

J. F. HAWLEY & F. L. MOSS.
CIRCUIT CLOSER.
APPLICATION FILED DEC. 19, 1916.

1,233,231.

Patented July 10, 1917.

Fig. 1.

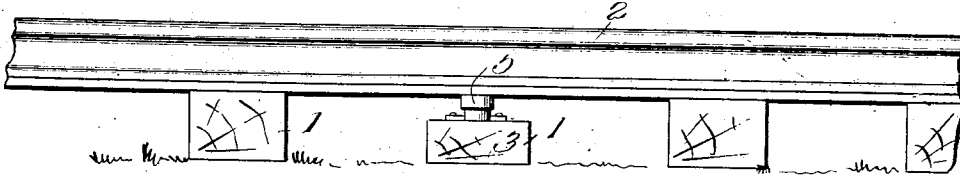


Fig. 2.

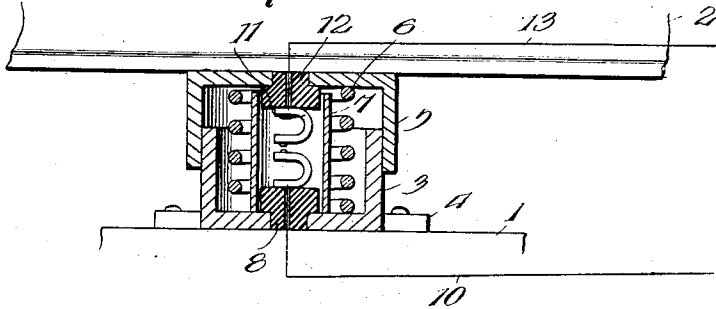
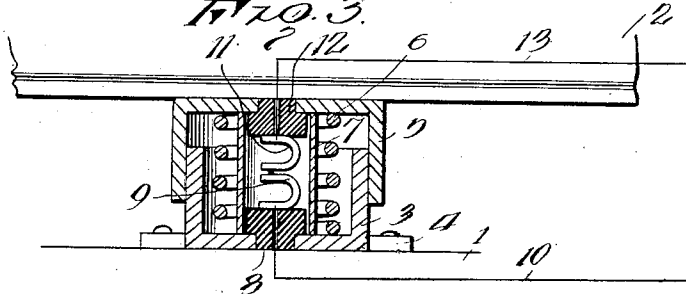


Fig. 3.



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JOHN F. HAWLEY AND FRED L. MOSS, OF CHILLICOTHE, MISSOURI.

CIRCUIT-CLOSER.

1,233,231.

Specification of Letters Patent.

Patented July 10, 1917.

Application filed December 19, 1916. Serial No. 137,915.

To all whom it may concern:

Be it known that we, JOHN F. HAWLEY and FRED L. MOSS, citizens of the United States, residing at Chillicothe, in the county of Livingston and State of Missouri, have invented certain new and useful Improvements in Circuit-Closers, of which the following is a specification.

This invention relates to circuit closers and more particularly to that class of such devices which are designed to be employed beneath the rails of a railway track for the purpose of closing a signal circuit upon the passage of a train over the rails at the point of location of the device, and the application is, more specifically speaking, a division of our copending application for patent on railway crossing signals, filed April 6, 1916, Serial No. 89414.

It is one aim of the present invention to provide a circuit closing device of the class mentioned which will be so constructed as to not be liable to have its parts disarranged due to the shocks incurred by the passage of a train over the rail beneath which the device is located.

Another aim of the invention is to provide a circuit closing device which will be so constructed that the contact elements thereof will be completely housed in a casing which will protect them not only from contact with moving objects, but also from rain or snow.

In the accompanying drawings:

Figure 1 is a view in side elevation of a section of railway track illustrating the manner of arranging the circuit closer embodying the present invention beneath one of the rails;

Fig. 2 is a vertical sectional view through the circuit closer, the contacts being separated as in the normal condition of the device;

Fig. 3 is a similar view, but illustrating the contact elements in mutual engagement as when a train is passing over the rail beneath which the device is arranged.

In the drawings the railway ties are indicated by the numeral 1 and the rail by the numeral 2 and by reference to Fig. 2 it will be observed that the upper surface of that one of the ties upon which the circuit closing device of the present invention is disposed and secured, is located in a plane below the plane occupied by the upper faces of the ties at either side thereof so as to

provide a space between the upper face of the first-mentioned tie and the under face of the rail base to accommodate the said circuit closing device.

The circuit closing device comprises a lower casing section 3 having an attaching flange 4 whereby it may be secured upon one of the ties supporting the rail 1 and, more specifically, the tie first-mentioned above, and this casing section is open at its upper end and closed at its lower end and has telescopically fitted thereto, an upper casing section indicated by the numeral 5. This upper section is closed at its upper end and bears against the under side of the rail base, the sections being held normally in a direction toward separation by means of a spring 6 which is housed within the casing comprising the said sections and which bears at its lower end against the closed bottom of the section 3 and at its upper end against the closed top of the section 5. Arranged within the sections and surrounded by the spring is a sleeve 7 which may either be loosely disposed in place or integral with the bottom of the section 3 and within the lower end of the sleeve there is arranged a block 8 of insulation supporting a spring contact finger 9 from which leads a conductor wire 10 in the signal circuit to be closed by the said device. The contact finger 9 is bowed, or in other words, viewed in elevation is of U-shape and is resilient, and a similar finger 11 is mounted upon a block 12 of insulating material which block is housed within the upper end of the sleeve 7 and is secured in any suitable manner to the closed upper end of the casing 5. A conductor wire 13 leads from the contact finger 11 through the insulating block 12 and is also located in the same circuit as the wire 10. It will be observed that in the normal positions of the parts the upper end of the sleeve 7 is spaced below the closed upper end of the casing section 5 and that the free ends of the contacts are mutually spaced. However, when a train is passing over the rail at the point of location of the circuit closing device, the rail will be slightly depressed throughout its portion which extends between the ties at the opposite sides of the tie first-mentioned above and the casing section 5 will be moved downwardly against the tension of the spring 6, thereby bringing the free end of the contact finger 11 into engagement with the free end of the contact

finger 9 and thus closing the circuit in which the wires 10 and 13 are located.

Inasmuch as the section 5 of the casing fits telescopically over the upper open end of the section 3 of the casing, rain and snow cannot enter the casing and, furthermore, the sleeve 7 adds to the protection of the contacts from moisture. This sleeve also insures against any possible contact of the spring 6 with the contacts 9 and 11.

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

1. A circuit closing device of the class described including telescoping casing sections, means yieldably holding the same in a direction toward separation, bowed resilient contact elements carried by the bottom of the under section and top of the upper section and insulated therefrom and having their free ends normally spaced and adapted to be brought into mutual engagement upon

telescopic movement of one section with relation to the other, and a sleeve located within the said sections and surrounding the said contacts.

2. A circuit closing device of the class described including telescoping casing sections, contact elements carried by the bottom of the under section and top of the upper section and insulated therefrom and having their contact portions normally spaced and adapted to be brought into mutual engagement upon telescopic movement of one section with relation to the other, a sleeve arranged within the casing sections, and a spring surrounding the said sleeve and yieldably holding the sections against relative telescopic movement.

In testimony whereof we affix our signatures.

JOHN F. HAWLEY. [L. S.]
FRED L. MOSS. [L. S.]