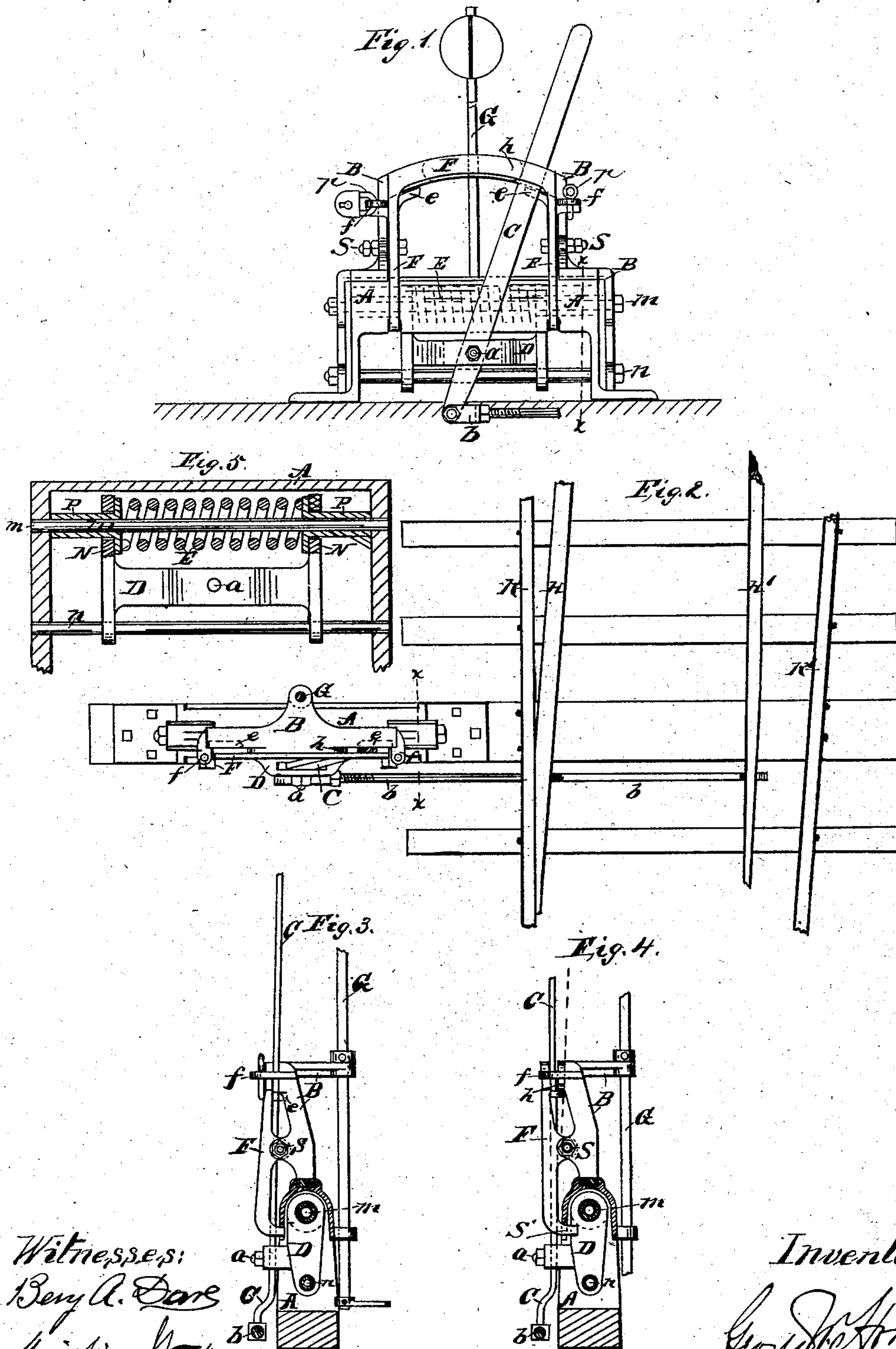


(No Model.)

G. W. HORNE.
SAFETY SWITCH STAND.

No. 290,194.

Patented Dec. 11, 1883.



Witnesses:
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GEORGE W. HORNE, OF NEW YORK, N. Y.

SAFETY-SWITCH STAND.

SPECIFICATION forming part of Letters Patent No. 290,194, dated December 11, 1883.

Application filed June 12, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. HORNE, a subject of Her Majesty Queen Victoria, and a resident of New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Safety-Switch Stands, of which the following is a specification.

My invention relates to means for operating switches, which, when closed, are held in place by a spring, so that a train passing through the closed switch is permitted to force it over, and so pass onto the main line without derailment, and when it has passed the switch the same will close automatically, thereby leaving the main line always open and free for trains to pass either way.

It consists in combining with a switch-stand and lever for actuating the switch-points a powerful spring and moving fulcrum, which is connected to said lever and automatically locked and unlocked, so that when the spring is locked the switch may be freely moved and set in either direction by the lever independently of the spring; but when set as desired and the lever locked, the spring and movable fulcrum is automatically unlocked, and said switch is then under the control of the spring or moving fulcrum, leaving it in the condition of a spring safety-switch.

The object of my invention is to devise an absolute safety-switch stand which is manipulated with ease and certainty, and in which, by the automatic arrangement of my locking device, the act of unlocking the lever to move the switch-points in either direction automatically locks the spring or moving fulcrum, thereby making same a fixed fulcrum, and thus making it impossible to lock the lever until the switch-points are in the proper place to correspond with the main-line rail. When the switch is properly set, the locking of the lever automatically unlocks the spring or moving fulcrum, thus leaving the switch perfectly safe against accidents of any kind, which will be hereinafter more fully explained, reference being had to the accompanying drawings, in which—

Figure 1 represents an elevation of switch-stand disconnected from the rails. Fig. 2 represents a plan of stand and switch-points and rails of main and siding lines. Fig. 3 repre-

sents a sectional elevation of switch-stand—section on line *x x* Figs. 1 and 2—showing the lever as locked and the switch-points under control of the spring and moving fulcrum, which is unlocked. Fig. 4 represents same view as Fig. 3, when the spring and moving fulcrum are locked, and the lever unlocked and free to move the switch-points in either direction. Fig. 5 represents an enlarged side elevation of top part of switch-stand in longitudinal section, showing the application of the moving fulcrum and spring.

Similar letters refer to similar parts in the several views.

A is a stand or case; B, arc or arched frame; C, lever; D, moving fulcrum-block; E, spring; F, locking-arm; G, lamp or signal rod; H H', switch-points; K K', fixed rails. K and H' represent siding-rails. H and K' represent main-line rails.

The lever C is pivoted to the fulcrum-block D at *a*. The lower end of said lever is attached to the switch-point H H' by the rod *b*. The upper end of lever extends above the arc or arch B, passing between same and the locking-arm F. Upon said locking-arm F is a projection, *e*, (shown in Fig. 1,) which extends back of the lever C, forming a slot or recess for the reception of the lever C.

On the inner face of the arc B is a projection, *h*, which extends the required length of the stroke or throw of the lever C, and which forms the lock for the lever when used as a safety-switch. The lever C, when drawn over, as shown in Fig. 1, past the end of projection *h*, drops against the face of arc B and moves freely in the recess thus formed by said arc and locking-arm F, and is secured in this position by a padlock or pin, *p*, through the lugs *f f*, attached to the arc B. The said locking-arm F is pivoted to the arc or frame B at *S*, the lower end of which arm F extends down and is formed with projections or detents *S'*, to pass through the case or stand A and embrace the ends of the moving fulcrum-block D. The said block is suspended in the stand upon the bars *m* and *n*. The spring is placed around the bar *m* in the top of case or stand A, between the projecting ears N of the block D. When the switch is locked over to either side by the lever C, as shown in Figs. 1 and 2, the flange of the wheel passing between the point

and the fixed rail will force them apart and draw the lower end of lever C in same direction, which also carries the fulcrum-block with it, which is pivoted to the said lever at *a*.

5 The spring E is thereby compressed, and said spring is prevented from passing along the bar *m* by the flanged sleeve P, along which the projecting ears N of block D move freely. The spring remains compressed until the train
10 has passed through the switch, and then the elasticity of said spring forces the fulcrum-block to the center and the switch-points back to their former position beside the fixed rail. The operation is the same when the switch is
15 set on either side.

When the switch is required to be set in either direction, the padlock or pin *p* is removed and the lever C is drawn forward of the projection *h*, as shown in Fig. 4. (The dotted
20 lines represent the position of lever C when locked, before being drawn forward.) The upper end of locking-arm F is also brought forward, (same being pivoted to frame B,) which causes the projections or detents S' on the
25 lower end of arms F to pass through the case A, embracing the ends of the fulcrum-block D, and securely holding said block from moving when the switch is to be moved by the lever C, which makes same an independent switch-
30 stand for this operation, and unless the switch-points are in their proper position the lever C cannot be locked, as there is no elasticity in the fulcrum-block and lever when secured in the manner described.

35 Another important feature in my improvement is, by putting the spring in the top of the stand I am enabled to incase it in and protect it from ice, snow, &c., whereas in the present system of using safety-springs they
40 are exposed, and, being placed close to the ground between the rails, they often get frozen up, and have to be cleared before they will act or perform the duties required.

Thus it will be seen that by so combining the mechanism I am enabled to construct an abso- 45
lutely-safe and automatic switch-stand, whereby it is impossible for accidents to occur through the negligence of switch-tenders.

Having described my invention what I claim, and desire to secure by Letters Patent, 50
is—

1. In a railroad-switch stand, the lever-fulcrum, in combination with a spring and with detents, whereby when the lever is locked the fulcrum is free to yield and when the le- 55
ver is unlocked the fulcrum is fixed, substantially as described.

2. In a railroad-switch stand, the moving fulcrum-block D, with lever C pivoted thereto and connected with the safety-spring E, sub- 60
stantially as described.

3. In a railroad-switch stand, the pivoted locking-arm F, provided with projections *e* and detents S', in combination with lever C and the moving fulcrum-block D, substantially as 65
and for the purpose specified.

4. In a railroad-switch stand, the combination of a moving fulcrum-block, D, and lever C, pivoted thereto, the arched frame B, with projection *h* upon its face for locking lever C, 70
the locking-arm F, with its recess formed by projection *e* for said lever, and projections or detents S', for embracing the ends of fulcrum-block D and securely retaining it in such position until released, all to operate automati- 75
cally, substantially as and for the purpose specified.

Signed at New York, in the county of New York and State of New York, this 21st day of May, A. D. 1883.

GEORGE W. HORNE.

Witnesses:

CHRISTIAN WEBER,
BENJN. A. DARE.