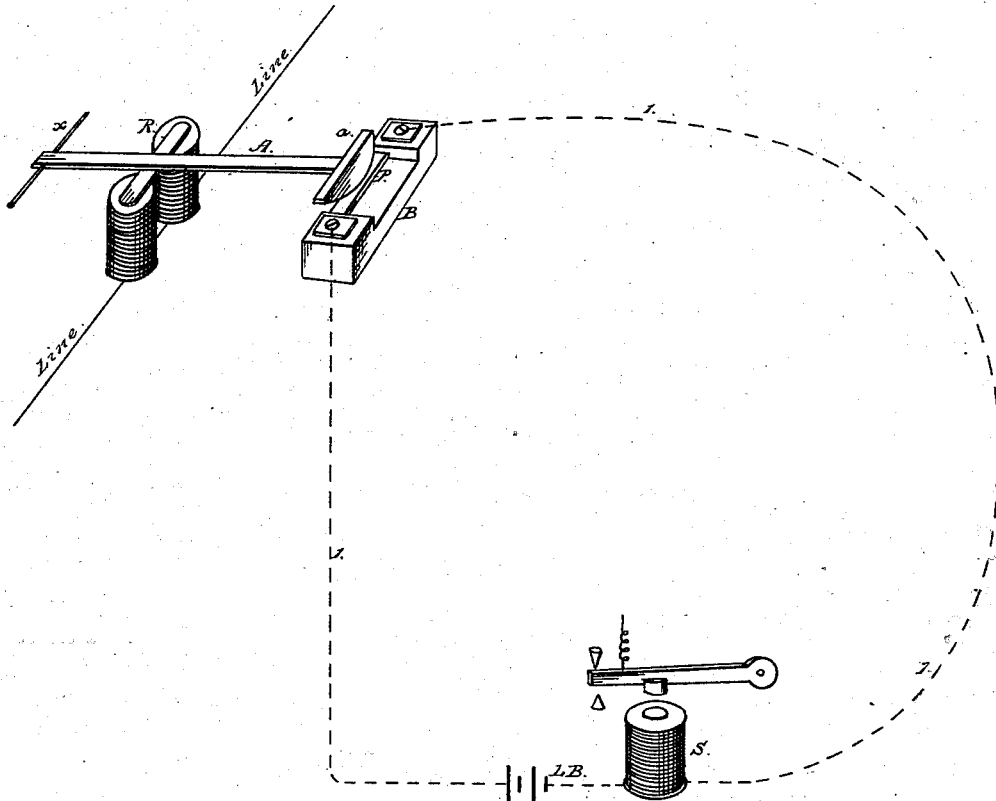


(No Model.)

T. A. EDISON.  
Relay for Telegraphs.

No. 239,154.

Patented March 22, 1881.



Attest;  
C. W. Howard  
J. A. Hall

Inventor;  
T. A. Edison  
per Dyer & Miller

Attest

# UNITED STATES PATENT OFFICE.

THOMAS A. EDISON, OF MENLO PARK, NEW JERSEY.

## RELAY FOR TELEGRAPHS.

SPECIFICATION forming part of Letters Patent No. 239,154, dated March 22, 1881.

Application filed December 14, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS A. EDISON, of Menlo Park, in the county of Middlesex and State of New Jersey, have invented a new and useful Improvement in Telegraph Apparatus; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawing, and to the letters of reference marked thereon.

The object of this invention is to provide a relay for telegraph-lines, in which a sounder or other electrical apparatus in a secondary or local circuit shall be controlled by varying the resistance therein; and my arrangement for this purpose consists in a local circuit containing such a resistance as shall decrease the current, so as not to allow the sounder to be affected thereby until, by the completion of the main circuit, an armature is moved, which brings a better conductor into the place of the resistance, thus causing a stronger current in the local circuit, and operating the sounder placed therein, all as will be more fully hereinafter set forth.

The accompanying drawing represents a form of my invention.

1 is the local circuit, in which is contained a piece, *p*, of carbon or platinum, of high resistance power, but flexible, so as to be easily bent.

L B is the local battery, whose power is such that when the full resistance, *p*, is in circuit the current will be insufficient to operate the sounder S.

R is the relay-magnet in the line-circuit, and A its armature-lever, which is pivoted at *x*, and has attached to its other end the metal piece *a*, the top of which is square or oblong and the lower part curved, as shown in the drawing.

When the main circuit is closed through R, the armature A is attracted and pulled down, so that the piece *a* is pressed against the resistance *p*, which, being flexible, is pressed down in the middle, so that it conforms to the shape of *a*, and a large part of the surfaces are in contact. The current from L B thus passes through *a* instead of *p*, and the resistance being lessened, the current is increased sufficiently to operate the sounder S.

I do not claim, broadly, the method of operating a local circuit, consisting in varying the resistance therein, as such is the subject of a prior application.

What I claim as my invention is—

The combination, with a local circuit and instruments therein, of a flexible high resistance in such circuit, and a metallic contact resting therein and controlled by the main circuit, substantially as and for the purpose described.

This specification signed and witnessed this 11th day of December, 1880.

THOS. A. EDISON.

Witnesses:

H. W. SEELY,  
WM. CARMAN.