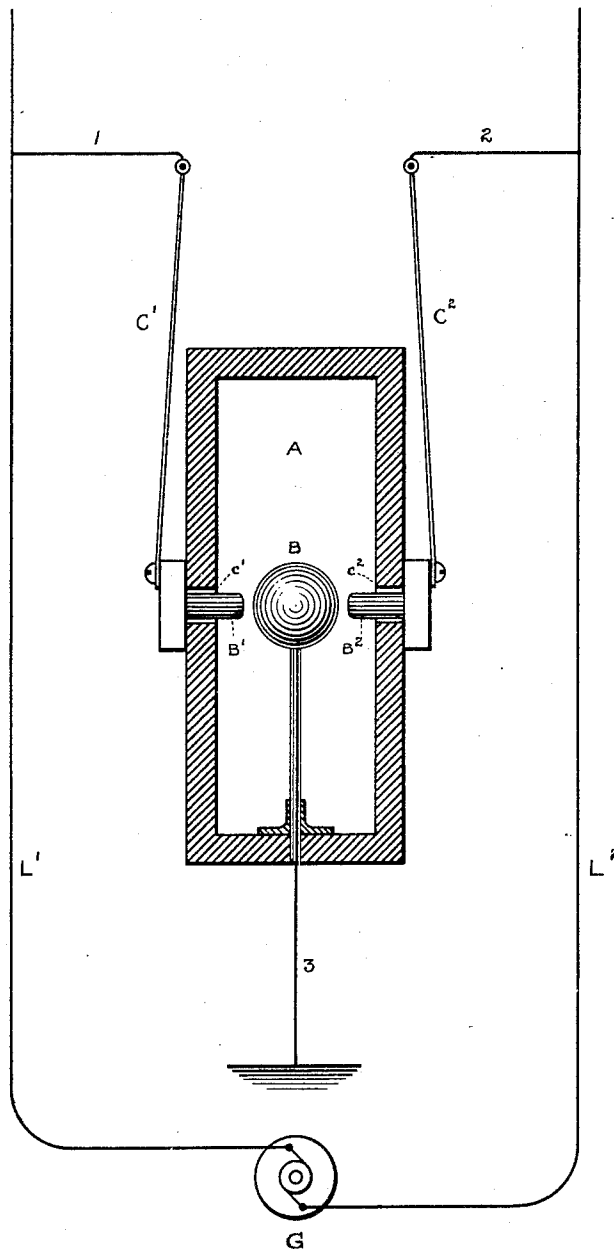


(No Model.)

A. WURTS.
LIGHTNING ARRESTER.

No. 434,371.

Patented Aug. 12, 1890.



Witnesses
James W. Smith
Henry H. H. Smith

Inventor
Alexander Wurts
By *his* Attorney
Charles A. Tamm

UNITED STATES PATENT OFFICE.

ALEXANDER WURTS, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO THE
WESTINGHOUSE ELECTRIC COMPANY, OF SAME PLACE.

LIGHTNING-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 434,371, dated August 12, 1890.

Application filed May 12, 1890. Serial No. 351,523. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER WURTS, a citizen of the United States, residing in Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a certain new and useful Improvement in Lightning-Arresters, (Case No. 403,) of which the following is a specification.

The invention relates to the construction of devices for protecting electric circuits against the injurious effects which are liable to result from the flow of a generated electric current across the space between the discharge-points of a lightning-arrester after a lightning-discharge has taken place.

The invention consists in constructing the lightning-discharge device so that the electrodes between which the lightning-discharge takes place shall be automatically separated by the action of the heat developed by the current flowing.

The invention consists in connecting with one side of an electric circuit an electrode which is in proximity to a second electrode normally electrically connected with the earth. The space between the two electrodes is to be traversed by the lightning-discharge, and the parts are so organized that one of these electrodes will be moved with reference to the other by reason of the heat developed by the arc formed between the two electrodes and which the current from the dynamo tends to maintain.

The invention will be further described in connection with the accompanying drawing, which shows a vertical section of a device employed for carrying out the invention.

Referring to the figure, G represents a source of electric currents, and L' L² main-line conductors leading therefrom.

A represents an inclosing box or chamber, and B an electrode, which may be of carbon, for instance, or of other suitable material. This electrode is electrically connected with the earth by the conductor 3. The electrode B is contained within the box A, and two other electrodes B' and B² are placed in the immediate vicinity of the electrode B. The electrode B' is connected by the conductor 1 with the main line L', and the electrode B² is con-

nected by the conductor 2 with the main line L². These electrodes B' and B² are supported upon flexible springs or cords or pivoted arms C' C², and they are normally held toward the box so that they project through the openings c' c² toward the electrode B. They are, however, movable with reference to the box and the electrode B, and any expansion of the air within the box, by reason of the heat developed by the electric current traversing the space between the electrodes, will force them outward from the openings, thus interrupting any electric arc which might tend to persist across the space between the electrodes. Upon the cessation of the arc the electrodes will resume their former positions and be in positions to receive other lightning-discharges.

In another application filed by me, Serial No. 351,961, I have shown the lightning-arrester here described and claimed in connection with certain apparatus for producing an initial separation of the electrodes under certain circumstances.

I claim as my invention—

1. The combination, with an inclosing box or chamber, of two separated electrodes constituting discharge-points for electric currents, the one being movable with reference to the other and projecting through an opening in the box or chamber.

2. The combination, with an inclosing chamber or box, of an electrode for lightning or other electric discharges, placed within the box, and a second electrode placed in an aperture in the box and movable with reference to the first-named electrode, substantially as described.

3. The combination, with an inclosing box or chamber, of an electrode electrically connected with the earth, and two electrodes projecting through openings in the walls of the box into proximity to the first-named electrode and movably supported with reference thereto, substantially as described.

4. The combination of an inclosing-chamber, an electrode contained therein, and two electrodes movably supported with reference thereto and placed in vents in the walls of said chamber, substantially as described.

5. In an apparatus for interrupting the flow

of electric currents, two separated electrodes,
one movable with reference to the other, a
chamber within which they are contained and
through the walls of which one is movable
5 under the influence of the expansion of the
air within the chamber, substantially as de-
scribed.

In testimony whereof I have hereunto sub-
scribed my name this 29th day of April, A. D.
1890.

ALEXANDER WURTS.

Witnesses:

FRANCIS PETTIT MANN,
JAMES W. SMITH.