

J. T. HALSEY.
 Railroad Safety-Switch.
 No. 214,649. Patented April 22, 1879.

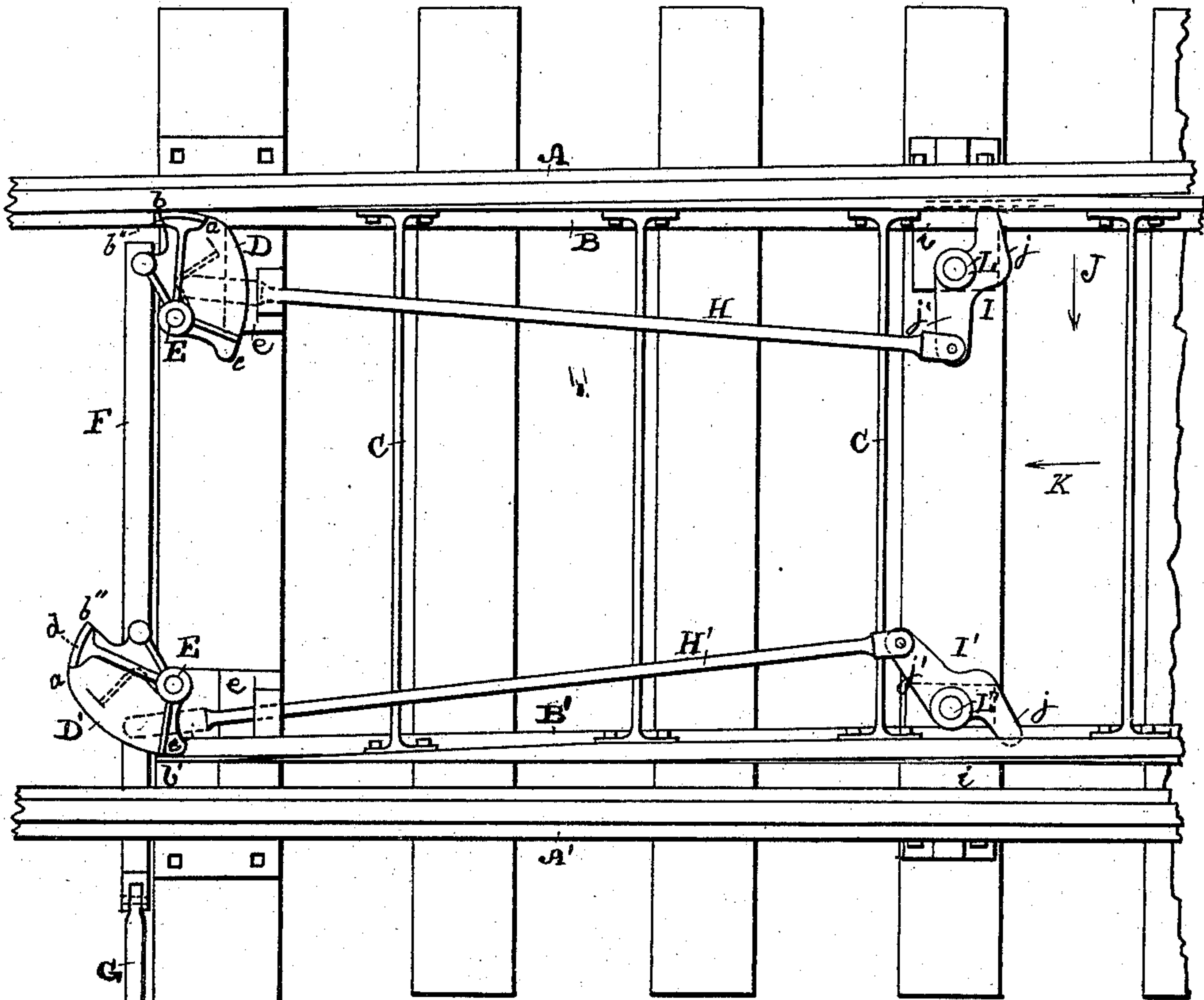


Fig. 1.

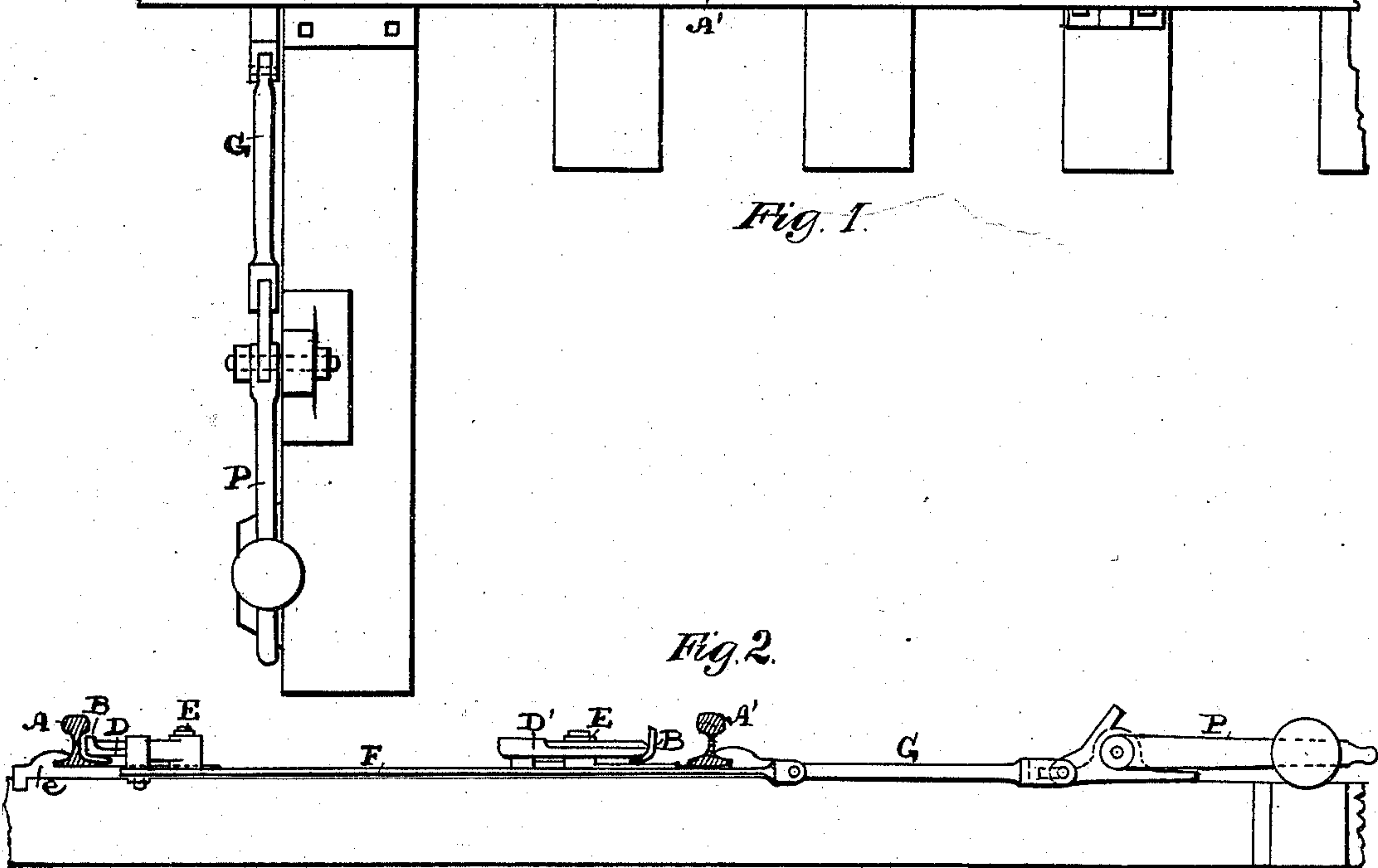


Fig. 2.

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UNITED STATES PATENT OFFICE

JAMES T. HALSEY, OF ALTOONA, PENNSYLVANIA.

IMPROVEMENT IN RAILROAD SAFETY-SWITCHES.

Specification forming part of Letters Patent No. **214,649**, dated April 22, 1879; application filed July 17, 1878.

To all whom it may concern:

Be it known that I, JAMES T. HALSEY, of Altoona, in the county of Blair and State of Pennsylvania, have invented certain new and useful Improvements in Railroad Safety-Switches; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to railroad-switches, more particularly to that class known as "safety-switches."

A safety-switch is one which, if set for one track, will, upon the approach of a train upon the other track, automatically adjust itself to the track upon which the train is coming, and so allow the train to pass on without leaving its track.

Safety-switches, as heretofore constructed, have been made with a great number of parts, which render their operation complicated and difficult to understand by the trackmen.

My invention is designed to obviate these difficulties; and the invention consists in certain new and improved devices and combinations of devices, whereby the switch is rendered safe to trains running in either direction, all as hereinafter more fully set forth.

In the accompanying drawings, Figure 1 is a plan view of my improved safety-switch; and Fig. 2 is an elevation of the same, shown partly in section.

Referring to the parts by letters, A A' represent permanent track-rails, and B B' the movable switch-rails. The switch-rails are connected together and held to proper gage by tie-rods C C, so that they must move together when either is operated on by sufficient force.

The switch-rails are what is commonly known as "split-rails," which taper toward the points b b'. At these points are located the rail moving and locking devices D D', said devices being pivoted at E by proper studs or pivot-pins to the chairs e, which hold the main rails in position, or to any suitable bed-plate secured to the sleepers. They are also pivoted to a

sliding bar or rod, F, which is connected by suitable rod or link G to the switch-lever P, and by means of which the points of the switch may be moved and securely locked, in the manner hereinafter more fully set forth.

I I' are bell-crank levers, located at a proper distance back from the points of the switch-rails, and pivoted to chairs or suitable bed-plates i by studs or pivot-pins L L'. Each of these bell-cranks has an arm, j, bent at right angles, as clearly shown by Fig. 1 of the drawings. Their other arms, j', are pivoted to rods H H', the free ends of which engage with projections formed on the under side of the locking devices D D'.

The operation is as follows: With the switch in the position shown by the drawings, the switch-rail B is locked or held securely against the rail A, and consequently the switch-rail B' is held clear of the rail A'. Now, if we suppose a train to be approaching in the direction of the arrow K from the siding-rails A and B', the flanges of the wheels on the side A would force the switch-rail B to move laterally in the direction of the arrow J, the pressure or force operating to turn the arm j of the crank I to the right, and thereby, through connection with the rod H, to turn the locking device D to the left, so as to unlock the switch-rail B and move the switch over to the other side. This movement of the crank I, rod H, and lock D will at the same time, through the connection of the latter with the bar F, operate to turn the lock D' to the right, and bring the arm j' of the crank I' into the same position before occupied by the crank I during the movement of the switch-rail, thereby locking the switch-rail B' against the rail A'. When, now, another train approaches on the main track, in the direction of the arrow K, with the switch-rails in this position, the operation of moving the switch so as to clear the track for the passing train will be performed by the flanges of the wheels on the side A' in the same manner as before described; and thus it will be seen that, no matter how the switch-rails may be set, the wheels of the passing train will move them into proper position to allow the train to pass on in safety.

When it is desired to move the switch-rail so as to allow a train to pass onto or from the

main rails to the siding, it is accomplished by means of the switch-lever and sliding bar F, the movement of which causes the locking devices D D' to turn to the right or left, and thereby lock or release the points of the switch-rails, and, through connection with the rods H H' and cranks I I', move the switch to the right or left, as occasion requires.

These locking devices D D' are formed with curved or cam-shaped edges, which, when brought into contact with the rails, bear against the web portion and lock the same in position. The movement of the rail is effected by that portion of the curve between *a* and *c*, and the locking of the rail is effected by the portion of the curve between *a* and *b''*, the latter portion of the curve being the arc of a circle drawn from the pivot E as a center. This locking portion of the device may be made thicker than the other parts of the device and strengthened by a rib, *d*. These peculiar-shaped rail moving and locking devices, however, form the subject of another application for Letters Pat-

ent now pending, so that I do not broadly claim the construction of said devices in this, but only claim them in combination with the other devices herein described.

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

1. A bell-crank lever, I or I', operating in combination with a rod, H or H', and a locking device, D or D', substantially as and for the purpose specified.

2. In combination with the sliding bar F and rail moving and locking devices D D', the rods H H' and crank-levers I I', substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JAMES T. HALSEY.

Witnesses:

D. G. STUART,
A. McCALLUM.