No. 768,196. PATENTED AUG. 23, 1904.

C. A. ROLFE.

LIGHTNING ARRESTER.

APPLICATION FILED JAN. 21, 1903.

NO MODEL.

Fig. 2.

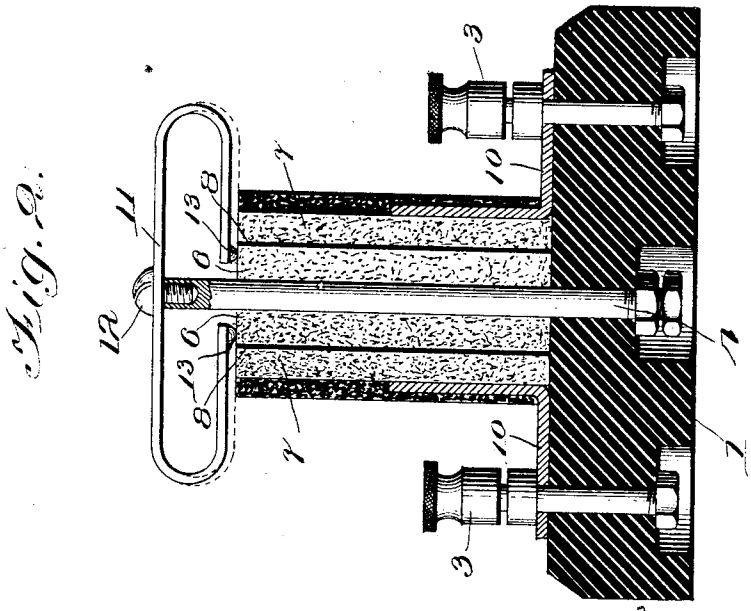
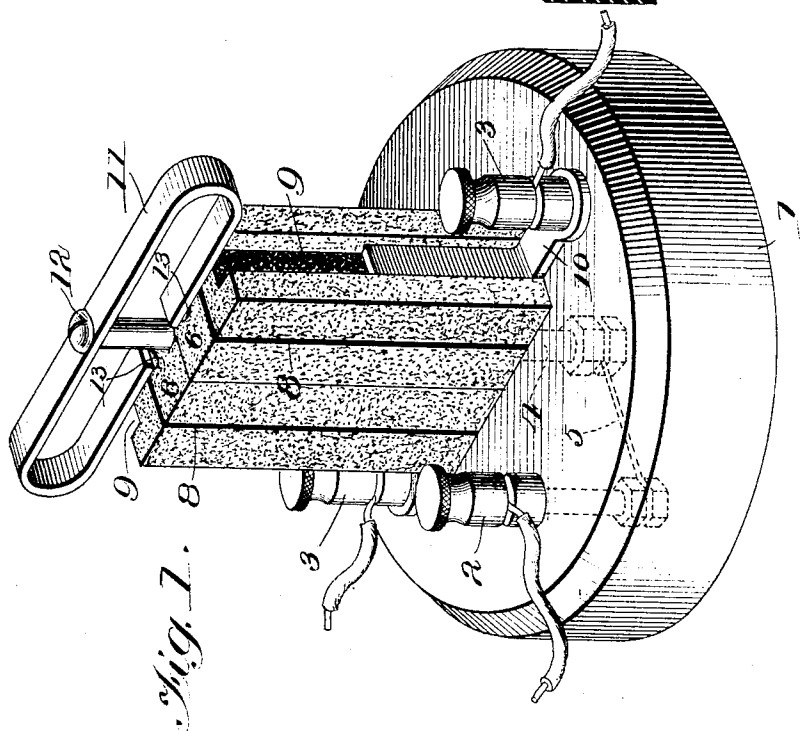


Fig. 1.



Witnesses:
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Inventor:
Charles A. Rolfe.
by A. Miller Reynolds
his Attorney.

No. 768,196. Patented August 23, 1904.

UNITED STATES PATENT OFFICE.

CHARLES A. ROLFE, OF ADRIAN, MICHIGAN, ASSIGNOR TO ROLFE ELECTRIC COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

LIGHTNING-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 768,196, dated August 23, 1904.

Original application filed April 21, 1902, Serial No. 104,021. Divided and this application filed January 21, 1903. Serial No. 140,012. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. ROLFE, a citizen of the United States, residing at Adrian, in the county of Lenawee and State of Michigan, have invented a certain new and useful Improvement in Lightning-Arresters, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to lightning-arresters for relieving low-tension circuits of high potentials, such as lightning discharges and the like.

The object of my invention is to provide a simple, practical, and inexpensive form of lightning-arrester.

In the accompanying drawings, Figure 1 is a perspective view of a lightning-arrester embodying my present invention. Fig. 2 is a vertical section of the same.

The lightning-arrester which I have shown in the drawings for illustrating my invention is provided with a base 1, which is understood to be of insulating material, such as porcelain, hard rubber, or the like. The base 1 is provided with three terminal posts 2 and 3 3, whereof the post 2 is to be connected with the ground and the posts 3 3 with the opposite sides of the line which is to be protected by the arrester. The base 1 is also provided with a vertically-arranged metallic post 4, whose lower end is connected with the ground terminal 2, as by a conductor 5. Arranged on opposite sides of the post 4 are two sets or pairs of carbon electrodes or terminals 6 6 and 7 7, whereof the electrodes 6 6 are arranged next to and in contact with the post 4 and the electrodes 7 7 are arranged on the outer sides of the electrodes 6 6 and are separated therefrom by small sheets or strips of insulating material 8 8, such as mica. The outer electrodes 7 7 are desirably grooved, as at 9 9, and the terminal posts 3 3 are provided with contacts 10 10, made angle-shaped and having their upright ends adapted to fit in the grooves 9 9 and tending to spring inwardly against the bottoms of such grooves. In this way the contacts 10 10 serve to make connection between opposite sides of the line and the line-electrodes 7 7 and also to hold these electrodes in position and force them inwardly, so as to hold the inner electrodes 6 6 also in position in connection with the post 4.

The post 4 is provided at its upper end with a loop-spring 11, properly secured thereto, as by a screw 12, fitting into the upper end of the post, and the lower ends of the spring 11 are arranged above the tops of the various electrodes. These ends, however, are held out of contact with the line-electrodes 7 7 by small masses or balls 13 13, of readily-softenable material, such as solder, which balls or masses 13 13 are inserted under the inner ends of the spring and rest upon the ground-carbons 6 6. The ends of the spring are adapted, however, and normally tend to spring downwardly and make contact with the line-carbons 7 7. Thus when lightning or other high potential intrudes upon the line it escapes from the line-carbons 7 7 to the spring 11 and thence to ground, and this arcing action across the space between the line-carbons and the spring causes a melting or softening of the balls 13 13, whereupon the ends of the spring descend, thereby making connection between either or both of the line-carbons 7 7 and the ground by way of the spring 11.

To renew the arrester, a new ball or balls 13 are supplied and inserted in position, thereby separating the ends of the spring 11 from the line-carbons 7 7, as before. Either pair of electrodes 6 7 or both can be withdrawn by turning the spring 11 about its pivotal connection with the post and then drawing the electrodes upwardly.

It will be understood that while I have shown this lightning-arrester in the form of a single device adapted for a single circuit it can readily be assembled in large numbers and mounted upon boards for central stations.

It will be obvious that the construction herein shown and described can be varied or modi-

fied without departing from the spirit of my invention.

The lightning-arrester herein is shown and described in my application, Serial No. 104,021, filed by me April 21, 1902, but is not claimed therein. The present application is intended as a divisional application of said other application.

What I claim is—

1. In a lightning-arrester, the combination with the ground-electrode, of line-electrodes on opposite sides of the ground-electrode, a spring supported above the ground-electrode, and extending on opposite sides to the line-electrodes, and softenable material interposed between the spring and ground-electrode so as to hold the same normally out of contact with the line-electrode, substantially as described,

2. The combination with ground-electrodes, of line-electrodes arranged on opposite sides thereof and separated therefrom by insulating material, a post extending up between the ground-electrodes and provided at its upper end with a spring which extends out and over the two line-electrodes, and small quantities of softenable material interposed between the ground-electrodes and the spring to hold the latter normally out of contact with the line-electrodes, substantially as described.

3. The combination with opposite pairs of carbon electrodes 6, 6, and 7, 7, of a post 4 extending up between the ground-electrodes 6, 6, a spring 11 connected to the upper end of the post and having its ends arranged over the electrodes 6, 6, and 7, 7, and tending to spring downwardly toward the same, and small quantities 13, 13, of readily-softenable solder interposed between the inner ends of the spring 11 and the ground-electrodes 6, 6, substantially as described.

In witness whereof I hereunto subscribe my name this 1st day of May, A. D., 1902.

CHARLES A. ROLFE.

Witnesses:
A. MILLER BELFIELD,
I. C. LEE.