

No. 762,413.

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C. M. HURST.
SIGNAL AND SWITCH TRIP.

APPLICATION FILED FEB. 27, 1902. RENEWED JAN. 7, 1904.

NO MODEL.

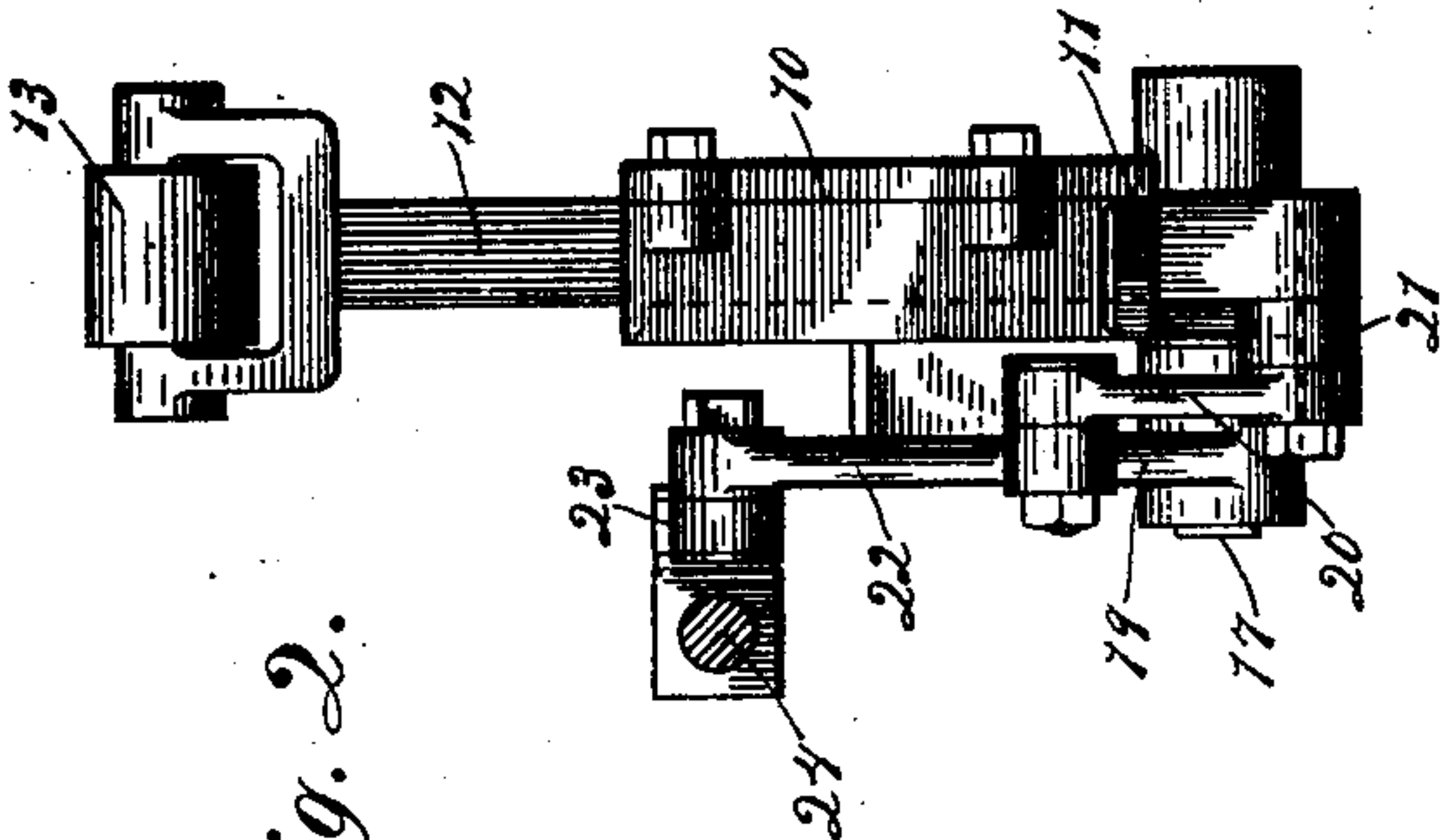


Fig. 2.

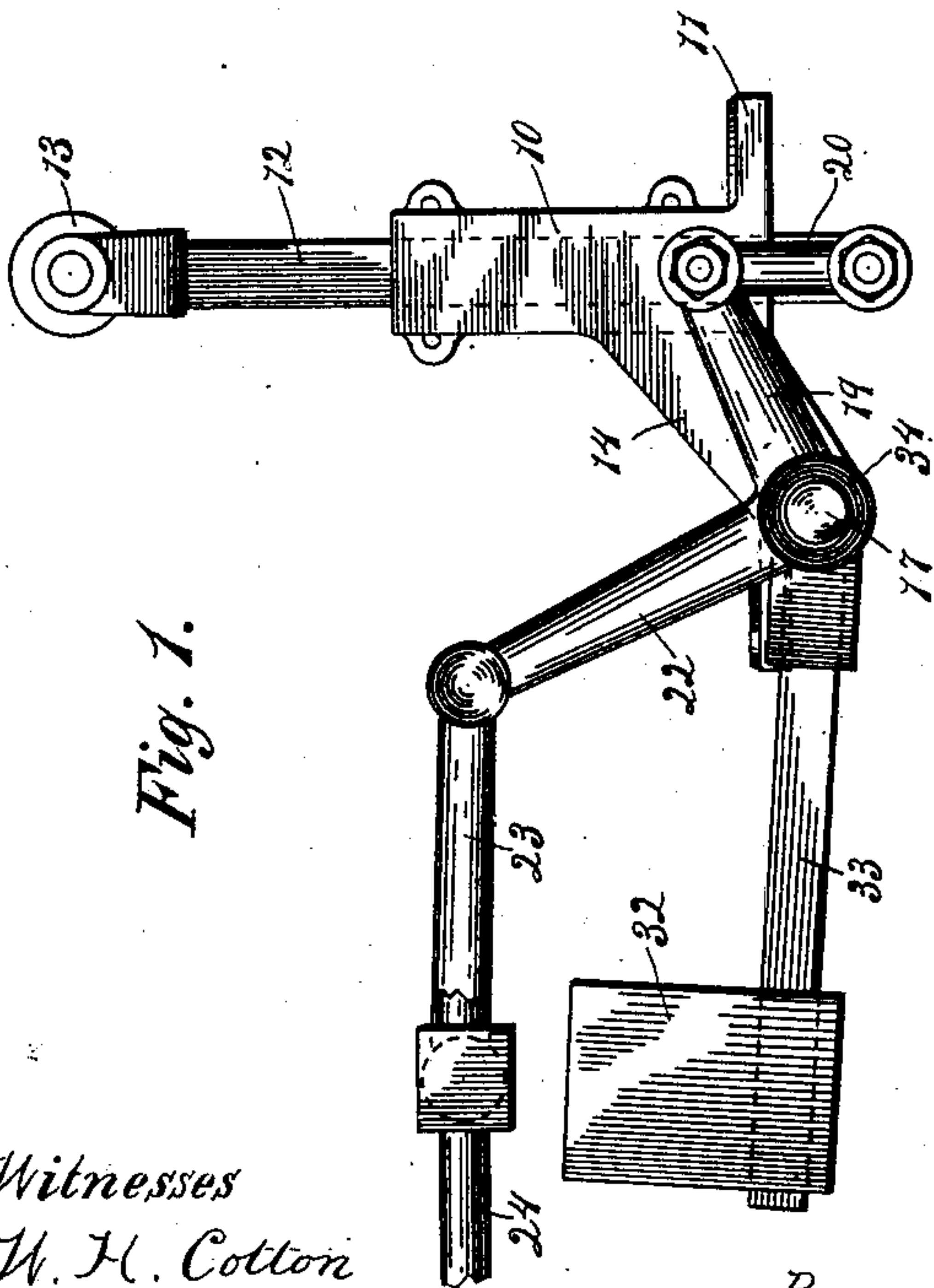


Fig. 1.

Witnesses
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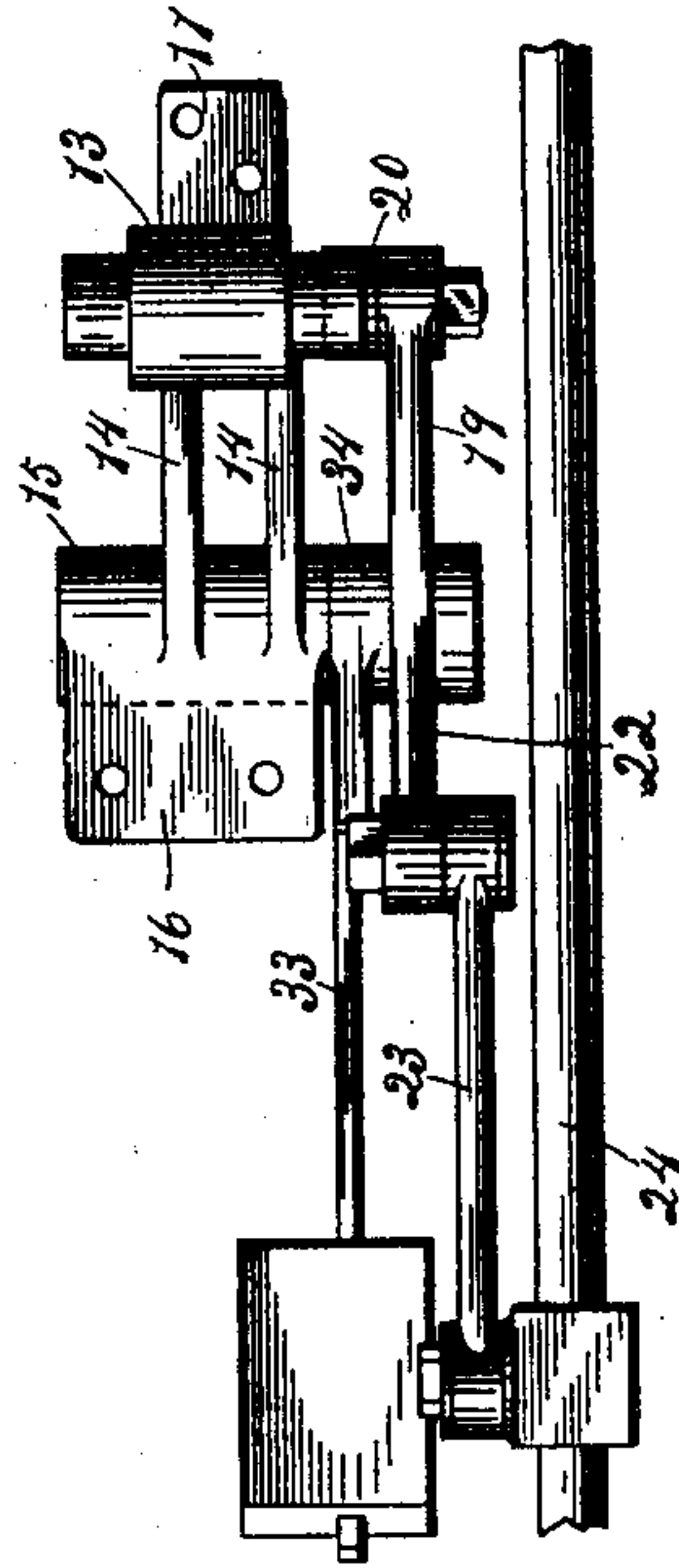
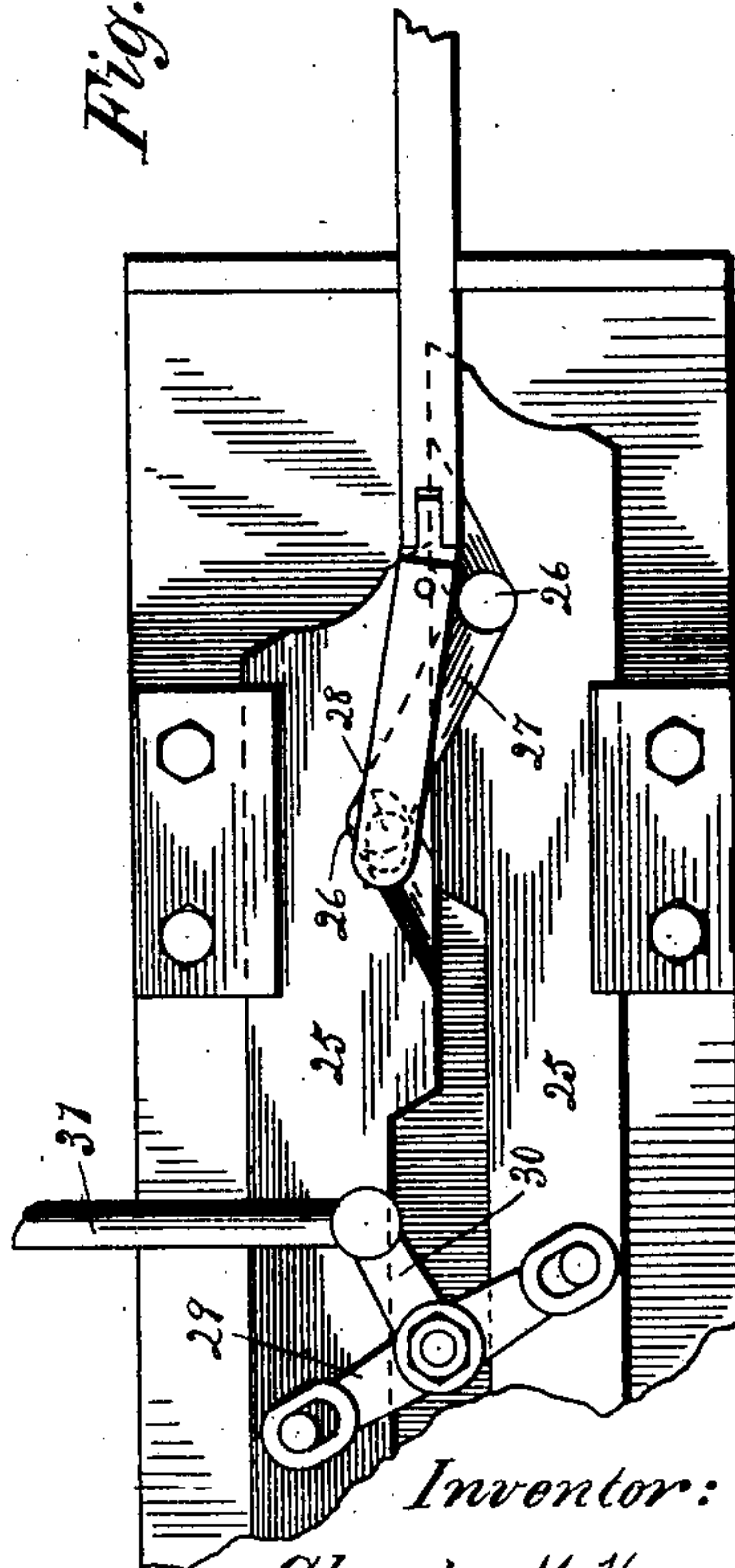


Fig. 3.



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CHARLES M. HURST, OF RAWLINS, WYOMING.

SIGNAL AND SWITCH TRIP.

SPECIFICATION forming part of Letters Patent No. 762,413, dated June 14, 1904.

Application filed February 27, 1902. Renewed January 7, 1904. Serial No. 188,139. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. HURST, a citizen of the United States, and a resident of Rawlins, county of Carbon, and State of Wyoming, have invented certain new and useful Improvements in Signal and Switch Trips, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

This invention relates to a tripping device designed to be actuated by a passing locomotive or car, and particularly adapted for use in connection with automatic railway switches, switch-signals, semaphores, and like mechanisms, the object thereof being to provide a mechanism of this character which shall be simple in construction and effective in operation.

The invention comprises the arrangement and combination of parts hereinafter fully described, specifically designated in the appended claims, and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the tripping device constructed in accordance with my invention. Fig. 2 is a front elevation thereof; and Fig. 3 is a plan view of the tripping mechanism, which is illustrated in connection with the shifting mechanism of an automatic railway-switch.

Referring to the drawings, 10 indicates a vertically-disposed hollow guide-casing designed to be located at some convenient point along the railway-line and secured to a suitable support, such as a railway-tie.

Adapted to reciprocate in the casing 10 is a bar 12, carrying at its upper end a roller 13, the axis of which is at a right angle to the railway-line. Connected by an arm or arms 14 to the supporting-casing 10 is a sleeve 15, having a securing-lug 16, by means of which and a lug 11, extending from the casing 10, the supporting-frame, comprising the casing 10, arms 14, and sleeve 15, may be securely fastened in place.

Fixed in and projecting from the sleeve 15 is a pin or stub-shaft 17, having mounted therein a bell-crank lever 18, one arm, 19, of which extends toward the casing 10 and is jointed to a link 20, which in turn is pivotally

connected, as at 21, to the lower end of the vertically-reciprocating bar 12. The other arm, 22, of the bell-crank lever extends upwardly and is connected by a link 23 to a rod 24, coacting with the switch-shifting or signal-operating mechanism.

In the drawings I have shown the tripping device in connection with a switch-shifting mechanism shown and claimed in an application filed by me and to which reference is made for a fuller understanding thereof. Briefly described, the said shifting mechanism comprises a pair of independently-movable oppositely-reciprocating slide-bars 25, each of which is provided with a vertical socket 26 and a triangular recess extending from the socket to the inner edge of the bar, whereby when the two slides are reciprocated to the limit of their movement the adjacent portions of the recesses jointly form a guide-groove, as 27, between the sockets 26. The end of the rod 24 is provided with a pivoted hook 28, normally engaging the inner of the sockets 26. Motion is communicated from the slide with which the hook 27 of the bar 24 happens to be in engagement to the other bar, so as to insure simultaneous reciprocation of the slide-bars, by a link 29, pivoted between and connected at its ends to the bars and from which extends an arm 30, jointed to a switch or signal rod 31.

The mechanism of the tripping device, the rod 24, and likewise the hook 28 are returned to normal position after each actuation by a weight 32 on an arm 33, projecting from the hub 34 of the bell-crank lever 18, or other suitable means.

In operation a member or bar carried by a passing locomotive or car engages the roller 13 and forces the bar 12 downwardly, thereby oscillating the bell-crank lever 18 and pulling the rod 24 outwardly and through the medium of the hook 28 reciprocating the bars 25 to their other position, this action resulting in the throwing of the switch, signal, or other mechanism being operated. As soon as the car member clears the roller 13 the weight 32 will return the bar 12 and rod 24 to their original positions, moving the hook forward through the guide-groove between the socket

with which it is in engagement to the socket of the other sliding bar. On the next operation of the tripping mechanism the sliding bars will be returned to their first position, the hook 28 engaging the bars in alternation and moving back after each operation to the inner of the sockets of the bars.

I claim as my invention—

1. In a tripping device for railway switches, signals, &c., in combination, a vertical guide-casing, a bar reciprocating in the casing, a sleeve attached to the casing, a bell-crank lever pivotally supported by the sleeve, a link connecting one arm of the lever with the reciprocating bar, a rod for communicating motion to the mechanism operated, a link connecting the other arm of the lever with the rod, and a weighted arm projecting from the lever for returning the parts to normal position after each operation.

2. In a tripping device for railway switches, signals, &c., in combination, a vertical guide-casing, a bar reciprocating in the casing, a bell-crank lever, a link connecting one arm of the lever with the reciprocating bar, an operating-rod, a link connecting the other arm of the bell-crank lever with the operating-rod, a pair of simultaneously-moving oppositely-reciprocating slide-bars, a hook on the rod for alternately engaging the slide-bars to reciprocate the same, and means for transmitting motion from the slide-bars to the mechanism operated.

3. In a tripping device for railway switches, signals, &c., in combination, a vertical guide-casing, a bar reciprocating in the casing, a bell-crank lever, a link connecting one arm of the lever with the reciprocating bar, an operating-rod, a link connecting the other arm of the bell-crank lever with the operating-rod, a pair of simultaneously-moving oppositely-reciprocating slide-bars, each of which is provided with a socket and a triangular recess, the said recesses being designed to form a guide-groove between the sockets, a hook pivotally connected to the rod and for alternately engaging the sockets to reciprocate the bars, means for transmitting motion from the slide-bars to the mechanism operated, and a weight for returning the tripping device to its original position.

4. In a tripping device for railway switches, signals, &c., in combination, a vertical guide-casing, a bar reciprocating in the casing, a sleeve attached to the casing, a bell-crank lever pivotally supported by the sleeve, one arm thereof being connected with the reciprocating bar, a rod for communicating motion to the mechanism operated, a link connecting the other arm of the lever with the rod, and means for normally returning the reciprocating bar to its upper position.

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