

(No Model.)

A. R. ROBERTS.

# SAFETY DEVICE FOR RAILROAD SWITCHES.

No. 318,297.

Patented May 19, 1885.

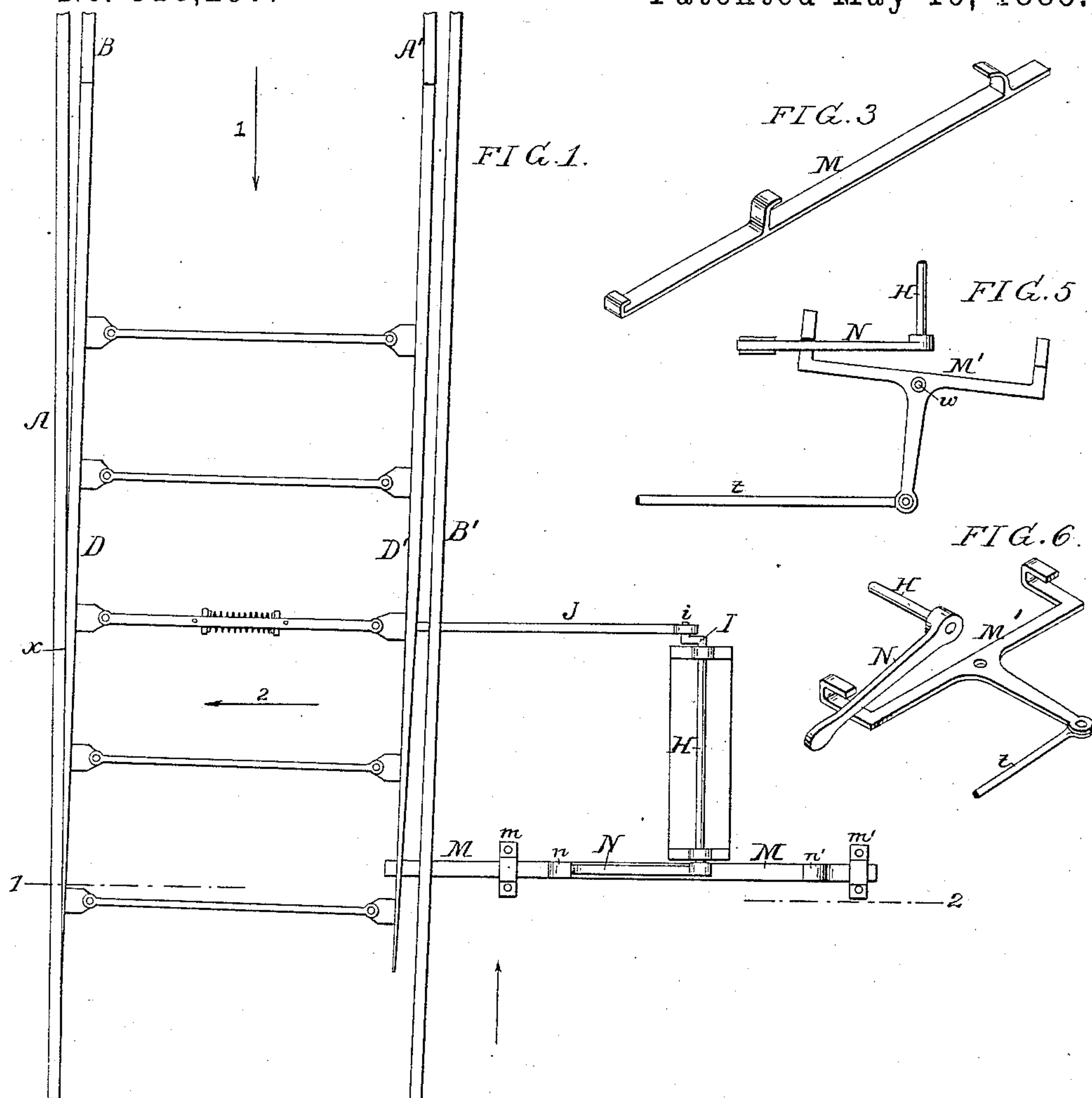


FIG. 2.

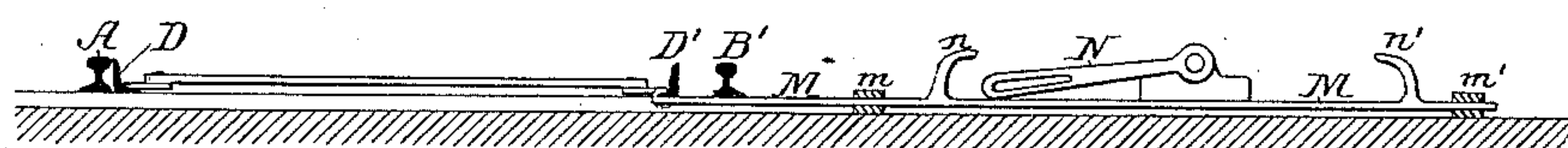
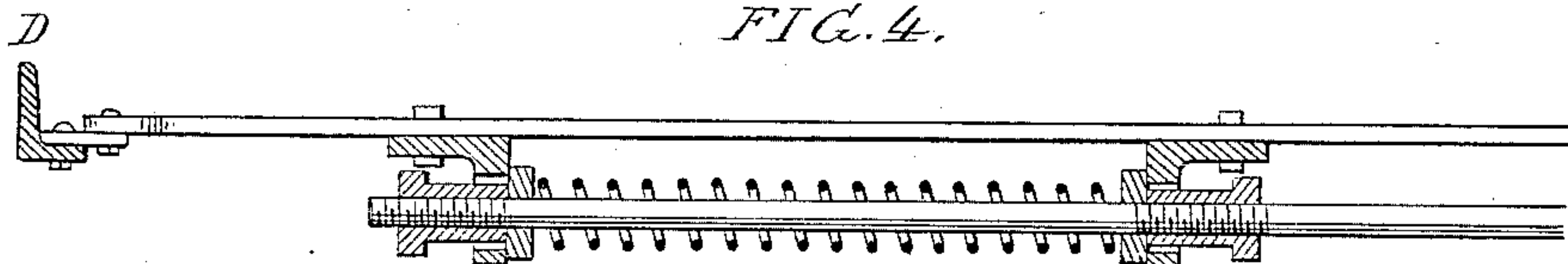


FIG. 4.



Witnesses:  
John M. Clayton.  
Harry Smith

Inventor:  
Albert R. Roberts  
by his attorneys  
Howson & Sons

# UNITED STATES PATENT OFFICE.

ALFRED R. ROBERTS, OF PHILADELPHIA, PENNSYLVANIA.

## SAFETY DEVICE FOR RAILROAD-SWITCHES.

SPECIFICATION forming part of Letters Patent No. 318,297, dated May 19, 1885.

Application filed November 10, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED R. ROBERTS, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Safety Devices for Railroad-Switches, of which the following is a specification.

My invention relates to switches and operating mechanism combined with elastic connections which permit the switch to yield to the wheels of a locomotive or car under the circumstances explained hereinafter; and my invention consists of the combination of a switch-lever for operating the same and the yielding connection of one to the other with a safety device rigidly connected to the switch, and constructed for restricting the movement of the said lever when the switch is obstructed, substantially as described hereinafter, this restriction of the lever notifying the switchman that there is an obstruction to be removed.

In the accompanying drawings, Figure 1 is a plan view of a switch and operating mechanism with my improvement; Fig. 2, a section on the line 1 2, looking in the direction of the arrow; Fig. 3, a perspective view illustrating part of my improvement; Fig. 4, a view, partly in section and drawn to an enlarged scale, of the yielding connection which I propose to use; and Figs. 5 and 6, a modification of my invention.

A and A' are the permanent rails of the main track, B and B' the rails of the siding or turn-out, and D D' the switch-rails, which are connected together by cross-bars in the usual manner.

A shaft, H, is adapted to suitable bearings on a plate near the track, and one end of a rod, J, is connected with the pin *i* of a crank, I, forming part of the shaft, the opposite end of the rod having an elastic connection with the switch-rails. This connection may be made in different ways, that which is shown in Fig. 4, and which will be readily understood, being in common use. This connection permits the switch-rails to yield to the wheels of a locomotive or car without bending the rod J or injuring other parts of the operating mechanism—for instance, if, when the switch is adjusted to the position shown in Fig. 1, a train should be traveling on the main track in the

direction of arrow 1, the switch will yield to the wheels without disturbing the rod J and operating mechanism, the switch being automatically restored to its position when free from the influence of the wheels, owing to the elasticity of the above-mentioned connection.

There is this difficulty attending the use of a connection of this kind. A small stone or other obstruction may prevent the movement of the switch to its full extent and to its true position, and this might not be observed by the operator. There might, for instance, be a small stone at the point *x* between the rail A and the switch-rail D, and yet, owing to the elastic connection, the operator could depress the switch-lever N to its full extent without being aware of the obstruction, and in spite of the latter the lever would remain in its depressed position when released, for the crank I and the lever N are always so arranged as to lock the switch in either of its two final positions. I obviate this difficulty by the device which I will proceed to describe. A bar, M, situated below the switch-lever N, is adapted to guides *m m'* on the ties, and on this bar, which is connected to the switch, are two projections, *n n'*, which are such as not to interfere with the depression of the switch-lever to its full extent in moving the switch in either direction, providing there is no obstruction to prevent the switch from reaching its proper position; but if there should be any obstruction to prevent this complete movement of the switch one or other of the projections *n n'*, according to the direction in which the switch is moved, will prevent the full depression of the lever, and this will notify the operator that there is an obstruction to be removed. Supposing, for instance, that there is an obstruction at *x* when the operator is moving the switch in the direction of the arrow 2, the projection *n* of the bar M, which is under the control of the switch, will prevent the full depression of the lever. The obstruction to the movement of the switch-lever however, is not such as to lock the said lever; hence it can at once be reversed so as to open the switch and permit the removal of the obstruction by the switchman.

In carrying out my invention it is not essential to adhere to this precise construction of



safety device. The bar M and its projections may, for instance, be in the form of a lever, M', Figs. 5 and 6, which is pivoted at *w*, and one arm of which is connected by a rod, *t*, to the switch, the other arms being provided with such projections that when there is a failure to move the switch home in one direction, owing to an obstruction, the projection of one arm will prevent the full depression of the lever, that of the other arm performing a like duty when an obstruction interferes with the switch as the latter is being moved in the contrary direction, the lever in this modification being the equivalent of the sliding bar and its projections or stops.

Other modifications of the safety device will readily suggest themselves to expert mechanics, and may be demanded by differences in the construction of the switch-operating mechanism.

I claim as my invention—

1. The combination of a switch, a lever for

operating the same, and a yielding connection of one to the other, with a safety device rigidly connected to the switch, but free from connection with the switch-operating device and constructed for restricting the movement of the switch-lever without locking the same when the switch is obstructed, all substantially as specified.

2. The combination of the switch, the operating-lever, and the yielding connection of one to the other with a safety device comprising a guided bar, M, rigidly connected to the switch and having stops *n n'*, for restricting the movement of the lever when the switch is obstructed, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALFRED R. ROBERTS.

Witnesses:

JOHN M. CLAYTON,  
HARRY SMITH.