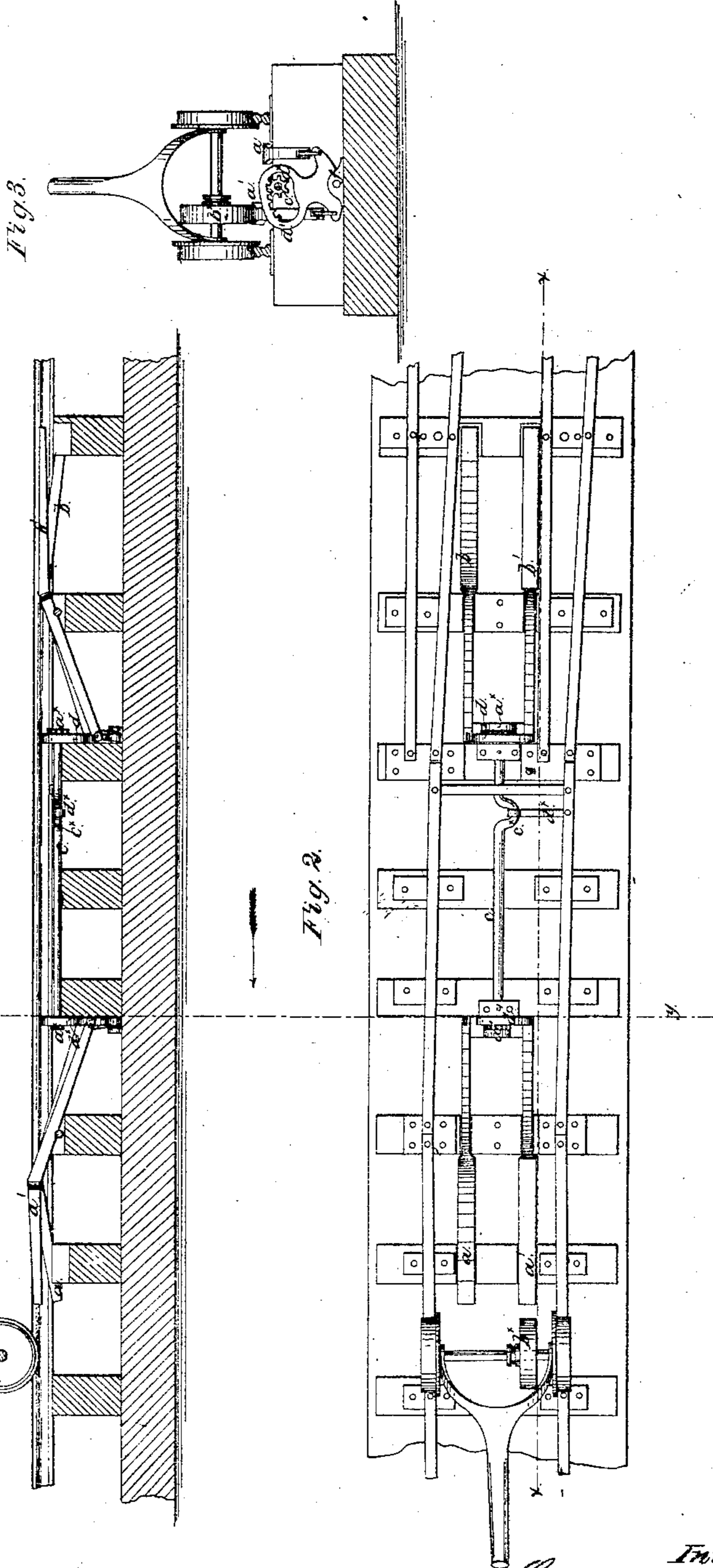


G. M. Cole.

Railroad Switch.

N<sup>o</sup> 63,218.

Patented Mar. 26, 1867.



Witnesses.

Thos. Trench  
J. A. Servia.

Inventor

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# United States Patent Office.

GILBERT M. COLE, OF FOLSOM CITY, CALIFORNIA.

Letters Patent No. 63,218, dated March 26, 1867.

## METHOD OF OPERATING RAILROAD SWITCHES.

The Schedule referred to in these Letters Patent and making part of the same.

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, GILBERT M. COLE, of Folsom City, in the county of Sacramento, and State of California, have invented a new and improved Mode of Operating Railroad Switches; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side sectional view of my invention taken in the line *x x*, fig. 2.

Figure 2, a plan or top view of the same.

Figure 3, a transverse vertical section of the same, taken in the line *y y*, figs. 1 and 2.

Similar letters of reference indicate like parts.

In fig. 2, the crank-shaft *c* lies midway between and parallel with the line of the rail tracks, and has pinion-wheels, *a a\**, at each end, which are operated by the sectors *d* or *d'*, causing said crank-shaft *c* to make a half revolution, whereby the switch changes its alignment to the other track. The sectors *d* and *d'* are caused to rock to the right or left on trunnions, as at *f*, when the levers *a* and *a'* or *b* and *b'* are alternately depressed, each pair of levers being linked or otherwise attached to the opposite arms of the sectors respectively. The levers *b* and *b'*, on the double track, are adjusted close to the insides of the inside tracks, so that when a car or locomotive approaches on the track to which the switch is not adjusted, the flange of the wheel will run upon the lever *b* or *b'*, according as the train may be approaching on the right or left-hand track, which lever, being depressed by the weight of the locomotive, will cause sector *d*, fig. 2, to rock towards the opposite track, giving a half revolution to the crank-shaft *c*, and throwing the switch, by means of a crank, *c\**, and connecting-rod, *d\**, in the alignment of the track on which the cars are approaching, so that the cars cannot run off the track. When lever *b* is being depressed lever *b'* is brought up in position to throw the switch back again in case the cars should come in on the other track, thus acting as an absolutely self-adjusting safety-switch when the cars approach from that direction. At the other end of the switch levers *a* and *a'* are arranged in a similar manner to levers *b* and *b'* and are operated in a similar manner, except that said levers *a* and *a'* are located away from the tracks and nearer together, and are to be operated at the pleasure of the engineer by means of an extra loose wheel, *b\**, hung on the middle of the forward axle of the locomotive truck in such manner that the engineer can move it to the right or left on the axle, so that it will be on a line with whichever lever he pleases. If he wishes to take the left track he throws the said loose wheel so as to operate the right lever, and *vice versa*.

When a train is approaching the vibrating switch, on either branch of the double track with which it connects, if the proper adjustment of the switch with the track upon which the train is approaching depends upon any act to be performed by the switch-tender or the engineer, the neglect to perform such act will inevitably cause the train to run off the track. But as the switch will always be in connection with one track or the other, a train approaching in the opposite direction will not run off the track, even if the switch be turned the wrong way, but will only take the wrong branch of the double track. Hence it is more important that the switch should be absolutely self-adjusting when the train is approaching it on either branch of the double track than when approaching in the opposite direction. But in order to dispense with the services of a local switch-tender it is necessary, in connection with means to render the switch absolutely self-adjusting when the train is approaching it on the double track, to have some means provided by which, when the train is approaching in the opposite direction, the engineer can cause the switch to become self-adjusting, if not absolutely so. I am aware that it has been attempted heretofore to make a switch absolutely self-adjusting, as the train approaches it on the double track, by means similar to those herein described for that purpose, and I am also aware that the device of a movable wheel on the axle of the locomotive truck, to operate on levers to move the switch, when adjusted for that purpose by the engineer, is not new; but I am not aware that any means for rendering the switch absolutely self-adjusting as the train approaches the switch on either branch of the double track, in connection with the means by which the engineer can render the switch self-adjusting as the train approaches in the opposite direction, so as to obviate all danger of the train running off the track, and at the same time dispense with the services of a local switch-tender, have ever before been devised; but what I claim as my invention, and desire to secure by Letters Patent, is—

1. The mechanism herein described, for rendering a railroad switch absolutely self-adjusting as the train approaches it on either branch of the double track, in combination with the mechanism herein described by which the engineer can render the switch self-adjusting as the train approaches in the opposite direction.

2. I claim the levers *b b'*, the pinion *a\**, the sector *d*, shaft *c*, and crank *c'*, in combination with the levers *a a'*, pinion *a*, sector *d'*, and the loose wheel *b\** on the shaft of the locomotive truck, all constructed, arranged, and operating substantially as described.

GILBERT M. COLE.

Witnesses:

ELMER LOVELL,  
M. T. RUDY.