(No Model.) 2 Sheets—Sheet 1

A. H. BAKER.

RAILROAD SIGNAL.

No. 271,296. Patented Jan. 30, 1883.

Fig. 1.

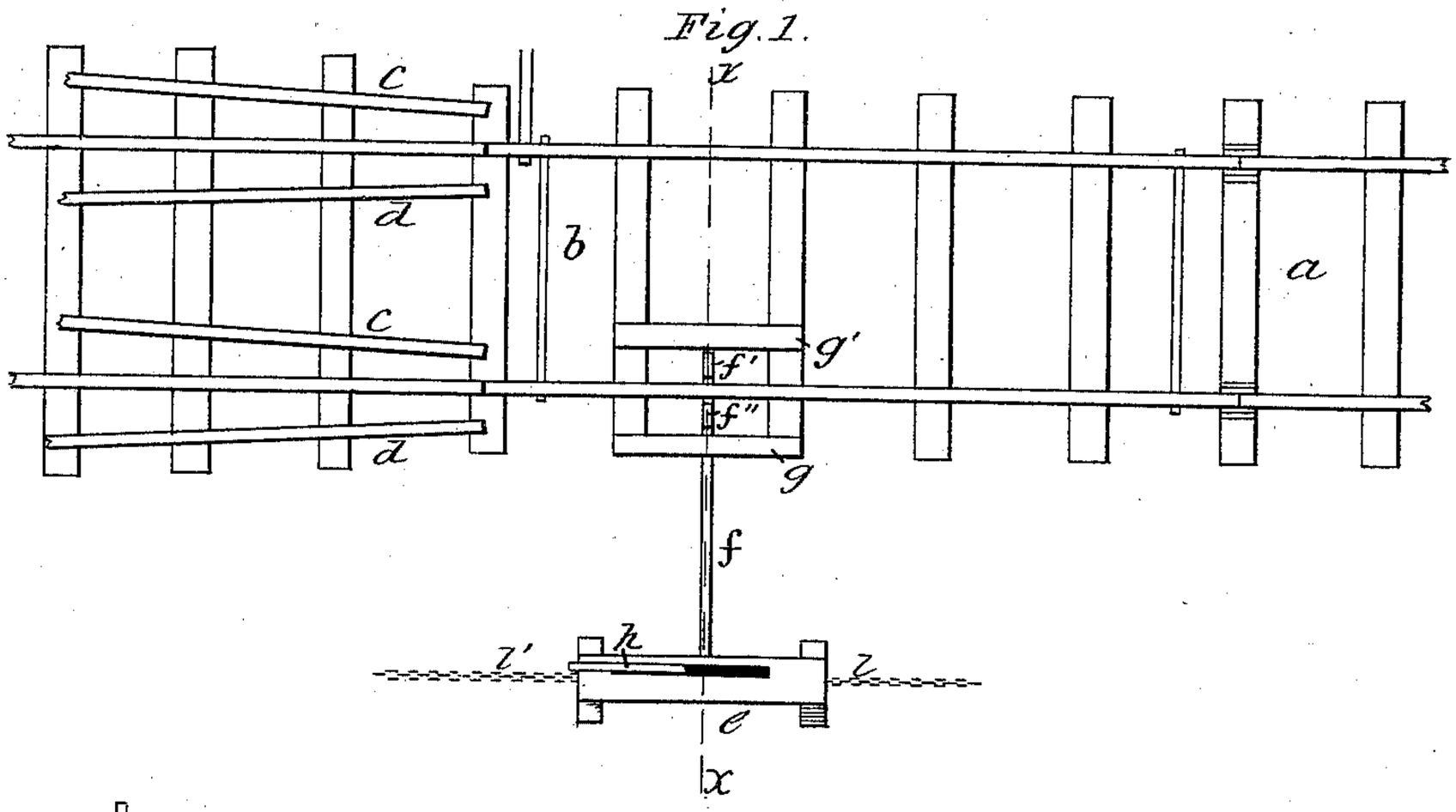


Fig. 2

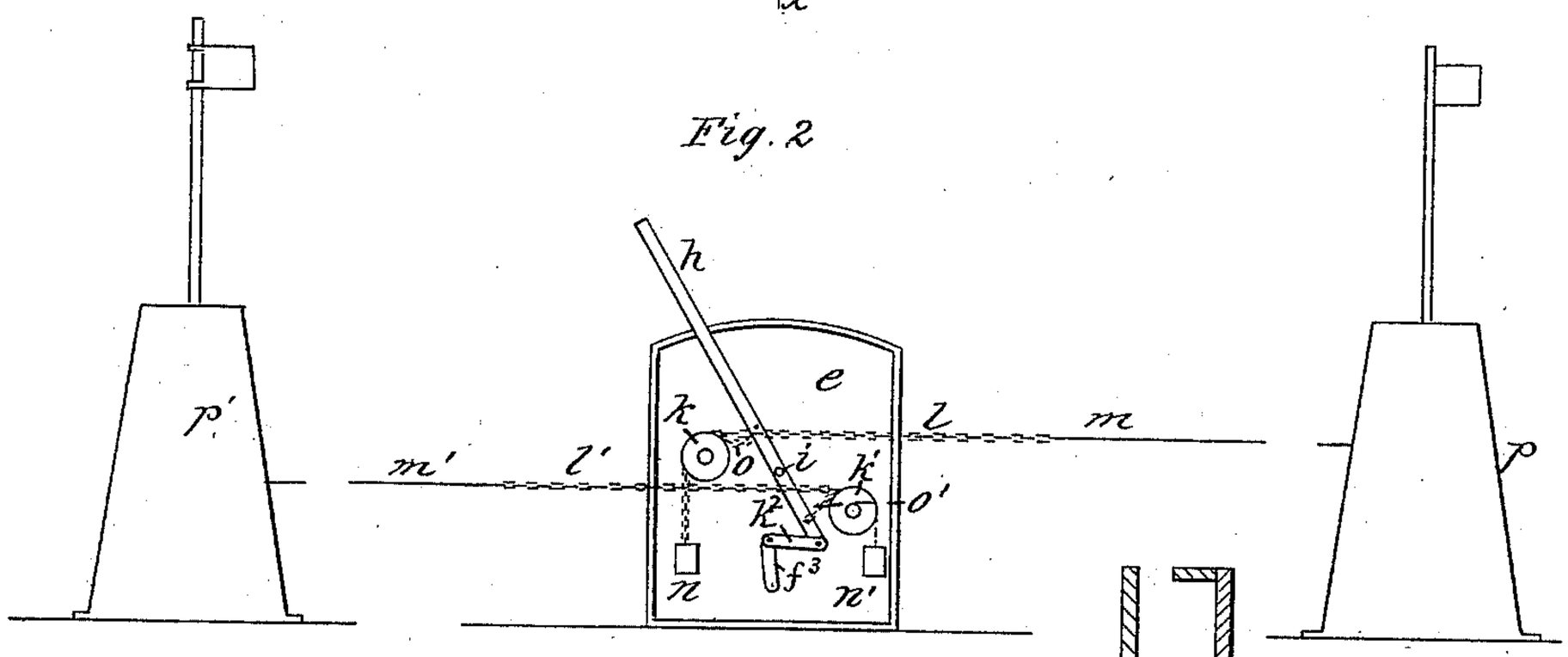
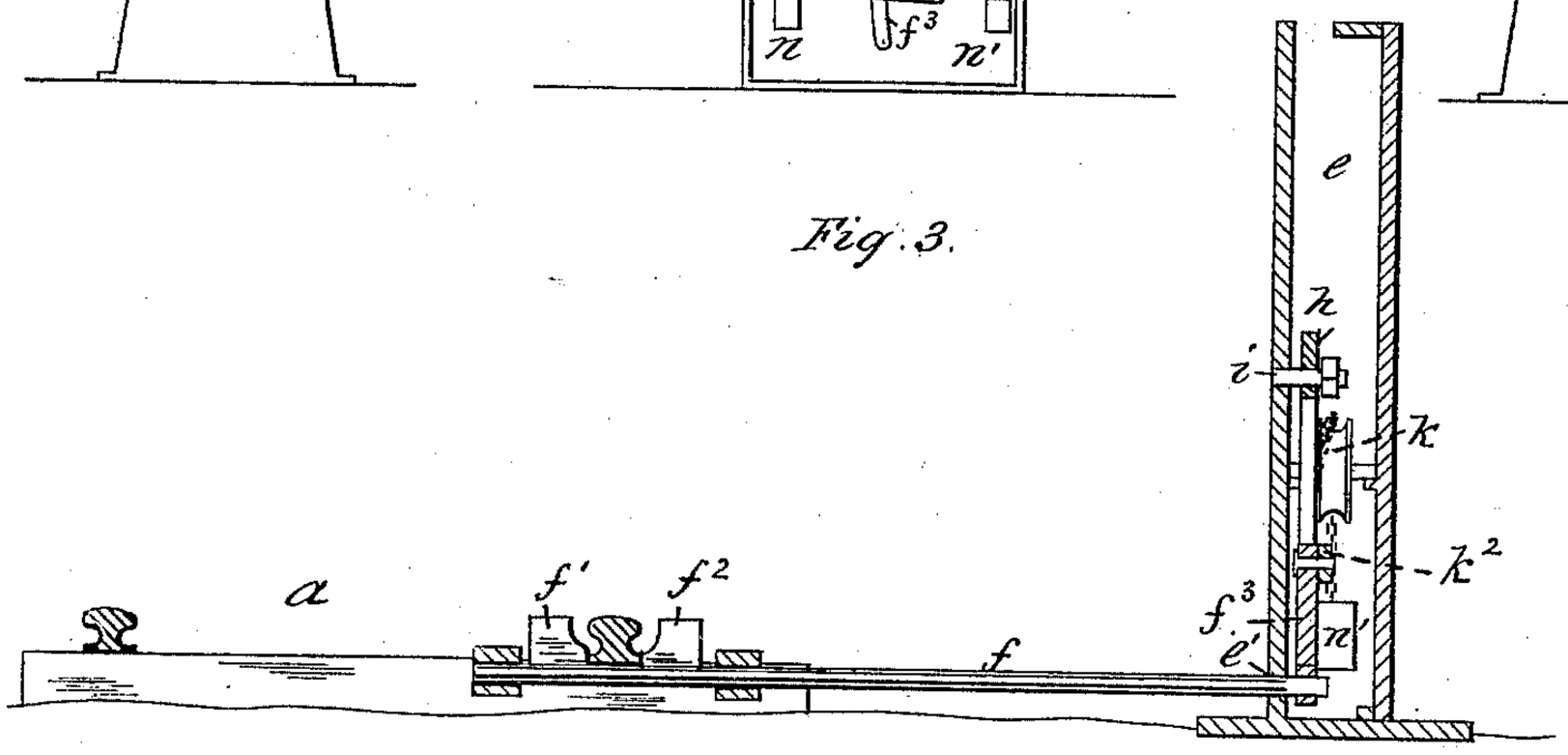


Fig. 3.



Witnesses:

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(No Model.) 2 Sheets—Sheet 2.

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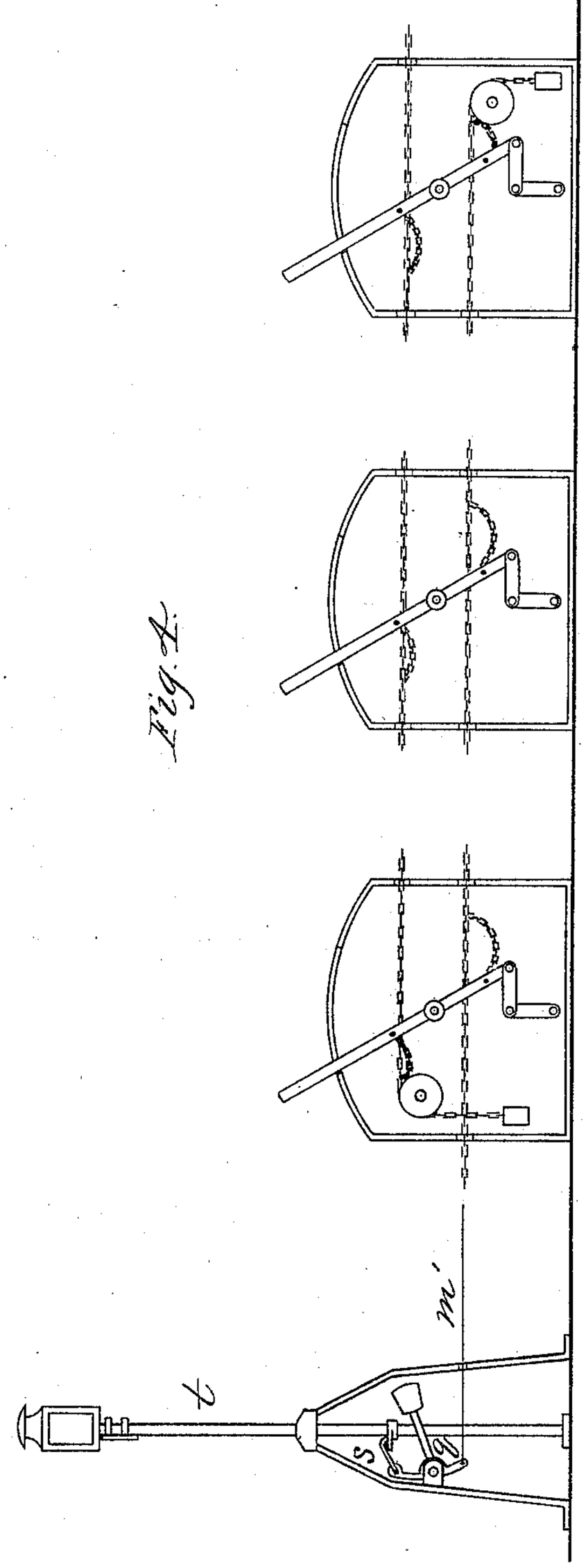

Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

AUGUSTUS H. BAKER, OF HARTFORD, ASSIGNOR OF ONE-HALF TO HENRY L. PINNEY, OF SOUTH WINDSOR, CONNECTICUT.

RAILROAD-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 271,296, dated January 30, 1883.

Application filed May 17, 1882. (No model.)

To all whom it may concern:

Be it known that I, AUGUSTUS H. BAKER, of Hartford, in the county of Hartford and State of Connecticut, have invented a certain new and useful Improvement in Railroad-Signals, of which the following is a description, reference being had to the accompanying drawings, where—

Figure 1 is a plan view of my device as applied to a switch in a railroad-track. Fig. 2 is a side view of interior of a lever-stand, showing mechanism and connections. Fig. 3 is a view, partly in cross-section, of track and lever-stand on plane denoted by line *x x*, Fig. 1. Fig. 4 is a diagram view of a series of lever-stands, showing the method of connecting the mechanism of several stands with main signal-wires operating each way from the extreme stands of the series along the track. In Fig. 4 only one of the connected signal-stands is shown.

My invention relates to devices used near a railroad-line to show, by signals displayed at suitable points, the condition of the track as to safety for the passage of trains.

It consists of switch-locking and signal-operating mechanism operated simultaneously by means of a lever set at any convenient place of access for a switchman—as near a junction, a switch, a draw-bridge, or the like—in connection with signals placed at any required distance or distances from the lever-stand. This device is independent of the switch-throwing mechanism, which may be of any ordinary form.

In the accompanying drawings, the letter *a* denotes a railroad-track; *b*, a switch, (shown as a "three-throw switch;") *c*, a branch track to one side of the main track; *d*, a branch to the other side of the same. At a convenient distance on either side of the switch a lever-stand, *e*, is securely placed, and from it, at about the level of the bottom of the switch-rail, a stout bar of iron, *f*, extends toward and under the nearest rail of the switch, and passes through suitable bearings, *g g'*, adapted to be secured to the two nearest ties on either side of its path. The bar *f* is provided with wards f' f^2, arranged one on each side of and loosely holding the switch-rail, and it is so held in the bearings as to rotate through the agency of the lever *h*, attached by pivot *i* to the stand *e*, operating in a vertical plane, and pivotally connected by pitman k^2 to the crank f^3 on the inner end of the bar *f*, which passes through the socket *e'* in the lever-stand.

In its function as a safety-lock for switches and the like my device operates as follows: When in position, as shown in Fig. 3, the switch *b* cannot be thrown out of the main line, as one rail is held between the upturned sides of the wards f' f^2. By throwing the lever *h* over, the rod is rotated and the wards are turned so as to lie in a plane just under the switch-rail. The switch can now be thrown in any desired direction; but the lever *h* cannot be thrown back until the switch is set for the main track, any attempt to do so being resisted by the ward striking the switch-rail just over it. These wards, however, offer no obstruction to the operation of the lever when the main track is continuous. The lever-stand contains other mechanism designed to operate signals. But one signal may be needed, and in that event the connections from the lever-stand are made in but one direction. In Fig. 2 signals each way from the stand are shown as connected, and in this event, on each side of lever *h*, securely pivoted to the stand *e*, are pulleys *k k'*, over which operate chains or flexible cords *l l'*, connecting the main signal-wires *m m'* and suspended governor-weights *n n'*. The lever *h* is attached to chain *l* by adjustable flexible connecting chain or cord *o*, and to *l'*, at a point on the opposite side of the pivot, by similar chain, *o'*.

At any desired distance either way from the lever-stand signal-stands *p p'* are erected for the display of signals for the track. Each stand contains a T-shaped lever, *q*, pivoted to operate in a vertical plane, and pivotally connected by pitman *s* with an arm rigidly secured to the upright signal-rod *t*, which bears a lantern or other signal. The lower arm of the lever *q*, as shown, is connected with the main signal-wire *m'*, by which the signal is operated from the lever-stand. When the main track is continuous and the switch is locked the signals show "safety;" but as soon as the lever is thrown over to unlock the switch-rail the signal-wires *m m'* are slackened by the lifting of the gov-

ernor-weights through the agency of the connecting-chains, and the weighted levers in the signal-stands operate the signals and display "danger." If several lever-stands are used, as may be the case when several switches are to be connected with the same signal or signals, the connections are made as shown in Fig. 4, the governor-weight being used only in the outer stands of the series. This governor-weight pulls constantly on the main wire, and serves to compensate its expansion and contraction, the connecting-chain being so adjusted as to leave slack enough for these changes, and the weight also serves to operate the signals when the lever releases it on being thrown back.

It is obvious that when a signal is to be placed but one way from the lever-stand only one main wire and its operating-weight and connections are used, and also that the stand may be placed near a switch, station, railroad-crossing, or a bridge, and used for operating signals without regard to its use as a switch-locking device.

My device is intended to apply to any switch without regard to the particular switch-stand and connections used, and is independent of it. This constitutes one of the advantages of my invention, as the signals may be operated without disturbing the switch—a feature of importance when anything—as a wreck—obstructs the operation of the switch. Another advantage is in the adjustability of the connecting-chains, whereby the amount of the pull of the lever may be regulated by changing the point of connection between the chains. The lever may be constructed to sweep any given arc, and the chain-connection made in accordance with the amount of pull upon the main wires that may be required in view of their length or the possible elasticity of any of the connections.

I claim as my invention—

1. In a railway switch-signal, in combination, switch *b*, rotary locking-bar *f*, having wards $f' f^2$, lever-stand *e*, lever *h*, pitman k^2, crank f^3, connecting-chain *o*, pulley *k*, governor-weight *n*, chain *l*, signal-wire *m*, and connected signal, all substantially as described.

2. In a railway switch-signal, in combination, switch *b*, rotary locking-bar *f*, having wards $f' f^2$ and crank f^3, pitman k^2, lever-stand *e*, and lever *h*, connected with one or more signal-wires, whereby signals at a distance one or both ways along the line of track may be operated, all substantially as described, and for the purpose set forth.

AUGUSTUS H. BAKER.

Witnesses:
CHAS. L. BURDETT,
W. H. MARSH.