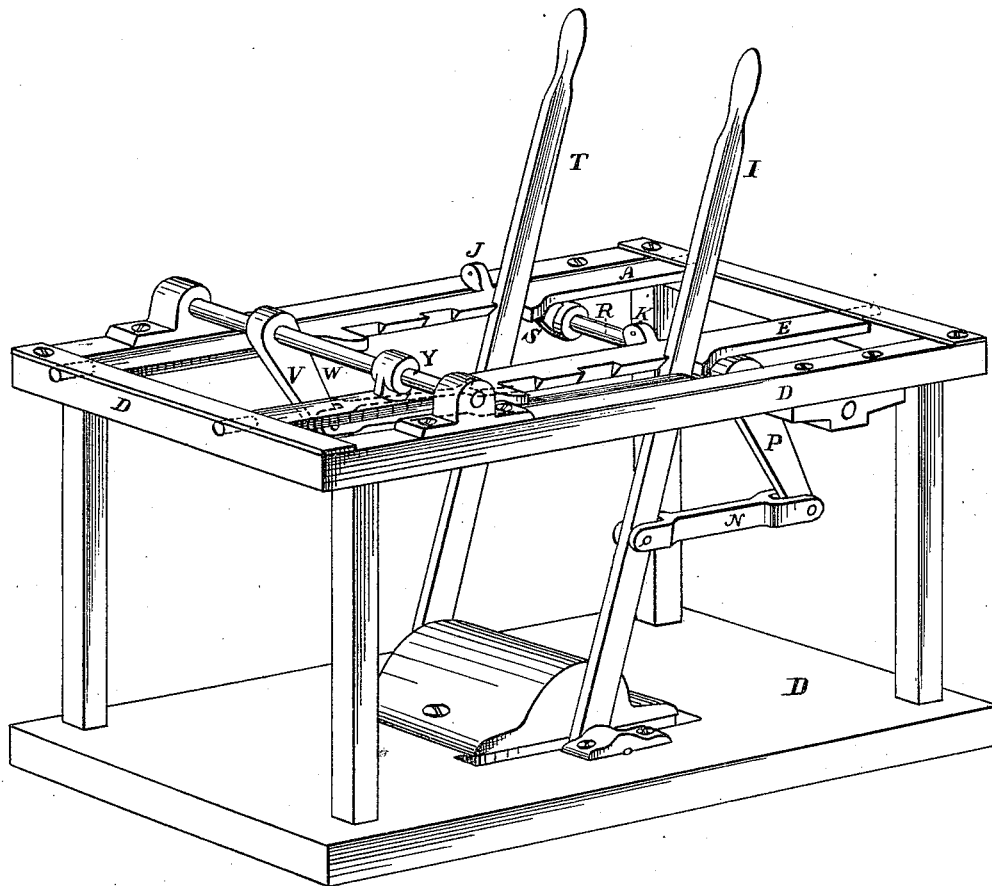


J. M. TOUCEY, W. H. SMITH & W. BUCHANAN.
Switch-Signaling Apparatus.

No. 164,612.

Patented June 15, 1875.

Fig. 1.



Witnesses:

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Robt. M. Fryer

Inventors

John M. Toucey

William H. Smith

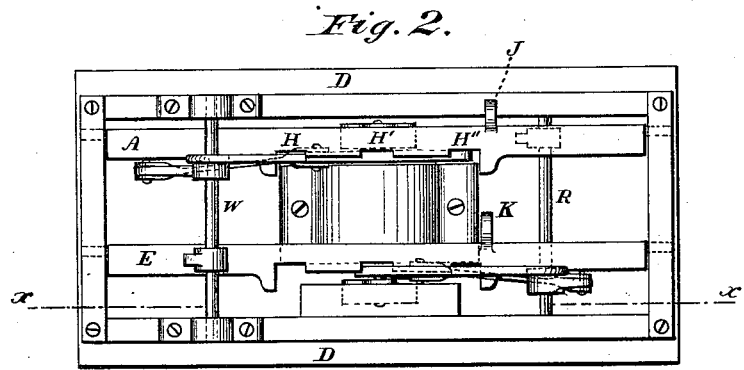
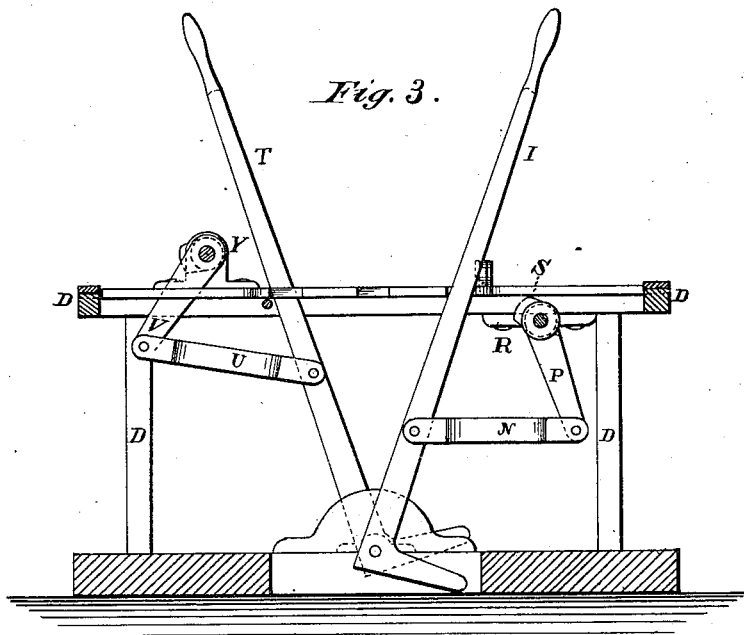
William Buchanan

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Inventor:

John M. Toucey
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William Buchanan

UNITED STATES PATENT OFFICE.

JOHN M. TOUCEY AND WILLIAM H. SMITH, OF NEW YORK, AND WILLIAM BUCHANAN, OF YONKERS, N. Y.

IMPROVEMENT IN SWITCH-SIGNALING APPARATUS.

Specification forming part of Letters Patent No. 164,612, dated June 15, 1875; application filed January 7, 1875.

To all whom it may concern:

Be it known that we, JOHN M. TOUCEY and WILLIAM H. SMITH, of the city, county, and State of New York, and WILLIAM BUCHANAN, of Yonkers, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Signal Apparatus for Railroads, of which the following is a specification:

The object of our invention is to produce an apparatus by means of which railroad signals and switches can be operated effectually; and it relates to that class of inventions designed for a regular system of signals in charge of one competent person at each prominent station along the road, whereby such signaling will be made to correspond with the switching operation of lines of track or tracks leading to and from such stations, by means of which the present danger arising from misplaced switches will be avoided, as we render it impossible for the operator to break the connection of the main line of track without first giving the signal for danger, which cannot be again withdrawn until the track is again right.

But in order to fully describe our invention, that its novelty and usefulness may be readily observed, we will proceed at once with the general description, having reference to the accompanying drawing, in which—

Figure 1 is a perspective view of the apparatus, in which two levers only are used; but we wish here to state that this number may be increased to any extent desired. Fig. 2 is a top or plan view, with the levers standing in opposite directions. Fig. 3 is a sectional elevation through the line *x x*, Fig. 2.

Similar letters of reference indicate corresponding parts in the several figures.

A and E represent two oscillating bars, supported at each end by journals resting in bearings in the main frame D. The journals of these oscillating bars are located at one side, the object of which is to throw the preponderance of weight on the opposite side, in which are the notches H H' H'', so as to hold the bars in position by their own gravity, to insure the engagement of the notches in said bars with the levers I and T. Pedals are attached to the lugs J and K, projecting from the sides

of the bars opposite the notches, to which pedals pressure is to be applied sufficient to overcome the weight of the bars when it is desired to disengage the levers. The levers I and T are pivoted in the bottom part of the frame D, and are for the purpose of operating the switch and signal, with which they are respectively connected. R and W are two shafts arranged at right angles to the bars A and E, and have their bearings in the sides of the frame. They are arranged to turn in their bearings, and are located one above the oscillating bars and the other beneath them. Where it is desirable, however, they may both be arranged above or both below without departing from the nature of the invention. To these shafts are rigidly secured the arms P and V, which arms are connected, respectively, with the levers I and T by means of the connections or links N U. Collars S and Y, with projections or toes extending from one side, are also rigidly secured upon the shafts R and W, the object of which is to lock the oscillating bars, to prevent their turning, by bringing the said toes in contact therewith.

In the arrangement shown in Fig. 1, I denotes the switch-lever, by which the switch is operated, and T denotes the signal-lever, which operates the signal to indicate whether the switch is open or closed with respect to the main track. It will be observed that when the levers stand in the position there shown the toe on the collar Y bears on the upper side of the bar E, by which said bar is prevented from turning in its bearings, and the switch-lever I is thereby securely locked, and cannot be moved to operate the switch until the lever T is first moved to the left, by which movement the shaft W is turned sufficiently to carry the toe on the collar Y out of contact with the bar E, which may then be oscillated to release the switch-lever I. The movement of the lever T to release the lever I also, at the same time, operates the signal, and sets it in a position to indicate "danger." If, now, the switch-lever I be moved to the left to operate the switch, and thereby break the main line, the toe on the collar S will be brought to bear against the under side of the bar A, which will thereby be locked against turning or oscillating, so that

the signal-lever cannot be moved back to set the signal to indicate "safety" or "all right," until the switch-lever has first been moved back to connect the main line. Thus it will be seen that the switch-lever cannot be moved to operate the switch until the signal-lever has first been moved to set the signal in a position to indicate "danger," and then, when the switch-lever is moved to break the main line, the movement thereof locks the signal-lever, so that the signal cannot be set back while the main line is broken.

Thus, when both levers stand in the same direction, one of the oscillating bars will be locked, so that its lever cannot be moved without first moving the opposite lever.

Either of the levers may be connected with either the switch or signal by simply reversing the frame.

What we claim as our invention, and desire to secure by Letters Patent of the United States, is—

The combination of switch and signal levers, locking-bars A E, and shafts carrying collars or stops, being constructed to operate substantially as and for the purpose above set forth.

JOHN M. TOUCEY.

WILLIAM H. SMITH.

WILLIAM BUCHANAN.

Witnesses:

A. R. FRYER,

ROBT. M. FRYER.