

D. ROUSSEAU.

Circuit-Closers for Railroad Signals.

No. 140,953.

Patented July 15, 1873

Fig. 1.

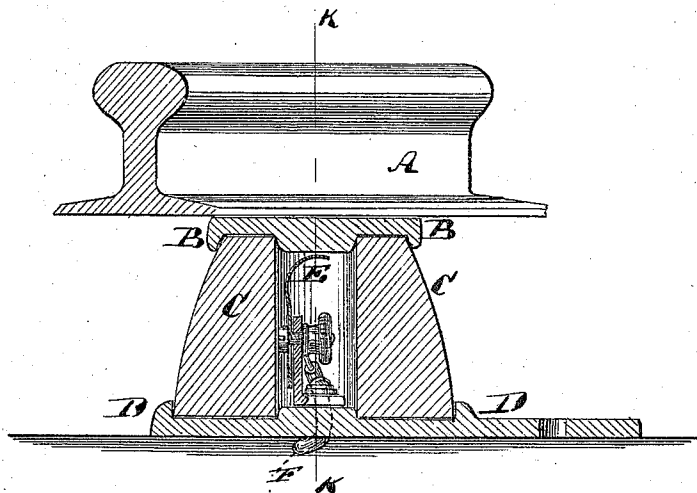
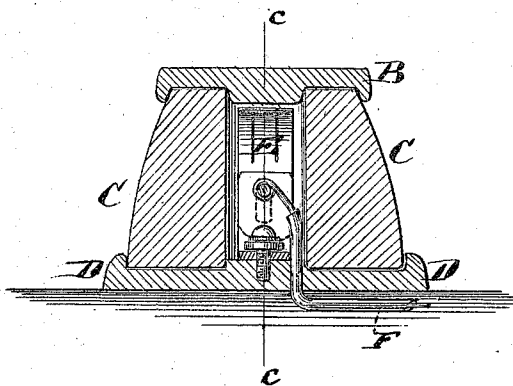


Fig. 2.



Witnesses

John Beecher.
Geo. H. Harnes

David Rousseau
by his attorneys
Brown & Allen

UNITED STATES PATENT OFFICE.

DAVID ROUSSEAU, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND
WM. C. SMITH, OF SAME PLACE.

IMPROVEMENT IN CIRCUIT-CLOSERS FOR RAILROAD SIGNALS.

Specification forming part of Letters Patent No. **140,953**, dated July 15, 1873; application filed
April 9, 1873.

To all whom it may concern:

Be it known that I, DAVID ROUSSEAU, of the city, county, and State of New York, have invented an Improved Circuit-Closer for Railways, of which the following is a specification:

The object of this invention is to, utilize the proportionate elasticity of railroad rails, in connection with the weight of trains passing over the same, for the purpose of establishing electric connection for operating suitable signals to announce the approach or departure of such trains.

My invention consists in placing beneath that part of the rail whose depression is to be utilized a plate supported on a cushion or spring, and in the normal condition of the rail out of contact with a metal spring or projection that is in connection with the conductor from an electric battery. The least depression of the rail caused by the passing over it of a train, locomotive, or car will crowd or lower the aforementioned metallic plate into contact with the metallic projection of the conductor, and thereby establish the circuit and operate the electric signal or other apparatus in the desired manner. By this means a positive and invariably reliable electric circuit-closer is produced, and the proper signals for noting the approach of a train or locomotive at suitable distances from such circuit-closing device will be given, without requiring any change in the construction of the cars or engines constituting the train, or any attachment thereto.

In the accompanying drawing, Figure 1 represents a sectional longitudinal elevation of my improved circuit-closer, the line *c c*, Fig. 2, indicating the plane of section. Fig. 2 is a vertical transverse section of the same on the line *k k*, Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents a portion of a railroad rail. Beneath the same and in contact therewith is a metal plate, B, resting on a rubber or other insulating cushion or support, C, which

is held in position by a suitable bed-plate, D. The cushion C may be hollow, as shown, to receive the metal end E of a telegraph-wire, F, which end E reaches near to, but not quite in contact with, the plate B, as clearly shown in both figures. I prefer to make that portion of the conductor F, which constitutes the end E, in the form of a metallic spring to make it yielding and cause it resume its normal position whenever pressure from above ceases. As soon as the train or car or locomotive passes over the rail A, it slightly depresses the same and causes the plate B to come into metallic contact with the end E of the conductor F, thereby establishing an electric circuit either through the rail A, or using the rail A as the ground-connection for the current. Instead of making the cushion C hollow, as shown, it may be made entirely solid, and the end E of the conductor may project by its side toward the plate B, although the former construction is in every way the most desirable, since it serves to protect the metal E against the injurious influences of moisture or atmospheric contact. The portion E of the conductor may, as shown, be slotted to be adjustable on its connection with the conductor F, and to be brought at a suitable distance from the plate B, which may be determined by the varying degrees of the elasticity of the rails.

I claim as my invention and desire to secure by Letters Patent—

1. The combination of the top and bottom plates B D, cushion C, and metallic conductor F with each other, to constitute an electric circuit-closer beneath a railroad rail, as described.

2. The combination of the adjustable spring E with the metallic conductor F and with the cushion C and plates B D for operation, as set forth.

DAVID ROUSSEAU.

Witnesses:

W. C. SMITH,
A. V. BRIESEN.