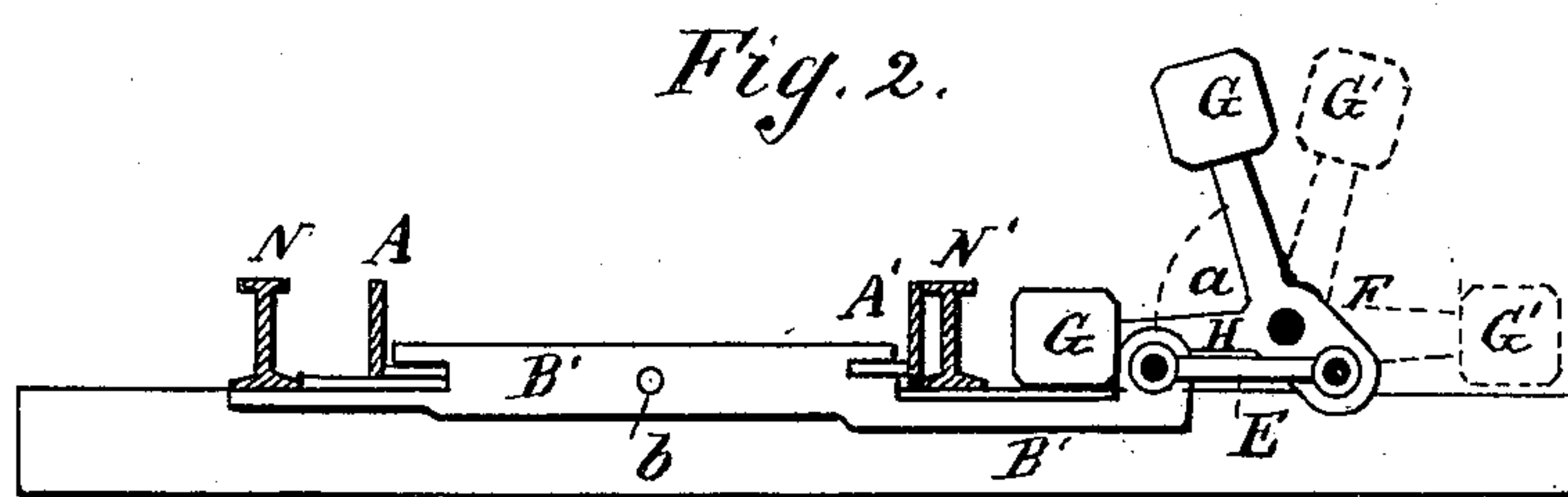
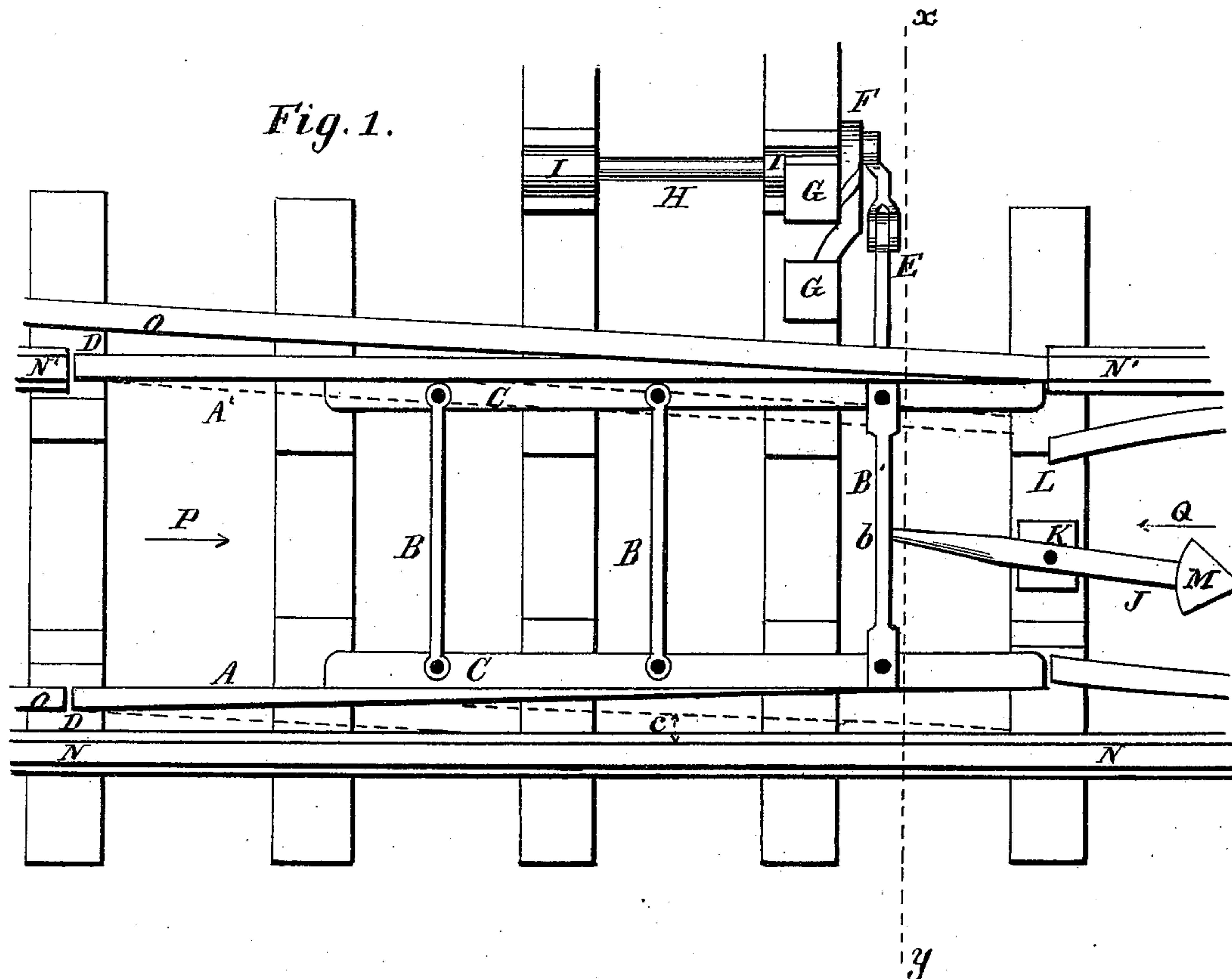


W. SPIELMAN.  
Railway-Switch.

No. 200,353.

Patented Feb. 12, 1878.



Witnesses

J. B. Pastorius  
M. B. Hahn.

Inventor

William Spielman  
by Francis D. Pastorius,  
att'y

# UNITED STATES PATENT OFFICE.

WILLIAM SPIELMAN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF  
ONE-HALF HIS RIGHT TO MARTIN CONNELLY, OF SAME PLACE.

## IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **200,353**, dated February 12, 1878; application filed  
December 20, 1877.

*To all whom it may concern:*

Be it known that I, WILLIAM SPIELMAN, of Philadelphia, in the county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Railway-Switches, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a plan view, and Fig. 2 is a transverse section through the line  $x y$ .

My railway-switch possesses the property of being worked by the train itself without the help of the switchman, and has the great advantage of not throwing the trains off the line when it may happen to be improperly set.

It is composed of rails bound immovably together by rods, bolted either to the flanges of the rails or to attached strips. The heel of the switch centers in shoes, as usual, and the end takes against the rail in use for the straight line without making a shoulder or leaving any perceptible space between them. The rods which connect the switch-rails are put in motion by a cranked hub, which forms the center of counterbalanced arms on a horizontal shaft, maintained in suitable boxes.

The switch can be worked by a train moving in one direction by a trip-lever on a cross-tie, which is operated by a tappet device fixed to the front of the train.

In the drawings,  $A A'$  are the switch-rails, which are bound immovably together by the tie-rods  $B B'$ , bolted to the flanges of the rails or to their attached strips  $C$ . The switch is movable about the points  $D$ , and forms part of the main-line rail.

The rods connecting the switch-rails are put in motion by a rod,  $E$ , connecting the end tie-rod  $B'$  and crank upon the hub  $F$ , in which hub is the center for the weighted arms  $G$ . The longitudinal shaft  $H$ , laid by the side of the line and supported in boxes  $I$ , carries the hub vertically. The weighted arms  $G$  make an acute angle,  $a$ , with each other, of such degree as to enable them to exert a constant effort in the same direction, and cause the switch-rail to press against either main rail, without

requiring too much force to vibrate them from one side to the other.

$J$  is a switch-lever, which moves around a pin,  $K$ , fixed to the cross-tie  $L$ . Its point takes loosely into an opening,  $b$ , formed in the end tie-rod  $B'$ . Its loose end  $M$  is arrow-headed, to come in contact with a tappet-bolt fixed to the front of the engine, to use when the train is moving in an opposite direction.

As shown in the accompanying drawings, the switch is placed in its regular and normal position, viz., that of an unbroken main line,  $N N'$ , which it is enabled to maintain by the arms  $G$ . Upon the arms being reversed, as shown by the dotted lines  $G'$ , the switch-rail  $A$  (dotted lines) is caused to press against the rail  $N$ , by which the main line is broken and the oblique line  $O O$  opened. If a train advances along the main line  $N N'$  in the direction of the arrow  $P$ , when line  $O O$  is opened the flanges of the wheels will pass through the angle  $c$ , and, assisted by the weighted arms  $G$ , will force the switch into its normal position without throwing the train off the track. If a train advances in an opposite direction, (arrow  $Q$ ), and by any means the switch be misplaced, the tappet of the train, by colliding with the head  $M$  of the lever  $J$ , will throw the switch-rails to either side for forming an unbroken line.

I claim as my invention—

1. The connected switch-rails  $A A'$ , weighted arms  $G G'$ , shaft  $H$ , crank-hub  $F$ , and rod  $E$ , combined with the main-track rails substantially as described.

2. Combined with the rails of the main track, the switch-rails  $A A'$ , connected as described, arms  $G G'$ , shaft  $H$ , cranked hub  $F$ , rod  $E$ , lever  $J$ , having angularly-shaped head  $M$ , and rod  $B'$ , substantially as and for the purposes specified.

In testimony whereof I hereunto sign my name in presence of two subscribing witnesses.

WILLIAM SPIELMAN.

Witnesses:

FRANCIS D. PASTORIUS,  
MARTIN CONNELLY.