

(No Model.)

2 Sheets—Sheet 1.

J. B. SUFFERN.  
RAILWAY SWITCH.

No. 370,988.

Patented Oct. 4, 1887.

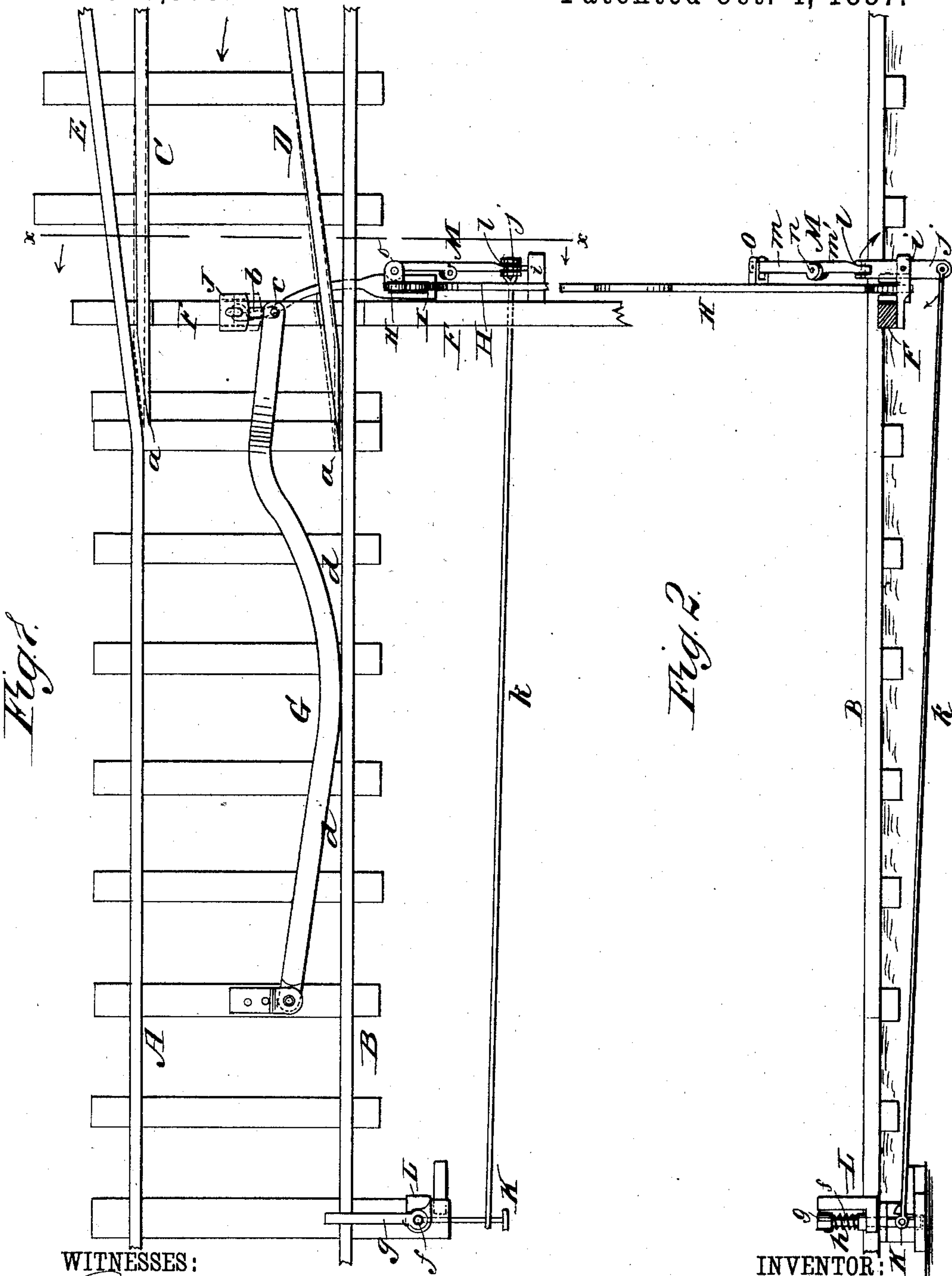


Fig. 1.

Fig. 2.

WITNESSES:

Francis Mc Ardle.  
C. Sedgwick

INVENTOR:

J. B. Suffern  
BY Munn & Co.  
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

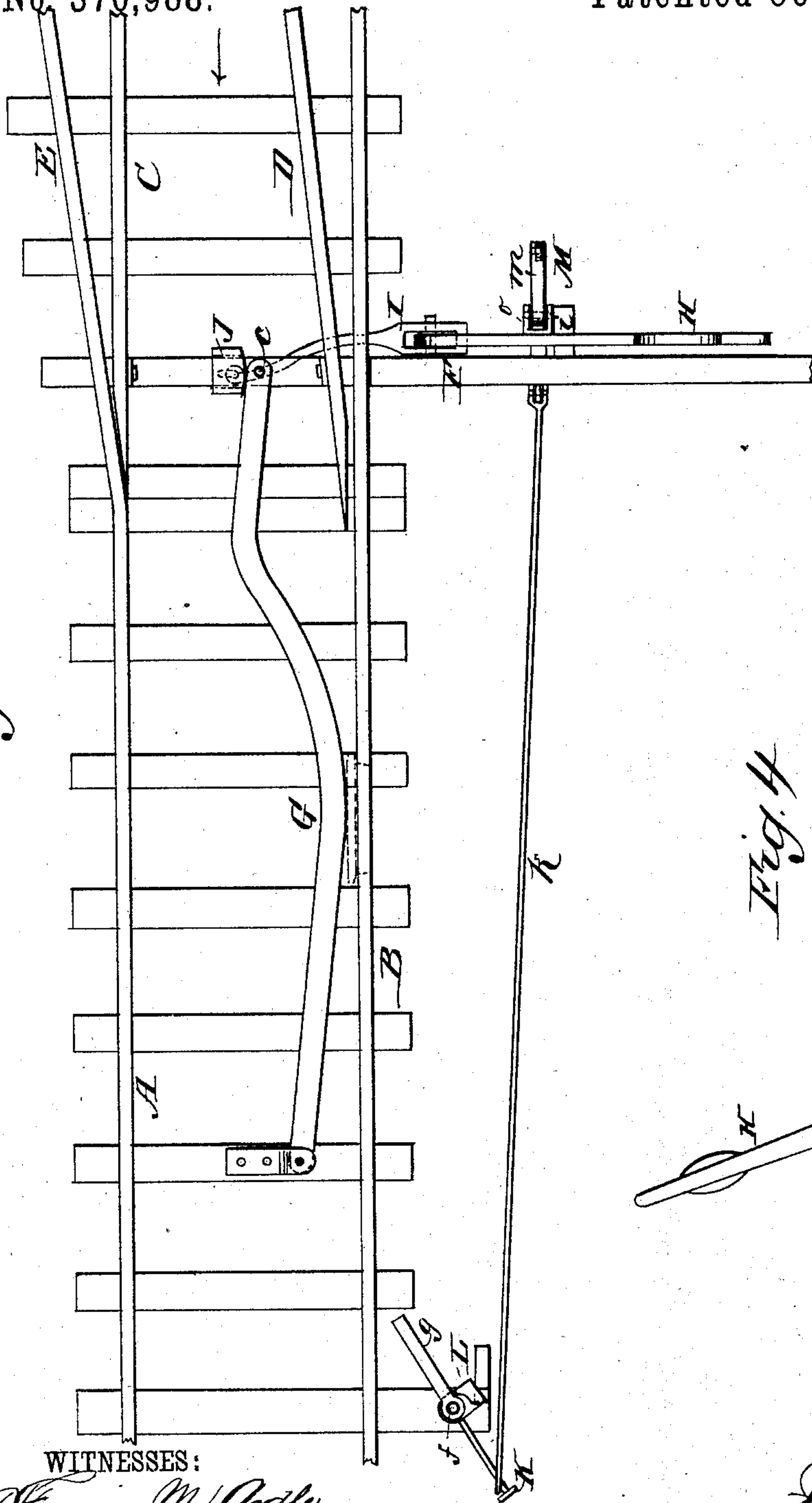
J. B. SUFFERN.

RAILWAY SWITCH.

No. 370,988.

Patented Oct. 4, 1887.

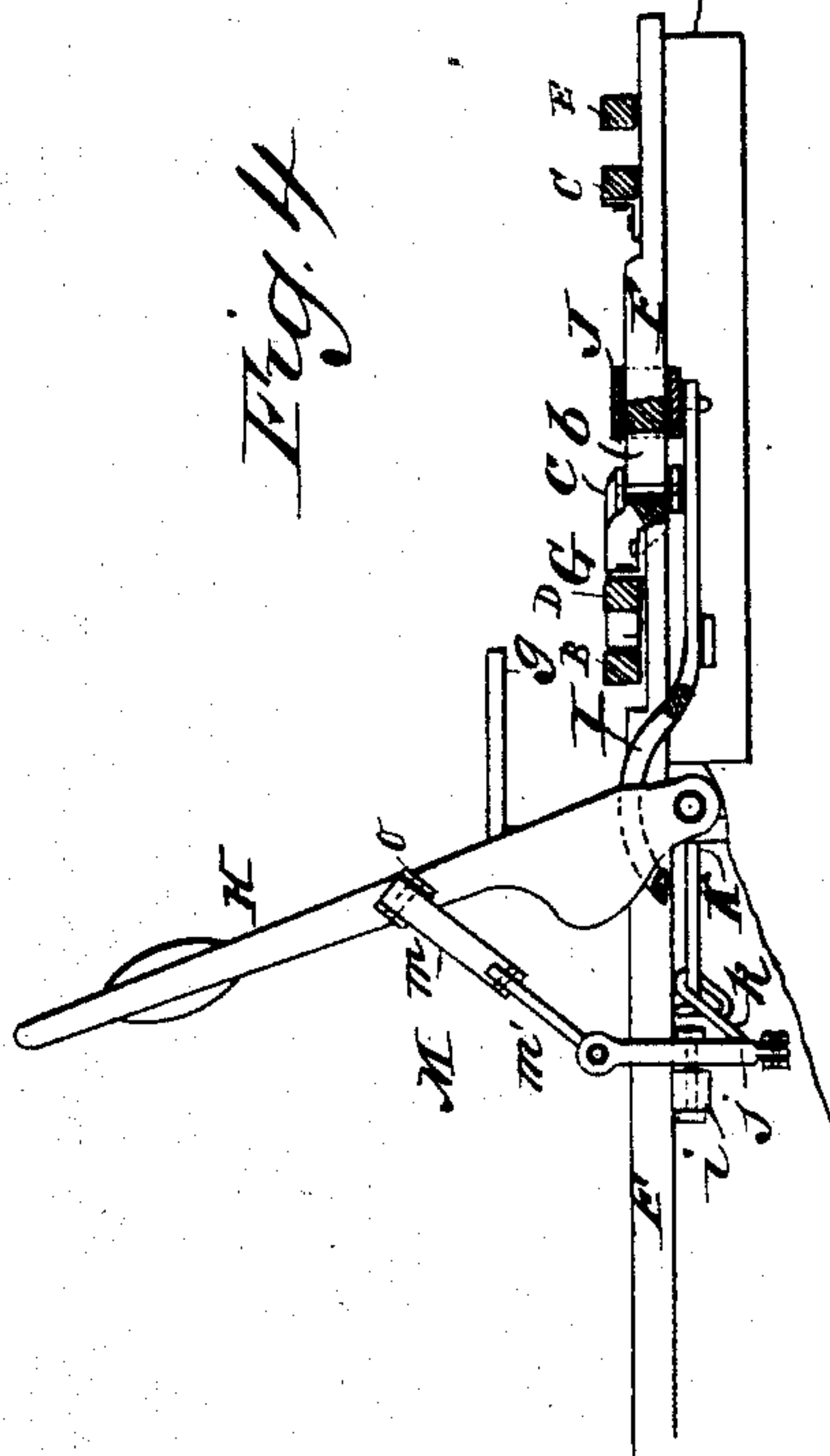
Fig. 3



WITNESSES:

Francis McAnally  
C. Sedgwick

Fig. 4



INVENTOR:

J. B. Suffern  
BY Munn & Co.  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

JAMES B. SUFFERN, OF HILLBURN, NEW YORK.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 370,988, dated October 4, 1867.

Application filed April 9, 1867. Serial No. 234,233. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES B. SUFFERN, of Hillburn, in the county of Rockland and State of New York, have invented new and useful  
5 Improvements in Railway-Switches, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a plan view of a switch embody-  
10 ing my improvement. Fig. 2 is a side elevation of the same. Fig. 3 is a plan view of my improvement, showing the parts in position to cause the engine to keep on the main track; and Fig. 4 is a cross-section of the same on the  
15 line *xx* in Fig. 1.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to provide a  
20 switch which will be operated by the locomotive without the necessity of applying to the locomotive any fixtures and without any attention from the locomotive-engineer.

My invention consists in the combination,  
25 with a track-lever adapted to operate the switch-bar, of a locking and releasing device connected with the switch-bar and adapted to lock the track-lever, so as to cause it to move the switch-bar when engaged by the car-wheels,  
30 and thus close the switch, or to release the track-lever, so that a passing train will produce no effect upon the switch-bar, thereby permitting the train to take a side track.

The main-track rails A B are arranged with  
35 reference to the switch-rails C D in the usual way—that is to say, the switch-rail D is provided with a tapered end, *a*, adjoining the track-rail B, and the switch-rail C forms a portion of the main track, while the main-track rail A is connected permanently with the sid-  
40 ing-rail E. The switch-rail D and the siding-rail E therefore form the siding, while the main-track rail A, the switch-rail C, and the main-track rail B form the main track. The rails C D are fixed at one end and arranged to  
45 spring at their free tapered ends, the free ends being attached to a switch-bar, F, which is connected with a switch-stand of any approved construction. The switch-bar F is provided with a slot, *b*, near the center thereof, and to  
50 one of the ties, a short distance from the points of the switch-rails, is pivoted a curved track-

lever, G, having a forked end, which embraces the switch-bar F, and is provided with a bolt, *c*, which passes through the slot *b* of the switch-  
55 bar. The convex side of the curved track-lever G is normally in contact with the track-rail B, leaving wedge-shaped openings *d* upon  
60 either side of the point of contact between the convex side of the track-lever and the rail B, so that a car-wheel passing along the rail B in  
65 either direction would throw the track-lever G away from the rail B.

Upon the side of the switch-bar F is pivoted a weighted cam lever, H, embraced by a yoke, I, connected with a slide, J, placed on the  
70 switch-bar F beyond the forked end of the track-lever G. By means of the cam-lever H the slide J may be locked in a position remote from the slot *b* of the switch-bar F, so as to permit of the free movement of the track-lever  
75 G without moving the switch-bar; or it may be locked against the side of the track-lever, so as to prevent the track-lever from moving without moving the slide J and the bar F. When the lever H is raised, the track-lever is  
80 free; but when the said lever is depressed the track-lever is locked to the switch-bar F, so that the said lever cannot move without also moving the switch-bar.

To render this device automatic, a vertical  
85 shaft, *f*, is placed at a short distance from the track-lever and provided with an arm, K, also with a right-angled arm, L, which extends outward and upward. Upon the upper end of the shaft *f* is loosely placed an arm, *g*, which  
90 projects into the path of the locomotive-pilot, and is held in position by a spiral spring, *h*, surrounding the shaft *f*, and attached at one end to the said shaft and at the other end to the arm *g*. Upon an arm, *i*, projecting from  
95 the side of the switch-bar F, is pivoted a lever, *j*, which is connected by a rod, *k*, with the arm K. In the upper end of the lever *j* is formed a slot, *l*, at right angles to the plane of the movement of said lever, and in the slot *l* is piv-  
100 oted one end of a toggle, M, formed of two arms, *m m'*, jointed together by the pivotal pin *n*. The opposite end of the toggle M is pivoted between a pair of ears, *o*, projecting from the side of the lever H.

When a train approaches the switch in the direction indicated by the arrow, it may safely



pass over the switch in the usual way without affecting any of the working parts other than to set the switch in a closed position, so as to render the main track practically continuous. When  
 5 a train approaches the switch from the opposite direction, the pilot of the locomotive engages the lever *g*, bringing it into engagement with the arm *L*, thereby turning the shaft *f*, tripping the toggle *M*, allowing the lever *H* to  
 10 fall by its own gravity into a position parallel with the bar *F*, and, the track-lever *G* being locked with the bar *F*, the engagement of the wheels with the track-lever pushes it away from the track-rail *B*, and thus moves the bar  
 15 *F* and switch-rail *C*, as indicated in dotted lines in Fig. 1, thereby rendering the track continuous, so that the train may pass over the switch in safety without danger of being run onto the siding.  
 20 It will be seen that, as the arm *g* is free to move in the opposite direction, the passing of the train in from the switch toward the shaft *f* will produce no effect other than moving the lever *g* against the pressure of the spring *h*.  
 25 When it is desired to operate the switch by hand in the usual way, the lever *H* is raised and locked in the raised position by the toggle *M*, and if the attendant should leave the lever *H* in an elevated position the arm *g*, shaft *f*,  
 30 and arm *K* will be brought into action, as the arm *g* will be engaged by the locomotive, so as to turn the shaft *f* and draw upon the rod

*k*, thereby turning the lever *j* and unlocking the toggle *M*, permitting the lever *H* to fall, and by moving the slide *J* forward lock the  
 35 track-lever *G* fast to the bar *F*, thereby putting the track-rail in position to be engaged by the car-wheels, as before.

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

1. The combination, with the slotted switch-rail-operating bar *F*, of the curved pivoted track-lever *G*, having a forked end embracing the bar *F*, the pin *c*, passing through the fork  
 45 of the said track-lever and through the slot of the bar *F*, the slide *J*, and means for moving and locking the said slide, substantially as specified.

2. The combination, with the curved track-lever *G* and the slotted switch-operating bar  
 50 *F*, of the slide *J*, yoke *I*, connected with the slide *J*, and the cam-lever *H*, substantially as specified.

3. The combination of the track-lever *G*,  
 55 bar *F*, slide *J*, yoke *I*, the toggle *M*, lever *j*, rod *k*, shaft *f*, provided with the fixed arms *K* *L*, the movable arm *g*, and spring *h*, connecting the said arm *g* with the shaft *f*, substantially as specified.

JAMES B. SUFFERN.

Witnesses:

JOHN J. BARBAROW,  
 WILLIAM H. ROSE.