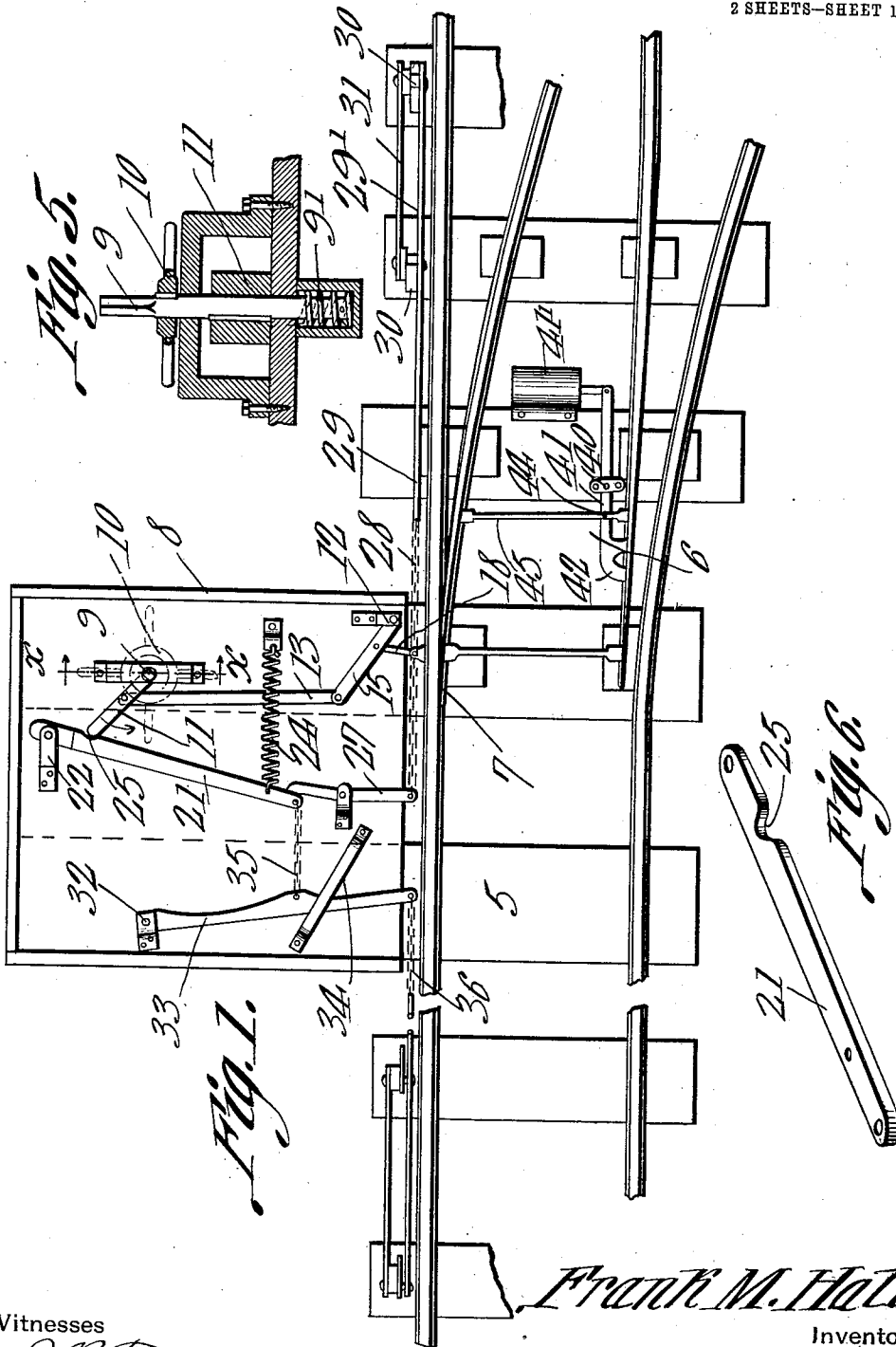


F. M. HALL.
RAILROAD SWITCH.
APPLICATION FILED MAY 12, 1911.

1,018,314.

Patented Feb. 20, 1912.

2 SHEETS—SHEET 1.



Witnesses
J. P. Tomlin
L. H. Wilson

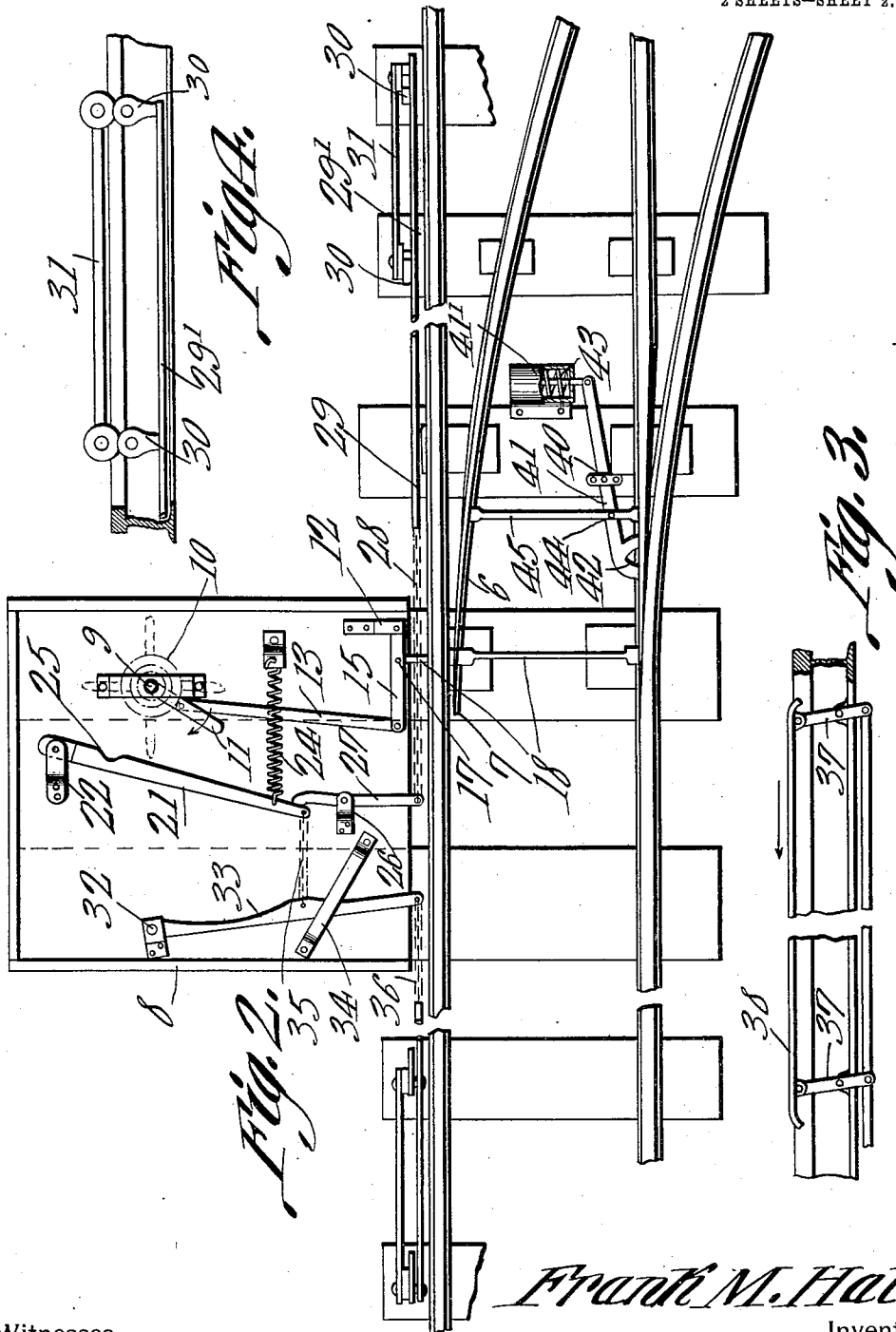
Frank M. Hall,
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 Attorneys

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UNITED STATES PATENT OFFICE.

FRANK M. HALL, OF BELLEFLOWER, ILLINOIS, ASSIGNOR OF ONE-NINTH TO JOHN A. BOURNE, ONE-NINTH TO JOHN BAXTER, ONE-NINTH TO WILLIAM J. ROSE, ONE-NINTH TO JEPHTHA BROOKS, ONE-NINTH TO FLOYD A. POE, ONE-NINTH TO WILLIAM W. BRANDON, ONE-NINTH TO FRED J. DUNN, AND ONE-NINTH TO ROBERT N. JENKINS, ALL OF BELLEFLOWER, ILLINOIS.

RAILROAD-SWITCH.

1,018,314.

Specification of Letters Patent.

Patented Feb. 20, 1912.

Application filed May 12, 1911. Serial No. 626,792.

To all whom it may concern:

Be it known that I, FRANK M. HALL, a citizen of the United States, residing at Belleflower, in the county of McLean and State of Illinois, have invented a new and useful Railroad-Switch, of which the following is a specification.

This invention relates to an improvement in railroad switches, which is designed to perfect the construction set forth in applicant's Patent No. 915,854, dated March 23, 1909, and the primary object of the present invention being the provision of a train operated switch, which may be operated, or rather set in operation by a train approaching in either direction, the setting or closing of the switch being indicated simultaneously by a semaphore, a housing being provided to receive the vital parts of the mechanism whereby the same cannot be tampered with without access to the housing.

A further object of the invention is the provision of a switch having means upon both sides thereof to be set in operation by a train approaching in either direction, combined with a switch locking mechanism held in such locked position by a spring held semaphore mechanism.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

In the drawings:—Figure 1 is a plan view of a railway switch equipped with an improved switch throwing device, showing the latter in locked position, and the switch open. Fig. 2 is a similar view with the switch closed. Fig. 3 is a detail view of one form of train operated treadle or tappet. Fig. 4 is a detail view of another form. Fig. 5 is a detail sectional view on line X—X of Fig. 1. Fig. 6 is a perspective view of the main latch lever.

Referring to the drawings, the numeral 50 designates the main line, 6 the switch, and 7 the switch points, all being of the usual and well known construction.

Arranged to one side of the main line adjacent the terminals of the switch points, is a casing 8, which forms a housing for the switch-throwing mechanism. Mounted for rotation in the casing is the semaphore arm or standard 9, having the housed spiral spring 9', to normally exert a tension to rotate the arm 9 to close the switch, as will hereinafter appear. Mounted upon the arm or shaft 9, is a hand wheel 10, whereby the spring 9' may be wound, and the semaphore manually returned to safety. Secured intermediate of the semaphore arm 9, is a cross arm 11, to which is imparted the rotary movement by the spring 9'.

Secured to the bottom of the casing 8, is a keeper 12, to which is pivoted a switch throwing lever 15, the outer end of which is pivoted to the lower end of the bar 13, whose upper end is pivoted in turn to the arm 11, thus permitting the spring 9', to have a tension upon the arm 11 so that the bar 13 is moved toward the main line. The switch throwing lever 15 is pivotally connected at 17 with the extremity of the bridle bar 18, which is rigidly secured to the switch points 7, adjacent their free extremities, and which operates to move the switch points into closed or open position relatively to the main line, as the switch-throwing lever 15 is actuated.

For locking the switch in open position, a locking lever or member 21, is pivotally mounted at one end in a bracket 22, and is yieldingly held in engagement with the cross arm 11, through the medium of a spiral spring 24, which exerts a tension to pull upon the front face of the locking member. A notch 25 is formed in the locking member or lever 21, for the reception of the adjacent end of the cross arm 11, when the latter is in engagement with the cross arm, as clearly shown in Fig. 1.

Pivotally mounted at 26, is an operating lever 27, the short end of which is held in

abutting contact with the free end of the locking member or lever 21, and the long end of which is connected to a flexible cord or chain 28, which travels in a metal conduit 29, that extends along the outer side of the main line rail, as shown. The cord 28 is connected at its free end to the rod 29', which connects the two crank arms 30 operatively together, these crank arms 30, being in turn in operative relation to a train carried switch device to engage the treadle or tappet 31, which extends above the tread of the rail and is depressed by the device carried by a passing train. The tappet operates through the medium of the cord 28, to actuate the lever 27, and release the locking member 21, from engagement with the cross arm 11, so that the spring 9', will move arm 11, which will push upon the bar 13, which operates the lever 15 to throw the switch, from the position as shown in Fig. 1 to that as shown in Fig. 2.

Pivotaly mounted at 32, is an operating lever 33, the free end of which is slidably fitted in a slotted guide bar 34, secured to the bottom of the casing 8. A chain or similar flexible connection 35, connects the free end of the operating lever with the free end of the locking member 21, as shown. A cord or flexible connection 36, is connected at one end to the free end of the operating lever 33, and at its other end to the crank arms 37, of a tappet or treadle 38, which extends above the tread surface of the rail to one side thereof and is depressed by a device carried by the locomotive of a train and operable manually therefrom; and operates through the medium of the cord 36 and operating lever 33, to release the locking member 21 from engagement with the cross arm 11, so that the switch is closed by a train approaching from the direction of the tappet 38.

Pivoted at 40, to one of the cross ties of the track between the rails, is a lever 41, one end of which terminates in a branched head 42, the extremities of which are held in abutting contact with one of the switch points 7, as shown. The opposite end of the lever 41, is connected with a coiled spring 43, mounted in a casing 41', said spring 43 operating to rock the lever 41. Pivotaly connected at 44, to the lever 41, is a bridle bar 45, the extremities of which are rigidly secured to the switch points 7. The spring 43 exerts a pressure upon the free end of the lever 41 tending to resist the opening of the switch and operating to rock said lever, whereby to shift the bridle bar and normally hold the switch closed.

It is therefore evident that the semaphore arm may be rotated until the cross arm 11 is in engagement with the notch of the locking member 21, simultaneously winding the

spring 9'; and in this position the parts of the switch will remain in open position to permit of a train passing from the main line to the siding. After the train has passed from the main line to the siding should the switch be left open, the next train approaching from either direction will through the medium of the above mentioned tappets operate to release the locking member 21 from engagement with the cross arm 11 and close the switch, as above described.

What is claimed, is:—

The combination with a switch, of an operating mechanism for operating the same from two oppositely disposed points, comprising a housing disposed adjacent to the switch points of the switch, a link connected to the switch points and projecting beyond the switch toward the housing, a lever having one end fulcrumed within the housing and connected intermediate of its ends to said link, a shaft mounted in the housing, a spring connected thereto for rotating the shaft toward the switch, a cross arm connected to and carried by said shaft, a long link having one end connected intermediate the ends of the cross arm and having its other end connected to the end of the lever, a locking member having one end pivoted within the housing beyond the journaling of the rotary shaft with its free end toward the switch, said locking member being provided with a notch to receive the free end of the cross arm to lock the same against the tension of the spring of the rotary shaft, a spring mounted within the housing and connected to the free end of said locking member for holding the same toward the rotary shaft, oppositely disposed train actuated devices one upon each side of the switch, a flexible connection connected to each one of said train actuated devices and extending toward the housing, a locking member holding and releasing lever pivoted within the housing and disposed to have its inner end in the path of to engage the extreme end of the locking member, the outer free end thereof projecting beyond the housing toward the switch and operably connected to one of the train actuated flexible connections, the actuation of the train actuated device operating said lever to move the locking member against the tension of the spring to release the rotary shaft, another locking member holding and releasing lever pivoted within the casing at its inner end and having its outer end projecting without the housing toward the switch and connected to the other flexible member of the train actuated device, and a flexible connection connected intermediate the ends of said last mentioned locking and holding lever and the extreme end of the

locking member, whereby the actuation of the train actuated device connected to the last mentioned holding and releasing lever will actuate the same to pull the locking member against the tension of the spring to release the cross arm.

5 In testimony that I claim the foregoing

as my own, I have hereto affixed my signature in the presence of two witnesses.

FRANK M. HALL.

Witnesses:

R. N. JENKINS,

A. G. GOOCH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."