No. 659,559. Patented Oct. 9, 1900.

C. M. TAYLOR.

LIGHTNING ARRESTER.

(Application filed June 12, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig 1

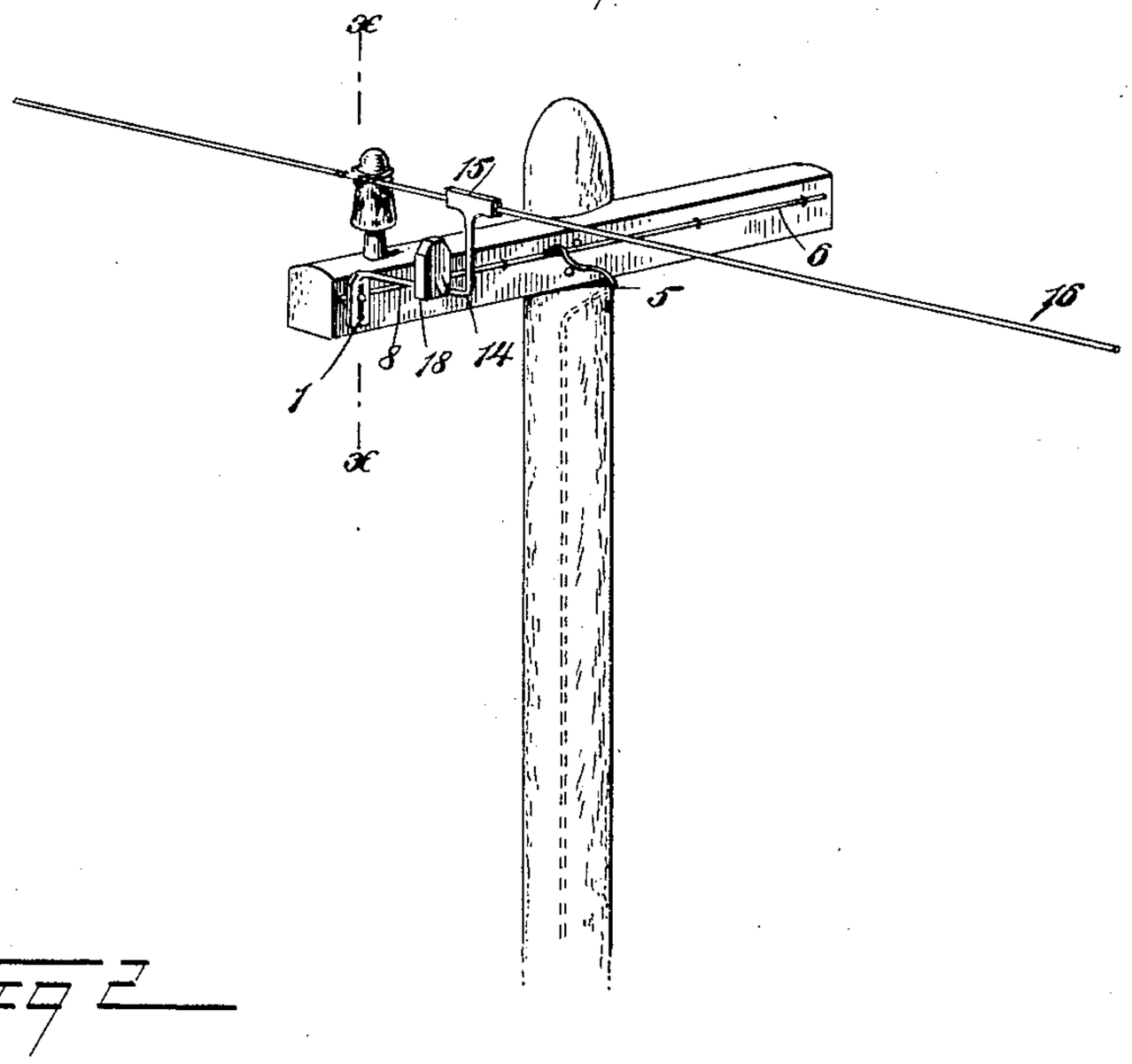

Fig 2

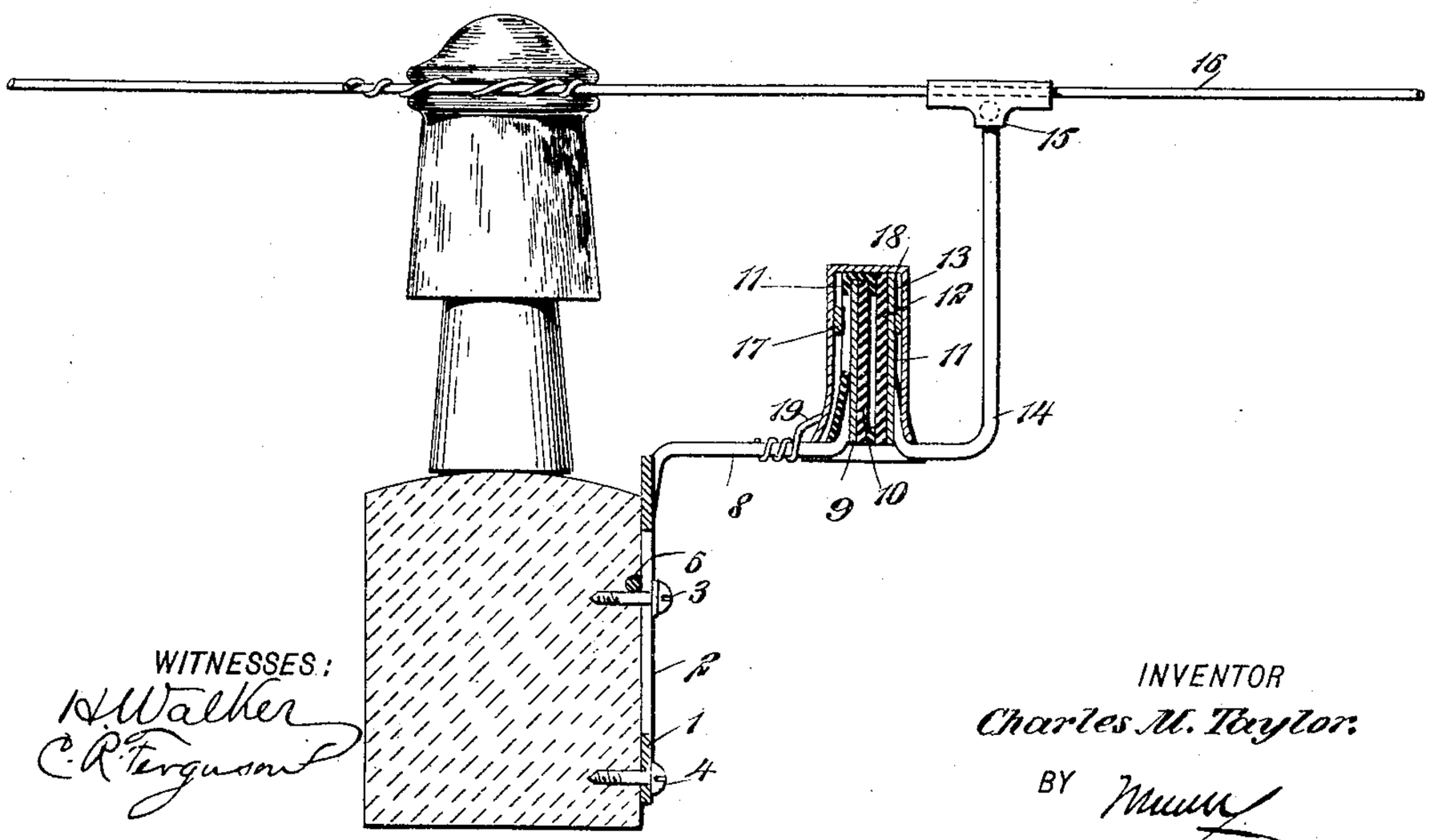

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Fig 3

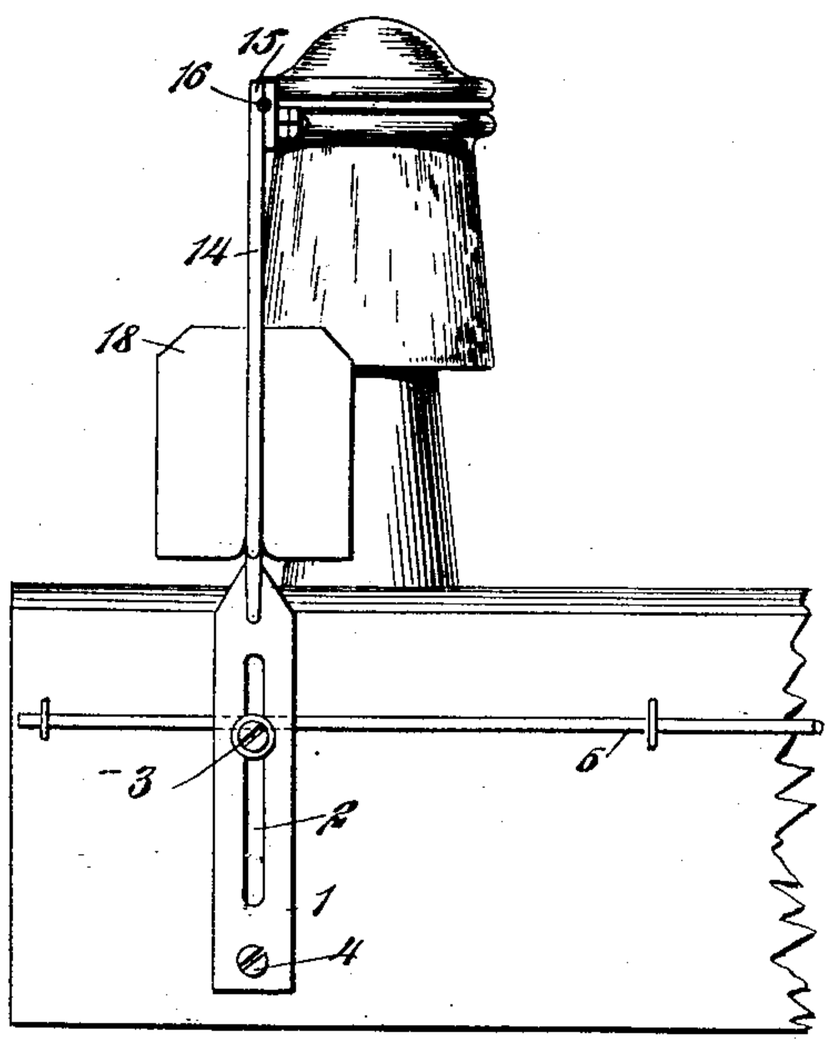


Fig 4

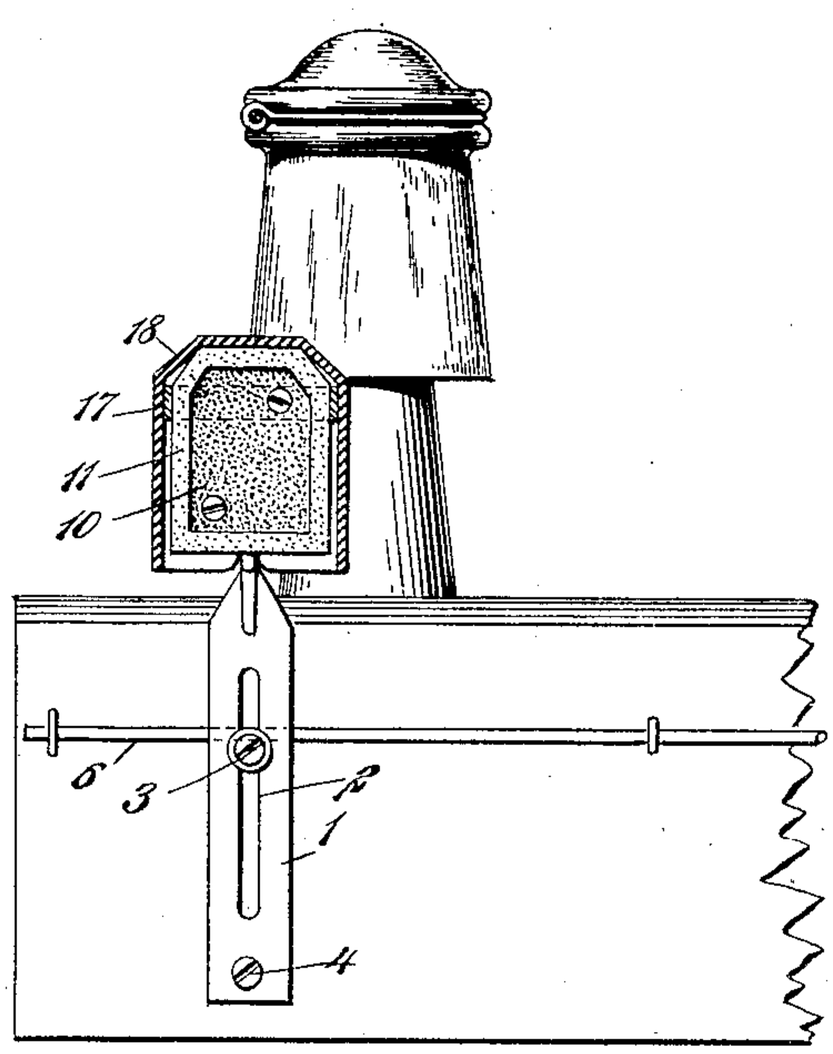


Fig 5

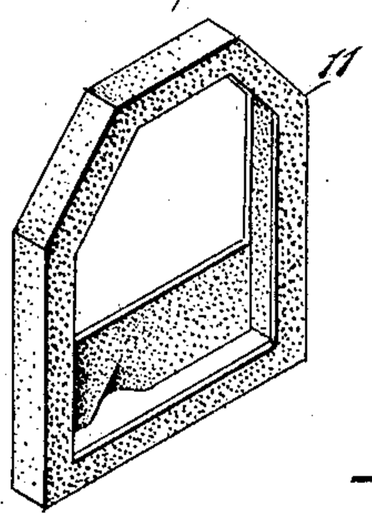


Fig 6

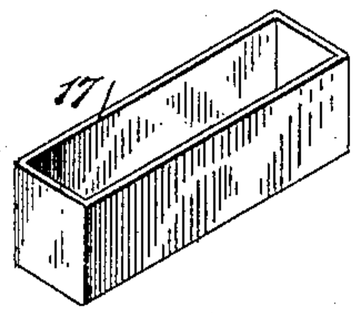
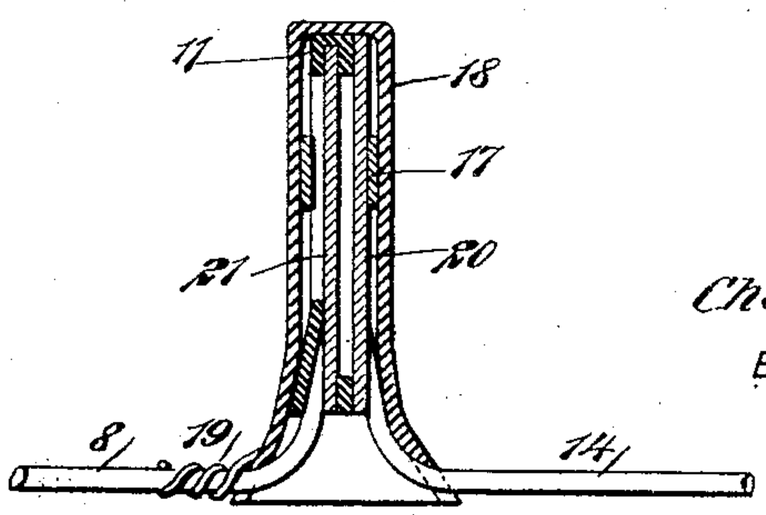


Fig 7



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UNITED STATES PATENT OFFICE.

CHARLES MONROE TAYLOR, OF GEORGETOWN, KENTUCKY.

LIGHTNING-ARRESTER.

SPECIFICATION forming part of Letters Patent No. 659,559, dated October 9, 1900.

Application filed June 12, 1900. Serial No. 20,012. (No model.)

To all whom it may concern:

Be it known that I, CHARLES MONROE TAYLOR, a citizen of the United States, and a resident of Georgetown, in the county of Scott and State of Kentucky, have invented a new and Improved Lightning-Arrester, of which the following is a full, clear, and exact description.

This invention relates to improvements in lightning-arresters or grounding devices particularly adapted for use in connection with telegraph or telephone line-wires strung on posts, and the object is to provide an arrester of simple construction that will carry off a lightning-current without grounding the line-wire.

I will describe a lightning-arrester embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of a lightning-arrester embodying my invention and showing the same as attached to a line-pole. Fig. 2 is a section on the line $x\,x$ of Fig. 1. Fig. 3 is a side view. Fig. 4 is also a side view with one of the grounding-plates omitted. Fig. 5 is a perspective view of a plate-holder employed. Fig. 6 is a perspective view of a clamping-sleeve employed, and Fig. 7 is a vertical section of a modified construction.

Referring to the drawings, 1 designates a metal plate adapted to be secured to a support—such, for instance, as to a pole or a crosstree thereon, as indicated in the drawings. This plate will preferably be adjustable vertically. Therefore I have provided it with a slot 2, through which a screw 3 passes. When the plate is adjusted relatively to the screw 3, it may be securely held in such position by means of a screw 4, passing through an opening in the plate below the slot. This plate 1 is in electrical connection with a grounding-wire 5, which extends down one side of the pole. I have here shown the grounding-wire as connected to a rod or wire 6, attached to the crosstree and engaged by the plate. It is obvious, however, that the wire 5 may be connected directly to the plate, as the rod or wire 6 is practically a part of the grounding-wire.

Extended outward from the upper end of the plate 1 is a conductor-rod 8, which is connected at its outer end with a metal plate 9, to which a grounding-plate 10, of carbon or the like, is attached by means of screws, as indicated in Fig. 4. A frame 11, of insulating material—such, for instance, as asbestos fiber or the like—provides a seat for the plates 9 and 10, and also spaces the other carbon grounding-plate 12 from the plate 10—that is, the plate 12 engages around its edges against the adjacent side edges of the frame 11. Thus an air-space is provided between the grounding-plates, across which a heavy charge or lightning current may jump, but across which the ordinary working current will not pass. The plate 12 is removably secured by means of screws to a metal plate 13, connected to a conductor-arm 14, which at its upper end is attached to a clamp 15, clamped to the line-wire 16. The plates may be held rigidly with relation to each other by means of a sleeve or collar 17, of suitable material, engaging around the frame 11 and around the metal plate 13, and when all these parts are assembled a protecting-cover 18, of insulating material, is placed over the same and may be secured from accidental detachment by any suitable means. I have here shown for this purpose a wire 19, connected at one end to the casing and having its opposite end twisted around the conductor 8.

In operation, should a lightning-current pass along the wire 16 it will deflect or pass downward through the conductor 14, thence to the plate 12, jump the gap to the plate 10, and then pass down the conductor 8 and plate 1 to the grounding-wire. Thus it will be seen that there are no fuses or coils liable to be burned out or to ground the working current.

The modification shown in Fig. 7 is practically like the first example described. In this figure, however, metal grounding-plates 20 and 21 are employed instead of carbon plates. Otherwise the construction and operation are the same.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A lightning-arrester, comprising a pair of grounding-plates, means for connecting one of said plates electrically with the line-wire, a frame of insulating material in which the other of said plates is arranged and spaced from the first-named plate, a protecting-cover for the plates, and means for electrically connecting the second-named plate with a grounding-wire, substantially as specified.

2. A lightning-arrester, comprising metal plates, means for electrically connecting one of said metal plates with a line-wire, means for connecting the other of said plates with a grounding-wire, carbon grounding-plates detachably secured to the metal plates, a frame in which one of the carbons and its metal plate are supported and electrically separating the carbon plates one from the other, and a protecting-cover for the several plates, substantially as specified.

3. A lightning-arrester, comprising vertically-extended grounding-plates insulated one from the other, a sleeve or collar for holding said plates in their proper relation to each other, a frame of insulating material in which one of the plates is arranged, and means for connecting the plates electrically with a line-wire and with a grounding-wire, substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES MONROE TAYLOR.

Witnesses:
W. G. ABBETT,
A. P. BROWN.