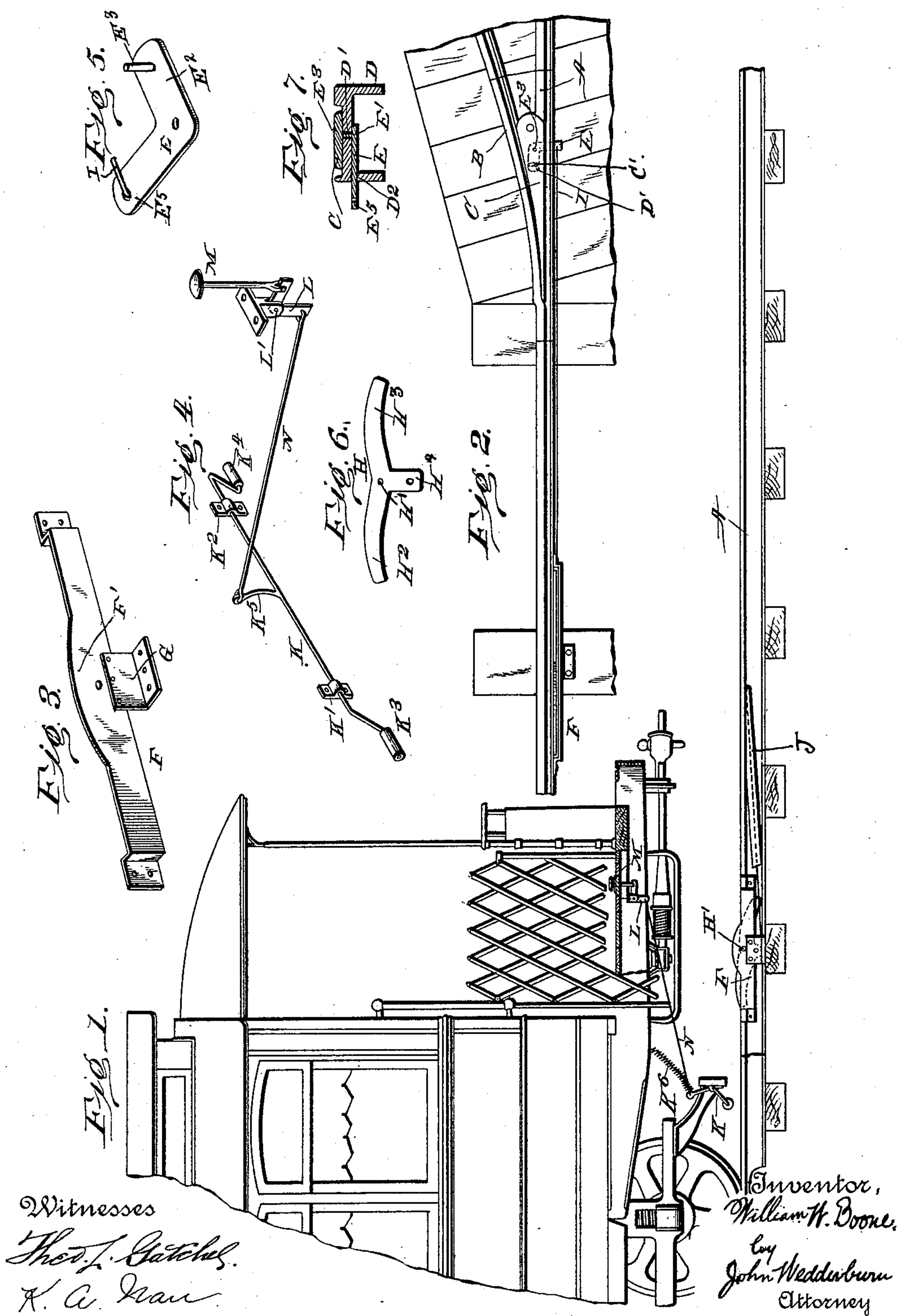


W. W. BOONE.  
RAILWAY SWITCH THROWER.

Patented June 1, 1897.





# UNITED STATES PATENT OFFICE.

WILLIAM W. BOONE, OF BALTIMORE, MARYLAND.

## RAILWAY-SWITCH THROWER.

SPECIFICATION forming part of Letters Patent No. 583,591, dated June 1, 1897.

Application filed June 11, 1896. Serial No. 595,112. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. BOONE, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Railway-Switch Throwers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as it appertains to make and use the same.

My invention relates to railway-switch throwers operated from a moving car.

My object is to provide more simple, durable, and efficient track-switch-operating mechanism, and, further, to provide superior tripping mechanism on the moving car whereby the switch can be quickly and easily thrown either way.

Having these objects in view, the invention consists of certain novel features and combinations appearing more fully hereinafter.

In the accompanying drawings, Figure 1 is a side elevation of the complete mechanisms; Fig. 2, a plan view of the track mechanism; Fig. 3, a detail view of certain brackets; Fig. 4, a like view of the tripping mechanism carried by the car; Fig. 5, a detail of a certain bell-crank lever; Fig. 6, a similar view of a rocking lever, and Fig. 7 a cross-section of the switch tongue and rails.

I will first describe the track mechanism.

A is one rail of the main line, and B one rail of the branch. I have not deemed it necessary to disclose the other rails, as they do not enter into the invention.

C is an ordinary switch-tongue whose heel is pivoted to the usual bed-plate D, and it serves to lead the wheels onto either track, according to its position, as is well known to those skilled in the art to which this invention appertains. I provide a bell-crank lever E, which is pivoted at E' to the under side of the bed-plate. The arm E<sup>2</sup> of this lever is provided with a pin E<sup>3</sup>, which projects up through a curved slot D' in the bed-plate and is received in a hole C' in the switch-tongue. The other arm E<sup>5</sup> of the lever projects out through a slot D<sup>2</sup> in the side of the bed-plate. When this bell-crank lever is rocked, the switch-tongue is moved one way or the other. At a suitable distance from

the switch-tongue there is located a bracket F, which is secured to the rail A and is provided with an upwardly-curved cam F'. This bracket is further strengthened and supported by an auxiliary bracket G, which is connected thereto and has a foot resting on and connected to a tie.

H is a rocking lever which is pivoted on a bolt H', passing through rail A and bracket F. This lever is provided with diverging curved arms H<sup>2</sup> and H<sup>3</sup> and a central depending short arm H<sup>4</sup>. A rod I connects this short arm with the arm E<sup>5</sup> of the bell-crank lever, so that when the rocking lever is moved the bell-crank lever will also move and throw the switch. I find it preferable to house rod I to prevent injury to the same. This is accomplished by employing a strip of discarded boiler-iron J, which sets against the rail-flange.

Having described the track mechanism, I will now describe the car mechanism.

K designates a crank-shaft which is journaled in bearings K' and K<sup>2</sup>, connected to the rear side of the pilot-board, and carries on its ends rollers K<sup>3</sup> and K<sup>4</sup>, which are adapted to ride on the rocking lever and curved cam of the main bracket when the crank-shaft is properly rotated. This crank-shaft is provided with an arm K<sup>5</sup>, and K<sup>6</sup> designates a coil-spring which has one end connected to this arm and the other end to the car. This spring tends to keep the crank-shaft turned and the rollers normally elevated.

L is a bell-crank lever which is pivoted at L'. A headed push-pin M is connected to the horizontal end of this lever and extends up through the car-platform within easy reach of the motorman, so that he can depress it with his foot. The other arm of the lever is connected to arm K<sup>5</sup> by a rod N.

The operation is as follows: Assuming that arm H<sup>2</sup> of the rocking lever is elevated, the toe of the switch-tongue will then lie against rail A and the branch line of the railway-track will be complete. If the motorman desires to keep to the branch line, he does not use the throwing mechanism. If, on the other hand, he wants to take the main line, before the car reaches the rocking lever he depresses the push-pin with his foot, thereby

throwing the rollers down, so that when the arm 1 and 2 is reached the engagement of the two devices will rock said arm downward and throw the switch. When the roller reaches  
5 and rides on the curved cam of the bracket, the upward movement of the push-pin indicates to the motorman that the switch has been thrown, and he immediately removes his foot and allows the spring to retract the trip-  
10 ping mechanism, so that the switch will not be thrown back again. The arm H<sup>3</sup> has been elevated during the preceding operation, so that the switch can be thrown again by another car.

15 Having thus described the invention, what is claimed as new is—

1. In a switch-thrower, the combination with a switch, of a rocking lever formed of a single piece of material having oppositely-  
20 tending curved cam-arms, a connection between the rocking lever and the switch, and

tripping mechanism on a moving car, substantially as described.

2. In a switch-thrower, the combination with a switch, of a pivoted rocking lever, 25 formed in a single piece and having oppositely-extending cam-arms, an operative connection between the rocking lever and the switch, a bracket having a cam located adjacent to the switch-arms of the rocking lever, 30 said rocking lever being journaled in the bracket, and tripping mechanism carried on a moving car, and adapted to engage the arms of the rocking lever and cam, substantially as described.

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

WILLIAM W. BOONE.

Witnesses:

GEO. E. TAYLOR,  
EDGAR F. DOBSON.