G. P. A. DAMSCHEN.

LIGHTNING ARRESTER.

APPLICATION FILED FEB. 6, 1912.

1,104,038. Patented July 21, 1914.

Fig. 1.

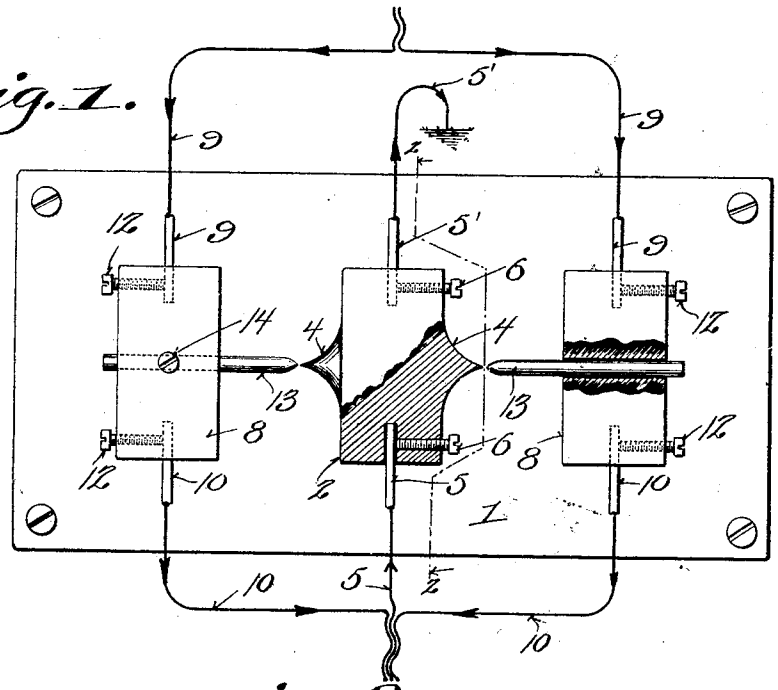
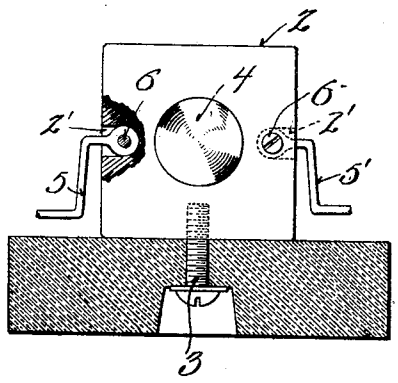



Fig. 2.




Witnesses:
Clarence Young
May Downey

Inventor:
Gerhard P. A. Damschen
By Orphans & Young
Attorneys.

THE NORRIS PETERS CO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

GERHARD P. A. DAMSCHEN, OF OCONOMOWOC, WISCONSIN.

## LIGHTNING-ARRESTER.

1,104,038. Specification of Letters Patent. Patented July 21, 1914.

Application filed February 6, 1912. Serial No. 675,817.

*To all whom it may concern:*

Be it known that I, GERHARD P. A. DAMSCHEN, a citizen of the United States, and resident of the town of Oconomowoc, in the county of Waukesha and State of Wisconsin, have invented certain new and useful Improvements in Lightning-Arresters; and I do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention is to provide a simple, economical and effective lightning arrester arranged to be interposed in the line of a telephone or other instrument, its construction and arrangement being such as to prevent the line wires from grounding caused through an overcharge, which overcharge under ordinary conditions employed in lightning arresters causes fusing of the electrodes, whereby said line is grounded and thus the instrument is cut out.

In carrying out my invention, as shown in the illustrations, which is the preferred form, I utilize a triple set of metallic blocks, the intermediate or ground line one of which is provided with oppositely disposed permanent conical points which operate in conjunction with a pair of adjustable electrodes carried by the flanking blocks that are used as line wire connections, it being understood that the ground connection from the intermediate block is of low resistance.

With the above objects in view the invention consists in certain peculiarities of construction and combination of parts as set forth hereinafter with reference to the accompanying illustrations and subsequently claimed.

In the drawings Figure 1 represents a plan view with parts broken away and parts in section of a lightning arrester embodying the features of my invention, and Fig. 2, a cross-section of the same, the section being indicated by line 2—2 of Fig. 1.

Referring by characters to the drawings, 1 represents a non-metallic base having secured thereto a centrally disposed copper block 2, the block being held to the base by a screw connection 3. This block is provided with integral oppositely disposed conical pointed electrodes 4, 4. The block is also provided with sockets 2′, 2′, for the reception of ground terminal wires 5, 5′, respectively, which wires are held in the sockets by suitable binding screws 6, the terminal wires being interrupted and coupled under the base by screw-bolts 7 as best shown in Fig. 2. The ground wire 5′, as shown in Fig. 1, is of low resistance and suitably grounded while the ground wire 5 is connected to a telephone or other instrument not shown. The block 2 constitutes a grounding block which is flanked by blocks 8, 8, that constitute connections for line wires 9, 9, and 10, 10, respectively. These line wires are arranged similar to the ground wires, being interrupted by screw-bolts 11 that pass through the base-plate, said line wires being held into sockets of the blocks by binding screws 12. The line wire blocks are centrally apertured for the reception of pointed electrode rods 13, which rods are in axial alinement with the conical electrodes of the ground wire block and are adjusted to form a slight space between the ground wire electrode points, being held in their adjusted position by binding screws 14. Both the adjustable electrodes and line wire blocks are preferably composed of copper although any other suitable metallic conductor material may be substituted therefor. The line wire conductors 10 are designed to be attached to a telephone or other instrument while the line wire conductors 9 are connected to a suitable source of electrical energy.

In the operation of my device when either of the line wires 9 are charged with a current of abnormal strength the said charge will jump the gap between the line electrode which is carried by the block 8 and the juxtaposed permanent electrode that constitutes part of the ground block. Hence this overcharge will cause the negative electrode point which is carried by the ground block to melt away slightly and thus increase the gap distance, whereby the line is only momentarily grounded and during such grounding operation it is apparent that the instrument being shunted will remain intact and that there will be no damage to the operator who may at the time be manipulating said instrument.

I claim:

In an electric circuit having a pair of alined wires for supplying current to an instrument, and a single ground wire; the combination of a metallic block interrupting each line wire, an adjustable pointed electrode extending from each block, a second metallic block interrupting the ground wire

and interposed between the line wire blocks, and integral conical electrodes extending therefrom in axial alinement with the line wire electrodes, the same being spaced from said line wire electrodes at predetermined distances.

In testimony that I claim the foregoing I have hereunto set my hand at Oconomowoc, in the county of Waukesha and State of Wisconsin, in the presence of two witnesses.

GERHARD P. A. DAMSCHEN.

Witnesses:
H. H. BAKER,
MART BOUG.

**Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."**