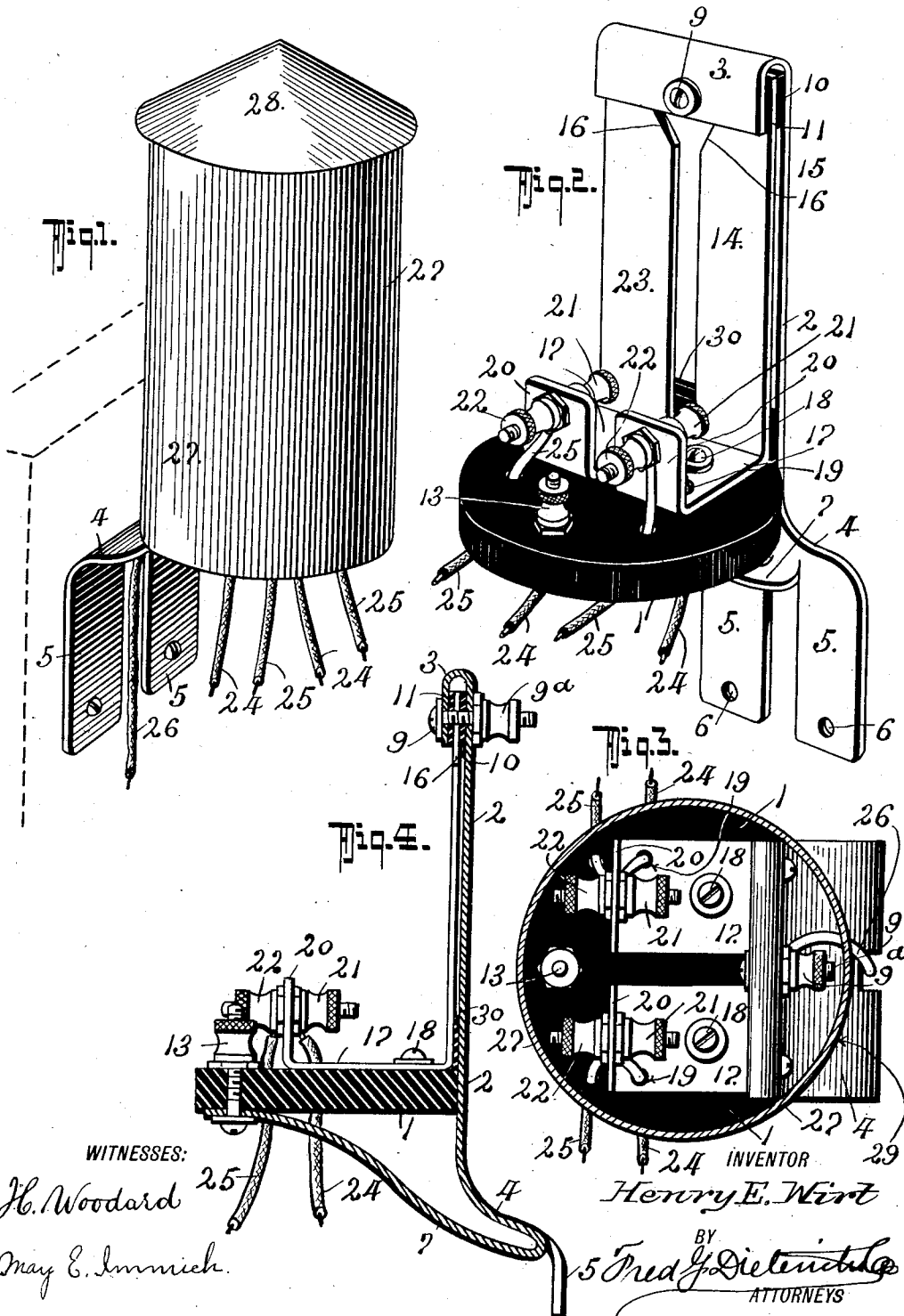


H. E. WIRT.
 LIGHTNING ARRESTER AND TEST DEVICE.
 APPLICATION FILED MAR. 13, 1911.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HENRY E. WIRT, of Lewiston, in the county of Winona and State of Minnesota, have invented a certain new and useful Lightning-Arrester and Test Device, of which the following is a specification.

My invention relates to certain new and useful improvements in lightning arresters which are particularly adapted for telephone service, and the invention particularly has for its object to provide a device of this character of a simple and effective construction that can be cheaply manufactured, and will not only serve as an efficient and reliable lightning arrester, but may be used in connection with the usual testing instruments for testing lines and house circuits as well as the ringer circuit, the parts being so constructed that good electrical contact at the testing points may be had without soldering joints or special unions.

Again the invention has for its object to provide a device of the character stated, that may be set up in an exposed position without danger of injuring the circuit connections or detracting from the efficiency of the device for its intended purposes.

Generally the invention consists of an insulating base and a metallic bracket like member secured to one edge of the base and projecting upwardly therefrom to form the "ground" element. The "ground" element also projects downwardly from the base and terminates in members through the medium of which the base may be secured to a support. Mounted on the base are two L shaped terminal plates, one arm of each parallels the "ground" plate and is held in close juxtaposition with the "ground" plate, the terminal or line plates being spaced from the "ground" plate, however, a suitable distance, by insulating members. The line plates carry two sets of binding posts on their short arms to one of which the incoming line wires are joined, while the outgoing house wires are joined to the other set of binding posts, thus insuring a good electrical connection between the line wires and the house wires and also enabling either set of wires to be independently connected to or disconnected from the line plates. An additional "ground" binding post is mounted on the base and connected

with an arm from the "ground" plate to be used in testing. A metallic housing incloses the base and the upwardly projecting part and may contact the "ground" plate so as to insure a "ground" with the housing.

The invention also includes those novel details of construction, combination and arrangement of parts, all of which will be first fully described and then be specifically pointed out in the appended claims, reference being had to the accompanying drawing in which:—

Figure 1 is a perspective view of the invention. Fig. 2 is a perspective view of the device with the housing removed. Fig. 3 is a horizontal section and plan of the invention. Fig. 4 is a central vertical longitudinal section of the device.

Referring now to the accompanying drawing in which like numerals and letters of reference indicate like parts in all of the figures, 1 is the base formed of fiber or other suitable insulation. In the preferred form of my invention, the base 1 is in the shape of a disk having a portion cut away to leave a straight edge to which the "ground" plate 2 is secured. The "ground" plate 2 extends up above the base 1 and is bent back upon itself as at 3 to receive the insulating strips 10 and 11, between which the upper ends of the line plates 14 and 23, project. The line plates are in the nature of L shaped members having base portions 17 which are secured to the base 1 by screws 18. They also include the short arm portions 20 which project up from the base and carry the line binding posts 22—22 and the house wire binding 21—21. One post 21 aligns with one post 22. The base portions 17 are perforated at 19 while the base 1 is correspondingly perforated so that the incoming line wires 25 may pass through the same and be joined to the binding posts 22. The line plates 14 and 23 are cut away at 16 at their upper ends so that a binding screw 9 may pass through the "ground" plate 2 and its bent back portion 3 and the insulating strips 10 and 11, and serve in connection with the binding post nut 9^a as a binding post to which the "ground" wire may be secured.

7 designates a bracket like strip formed integral with the "ground" plate 2 and having its free end clamped beneath the base 1 by the binding post screw of the binding post 13.

In practice the device is mounted on a suitable support and a "ground" wire 26 is brought into the housing 27 and joined with the binding post 9—9^a so as to effectually ground the "ground" plate 2. The "ground" plate 2 is bent backwardly or off as at 4 to provide members 5 having holes 6 through which securing devices may pass in mounting the device on a support.

The line wires may be connected to either posts 21 or 22, although I prefer to connect the line wires 25 to the posts 22 and the house wires 24 to the posts 21, thus, should it be desired to test the circuits, the house circuit may be tested by disconnecting the line wires 25 from the posts 22 and connecting the testing set thereto. Similarly the line wires may be tested by leaving them connected to the posts 22 and disconnecting the house wires 24 from the posts 21 and connecting the testing set to such posts 21. In testing the ringer circuit, or when it is desired to "ground" a test connection, the "ground" wire of the test set may be joined to the post 13 and ground through the plate 2 and wire 26.

When the device is being used simply as a lightning arrester, an abnormal static charge coming in over the line wires will jump the gap between the line plates 14—23 and the "ground" plate 2 and pass to earth through the "ground" wire 26. Should lightning strike the housing 27, it will "ground" through the plate 2 and wire 26 without affecting the circuit connections with the house wires. The housing 27 is formed with a dome 28 to act as a watershed.

While I have particularly described the construction, I do not desire to be limited to the precise details of construction shown and described, as obvious modifications in the design of parts and its mechanical details may readily be made by those skilled in the art, without departing from the gist of the invention.

An insulating strip 30 may be provided between the line plates 14—23 and the "ground" plate 2 adjacent to the base 1, and the housing 27 may be forced down until it contacts the "ground" plate 2 at 29, and thus effectually "ground" the housing.

What I claim is:—

1. In a device of the class described, a base, a "ground" plate secured thereto and projecting upwardly therefrom, a pair of line plates secured to said base and projecting upwardly parallel to but separated from said "ground" plate and separated from one another, means for electrically insulating said line plates from said "ground" plate, and means for mechanically securing said line plates to said "ground" plate together with means for securing line and house wires to said line plates, said "line"

plates being held in the same plane and in a plane parallel to, but spaced from, that containing said "ground" plate.

2. In a device of the class described, a base, a "ground" plate secured thereto and projecting upwardly therefrom, a pair of line plates secured to said base and projecting upwardly parallel to but separated from said "ground" plate and separated from one another, means for electrically insulating said line plates from said "ground" plate, and means for mechanically securing said line plates to said "ground" plate together with means for securing line and house wires to said line plates, and a housing fitted over the aforesaid parts, said "ground" plate having a downwardly projecting portion by means of which the same may be secured to a support, and said housing adapted to contact said "ground" plate.

3. In a device of the class described, an insulating base, a "ground" plate secured to said base and projecting upwardly therefrom, a pair of line plates secured to said base and each including an arm projecting parallel to but separated from said "ground" plate, said line plates also having a second arm, a pair of binding posts secured to the second arm of each of said line plates, one of said binding posts of each of said line plate arms adapted to receive the ends of line wires, and the other binding posts adapted to receive the ends of the house wires.

4. In a device of the class described, an insulating base, a "ground" plate secured to said base and projecting upwardly therefrom, a pair of line plates secured to said base and each including an arm projecting parallel to but separated from said "ground" plate, said line plates also having a second arm, a pair of binding posts secured to the second arm of each of said line plates, one of said binding posts of each of said line plate arms adapted to receive the ends of line wires, and the other binding posts adapted to receive the ends of the house wires, and a binding post on said "ground" plate to which a grounding wire may be secured.

5. In a device of the class described, an insulating base, a "ground" plate secured to said base and projecting upwardly therefrom, a pair of line plates secured to said base and each including an arm projecting parallel to but separated from said "ground" plate, said line plates also having a second arm, a pair of binding posts secured to the second arm of each of said line plates, one of said binding posts of each of said line plate arms adapted to receive the ends of line wires, and the other binding posts adapted to receive the ends of the house wires, a "ground" binding post mounted on said base, and a bracket portion secured beneath said base in electrical contact with

said "ground" binding post, and electrically and mechanically connected to said "ground" plate.

6. A combined lightning arrester and test device that comprises an insulating base, a "ground" plate secured to said base and projecting upwardly therefrom, a pair of substantially L shaped "line" plates secured to said base and spaced apart, said line plates each having a long arm extending parallel to said "ground" plate and electrically insulated therefrom, binding posts carried by the shorter arm of each of said "line" plates to which the incoming and outgoing wires of an electric circuit may be secured.

7. A combined lightning arrester and test device that comprises an insulating base, a "ground" plate secured to said base and projecting upwardly therefrom, a pair of substantially L shaped "line" plates secured to said base and spaced apart, said line plates each having a long arm extending parallel to said "ground" plate and electrically insulated therefrom, binding posts carried by the shorter arm of each of said "line" plates to which the incoming and outgoing wires of an electric circuit may be secured, means for mechanically connecting the upper ends of said "line" plates to the upper end of said "ground" plate, a "ground" binding post mounted on said base and electrically connected with said "ground" plate.

8. A combined lightning arrester and test device that comprises an insulating base, a "ground" plate secured to said base and projecting upwardly therefrom, a pair of substantially L shaped "line" plates secured to said base and spaced apart, said "line" plates each having a long arm extending parallel to said "ground" plate and electrically insulated therefrom, binding posts carried by the shorter arm of each of said "line" plates to which the incoming and outgoing wires of an electric circuit may

be secured, and a housing over said base and said upwardly projecting parts, said housing including a watershed and adapted to electrically contact said "ground" plate.

9. A combined lightning arrester and test device that comprises an insulating base, a "ground" plate secured to said base and projecting upwardly therefrom, a pair of substantially L shaped "line" plates secured to said base and spaced apart, said line plates each having a long arm extending parallel to said "ground" plate and electrically insulated therefrom, binding posts carried by the shorter arm of each of said "line" plates to which the incoming and outgoing wires of an electric circuit may be secured, means for mechanically connecting the upper ends of said line plates to the upper end of said "ground" plate, a "ground" binding post mounted on said base and electrically connected with said "ground" plate, a housing over said base and said upwardly projected parts, said housing including a watershed and adapted to electrically contact said "ground" plate.

10. A combined lightning arrester and test device that comprises a base of insulating material, a "ground" plate secured to the edge of said base and projecting upwardly and downwardly therefrom, a pair of substantially L shaped line plates secured to said base and spaced apart, said line plates each having a long arm extending parallel to said "ground" plate and electrically insulated therefrom, said "ground" plate having its other end bent over the upper ends of said "line" plates and mechanically connected thereto, and means for removably securing incoming and outgoing wires to said "line" plates.

HENRY E. WIRT.

Witnesses:

EARL SIMPSON,
HAZEL DAMM.