April 22, 1924. 1,491,295

B. F. FINK

ELECTRIC RAILWAY SIGNAL

Filed Dec. 5, 1922

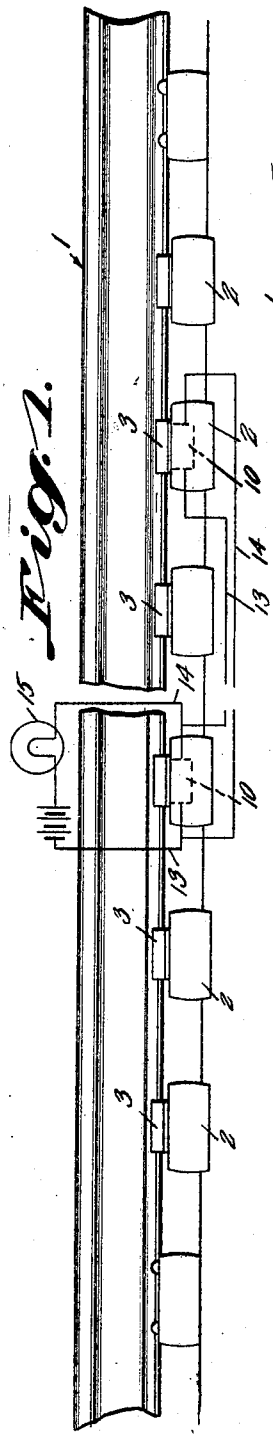


Fig. 1.

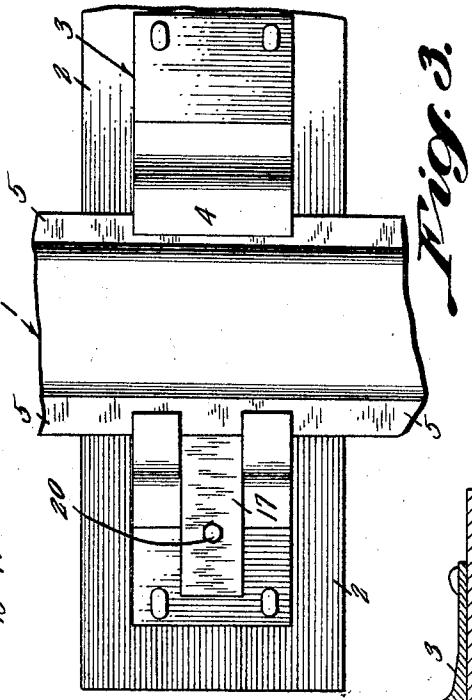


Fig. 3.

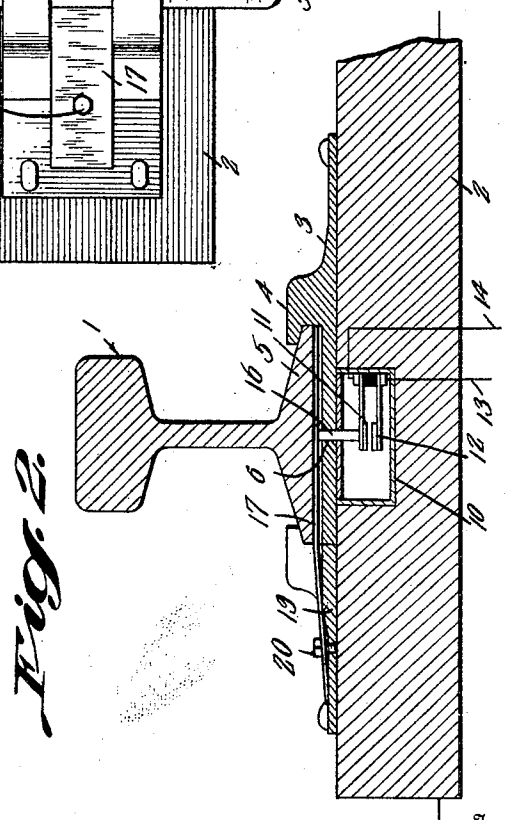


Fig. 2.

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UNITED STATES PATENT OFFICE.

BENJAMIN FRANKLIN FINK, OF HUNTINGDON, PENNSYLVANIA.

ELECTRIC RAILWAY SIGNAL.

Application filed December 5, 1922. Serial No. 605,084.

To all whom it may concern:

Be it known that I, BENJAMIN FRANKLIN FINK, a citizen of the United States, residing at Huntingdon, in the county of Huntingdon and State of Pennsylvania, have invented a new and useful Electric Railway Signal, of which the following is a specification.

This invention relates to electric railway signals of the class employed for the purpose of causing a visual or audible signal to be operated by railway trains or cars passing over the track.

The object of the invention is to provide a simple and efficient circuit closer operable by a passing train to control a visual signal to indicate to a train following that a train is on the track ahead.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:—

Figure 1 represents a side elevation of a portion of a railway track with this improved signal shown applied showing a diagrammatic view of the circuits for the track and signal, parts being broken out.

Fig. 2 is an enlarged detail transverse section, and

Fig. 3 is a top plan view.

In the embodiment illustrated, a railway rail 1 is shown mounted on the ties 2, said rail being spiked to the ties in the usual manner except at points where this invention is to be applied. The rail is left detached from the ties at spaced intervals, being held in operative position by plates 3 each of which has upstanding flanges 4 straddling the base 5 of the rail as is shown clearly in Fig. 2, and the ties at these points are countersunk a little below the others.

At certain intervals, one of the plates 3 is apertured as shown at 6 to provide for the mounting beneath the rail of the device constituting this invention. This device comprises a switch box 10 which is shown located in a recess in one of the ties 2 beneath the base of the rail. In this switch box is mounted two contacts 11 and 12 which as shown in Fig. 2 are normally separated and when closed complete the circuit through the wires 13 and 14, which operates to light the signal 15 located at a point remote from the switch box.

A post 16 extends through the top of the box 10, being preferably attached to the upper contact member 11 so that when the post is depressed, said contact will engage the contact 12 to close the circuit. This post 16 projects above the upper face of the tie 2 through the aperture 6 in the plate 3 and its upper end is positioned directly beneath the rail base 5 so that when the rail is depressed by the passing of the train, the post will be lowered to close the circuit and actuate the signal.

A heavy plate spring 17 is located in a recess 18 in one flange of plate 3 and extends beneath the rail base 5 and is sufficiently strong to raise the rail 1 about one-eighth or one-quarter of an inch, which is sufficient to relieve the pressure on the contact 11 and permit it to move away from contact 12 and open the circuit. This spring operates on a fulcrum 19 and is secured to plate 3 by a bolt 20 which is adjustable to vary the tension of the spring.

A plurality of switch boxes 10 are designed to be placed under a single rail 1 so that the passage of the train thereover will insure the actuation of the signal. The various switches are designed to be connected with the same signal.

It is of course understood that the wires connected with the contacts in the switch boxes will extend out over the road to any desired distance from two thousand to five thousand feet, thus lighting the track at any distance.

In the use of this invention, it is to be understood that as long as the signal remains lit, a following train will be apprised of the fact that a train is on the track in front of it within a danger limit and the engineer will be notified of this fact so that he will not pass over the rail until the light is extinguished, thus preventing all possibility of accidents.

I claim:—

1. The combination with a railway track including ties and the track rails; of a switch box located below the track rail, a normally open switch mounted in said box, said switch including two superposed nor-

mally spaced contacts, a post rising from the upper contact and extending into position below and into engagement with the track rail and adapted to close the switch on the depression of the rail, a plate located beneath the rail between it and said box and apertured for the passage of the post said plate having a recess extending under the rail, a heavy plate spring located in said recess and extending beneath the rail base, a fulcrum on said plate on which said spring operates the outer end of the spring being bolted to the plate, said spring having an aperture for the free passage of the post.

2. In an electric signal for railways, a switch box to be positioned below the track rail and having a normally open switch therein, a post extending from the switch into position below the track rail adapted to close the switch on the depression of the rail, a spring mounted beneath the track rail and having sufficient strength to raise the rail after being depressed to permit the switch to open, and a plate mounted on the tie between it and the rail base and having upstanding side flanges to straddle said rail base and provided with an opening through which the post operates, said plate having a seat in which said spring is mounted, and means for adjusting the tension of the spring.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

BENJAMIN FRANKLIN FINK.

Witnesses:

BLANCHE BECK,

BLANCHE PUTT.