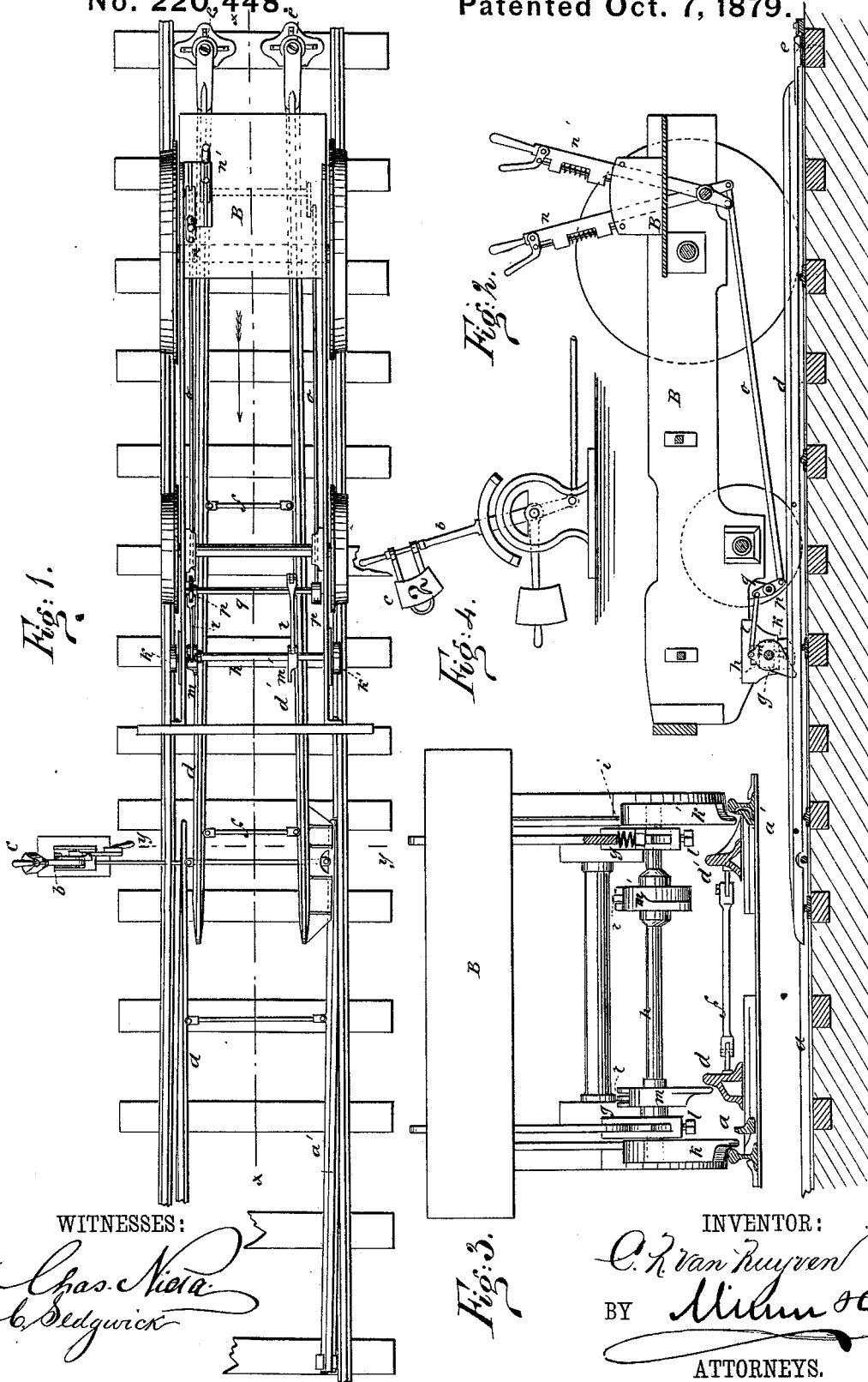


C. R. VAN RUYVEN.
Automatic-Switch Apparatus.

No. 220,448.

Patented Oct. 7, 1879.



WITNESSES:

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CORNELIUS R. VAN RUÿVEN, OF DEVENTER, NETHERLANDS.

IMPROVEMENT IN AUTOMATIC SWITCH APPARATUS.

Specification forming part of Letters Patent No. **220,448**, dated October 7, 1879; application filed June 12, 1879.

To all whom it may concern:

Be it known that I, CORNELIUS ROELAND VAN RUÿVEN, of Deventer, Netherlands, have invented a new and Improved Apparatus for Controlling the Position of Switches or Sliding Rails or Railways, of which the following is a specification.

Accidents upon railways are in a majority of cases caused by misplaced switches; and the object of my invention is to construct simple and efficient apparatus for regulating and correcting the position of switches, the apparatus being under the control of the engine-driver, so that should the switch stand wrong it can be shifted from the engine.

My invention is an improvement in the class of switches whose operation is controlled by the engineer or engine-driver, the movable rails being shifted or adjusted in position by means of devices on the locomotive.

The invention relates to the construction and arrangement of parts, as hereinafter described and claimed.

Figure 1 is a plan view of a railroad-track and switch and locomotive-truck fitted with the said apparatus. Fig. 2 is a side elevation on line *x x* of Fig. 1. Fig. 3 is a vertical cross-section on line *y y* of Fig. 1. Fig. 4 is a side view of the switch-lever and stand.

Similar letters of reference indicate corresponding parts.

The switch shown is an ordinary safety-switch, *a a'* being the moving points, which are fitted to be operated, as usual, by the hand-lever *b*. Upon the upper end of the hand-lever *b* is hung a weight, *c*, which acts to move the lever in either direction to complete its movement and prevent the lever remaining in a vertical or half-way position. Between the rails of the track the swinging arms or slides *d d'* are placed, these arms being pivoted to the ties at *e*, and connected by stays *f*, so that they move together sidewise between the rails, and their extreme moving ends move between the switch-points *a a'*.

The ends of arms *d d'* lie against or contiguous to the switch-points, so that by any movement of the switch the arms are caused to move, or vice versa.

The arms or slides *d d'* are formed with a raised web or flange portion, extending their

entire length, and projecting above the level of the track.

B represents a locomotive-truck, at the forward end of which, in boxes *g g*, a cross-shaft or axle, *h*, is fitted. The boxes *g* are fitted for vertical movement in slots, and are forced downward by springs *i*, so that there will be sufficient elasticity under concussion to prevent breakage.

Upon the outer ends of shaft *h* locking-blocks *k k'* are rigidly attached, which blocks project downward to near the top of the rails, and are each formed with an inner flange, which projects below the head of the rails at the inner side, as shown in Fig. 3, for purposes hereinafter set forth. The shaft *h* is rigid in boxes *g*, and the downward movement of the boxes is regulated by set-screws *l l*. Upon the shaft *h* are hung loosely the guide-blocks *m m'*, each of which is formed eccentric, or with a projecting portion that acts upon the sliding arms *d* or *d'* to shift the switch.

The blocks *m m'* are fitted for separate movement by means of levers *n n'*, placed in the locomotive-cab, which levers connect by rods *o o* to crank-arms *p p*, that are hung upon a cross-shaft, *q*, and connect by links *r r* with blocks *m m'*. The levers *n n'* are fitted with spring-catches of any suitable character for retaining the parts in position.

The operation is as follows: As the locomotive approaches the switch in the direction of the arrow, and it is desired to take the right-hand track while the switch is set for the left track, the guide-block *m* at the right-hand side of the locomotive is to be operated by its lever *n* to bring its point downward, which, as the locomotive moves forward, comes in contact with the outer side of the slide or arm *d*, pressing the same sidewise, and shifting the switch-points.

If the switch be set to the right, and it is desired to go to the left, the block *m'* at the left side of the locomotive will be brought by its lever *n'* to the required position for operating upon the arm *d'*. The blocks *m m'* should be raised again after the switch is passed.

The sliding arms *d d'* are to extend a sufficient distance from the switch-points to obtain a gradual movement, and the levers *n n'* will be arranged in a right and left hand posi-

tion, corresponding to the guide-blocks *m m'*, so that by operating the right or left hand lever, the driver insures the passage of the locomotive to the right or left, as desired, without requiring him to know the position of the switch.

The locking-blocks *k k'* pass over the switch-points in advance of the pilot-wheels, and by their flanges bind the switch-point *a* or *a'* to the rail, after the switch is shifted, to prevent any return movement.

The apparatus may be applied to other forms of switches than that shown, and may be fitted to be operated by a locomotive coming from either direction.

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

1. The movable blocks *m m'* and fixed locking-blocks *k k'*, combined together and with a locomotive, substantially as and for the purposes specified.

2. In combination, upon a locomotive, the fixed shaft or axle *h*, boxes *g*, springs *i*, set-screws *l*, guide-blocks *m m'*, and locking-blocks *k k'*, substantially as described and shown, and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 10th day of February, 1879.

CORNELIUS ROELAND VAN RUYVEN.

Witnesses:

L. U. F. PRÖNTGEN,
C. A. RUITGES.