

(No Model.)

D. M. ROTHENBERGER.
ELECTRIC INSULATOR.

No. 545,819.

Patented Sept. 3, 1895.

Fig. 1.

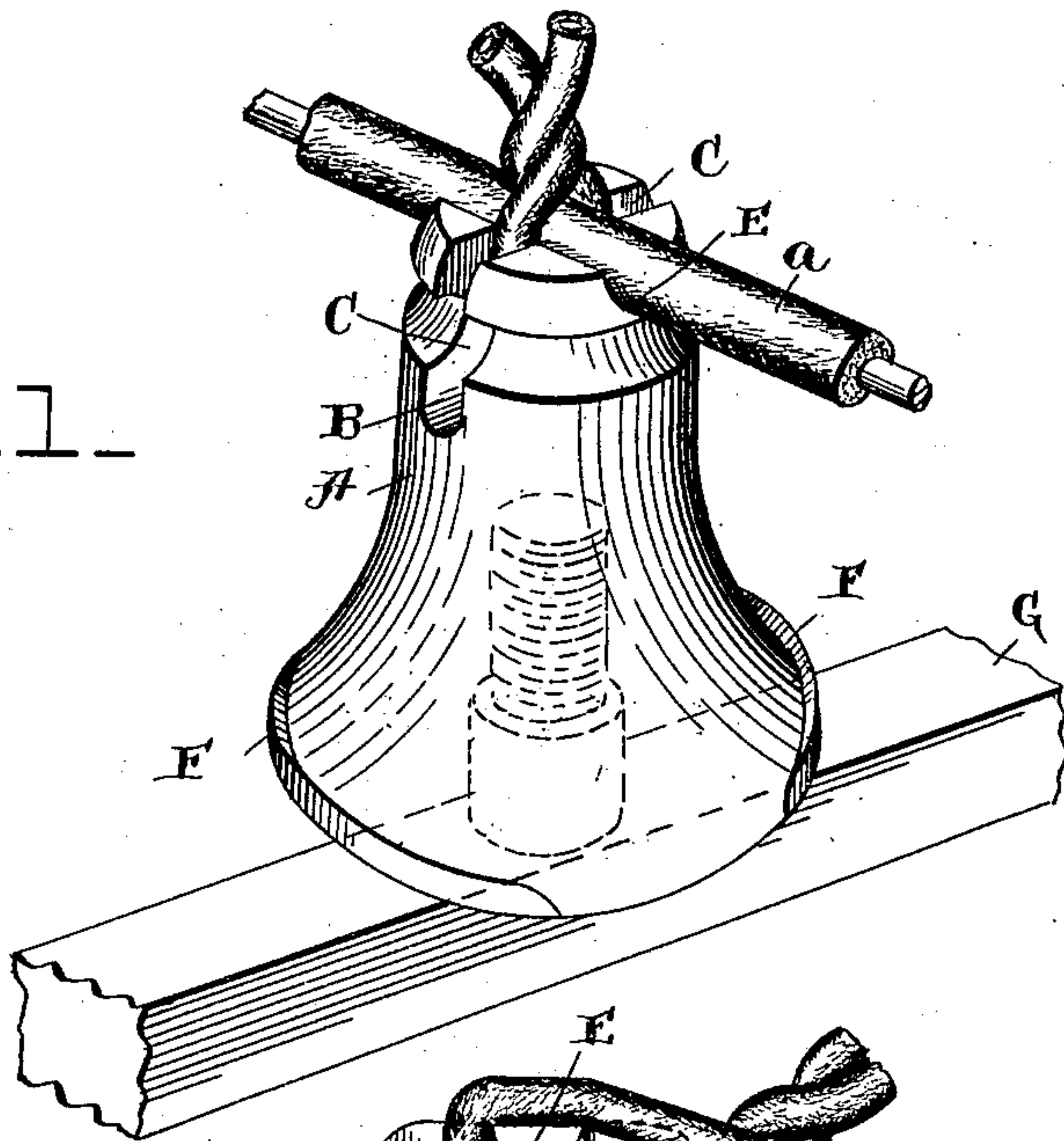


Fig. 2.

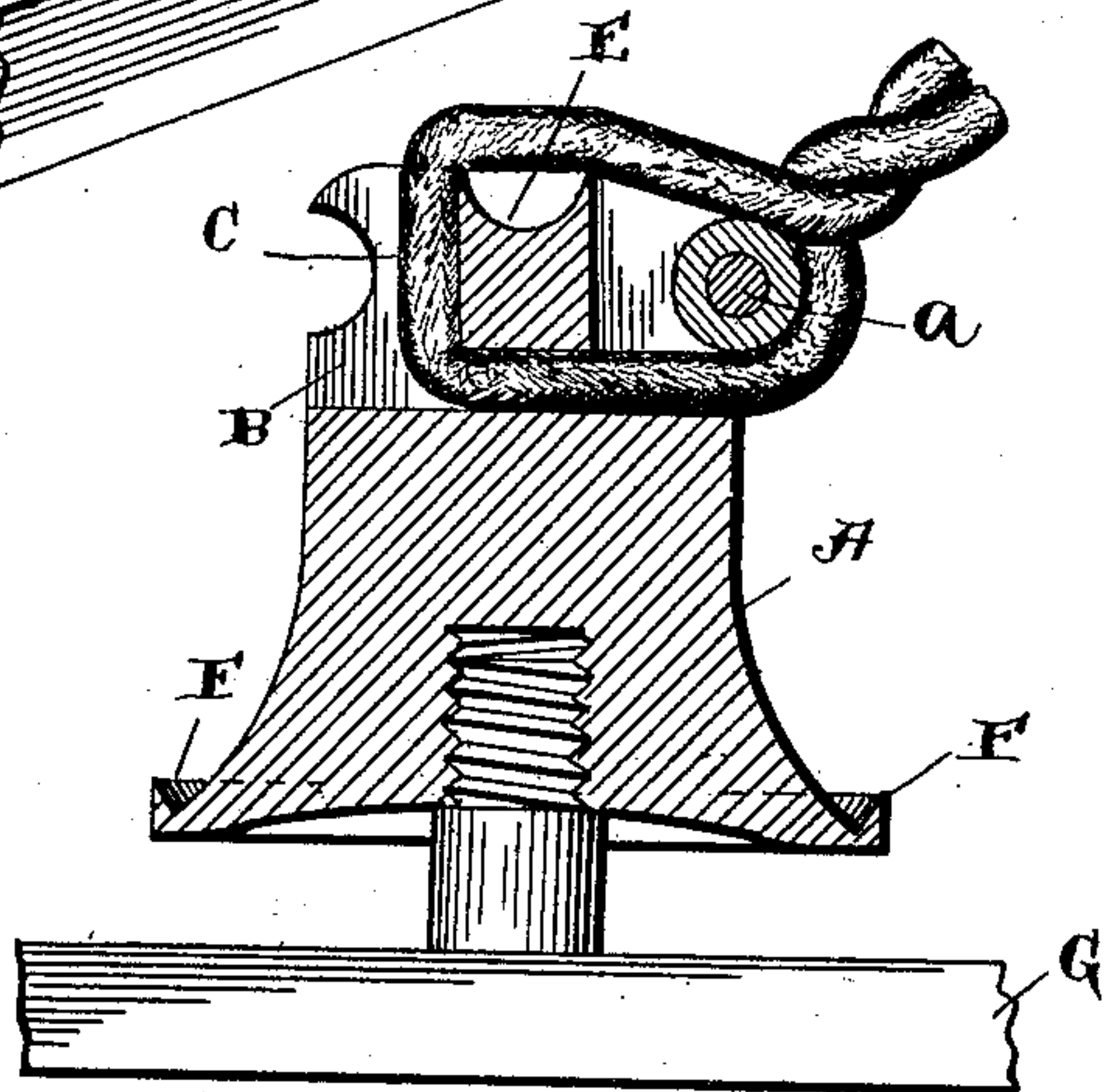
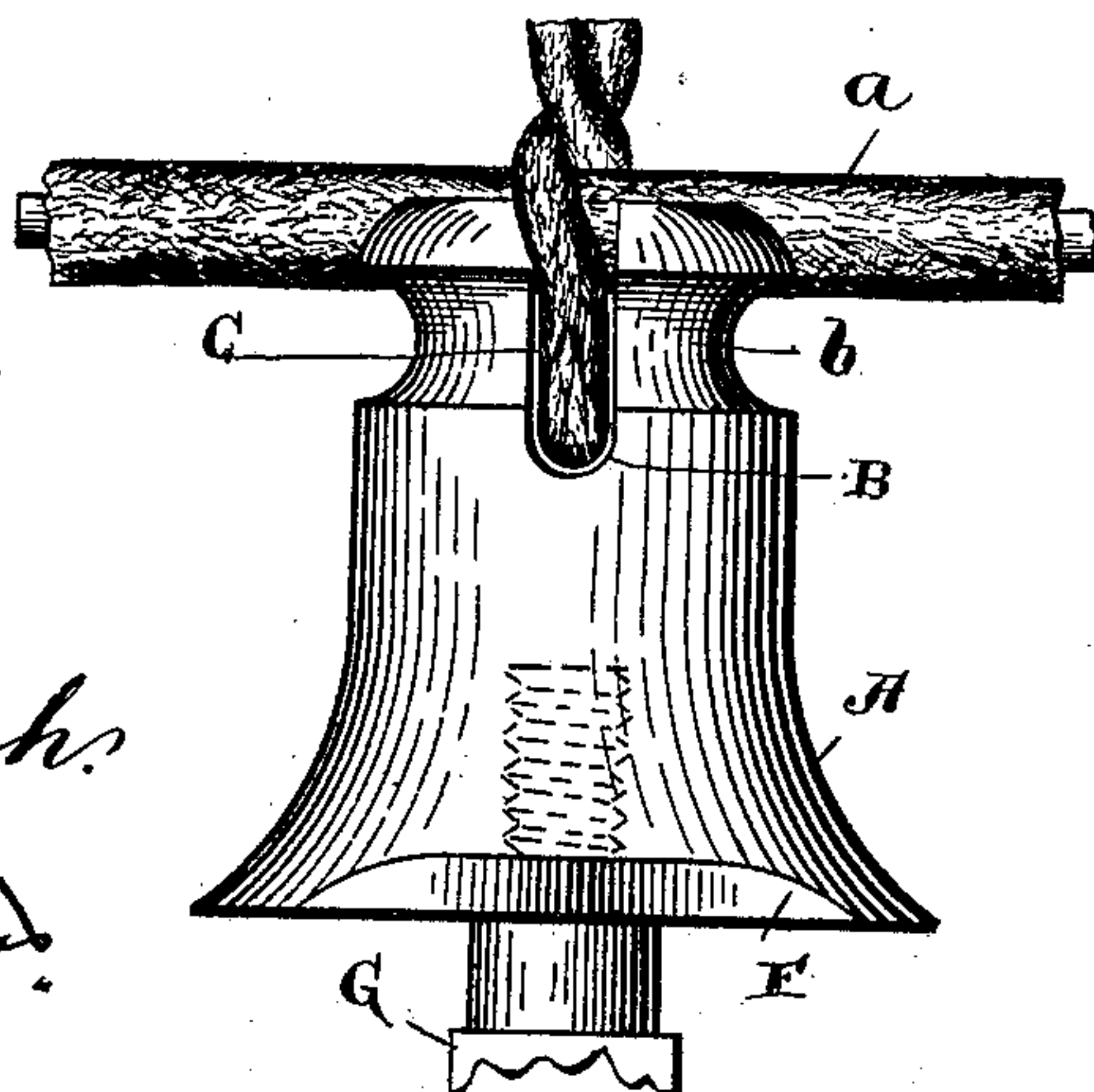


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

DANIEL M. ROTHENBERGER, OF LANCASTER, PENNSYLVANIA, ASSIGNOR OF TWO-THIRDS TO CHARLES A. INGLIS AND EDWARD D. REILLY, OF SAME PLACE.

ELECTRIC INSULATOR.

SPECIFICATION forming part of Letters Patent No. 545,819, dated September 3, 1895.

Application filed March 8, 1895. Serial No. 540,991. (No model.)

To all whom it may concern:

Be it known that I, DANIEL M. ROTHENBERGER, of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Electric Insulators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in insulators for electric wires, and pertains to that class of insulators in which the insulator is provided with a transverse ligament around which the tie-wire is passed, the said wire then being twisted around the main wire, all of which will be fully described hereinafter, and particularly pointed out in the claims.

One object of my invention is to provide an insulator with vertical side grooves terminating in a transverse ligament, which ligament is approximately the same thickness as the diameter of the main wire, and a transverse opening communicating with the vertical grooves or slots and beneath the said ligament, whereby the tie-wire can be passed beneath the ligament and turned upward at each side of the main wire and form a part of the groove in which the main wire is placed, whereby the main wire is securely clamped against slipping after it is once drawn.

Another object of my invention is to provide an insulator with a top groove to receive the main wire, with a circumferential groove beneath the said top groove, and a ligament or web around which a tie-wire is passed, the under opening forming the bottom of the ligament being beneath the circumferential groove, whereby the tie-wire may be used to secure a main wire either in the top groove or in the circumferential groove when it is desired to pass the wire around a corner or to make a curve therein.

In the accompanying drawings, Figure 1 is a perspective view of an insulator embodying my invention. Fig. 2 is a vertical section of the same, taken on the dotted lines 2 2 of

Fig. 1. Fig. 3 is a side elevation of the same, looking in the direction indicated in Fig. 1.

A indicates an insulator, preferably of bell shape, having upon its top a transverse groove E, in which the main wire *a* is to be placed. Formed in opposite sides of the outer end of the insulator and communicating with the said groove E are the longitudinal openings C, and formed beneath these longitudinal or vertical openings and communicating therewith is a transverse opening B, both of which form a central transverse ligament D, as clearly shown in Fig. 2. Formed around the ends of the insulator and just beneath the groove E is a curved external groove *b*, which is to be utilized when it is desired to turn the main wire around a corner or to make a curve or bend therein, as shown in Fig. 2. This curved groove *b* is made below the groove E, as before indicated, but above the opening C, which is beneath the ligament D, whereby the tie-wire may be used around the said ligament or web for the purpose of holding the main wire in the curved groove, as shown in Fig. 2, or in the end groove E, as shown in Figs. 1 and 3. Attention is especially directed to the fact that by forming the vertical or longitudinal groove C at opposite sides and extending at right angles to the groove E, I am enabled to have the tie-wire formed substantially as a part of the side walls of the groove E, and thus to grasp the main wire *a* tightly and firmly to prevent the same from slipping, which would not be the same if merely an opening E were formed through the insulator, as will be understood.

In Fig. 1 the insulator is shown supported by the horizontal support G, from which a vertical support extends, as shown in dotted lines in said figure, and to prevent the dropping of the water upon the cross-support G and the forming of icicles, or otherwise causing an electric communication by moisture, I form upon the periphery of the insulator, on sides at right angles to the groove E, the lips F, which catch the water and carry it to opposite sides of the cross-support G, as will be readily understood from Fig. 1.

I do not claim the use of a tie-wire through a transverse opening in the insulator, but the

combination of this transverse opening and the vertical grooves at each end thereof and communicating therewith, whereby a transverse ligament or web of a width substantially the same as the diameter of the main wire is formed, and whereby a firm grasp is obtained upon the main wire to prevent the same from slipping.

I also claim the relative location of the external groove for the main wire and the transverse opening, whereby the tie-wire may be utilized to hold the main wire in the said curved groove.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. An insulator having a transverse opening, vertical or longitudinal side grooves or slots communicating with the said opening and forming a transverse web or ligament of a width approximately the same as the diameter of main wire, whereby the tie wire will have a side and top hold upon the main wire to prevent it from slipping, substantially as described.

2. An insulator having a groove in its end for the main wire, a transverse groove below the said end groove at right angles thereto, vertical or longitudinal slots or grooves communicating with the said transverse opening and forming a web extending longitudinal the main wire, whereby a tie wire may be passed around the said ligament and securely

hold the main wire between its twisted ends, substantially as shown.

3. An insulator having a curved circumferential groove for the main wire, a transverse opening beneath the said groove, and vertical or side openings communicating with the said curved grooves, the parts adapted for the purpose shown and described.

4. An insulator having a groove in its end, an opening extending at right angles to the groove and beneath the same, vertical or longitudinal grooves or slots communicating with the said transverse opening, and a circumferential curved groove beneath the said end groove and above the said transverse opening, the same adapted for alternate use, substantially as shown and described.

5. A bell shaped insulator having at opposite sides circumferential lips F at its base for the purpose described.

6. A bell shaped insulator having at its lower edge and at opposite side thereof circumferential lips F for the purpose described, and a groove E in its end extending in a line between the ends of the said lips, whereby it is adapted to operate as described.

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

DANIEL M. ROTHENBERGER.

Witnesses:

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