

917,270.

J. B. EDWARDS.  
SIGNALING SYSTEM.  
APPLICATION FILED JUNE 24, 1908.

Patented Apr. 6, 1909.

2 SHEETS—SHEET 1

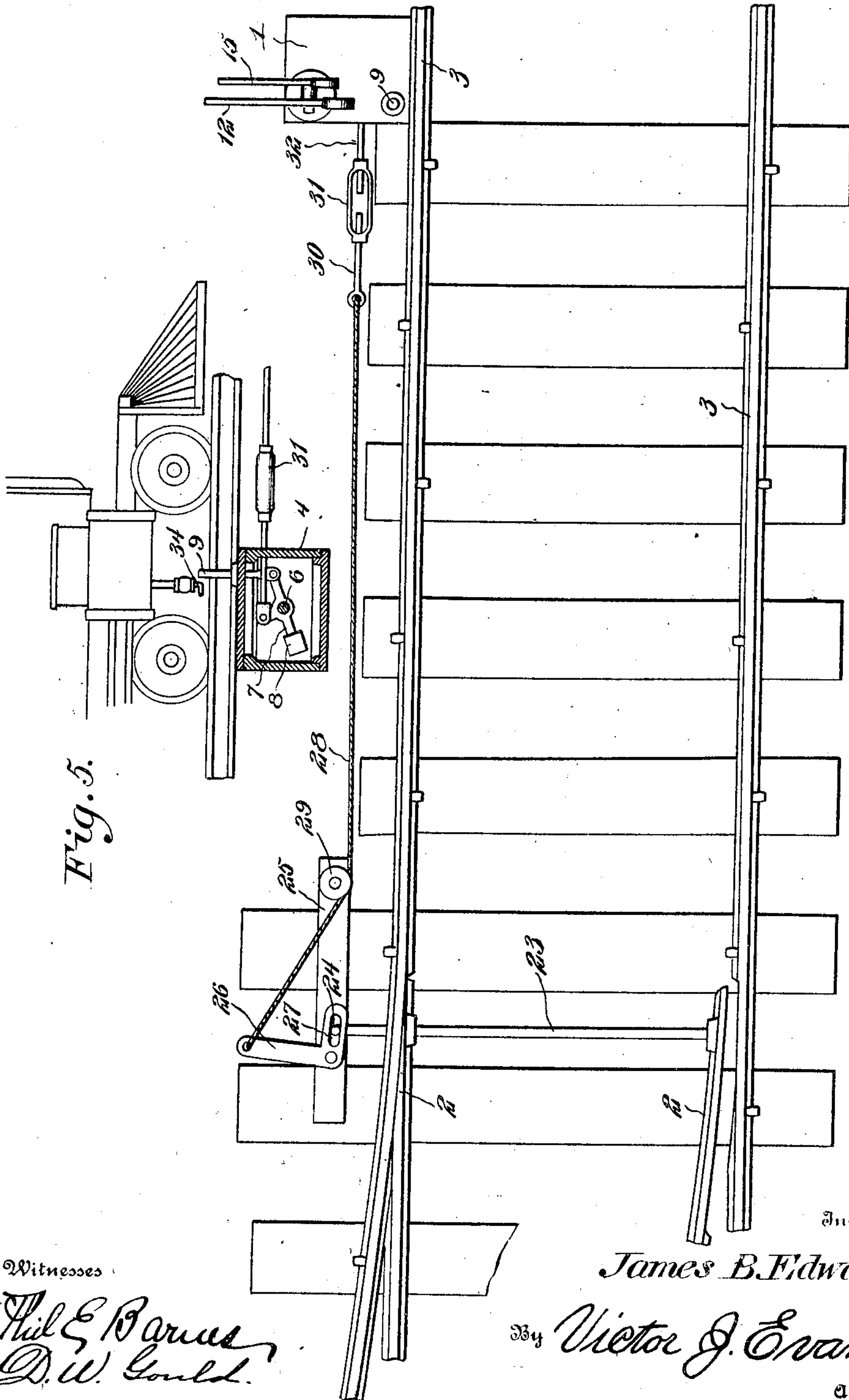


Fig. 5.

Fig. 1.

Witnesses

*Thos E Barnes*  
*D. W. Gould*

Inventor

*James B. Edwards*

By

*Victor J. Evans*

Attorney

917,270.

J. B. EDWARDS.  
SIGNALING SYSTEM.  
APPLICATION FILED JUNE 24, 1908.

Patented Apr. 6, 1909.  
2 SHEETS—SHEET 2.

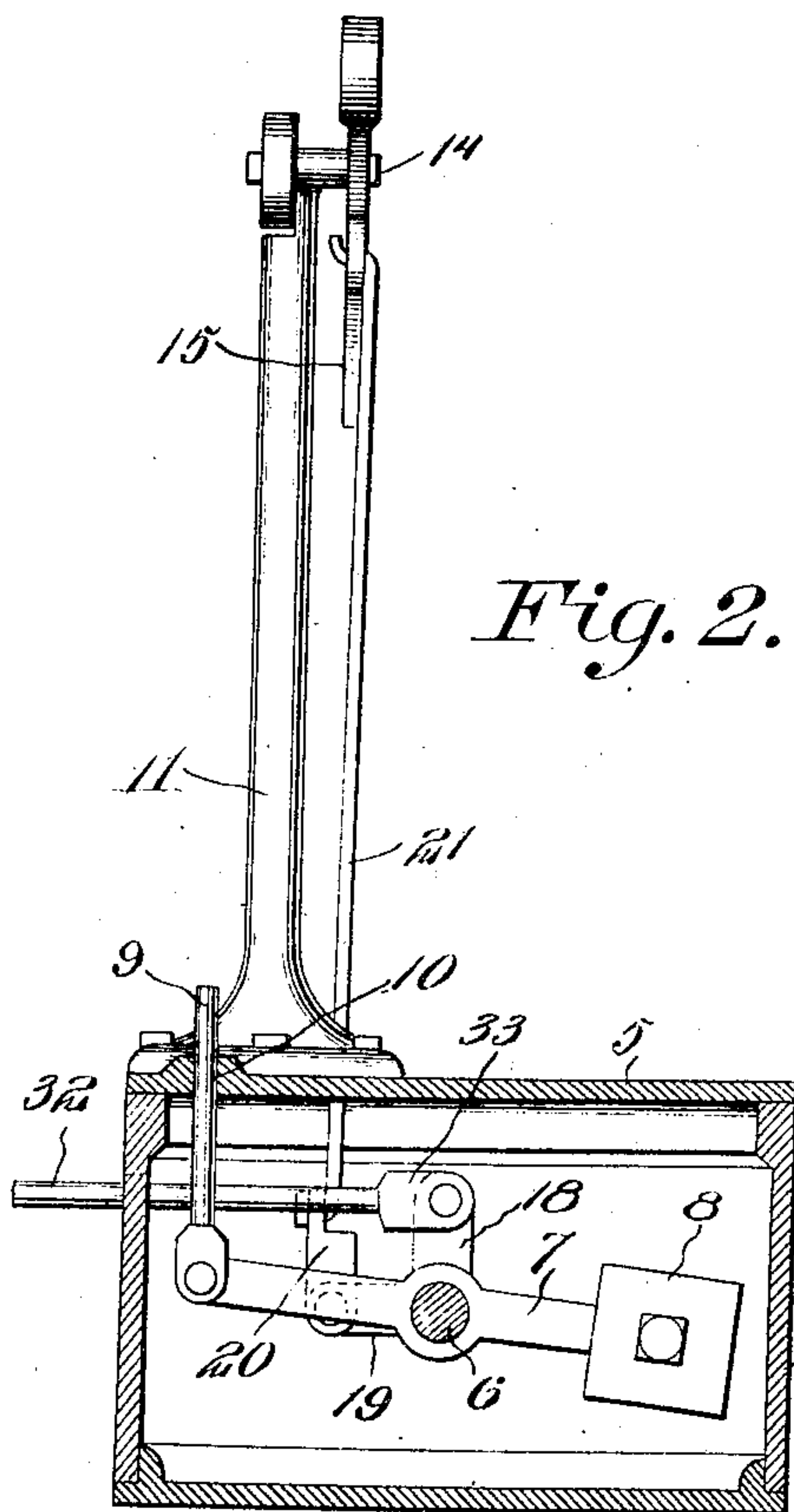


Fig. 2.

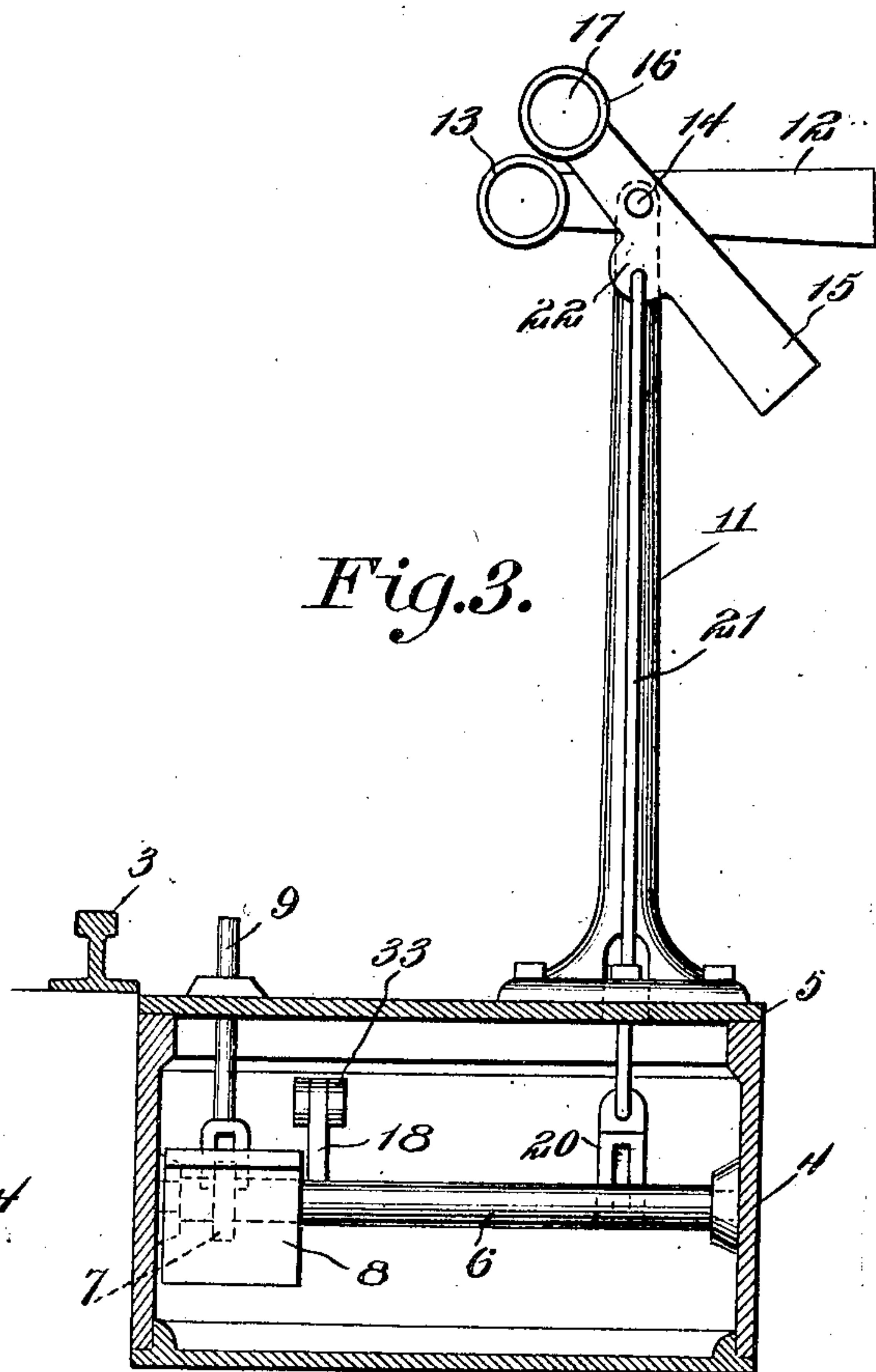


Fig. 3.

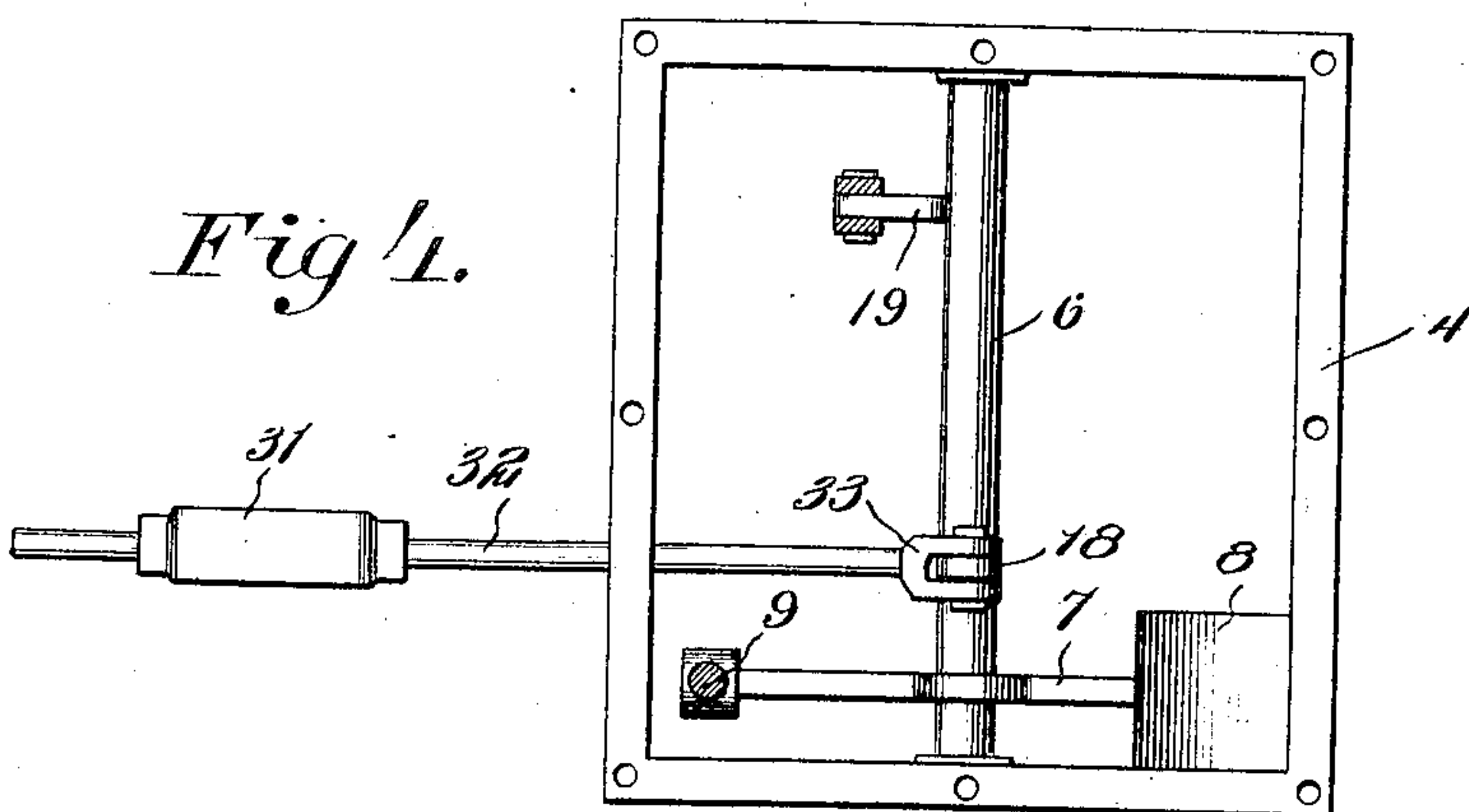


Fig. 4.

Inventor

James B. Edwards

By Victor J. Evans

Attorney

Witnesses.

Phil E. Barnes.  
D. W. Gould.



# UNITED STATES PATENT OFFICE.

JAMES B. EDWARDS, OF COLUMBIA, SOUTH CAROLINA, ASSIGNOR OF ONE-HALF TO  
ALEXANDER ROWLAND, OF COLUMBIA, SOUTH CAROLINA.

## SIGNALING SYSTEM.

No. 917,270.

Specification of Letters Patent.

Patented April 6, 1909.

Application filed June 24, 1908. Serial No. 440,167.

*To all whom it may concern:*

Be it known that I, JAMES B. EDWARDS, a citizen of the United States, residing at Columbia, in the county of Richland and State of South Carolina, have invented new and useful Improvements in Signaling Systems, of which the following is a specification.

The invention relates to an improvement in signaling systems and apparatus designed primarily for application and control at a switch juncture with the main road, the construction providing a means whereby when the switch is open a danger signal is automatically set against the oncoming train and an automatic device is projected to insure operation of the air brakes and the stopping of the train.

The invention will be described in the following specification, reference being had particularly to the accompanying drawings, in which:—

Figure 1 is a plan illustrating the construction and arrangement of the signaling apparatus. Fig. 2 is a longitudinal section through the signal box. Fig. 3 is a transverse section through the same. Fig. 4 is a plan of the same. Fig. 5 is a view in elevation, partly in section, illustrating the application of the relief cock trip.

Referring particularly to the accompanying drawings, my improved apparatus comprises a signal box 1 located at a point remote from the switch points 2, the signal box being located adjacent the tracks 3 of the main line in advance of the switch.

The switch box comprises a rectangular casing 4 having a removable cover plate 5, this casing being designed to be sunk in the roadbed beyond and immediately adjacent one of the rails. Within the casing and arranged transversely of the same is mounted a shaft 6, on which near one end is secured a lever 7, the relatively rear end of the lever carrying a weight 8, while the forward end carries a trip rod 9 normally seated in and operable through an opening 10 in the cover plate. Secured upon the cover plate is the signal standard or post 11, carrying at its upper end a fixed signal or semaphore 12 preferably of white color to indicate clear, the rear or end of the signal carrying a lantern recess 13 for night signaling. Mounted upon a stud 14 projecting from the signal post is a signal or semaphore 15 correspond-

ing in size and shape to the signal 12, being, however, of a red or danger color, the relatively rear end of the signal having a frame 16 to carry a red target 17, which, when the signal is in set or danger position, is disposed in front of the lantern carried by the white signal to show a red or danger light to the oncoming train.

The shaft 6 adjacent the end remote from the lever 7 is provided with lugs 18 and 19 radiating from the shaft, said lugs being preferably disposed at right angles to each other and the former being adapted for connection with the switch operating means, as hereinafter described. The lug 19 is connected through a link 20 with a rod 21, which extends through the cover of the casing and is connected with an offset 22 depending from the relatively lower edge of the danger signal 15. The arrangement of the parts is such that when the shaft is operated to elevate the trip 9, the rod 21 is also pushed upwardly with the effect to arrange the signal 15 in danger indicating position.

The lug 18 is connected to the switch operating mechanism preferably by the means illustrated in Fig. 1, wherein the tie bar 23 of the switch points is extended beyond the rails and formed with an upwardly extending lug 24. Mounted upon a supporting plate 25 bridging the ties adjacent the switch points is an angle lever 26, one end of said lever being formed with a longitudinally disposed slot 27 adapted to receive the lug 24 of the tie bar, the opposing end of the angle lever being connected to a flexible connection, as a wire rope 28, which is guided in an idler 29 mounted on the supporting plate, and extends from said idler toward the switch stand 1. Adjacent the switch stand the terminal of the connector 28 is secured to a threaded rod 30 arranged to engage the operating member 31 of a turn buckle, a complementary, though opposingly threaded rod 32 engaging the opposite end of the member and extending within the case of the switch box, wherein it terminates in a bifurcated end 33 arranged to engage the lug 18.

The lugs 18 and 19 are preferably arranged in spaced relation lengthwise the shaft 6, and the arrangement of the parts is such that when the switch points are closed to maintain the continuity of the main line a pull is exerted upon the connector 28 with the effect



to rock the shaft 6 against the influence of the weight 8 and thereby depress the trip 9 and move the lug 19 downwardly with the effect to lower the danger signal. When the switch points are operated to open the switch, the tension of the connector 28 is released and the weight 8 rocks the shaft 6 with the effect to elevate the trip 9 and also elevate the danger signal, thereby advising the on-coming train of the condition of the switch.

The trip 9 is intended as an automatic means for setting the brakes in the event the engineer should wilfully or accidentally disregard the signal 15. For this purpose the trip is arranged immediately adjacent the track rail in position to engage and turn a relief cock 34 of the train pipe, whereby said pipe is bled and the brakes are automatically set thereby stopping the train before reaching the switch.

From the above description it will be obvious that as long as the switch is closed the tension of the connector 28 will maintain the trip 9 withdrawn and the signal 15 lowered or in clear position, thereby permitting the advancing engineer to see the white signal and to be thereby advised that the switch is closed. If, however, the switch is open the tension on the connector 28 is released and the weight 8 serves to move all parts to operative positions. If for any reason the connector 28 should become broken and thereby prevent movement of the signaling device under the influence of the switch, it will be seen that the weight 8 will thereupon automatically act to set the parts in danger position, thereby providing a check against the inoperativeness of the device through the breaking of the connector.

The movable parts are protected within the casing 4, which, of course, is to be weather proof, and the connector 28 and con-

nected parts are also to be suitably housed as is usual in signal wires or the like.

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

1. The combination with a switch and a signal, of a signal box arranged adjacent the signal, a shaft mounted for movement within the box, a lever fixed intermediate its ends on the shaft, a weight carried by one end of the lever, a trip rod carried by the opposite end of the lever and adapted to be projected through the upper wall of the box in the movement of the lever in one direction, a connection leading from the switch, a lug projecting radially from the shaft and fixed to the switch connection, a connection leading from the signal, and a lug projecting radially from the shaft and secured to the signal connection.

2. The combination with a switch and a signal, of a signal box arranged adjacent the signal, a shaft mounted for movement within the box, a lever fixed intermediate its ends on the shaft, a weight carried by one end of the lever, a trip rod carried by the opposite end of the lever and adapted to be projected through the upper wall of the box in the movement of the lever in one direction, a connection leading from the switch, a lug projecting radially from the shaft and fixed to the switch connection, a connection leading from the signal, and a lug projecting radially from the shaft and secured to the signal connection, said lugs projecting from the shaft at right angles to each other.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES B. EDWARDS.

Witnesses:

K. ALLEN,

E. T. BOEHMER.