J. I. CONKLIN, Jr.

CIRCUIT-CLOSERS FOR ELECTRIC RAILROAD SIGNALS.

No. 184,842. Patented Nov. 28, 1876.

Fig. 1.

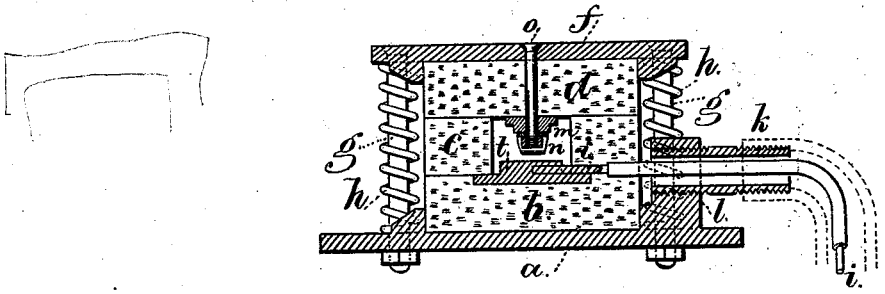
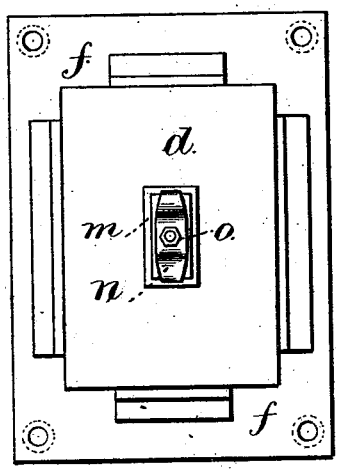


Fig. 2.



Witnesses

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IMPROVEMENT IN CIRCUIT-CLOSERS FOR ELECTRIC RAILROAD-SIGNALS.

Specification forming part of Letters Patent No. **184,842**, dated November 28, 1876; application filed April 27, 1876.

To all whom it may concern:

Be it known that I, JOSEPH I. CONKLIN, Jr., of the city and State of New York, have invented an Improvement in Circuit-Closers for Railroad-Signals, of which the following is a specification:

Track circuit-closers have been made of a spring of metal within a block of india-rubber. The same is liable to become misplaced, and to close the circuit by the action of moisture that may work into the cavity of the spring.

My invention is made for insuring a tight case for the circuit-closer, and for adjusting the same from outside, instead of having to separate the parts to obtain access to the circuit-closing spring.

In the drawing, Figure 1 is a vertical section, and Fig. 2 is an inverted plan, of the circuit-closer.

The base-plate *a* is of metal, and it is adapted to being placed upon a cross-tie or other support beneath the rail. Upon this plate *a* is the rubber spring, made of three layers, *b c d*. The layer *b* rests upon the base *a*, the layer *c* has a central recess, and the layer *d* is next to the metal cap-plate *f*. The cap-plate *f* and base *a* are connected by bolts *g*, and they can be drawn closer together by compressing the india-rubber *b c d* to adjust the circuit-closer, as hereafter described.

The springs *h* around the bolts *g* serve to lift the plate *f* and resist the compression due to the passing train. It is to be understood that the rail rests upon the plate *f*.

In order to protect the wire *i*, leading from the signal-instrument, the same is insulated by a covering of gutta-percha, and inclosed in an iron pipe. The iron pipe *k* terminates at the block *l* upon the plate *a*, and the wire *i* passes in between the rubber layers *b* and *c* to a metal plate, *t*, that is larger than the opening in *c*, and is held firmly in its place by the edges extending beyond the recesses in *c*, and the top of this plate *t* forms one face of the circuit-closer. The spring *n* is upon a block, *m*, that is at the under face of the rubber layer *d*, and this block *m* is bolted to the plate *f* by the bolt *o*.

It will now be apparent that the layers *b c d* of rubber, coming face to face under pressure, make the cavity of the circuit-closer perfectly tight, and that the circuit-closer is not liable to injury in consequence of very heavy trains or locomotives deflecting the rail, because the end of the bolt *o* will rest upon the plate *t* before the spring *n* can be injured, and the plate *t* can be pressed down into the layer *b* of rubber, and the parts will assume a normal position when the train has passed. The circuit-wire *i* is entirely between rubber surfaces, and not liable to injury, and the rubber around the bolt *o* makes a tight joint.

The proximity of the spring *n* to the plate *t* can be adjusted by drawing the plates *a f* by the bolts *g*, and compressing the rubber more or less.

I claim as my invention—

1. The plate *t*, with the circuit-wire *i*, in combination with the layers *b c* of india-rubber, and the circuit-closing spring *n*, substantially as set forth.

2. The layers of rubber *b c d*, plate *t*, circuit-wire *i*, spring *n*, bolt *o*, and block *m*, in combination with the plates *a* and *f* and bolts *g*, substantially as set forth.

Signed by me this 25th day of April, A. D. 1876.

J. I. CONKLIN, JR.

Witnesses:

GEO. T. PINCKNEY,

CHAS. H. SMITH.