

D. ROUSSEAU.

Circuit-Breakers for Electric Railway Signals.

No. 144,568.

Patented Nov. 11, 1873.

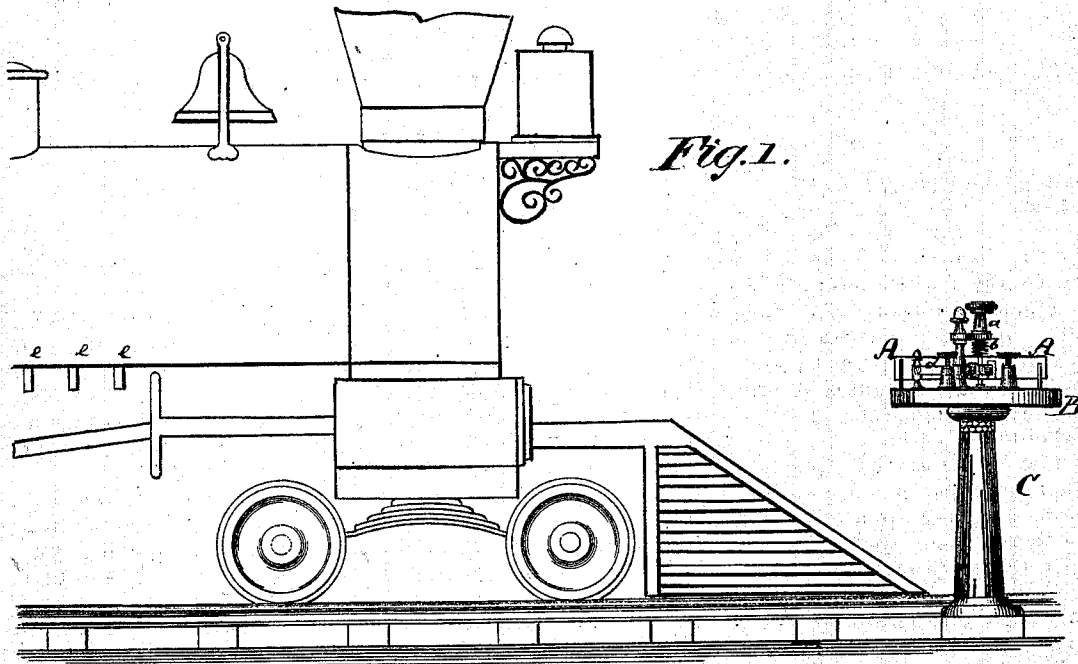


Fig. 1.

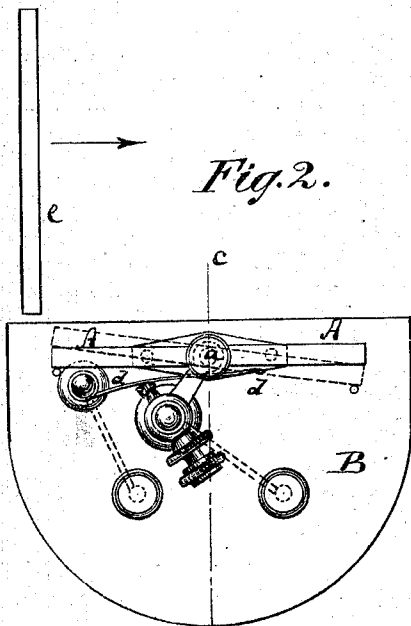


Fig. 2.

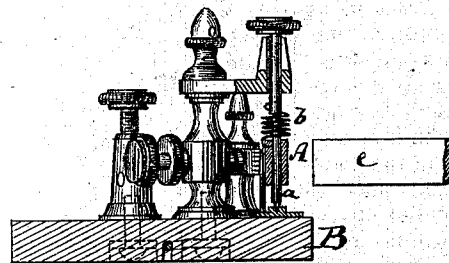


Fig. 3.

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

IMPROVEMENT IN CIRCUIT-BREAKERS FOR ELECTRIC RAILWAY-SIGNALS.

Specification forming part of Letters Patent No. **144,568**, dated November 11, 1873; application filed
February 5, 1873.

To all whom it may concern:

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

This invention has for its object to produce an apparatus for operating electric, audible, or visible railway-signals by the attraction or magnetic influence of passing engines or trains, without bodily contact of such engines or trains with such apparatus. My invention consists in arranging the armature of such circuit opening or breaking apparatus, or a magnetic needle on the same apparatus, within such proximity to the track that the metal of the engine or train, or metallic rods or bars specially applied thereto, will magnetically affect such armature or needle and cause it to be deflected from its normal position while the train or engine passes the apparatus, the deflection causing the desired interruption or establishment of electric currents whereby the audible or visible signal will be affected in the desired manner.

In the accompanying drawing, Figure 1 represents a side elevation of my improved apparatus; Fig. 2, a top view of the same; and Fig. 3, a vertical section of the same on the line C C, Fig. 2.

Similar letters of reference indicate corresponding parts of the figures.

The letter A represents a magnetic needle pivoted at or near its middle by a pin, *a*, in a suitable support, B, and so connected with a suitable tension-spring, *b*, as to be held by said spring, when not otherwise affected, in a certain normal position. In this position, which is indicated by full lines in Fig. 2, the needle A will be out of contact with certain metallic springs *d*, which are connected with one wire of the electric apparatus, while the pin *a*, on which the needle is pivoted, is connected with the other wire of the same. The apparatus containing the device described is on a post, C, or other suitable frame or standard supported near the track of the railroad, with the needle facing the said track. When the train or engine passes the apparatus the

metal of the latter, or, if this is not sufficiently effective, metallic rods or pieces *e e*, specially applied thereto, will, on their passing the stationary apparatus, attract one and repel the other pole of the needle A, and will thereby so deflect the same from its normal position that the needle will come in contact with the springs *d*, as indicated by dotted lines in Fig. 2, and by such contact establish an electric circuit that will operate in suitable manner the signal apparatus for announcing the approach or departure of the train.

The apparatus herein described is, of course, but one illustration of my invention, and may be materially varied without departing from the spirit of the invention. Thus, for example, I may so unite this apparatus with a signal that the signal will be displayed or operated by the breaking of the electric circuit, in which case the needle in its normal position will be in contact with the springs *d* or other equivalents, and when not in such normal position will be brought out of contact therewith, and thereby interrupt the electric circuit and operate the signal. In place of the needle A, I may obtain the same result by the use of an armature, which will be deflected and affected in similar manner by passing trains.

I may, if desired, apply magnets rigidly to the engine or cars of the train to affect the armature or needle, or the ordinary metallic projections or devices on such engine or train may suffice to properly affect the needle or armature. I therefore do not confine myself to any special arrangement of parts.

I claim as my invention—

1. The circuit opening or closing apparatus placed in proximity to a railway-track, to be actuated magnetically by a passing train or engine without bodily contact therewith, as specified.

2. The needle A arranged, in combination with the springs *b* and *d*, to be operated by a passing engine or train without contact, as set forth.

DAVID ROUSSEAU.

Witnesses:

A. V. BRIESEN,
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