

Fig. 1.

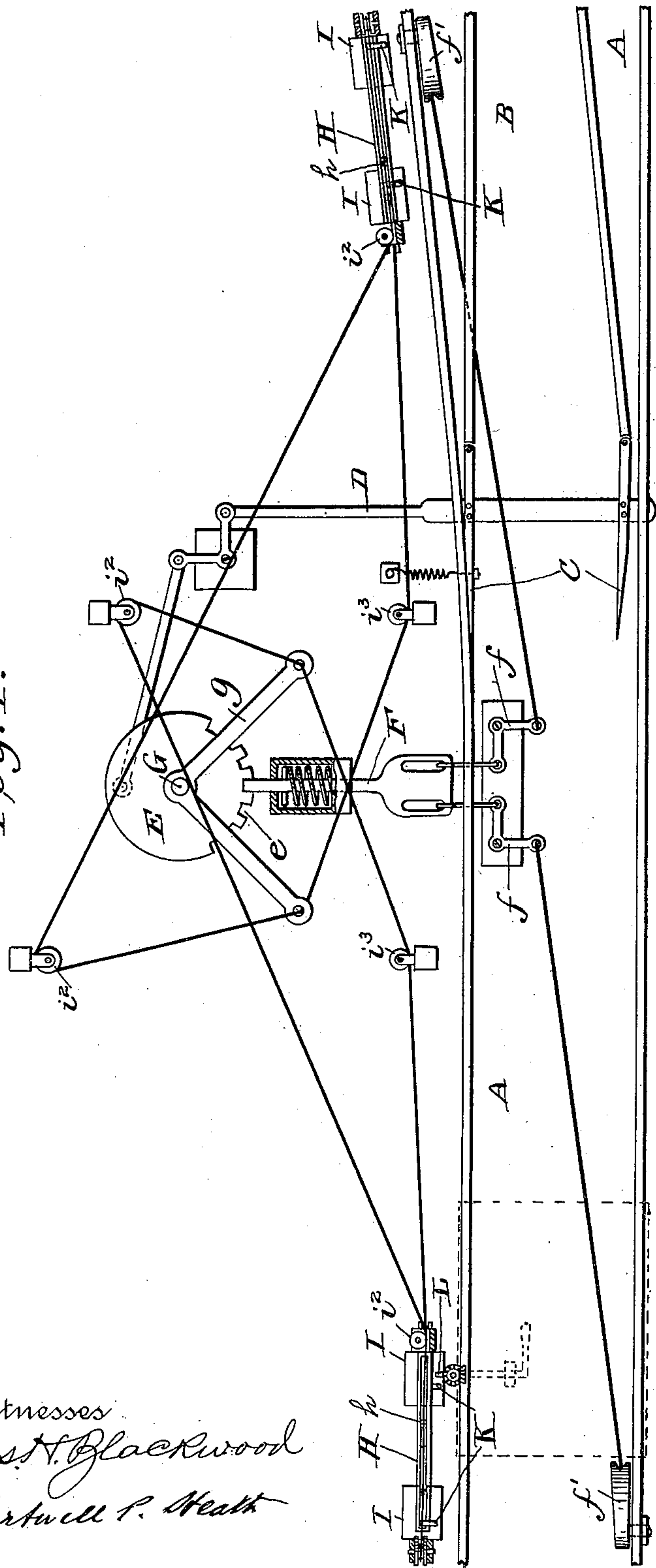


Fig. 3.

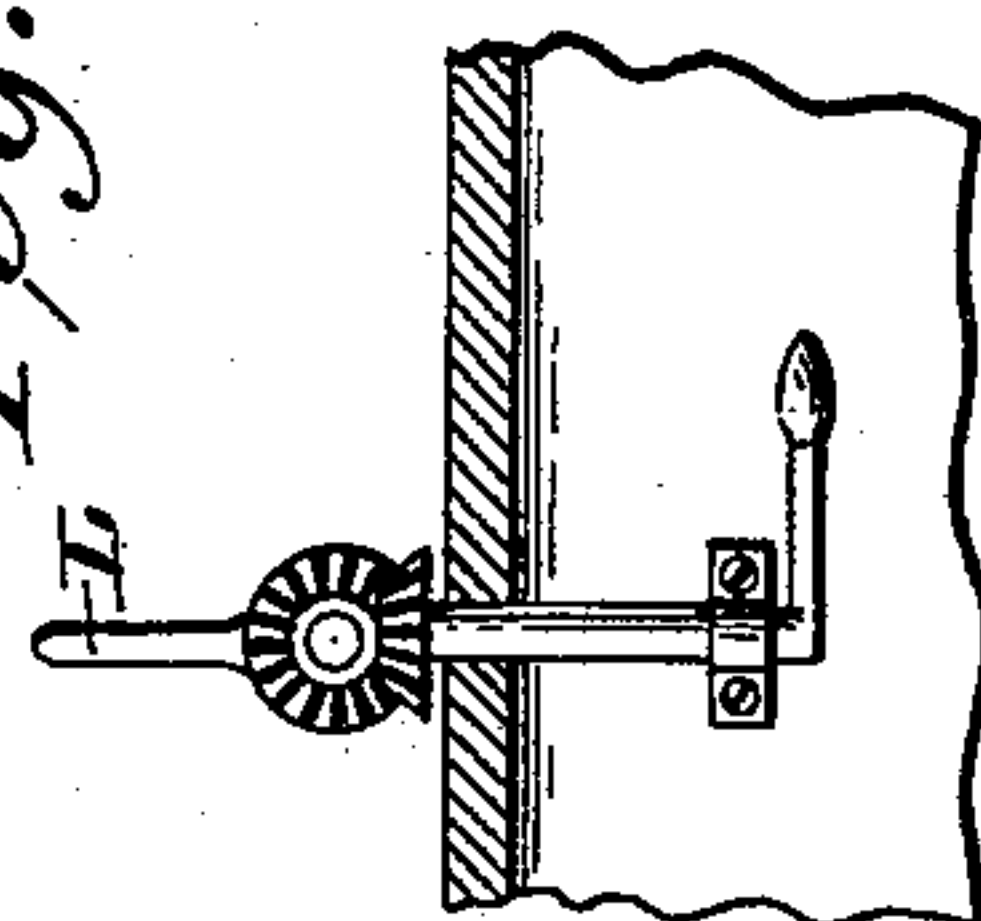
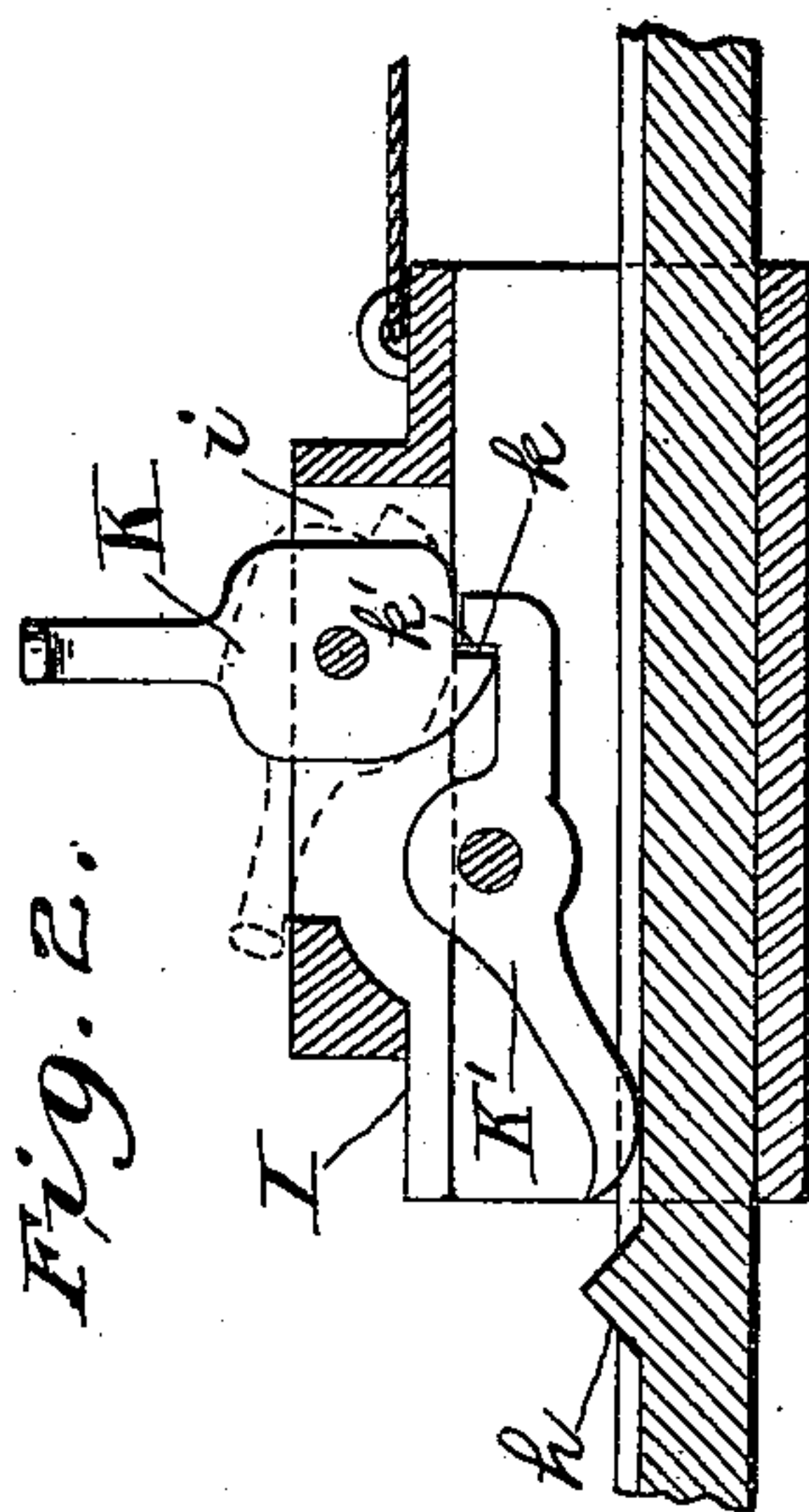


Fig. 2.



Witnesses
Jas. H. Blackwood
Hartwell P. Heath

Inventor
Nathan L. Coffenberry
By N. A. Gourick
Attorney

No. 618,643.

Patented Jan. 31, 1899.

N. L. COFFENBERRY.
RAILROAD SWITCH.

(Application filed Apr. 23, 1898.)

(No Model.)

2 Sheets—Sheet 2.

Fig. 4.

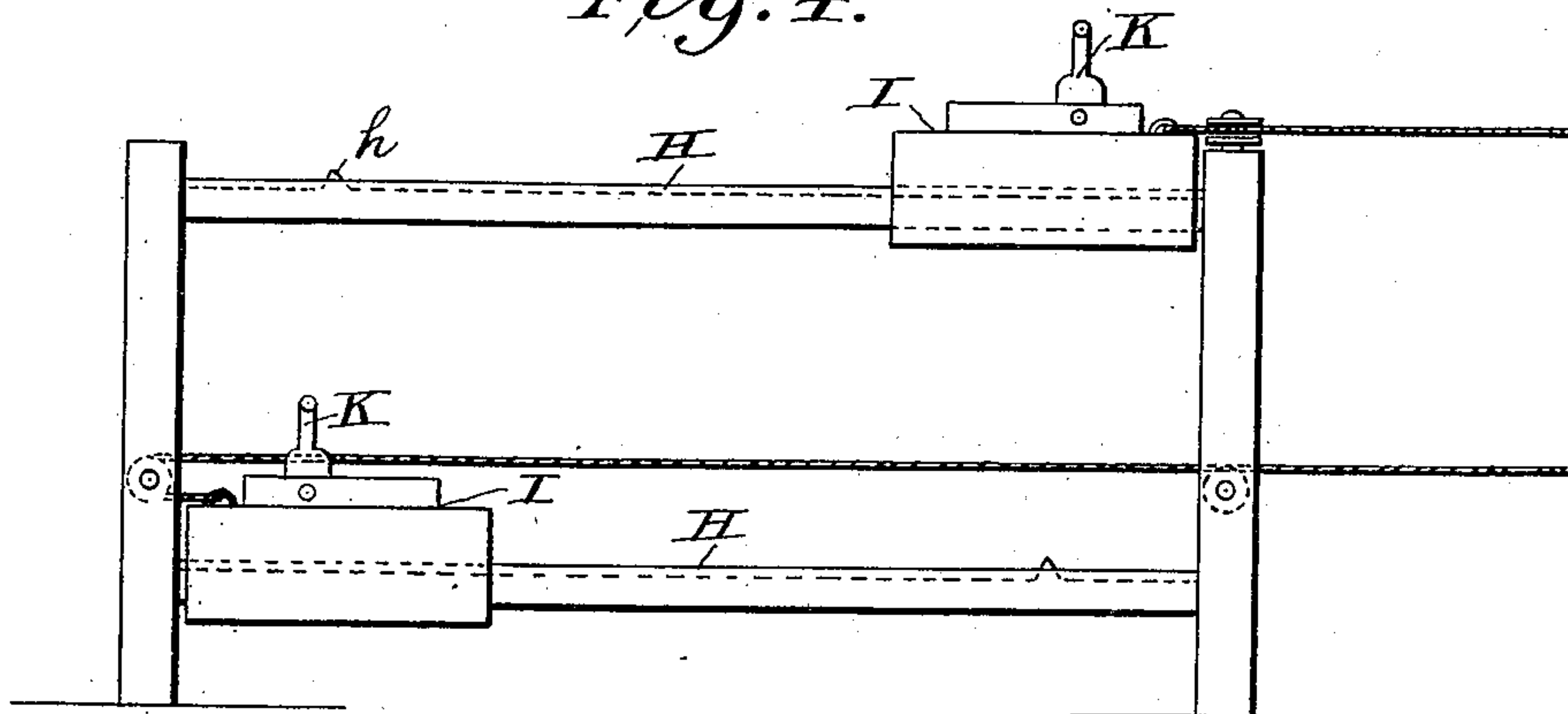


Fig. 5.

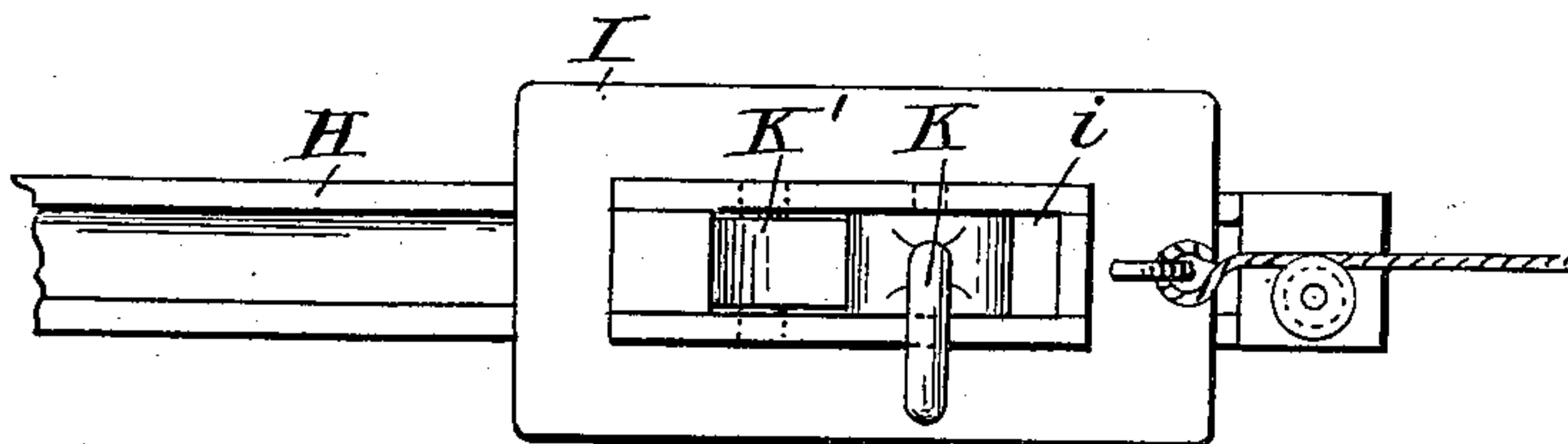
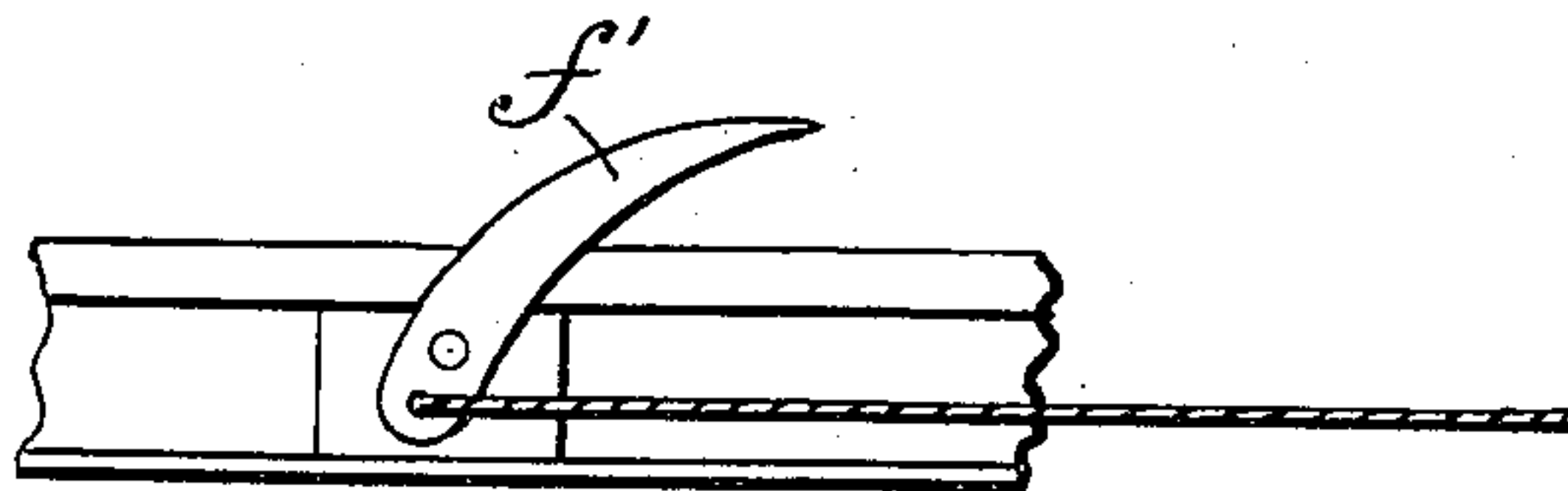


Fig. 6.



Witnesses
Jas. H. Blackwood
Hartwell P. Heath

Inventor
Nathan L. Coffenberry
by D. A. Gouwick
Attorney

UNITED STATES PATENT OFFICE.

NATHAN L. COFFENBERRY, OF LOWELL, INDIANA.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 618,643, dated January 31, 1899.

Application filed April 23, 1898. Serial No. 678,645. (No model.)

To all whom it may concern:

Be it known that I, NATHAN L. COFFENBERRY, a citizen of the United States, residing at Lowell, in the county of Lake and State of Indiana, have invented a certain new and useful Improvement in Railroad-Switches, of which the following is a specification.

My invention relates to railroad-switches, and has for its object to provide means for operating a switch from a moving train at once simple, cheap, easily constructed, durable, not likely to get out of order, and all on one side of the tracks. This object I accomplish in the manner and by the means hereinafter fully described in detail and particularly pointed out in the claims, reference being had to the accompanying drawings, in which like reference-letters indicate like parts in all the figures

Figure 1 is a top plan view of my invention. Fig. 2 is a detail view of slide-block. Fig. 3 is a detail view. Fig. 4 is a detail view of one set of parallel bars and slide-blocks. Fig. 5 is a top plan view of slide-block. Fig. 6 is a detail view of clip.

A represents the main track; B, the side track; C, the switch, normally held closed on main track by any of the usual means, and D the switch-rod. The end of the switch-rod D is connected directly or indirectly to a disk E in such a manner that the partial revolution of the disk E will open the switch C to the side track B. Two notches *e* are cut in the periphery of the disk C toward the track.

A spring detector-bar F is adapted to engage one of the notches *e* when the switch C is closed and to lock the same and to engage the other notch *e* when the switch C is open and lock it open. A bell-crank lever *f* is placed on each side of the detector-bar F and one arm connected therewith. The other arm of each of the bell-crank levers *f* is connected, by a wire or other suitable means, on opposite sides and at a suitable distance from the switch C to a curved clip *f'*, pivotally mounted alongside the track, with the gripping edge toward the detector-bar F and the wire secured to the other end of the clip *f'*. The clip *f'* is thus adapted to be pressed down by a passing train drawing on the wire and pressing it down, at the same time releasing the detector-bar F from the notch *e* and freeing the switch C.

Rising vertically from the disk E and adapted to revolve the disk E is a rod G, provided at its top with a bell-crank lever *g* or other suitable means of turning the rod G. At suitable distances on each side of the switch C are two parallel bars H, suitably supported one above the other in the same vertical plane. On each of the parallel bars H a slide-block I is mounted. Each of the slide-blocks I has a slot *i*, longitudinally through its top. In the slot *i* an arm K is pivotally mounted, with the greater part of its weight below the pivot, so that normally it stands upright, the outer end projecting toward the track. The arm K has a shoulder *k* at its lower end adapted to engage a shoulder *k'* in the upper surface of arm K', pivoted in the slot *i* below the arm K and adapted to ride on the slide-bar H, the shoulders *k* and *k'* engaging until the projection *h* on the slide-bar H raises the arm K'. The block I on the upper of each pair of bars H is connected with the bell-crank lever *g* through the pulleys *i*², so that when the said block I is slid toward the switch C it opens the switch C, and the block I on the lower of each pair of bars H is connected with the bell-crank lever *g* through the pulleys *i*³, so that when the said block I is slid away from the switch C it closes the switch C.

Attached to the side of the locomotive in front and the caboose at the rear of the train is an arm L, adapted to be swung out by a person on the train and when swung out to engage the arm K and slide the block I along the bar H.

The operation of my invention is as follows: The train passing over the clip *f'* releases the detector-bar F. The engineer throws the arm on the side of the engine out and engages the arm K, which carries the block I along until the projection *h* releases the arm K, opening the switch C, and when the caboose comes along the conductor or brakeman to insure the switch C being closed uses the arm on the caboose in the same way on the lower block of the other pair.

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

1. In combination with a railroad-switch, blocks, slidably mounted on parallel bars one above the other on each side of the switch and

beside the track and adapted to operate the switch, and means for operating the same, substantially as shown and described.

2. In combination with a railroad-switch, blocks slidably mounted on each side the switch and adapted to operate the switch, said blocks having longitudinal slots in their tops, arms pivotally mounted in the slots and provided near the lower ends with shoulders, said arms normally standing upright and projecting toward the track, arms, pivotally mounted in the slots below the first-named arms and provided with shoulders adapted to engage the shoulders on the upper arms and lock the same upright, until the lower arms are raised, and means for operating the same, substantially as shown and described.

3. The combination with the switch-rod, of a notched disk, a detector-bar engaging said notches and connected by wires to a clip on each side said switch, said clips operated by the moving train, sliding blocks mounted on parallel bars one above the other on each side the switch and beside the track and adapted to operate the switch, and means for operating the same, substantially as shown and described.

4. The combination with a railroad-switch of a spring detector-bar, bell-crank levers connected with the detector-bar, clips connected with the bell-crank levers and adapted, when pressed down by passing train, to release the detector-bar, a rod rising vertically from the switch-rod, and provided at the top with a bell-crank lever, sliding blocks provided with a longitudinal slot, through the top and connected with the switch bell-crank lever two on each side, said blocks adapted to operate the switch, arms pivotally mounted in the slots and provided with a shoulder near their lower ends, the arms normally standing upright and projecting toward the track, arms pivotally mounted in the slots below the first-named arms, and provided with shoulders adapted to engage the shoulders on the upper arms until the lower arms are raised, and means for operating the same, substantially as shown and described.

5. The combination with the switch-rod, of a disk provided with two notches, a spring detector-bar engaging the notches alternately, bell-crank levers connected with the detector-bar, clips connected with the bell-crank levers and adapted, when pressed down by passing train, to release the detector-bar, a rod rising vertically from the disk and provided at the top with a bell-crank lever, sliding blocks provided with a longitudinal slot through the top and connected with the switch bell-crank lever two on each side, said blocks adapted to operate the switch, arms pivotally mounted in the slots and provided with a shoulder near their lower ends, the arms normally standing

upright and projecting toward the track, arms pivotally mounted in the slots below the first-named arms, and provided with shoulders adapted to engage the shoulders on the upper arms until the lower arms are raised, and means for operating the same, substantially as shown and described.

6. The combination with the switch-rod, of a disk provided with two notches, a spring detector-bar engaging the notches alternately, bell-crank levers connected with the detector-bar, clips connected with the bell-crank levers and adapted, when pressed down by passing train, to release the detector-bar, a rod rising vertically from the disk and provided at the top with a bell-crank lever, sliding blocks provided with a longitudinal slot through the top and connected with the switch bell-crank lever two on each side, said blocks adapted to operate the switch, arms pivotally mounted in the slots and provided with a shoulder near their lower ends, the arms normally standing upright and projecting toward the tracks, arms pivotally mounted in the slots below the first-named arms, and provided with shoulders adapted to engage the shoulders on the upper arms until the lower arms are raised, and an arm attached to the train, adapted to be thrown out to engage the arm projecting from the slide-blocks, substantially as shown and described.

7. The combination with an arm attached to a train and adapted to be thrown out at right angles to the course of the train, of a switch, a switch-rod connected with said switch, of a disk provided with two notches, a spring detector-bar engaging the notches alternately, bell-crank levers connected with the detector-bar, clips connected with the bell-crank levers and adapted, when pressed down by passing train, to release the detector-bar, a rod rising vertically from the disk and provided at the top with a bell-crank lever, sliding blocks provided with a longitudinal slot through the top and connected with the switch bell-crank lever two on each side, said blocks adapted to operate the switch, arms pivotally mounted in the slots and provided with a shoulder near their lower ends, the arms normally standing upright and projecting toward the track, arms pivotally mounted in the slots below the first-named arms, and provided with shoulders adapted to engage the shoulders on the upper arms until the lower arms are raised, and means for operating the same, substantially as shown and described.

In testimony whereof I hereto affix my signature in the presence of two witnesses.

NATHAN L. COFFENBERRY.

Witnesses:

W. C. QUINCY,

HARRY W. WALLIS.