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SIGNAL.

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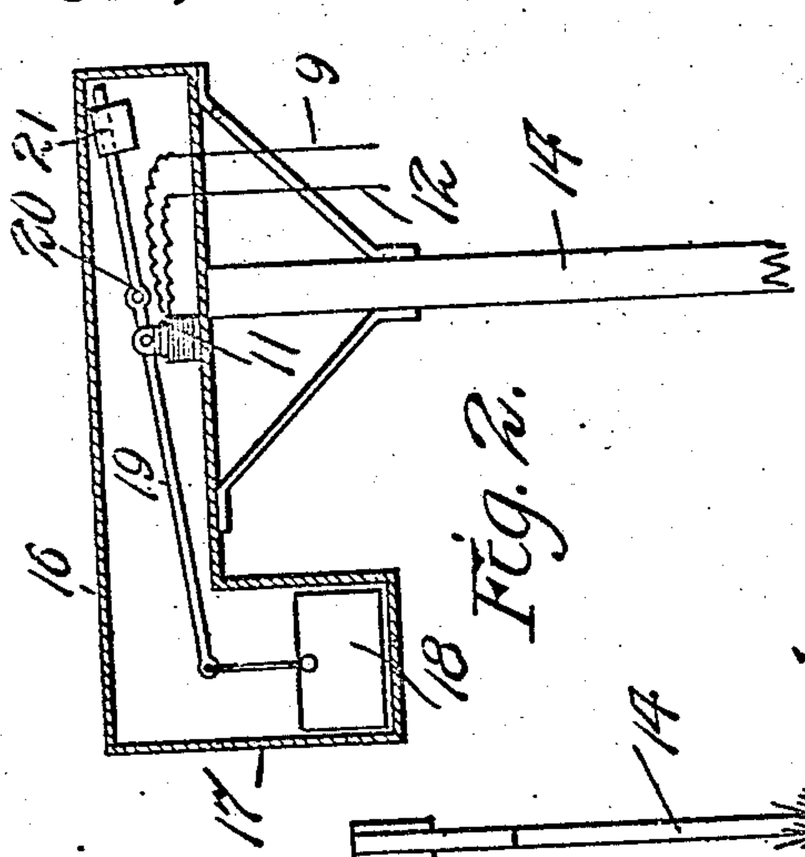

Fig. 2.

Fig. 1.

Fig. 3.

Witnesses

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SIGNAL.

No. 898,968. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed January 23, 1907. Serial No. 353,756.

To all whom it may concern:

Be it known that we, DAVID H. COKER and WHITFIELD A. SCARBROUGH, citizens of the United States, residing at Piedmont and Choccolocco, respectively, in the county of Calhoun and State of Alabama, have invented new and useful Improvements in Signals, of which the following is a specification.

This invention relates to signals, the object of the invention being to provide an automatic electrically actuated signal which is operated at a distance from the switch in connection with which it is used for the purpose of indicating to the engineer, at a point sufficiently remote from the switch, the fact that the switch is open, giving the engineer time to stop his train and avoid an accident.

With the above general object in view, the invention consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings, Figure 1 is a diagrammatic view showing the complete apparatus used in connection with a railway switch. Fig. 2 is an enlarged sectional view of one of the corners and its connections. Fig. 3 is a diagrammatic plan view of the circuit.

Referring to the drawings, 1 designates the rails of the main track and 2, the rails of a switch, while 3 designates a switch stand having connections with one or both of the switch rails for opening and closing the switch in the manner well understood.

In carrying out the present invention, we employ a circuit closer 4 arranged adjacent to the switch and interpose an operating connection between the standard or shaft of the switch stand and said circuit closer. This operating connection is shown as consisting of a slide rod 5 which carries a wedge shaped dog 6 which operates between the spring arm 7 of the circuit closer and a fixed abutment or shoulder 8 arranged opposite thereto, whereby as the connection 5 is moved in the direction which opens the switch, the circuit closer 4 is closed.

From the circuit closer, a wire 9 passes through the battery 10 and extends to an electro-magnet 11 arranged at a point remote from the switch. Another wire 12 extends from the electro-magnet 11 to another electro-magnet arranged at another point remote from the switch at the opposite side thereof and from said second electro-magnet, a wire 13 extends back to the circuit closer 4.

The two electro-magnets referred to may be located at any necessary distance from the switch and are shown as supported by signal posts 14 to which the wires are led over suitable poles 15. On the upper end of each post 14 there is arranged a casing 16 having a depending extension 17 in which works a signal or target 18 movable up and down so as to carry the same before or away from a window or opening formed in the side of the casing so as to display said signal or target to the engineer or hide the same, according to the condition of the switch. The signal 18 is carried by one end of a lever 19 mounted within the casing and fulcrumed at 20, while the opposite end of said lever carries a weight 21 just sufficient to uphold the signal or target 18 and carry the same away from before the window in the casing. Connected with the lever 19 is an armature which is attracted by the electro-magnet within the casing, when the latter is energized by the battery 10 upon the closing of the circuit closer 4 by the means hereinabove described.

When the switch is closed and the main track is clear, the circuit closer 4 is opened and does not affect the signals 18. As soon, however, as the switch is thrown open by means of the connection 5, the circuit closer 4 is closed and the electro-magnets 11 are energized so as to pull down the levers 19 and lower the signals 18 to a position where they may be readily seen by the engineer in time to stop his train and avoid running into the open switch.

We claim:

1. In an apparatus of the class described, the combination of a railroad switch, a signal circuit, means for opening and closing the circuit by the operation of the switch, and a signal device, said signal device comprising a support, a casing thereon having a depending portion provided with openings, a lever fulcrumed in the casing, an electro magnet, an armature connected with the lever and disposed above the electro magnet and arranged at one side of the fulcrum of the lever, a weight mounted on the lever at the side of the fulcrum opposite from the armature, a vertically-extending link depending from the lever at the end thereof opposite from the

weight, and a target suspended on the link and movable back and forth with respect to the opening of the casing and counterbalanced by the said weight.

2. In an apparatus of the class described, the combination of a railroad track, a switch, a member for throwing the switch, a circuit closer disposed at one side of the switch and including normally separated contacts, an element connected with the extremity of the said member and arranged to move the contacts into engagement, a plurality of signaling devices arranged at distant points in opposite directions from the switch, a metallic return circuit between both signaling devices, and a shunt between the two sides of the circuit and connected with the said contacts, each signaling device comprising a casing having an opening, a lever fulcrumed in the casing, a weight on the lever at one side of its fulcrum, a target suspended from the extremity of the lever opposite from that having the weight, an electro magnet supported in the casing and connected with the said circuit, and an armature suspended on the lever at a point between its fulcrum and the target and arranged to lower the target when the circuit is completed.

3. In an apparatus of the class described, the combination of a track switch, signaling devices located at a distance from the switch at each side of the latter, a metallic return circuit between both devices, a shunt circuit between the two sides of the said metallic circuit, a circuit closer including a pair of normally separated contacts and connected in the shunt circuit, a source of current connected in series with the circuit closer, a casing mounted at one side of the switch and inclosing the said source and circuit closer, a member extending into the casing and mounted to engage one of the contacts for pressing the latter against the other contact to close the circuit, means in the casing for guiding the said element, a member connected with the switch to move the same, and a hinge joint between the member and element for actuating the latter simultaneously with the opening and closing of the switch.

In testimony whereof, we affix our signatures in presence of two witnesses.

DAVID H. COKER.
WHITFIELD A. SCARBROUGH.

Witnesses:
DANL. CAWDEN,
A. SHARPE STEWART.