain of the parts shown in the preceding figure; Fig. 3, a vertical transverse section of the signal proper and the box in which it is hung; and Fig. 4, a detail view, partly in section, illustrating a guide for a flexible device that connects the switch and the mechanism controlled thereby.

Referring by letter to the drawings, A A' represent the rails of a main track, and B B' the rails of a switch communicating with said track, these latter rails being united by a throw-rod C, designed for connection with any suitable lever mechanism attached to an ordinary switch-stand.

Located between the track-rails A A' at a certain distance (more or less) from the switch is a box D, having the bottom thereof provided with drain-openings and preferably bolted to supports b, and, as in my previous patent, this box is provided at one end with a horizontal extension D', the latter being hereinafter referred to as a table. The table

is supported on cross-ties of the track below the level of the same and, as in said previous patent, serves as a stop or rest for a counterweighted flag E, that is pivotally arranged between the sides of the box, midway of the length of the latter.

The box D and table D' are preferably of cast metal in one piece, with a housing F laterally extended from one side of said box midway of its length and adjacent to the upper edge, this housing being of cylindrical form and strengthened by webs c, as shown in Figs. 1 and 3.

The inner end of the housing F is closed except for a horizontal slot d; but the outer end of said housing is open as it comes from the mold and screw-threaded to engage a cap G, the latter having a central opening e therein.

The slot in the inner end of the housing serves as a guide for a horizontal blade H, having a screw-threaded tang f extended through the opening in the cap on the other end of said housing and arranged within the latter between said cap and a collar g on the tang. Immediately adjacent to the blade is a spiral spring I, the tension of this spring and throw of said blade being regulated by means of a nut h, engaging the threads on said tang in opposition to the outer face of the afore-said cap.

The outer end of the blade-tang f is provided with an eye j, in which is fastened one end of a chain, wire, or other flexible device J, that is run over and through suitable guides—such as pulleys and eyes—and connected in any suitable manner to the switch above described.

As shown, the flexible device J runs from the blade-tang f over a pulley k in line therewith, then at right angles through a series of eyes m, then over a pulley n, and is finally connected to the point of the rail B, whereby when the switch is opened said flexible device is actuated to draw back the blade H against the power of the spring I; but I do not wish to be understood as limiting myself to the specific construction and arrangement of parts just described, although it is essential that there be a flexible connection between said blade and a movable portion of the switch for the purpose above described.

Each guide-eye *m* is shown as being in one piece with a spike, and the flexible device *J* appears upon the inside of the adjacent rail; but the exact construction of said guide-eyes and the location of said flexible device is a matter to be determined by practice, and is immaterial so far as my present claims are concerned.

The blade *H* normally overlaps the counterweighted flag *E* to hold the latter in a horizontal position out of sight of locomotive-drivers, and said flag not being displayed indicates that the switch is closed and the main track clear. Now if the switch be opened the blade *H* will be withdrawn, as above described, from opposition to the flag *E*, and the latter by its own gravity, due to the counterweighted portion thereof, will swing on its pivot to a vertical position, thus indicating the open position of said switch at some distance from the latter. The flag being pivoted it offers no resistance to an engine or train coming from either direction; but the engine or train having passed said flag automatically assumes its vertical position to show that the switch is still open. The blade *H* having been withdrawn from opposition to the flag *E*, the spring *I* is proportionately compressed, and consequently when the switch is closed said spring is free to expand against the collar *g* on the blade-tang *f* to thereby force said blade back to its normal position. The point of the blade *H* is preferably struck on an angle of about forty-five degrees, and thus when said blade is on its backward movement it comes gradually against the flag *E* and causes the latter to turn on its pivot from a vertical to a horizontal position.

By means of the construction above described the signal-flag may be operated at a considerable distance beyond the switch, and this is of particular value when said switch is around a curve in the main track.

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

1. The combination of a railway-track, a counterweighted flag pivotally arranged between the track-rails, a sliding blade in opposition to the flag, controlled as to movement

in one direction by a distant switch, and suitable means for moving the blade in the opposite direction, substantially as set forth.

2. The combination of a railway-track, a counterweighted flag pivotally arranged between the track-rails, a spring-controlled sliding blade in opposition to the flag, a distant switch, and a flexible device connecting the sliding blade and a movable portion of the switch, substantially as set forth.

3. The combination of a railway-track, a box located between the track-rails and provided with a lateral housing having a slotted inner end and a detachable cap on its outer end, a blade arranged to engage the housing-slot and having a collared tang passed through said cap, a spiral spring surrounding the blade-tang between the collar thereon and the aforesaid cap, a nut adjustable on the outer end of said tang, a distant switch, and a flexible device connecting this switch and the aforesaid tang, substantially as set forth.

4. The herein-described switch-signal, comprising a box-like body having a table at one end and a lateral housing at one side, a counterweighted flag pivoted in the box, and a spring-controlled blade arranged in the housing in opposition to the flag, substantially as set forth.

5. The herein-described switch-signal, comprising a box-like body having a perforated bottom and a lateral housing at one side, a counterweighted flag pivoted in the box, and a spring-controlled blade arranged in the housing in opposition to the flag, substantially as set forth.

6. The herein-described switch-signal, comprising a box-like body, a counterweighted flag pivoted in the box, and a blade arranged to slide in guides on said box in opposition to the flag, substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Weyerhauser, in the county of Chippewa and State of Wisconsin, in the presence of two witnesses.

WILLIAM R. THOMAS.

Witnesses:

GEORGE LASHBROOK,
JABEZ C. STUBBS.