

(No Model.)

W. A. TURBAYNE.
LIGHTNING ARRESTER.

No. 500,828.

Patented July 4, 1893.

Fig. 3.

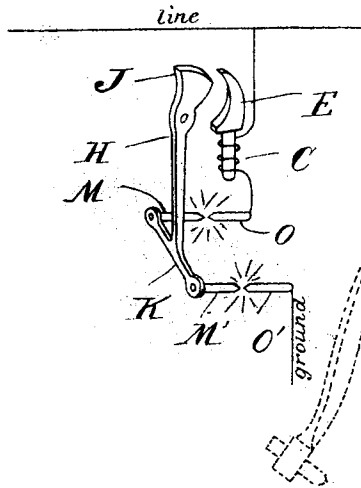


Fig. 1.

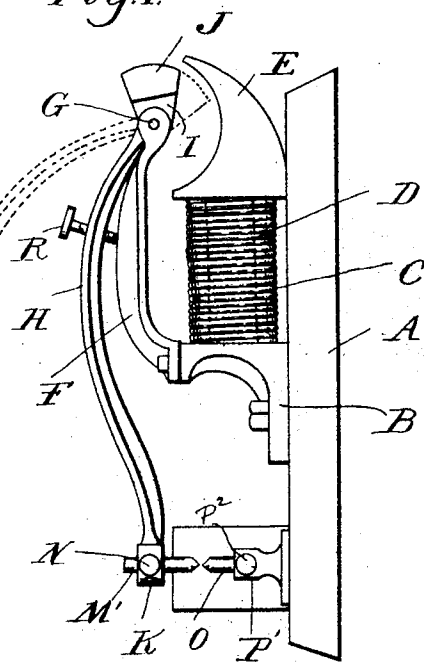
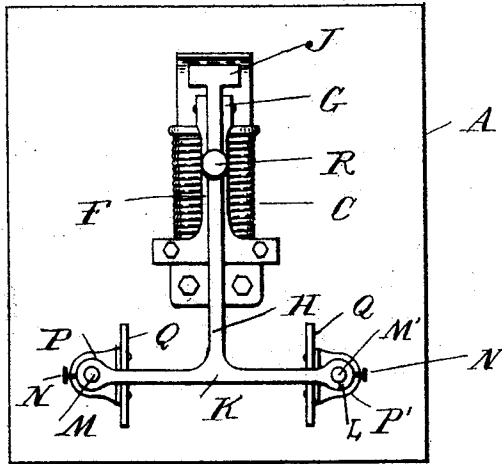


Fig. 2.



Inventor

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Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM A. TURBAYNE, OF DETROIT, MICHIGAN.

LIGHTNING-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 500,828, dated July 4, 1893.

Application filed November 5, 1892. Serial No. 451,103. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. TURBAYNE, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Lightning-Arresters, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention consists in the peculiar construction, arrangement and combination of parts.

In the drawings, Figure 1 is a side elevation of my improved lightning arrester. Fig. 2 is a front elevation thereof. Fig. 3 is a diagram showing the device connected in position for use.

A is a suitable hanger board to which the different parts are attached.

B is a bracket secured to the board A and supporting the electro-magnet C, the cord D of which is preferably formed integral with the bracket.

E is a horn-shaped pole piece which is also preferably integrally formed with the core D and bracket B.

F is a supporting arm attached to the front face of the bracket B and extending upward therefrom terminates in the bifurcation G opposite the horn shaped pole piece E.

H is a lever pivoted between the bifurcations G having an upwardly projecting arm I, carrying the segmental armature J preferably integrally formed therewith. The other arm of the lever H extends downward and is provided in its lower end with a cross bar K having sockets L L' at either end in which are adjustably secured carbon points M M', by means of set screws N.

O and O' are carbon points complementary to the points M M', which are secured to the hanger board K in the sockets P and P' having the set screws P² for adjustably holding them therein.

Q are plates formed of any suitable fire proof insulating material, preferably mica, which are secured to the board A between the carbon points O and O'.

R is an adjusting screw in the lever H by means of which the distance between the carbon points may be adjusted.

The parts being so arranged they are intended to operate as follows: The one terminal of the magnet C being connected to the carbon point O and the other connected to the line to which the lightning arrester is to be attached, and the carbon O' provided with suitable ground connection, by adjusting the screw R the lever H is moved into a position where the carbon points M, O and M', O' are separated from each other by small breaks across which the ordinary dynamic current cannot jump. The space between the points however, is so slight as to form but little resistance to the passage of a static charge and in case any point on the line is struck by lightning the charge will find an easy passage to the ground by forming an arc between the carbon points O and M M' and O' and thence to the ground. As the electro-magnet C is formed with but comparatively few turns of coarse wire it will be slightly influenced by the passage of the static charge, but as this charge in forming arcs between the separated carbon points establishes a passage for the dynamic current, the latter would immediately discharge to the ground and thereby cause great damage. The static charge is immediately followed by the dynamic current, which in passing through the coil magnetizes the pole piece E, and attracts the armature J, moving the lever H into the position shown in dotted lines in Fig. 1, withdrawing the carbon M, M' and breaking the arc. As soon as this is accomplished the parts will resume their initial position. The insulators Q prevent the formation of an arc between the points O, O'.

By employing the lever with the two carbons, the movable piece is suspended freely without the necessity of connecting the conductors thereto.

While I have shown the magnet located between the line and the carbon O, it is evident that it may as well be located between the carbon O' and the ground.

What I claim as my invention is—

1. In a lightning arrester, the combination with two stationary separated carbon points, having connection respectively with the line and the ground, a magnet in the ground circuit, a lever carrying at one end a bridge with complementary carbon points separated from

the stationary points, and an armature at the upper end of the lever arranged in proximity to the magnet, substantially as described.

2. In a lightning arrester, the combination
 5 with two stationary separated carbon points, having connection respectively with the line and the ground, a magnet in the ground circuit, a lever carrying at its lower end a bridge with complementary carbon points, an adjusting
 10 screw for adjusting the break between the stationary and movable carbons, and an armature at the upper end of the lever, arranged in proximity to the magnet, substantially as described.
- 15 3. In a lightning arrester, the combination of the two separated stationary carbon points, connected respectively to the line and the

ground, a magnet in the ground circuit, a bracket upon which said magnet is supported, and with which the core is formed integral,
 20 of an extension of the core having a segmental circular face, a lever pivoted on said bracket, a cross-bar on the lower end of said lever having at its ends carbon points complementary to the stationary carbons, and an armature at
 25 the upper end of the lever adapted to move across the segmental face of the core extension, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM A. TURBAYNE.

Witnesses:

M. B. O'DOHERTY,
 N. L. LINDOP.