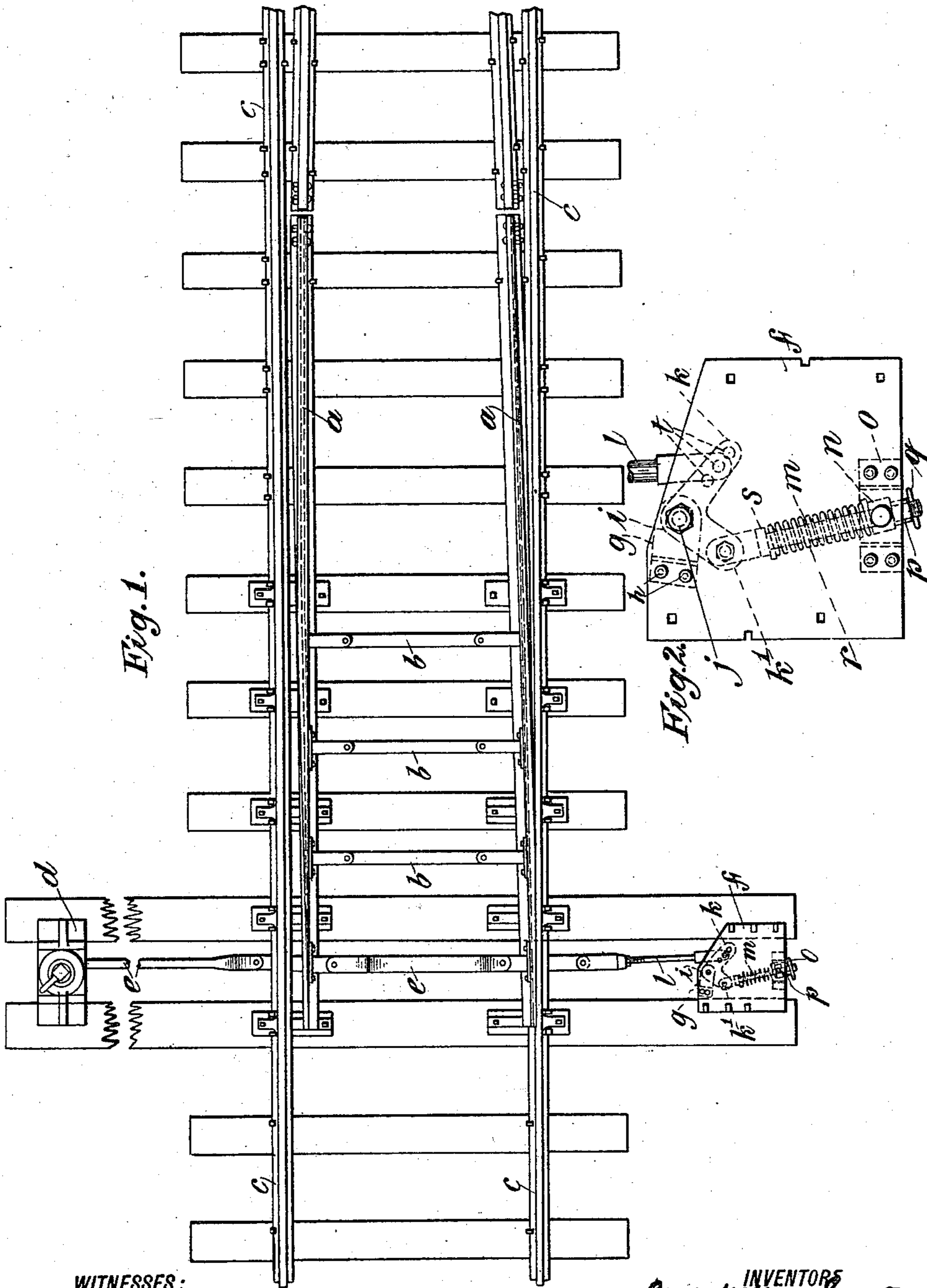


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 AUXILIARY AUTOMATIC SAFETY SWITCH APPLIANCE.
 APPLICATION FILED AUG. 6, 1909.

965,243.

Patented July 26, 1910.



WITNESSES:
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UNITED STATES PATENT OFFICE.

FRED WILLIAM SNOW, OF HILLBURN, NEW YORK, AND ARTHUR GEMUNDER AND WILLIAM MICHEL, OF COLUMBUS, OHIO, ASSIGNORS TO RAMAPO IRON WORKS, OF HILLBURN, NEW YORK, A CORPORATION OF NEW YORK.

AUXILIARY AUTOMATIC SAFETY-SWITCH APPLIANCE.

965,243.

Specification of Letters Patent.

Patented July 26, 1910.

Application filed August 6, 1909. Serial No. 511,496.

To all whom it may concern:

Be it known that we, FRED WILLIAM SNOW, a citizen of the United States, residing at Hillburn, in the county of Rockland, in the State of New York, and ARTHUR GEMUNDER and WILLIAM MICHEL, citizens of the United States, residing at Columbus, in the county of Franklin, in the State of Ohio, have invented certain new and useful Improvements in Auxiliary Automatic Safety-Switch Appliances, of which the following is a specification, reference being had to the accompanying drawing, forming a part hereof.

Heretofore many accidents have occurred because switch rails, and particularly in split switches, have become broken or because the connecting rod which operates the switch rail from the switch stand has become disconnected or broken, and this invention relates to means for preventing such accidents.

One object of the invention is to provide means whereby the switch points shall be held in their adjusted position and movement from such adjusted position shall be resisted by the action of a powerful spring.

A further object of the invention is to provide means which may be readily applied to switches now in use and which can be readily adjusted to meet different requirements.

The further objects of the invention will more fully appear in the description of one form of mechanism embodying the invention which consists in the new and novel features of construction and combinations of parts hereinafter set forth and claimed.

In the accompanying drawings Figure 1 is a plan view of a portion of a railroad track comprising a switch, a switch stand for operating the same and our improved auxiliary safety switch appliance. Fig. 2 is a plan view of the safety appliance on an enlarged scale to more clearly show the construction.

Referring to the drawings, and particularly to the mechanism embodying our invention which is shown as being used in connection with a split switch, the switch rails *a* are connected by tie rods *b* in the usual manner and are actuated to engage one of the main rails *c* by a switch stand *d*. Said switch stand may be of any common or preferred construction and is connected

with the switch rails by a switch rod *e* in the usual way.

Mounted upon suitable supports as the cross ties, and preferably directly opposite the switch stand is the base plate *f* having a bracket *g* secured thereto in any suitable manner as by rivets *h*. A bell crank lever *i* is pivoted to the bracket as at *j* and has one of its arms *k* secured to one end of a connecting rod *l* which is connected at its other end to the switch rod *e*. The other arm *k'* of the bell crank lever is connected to a spring bolt *m* which travels through a swivel *n* secured to the plate *f* by any suitable means as the bracket *o*. The bolt is held in position in the swivel by any suitable means as the nut *p* and locking pin *q*. A spring *r* is mounted upon the spring bolt and works against a shoulder *s* provided on the spring bolt and against the swivel at the other end.

Preferably the arm *k* is provided with a plurality of perforations *t* whereby the connecting rod *l* may be secured at different points and suitable adjustment thereby obtained. The operative mechanism of the safety device is also preferably secured beneath the base plate where it is protected from injury or malicious interference. The bell crank lever, sliding bolt and spring may be arranged in substantially the same horizontal plane so that the operating mechanism requires but little space beneath the bed plate.

In operation the spring will be compressed whenever the switch points are thrown through the switch stand and in the construction shown in the drawings the spring will be at dead center and at the point of greatest compression when the switch points are half way thrown. As soon as the spring passes the dead center, however, then the spring assists in throwing the switch points into operative position against the stock rails and the resistance of the spring is interposed against any movement of the switch rails from their adjusted position. By means of this construction all accidents which occur from the switch becoming loose from the switch stand, from a broken connecting rod or connecting pins will be avoided since the switch will be firmly held to the stock rail by the spring.

The appliance can be readily connected to the switch rod and is extremely simple

and compact in construction and the parts thereof may be readily removed for repairs or replacement. It is obvious, however, that the parts can be so arranged that the spring will be at dead center when the switch points are against one rail and therefore non-operative on that side, but will hold the switch points against movement when against the stock rail on the other side. Various other changes within the skill of the mechanic may be made in the mechanism hereinafter set forth without departing from the spirit of the invention provided the means set forth in the following claims be employed.

We claim as our invention:

1. In an auxiliary automatic safety switch appliance, the combination with a switch stand, a switch rail and a switch rod operatively connecting said rail to the switch stand, of a bell crank lever having one arm pivoted to said switch rod and its other arm pivoted to a sliding bolt, a spring engaging at one end with a rigid block and at its other end with said sliding bolt whereby the operation of the switch stand and any movement of the switch rail away from its adjusted position will be resisted by the spring, said switch rod, lever and bolt being arranged in substantially the same horizontal plane below the base of the switch rail.

2. The combination with a switch rail and means for actuating said switch rail, of an auxiliary automatic safety switch appliance connected with said switch rail to resist initial movement thereof, comprising a bed plate, a bell crank lever pivoted to said plate, a connecting rod adjustably secured by one end to an arm of said bell crank lever and connected by its other end to said switch rail, a sliding bolt secured to the arm of said bell crank lever, a swivel block mounted

on said plate and providing a bearing for said bolt, and a spring mounted on said bolt and having a rigid bearing at one end, said bed plate providing a cover for the other parts of said safety appliance, substantially as described.

3. In an auxiliary automatic safety switch appliance, the combination of switch rails, a switch stand, a switch rod operatively connected with said rails and stand, of a safety appliance operatively connected with said switch rails to resist movement thereof comprising a connecting rod on the opposite side of the track from the switch stand secured to said switch rod, a base plate adapted to be secured to the top of the cross ties, a bell crank lever pivoted to said plate and having one arm secured to said connecting rod, a sliding bolt provided with a shoulder and secured to the other arm of said lever, a swivel block provided with a bearing for said bolt, a spring mounted on said bolt and having a rigid bearing against the swivel block at one end and a bearing against the shoulder on said bolt at its other end, the movable parts of said safety appliance being arranged beneath the bed plate and protected thereby.

This specification signed and witnessed this 16th day of July A. D., 1909.

FRED WILLIAM SNOW.
ARTHUR GEMUNDER.
WILLIAM MICHEL.

In the presence of as to Fred William Snow:

JEAN SCOTT MACGREGOR,
JAMES BOORMAN STRONG,

In the presence of as to Arthur Gemunder and William Michel:

ARTHUR HYDE,
GORDON DAVIES.