

(No Model.)

H. L. JAMES.

INSULATOR.

No. 310,059.

Patented Dec. 30, 1884.

fig. 1.

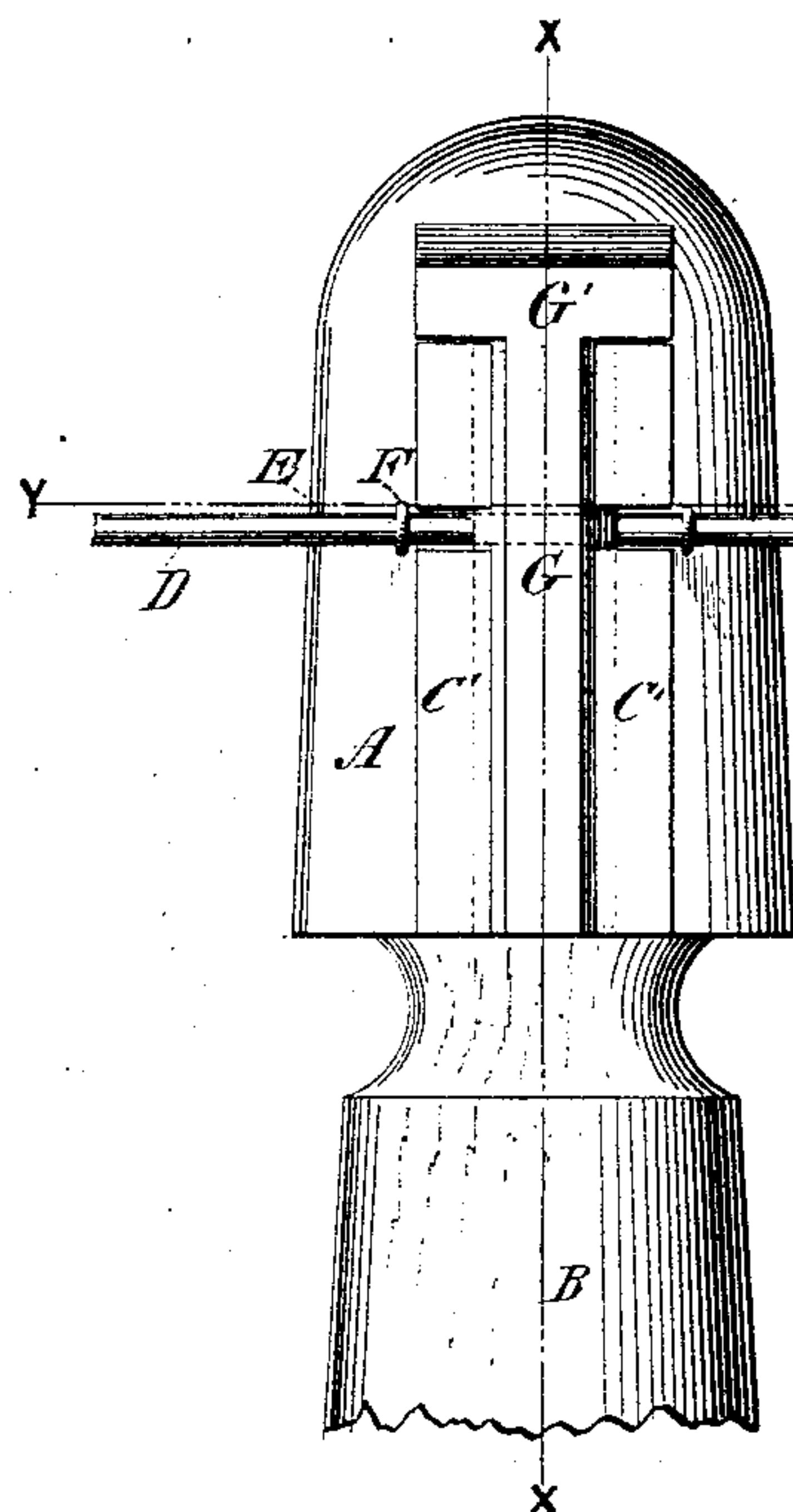


fig. 2.

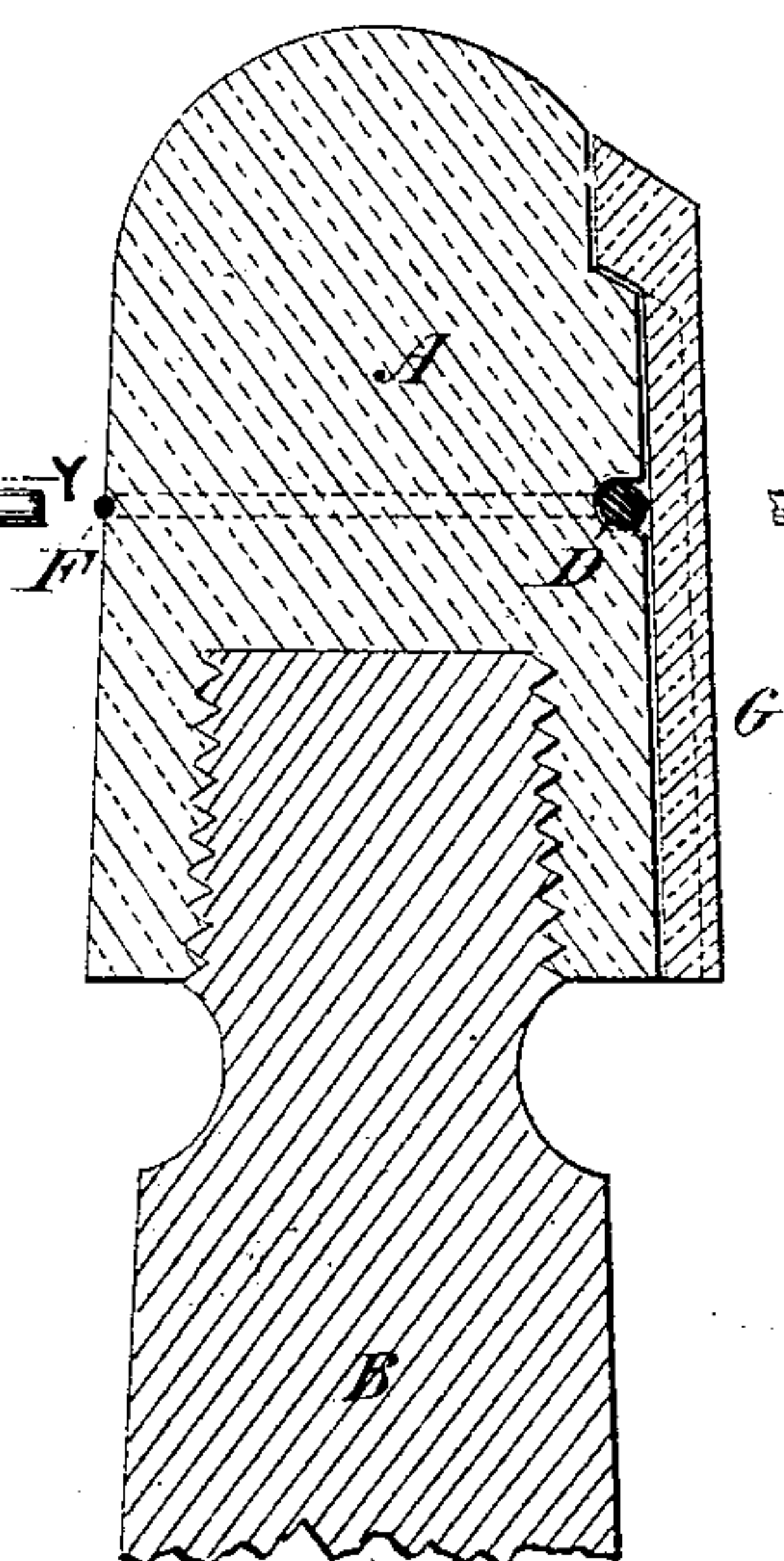


fig. 3.

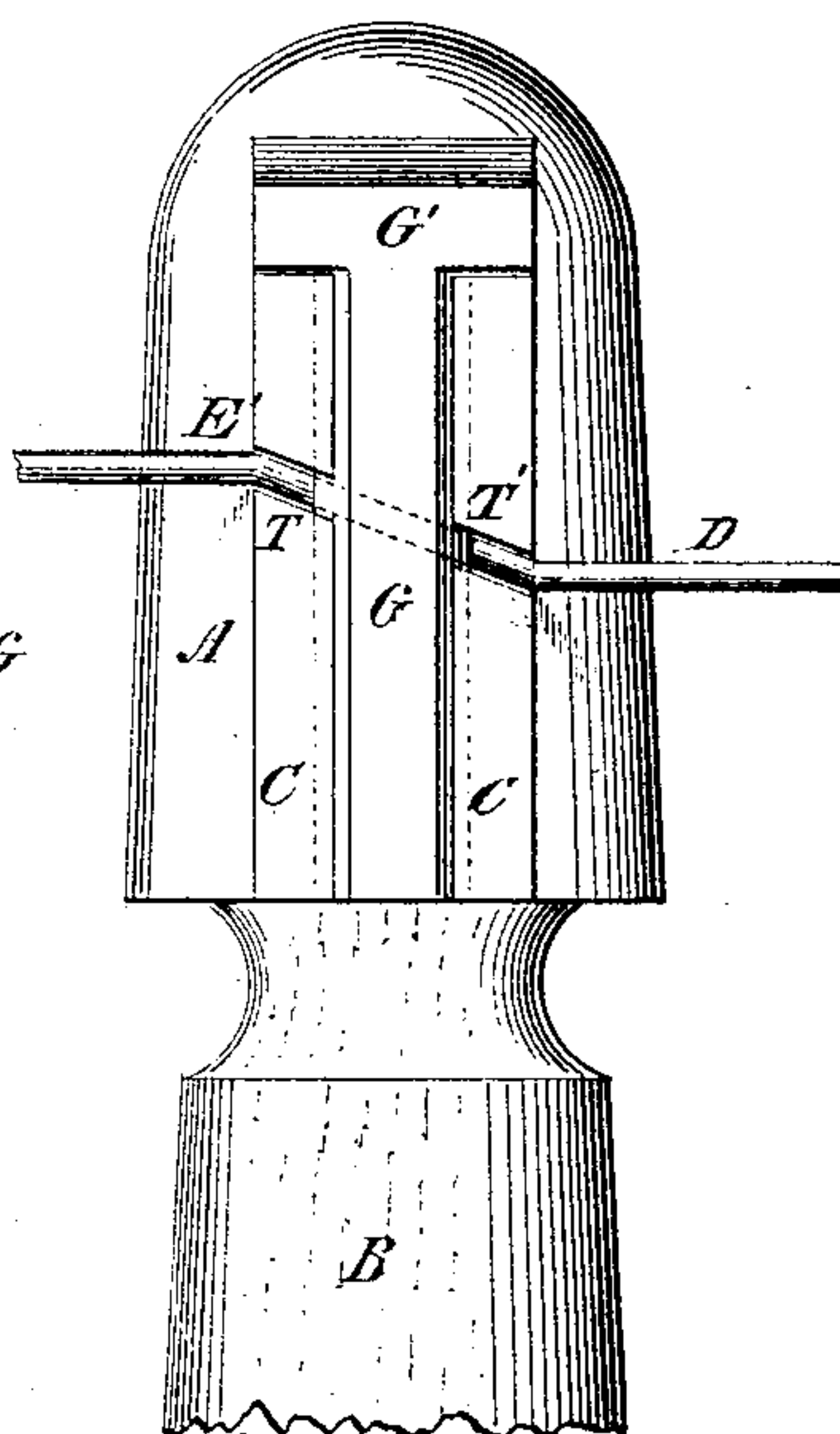


fig. 4.

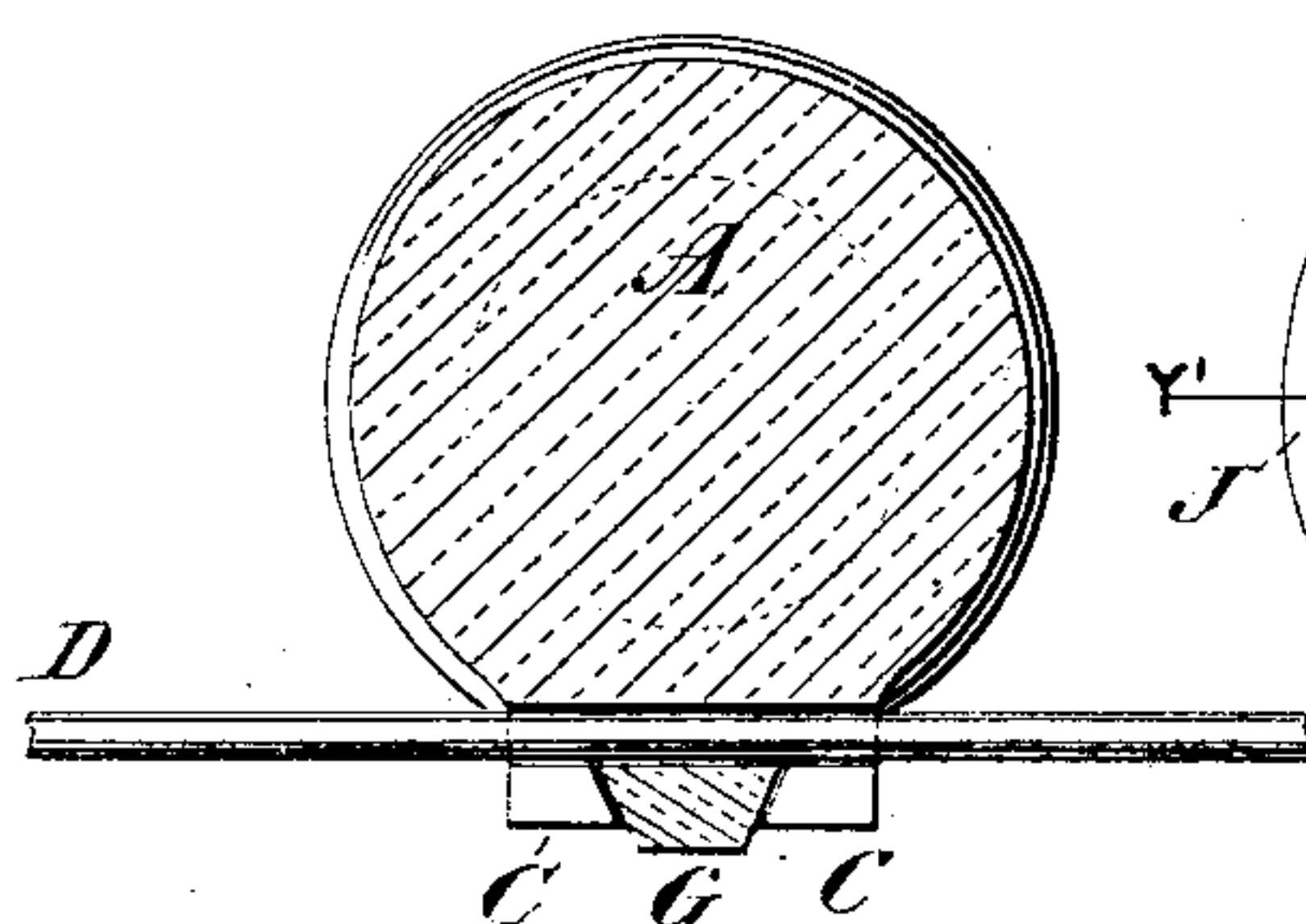


fig. 5.

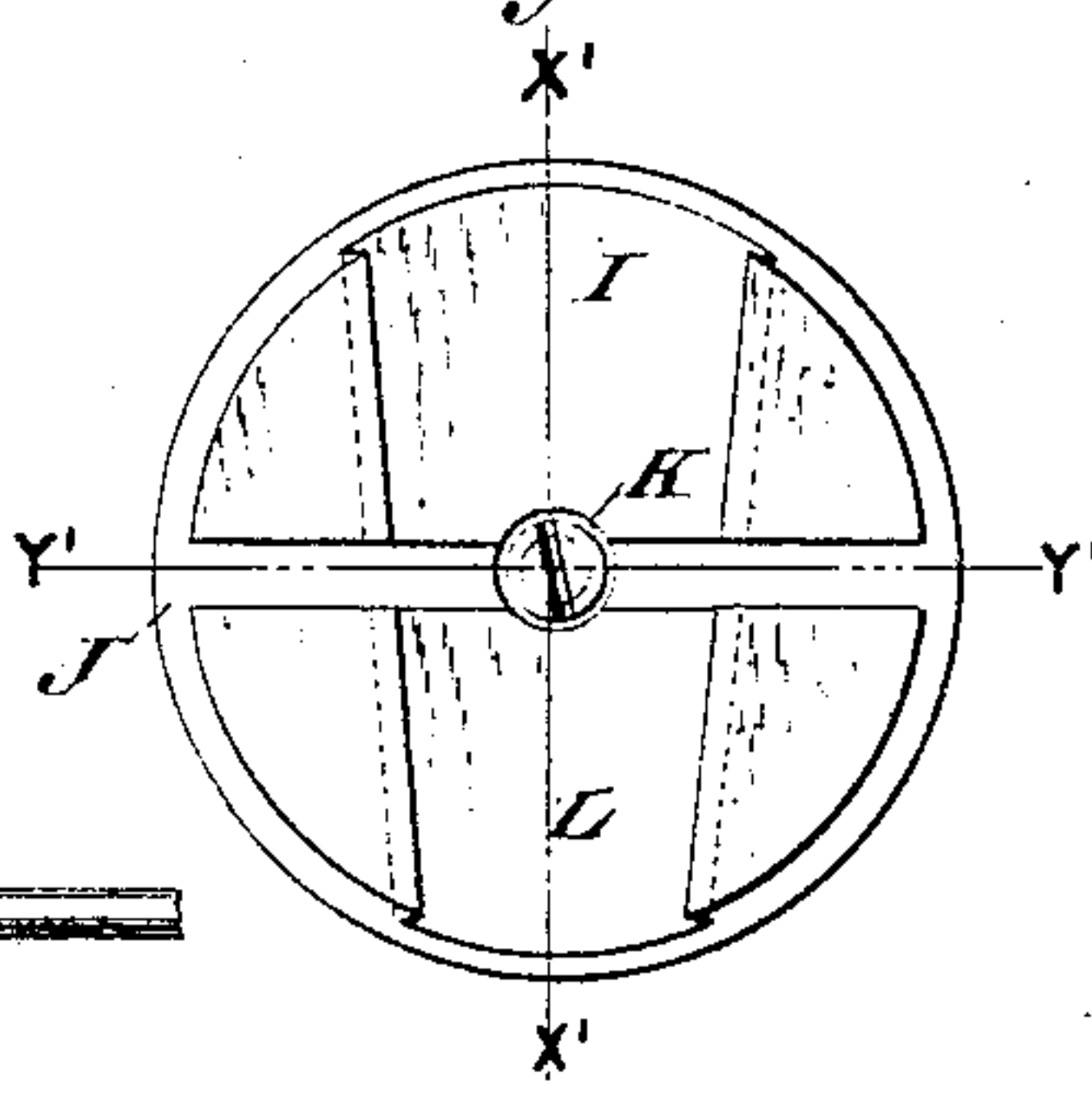


fig. 6.

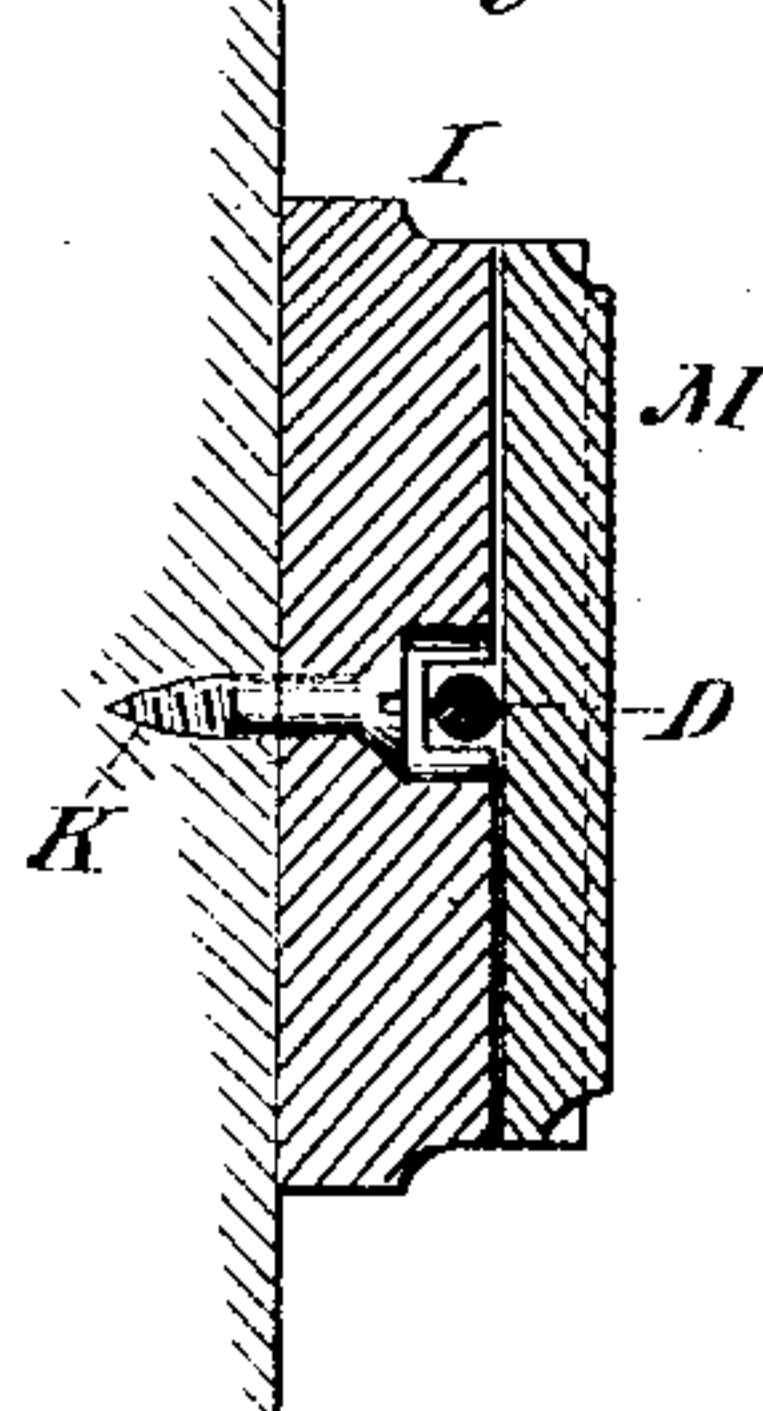
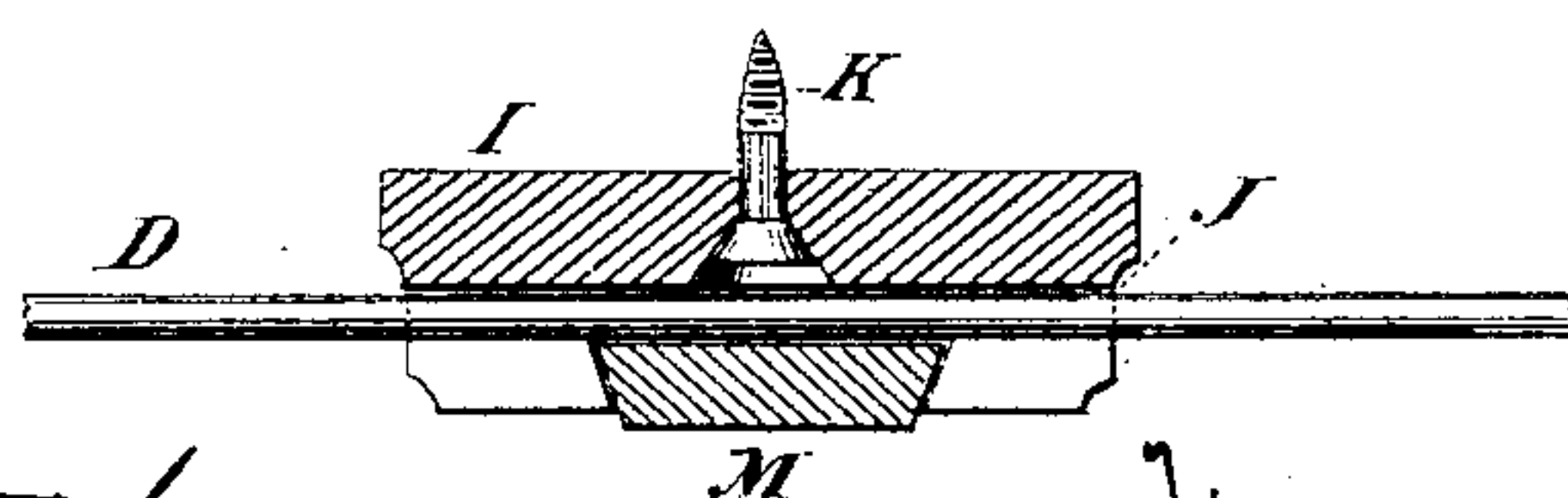


fig. 7.



WITNESSES:

Tustave Dietrich
W. A. French.

INVENTOR

Hamilton L. James.
BY
Geor H. Bismarck
his ATTORNEY

UNITED STATES PATENT OFFICE.

HAMILTON L. JAMES, OF JUNCTION CITY, KANSAS.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 310,059, dated December 30, 1884.

Application filed April 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, HAMILTON L. JAMES, of Junction City, Davis county, State of Kansas, have invented a new and useful Improvement in Insulators for Electrical Conductors, of which the following is a specification.

My invention relates to insulators made of glass or other suitable non-conducting material, such as are used in the open air for supporting telegraphic line wires or other electrical conductors. It also relates to insulators used in the interior of buildings for suspending and supporting large insulated conductors or cables, such as are employed for telephonic or electric lighting purposes.

My invention has for its object to construct an insulator in such a manner that the conductors can be readily attached and secured thereto or removed therefrom without the necessity of using any means for securing the conductor other than that provided by the insulator itself.

It is now commonly the practice to attach line-wires or conductors to the insulator by means of short pieces of wire fastened around the insulator and attached at either end to the main conductor. To apply wires of this description it requires considerable time, and when it is desired to move or change a conductor such wires have to be cut. They have also been found to be objectionable in practice, owing to the fact that the rubbing and friction occurring between them and the conductor, caused by the motion imparted by wind, tends to rapidly destroy the conductor, and in the case of large insulated conductors conveying currents of high electro-motive force they become a source of danger, in that the destruction of the insulation will, under certain circumstances, allow a deviation of the current from its proper conductor.

In the accompanying drawings, forming a part of this specification, similar letters of reference indicate like parts, in which—

Figures 1 and 3 are vertical elevations of my device, showing the electrical conductor contained in a groove or slot cut transversely, or transversely inclined across one side of the insulator and secured therein by means of the sliding retaining-plate. Fig. 2 is a vertical section taken on the line *xx* of Fig. 1, showing the attachment of the insulator to its sup-

porting-pin, and also the storm hood or cap on the upper end of the retaining-plate. Fig. 4 is a transverse section taken on the line *yy* of Fig. 1, and shows the relation of the retaining-plate to the groove in the side of the insulator. Fig. 5 is a view or elevation of a modification of my device as adapted for use in the interior of a building, and shows the transverse slot for the conductor, screw for attaching the insulator to the wall, and wedge-shaped opening for the receiving and retaining plate. Fig. 6 is a vertical section taken on the line *xx* of Fig. 5. Fig. 7 is a transverse section taken on the line *yy* of Fig. 5.

In Figs. 1, 2, 3, and 4, *A* is the body of the insulator, cylindrical in shape and slightly tapering from the base to the top.

I do not, however, limit myself to any particular form or configuration of the body of the insulator, provided, however, that the shape shall be such that the raised portion on one side of the insulator, as hereinafter described, for holding and retaining the electrical conductor, can be adapted thereto and made a part thereof.

The insulator may be made of glass, porcelain, or any suitable non-conducting material, or it may be made of a poor conducting material and the raised portion attached thereto, for holding the conductor, made of a non-conducting material.

As shown in the drawings, the insulator is arranged to be attached to a supporting-pin, *B*, by means of the screw-thread cut or cast into the body of the insulator, which fits a corresponding screw cut upon the pin. It may, however, be attached by any equivalent device which will secure the insulator firmly to the pin.

Arranged longitudinally on one side of the body of the insulator, and forming a part thereof, is a raised portion, *C*, consisting of the ribs *C' C'*, located opposite to each other, and having their inner edges beveled inwardly.

D represents a line-wire or an electrical conductor, and is shown located in a slot or groove cut transversely across one side of the insulator and through the ribs *C' C'*.

E, Fig. 3, is also a groove for receiving the conductor, transversely inclined across the side of the insulator, and through the ribs *C' C'*.

The object of cutting the conductor-grooves as shown is as follows: In Fig. 1 a straight groove is shown. This form is preferable for use where the line-conductors are subject to considerable expansion and contraction, owing to variations of temperature, or in localities where trees in falling are apt to strike upon the wires and drag them down. The wire, being loosely held, is free to move in its slide on the insulator, and thus escapes being broken.

In Fig. 1 a short portion of wire is shown at F, attaching the main conductor to the insulator in the usual way. This arrangement, however, is only necessary where it is desired to prevent too great a strain acting upon the retaining-plate, as when the wire is conveyed at an angle.

In Fig. 3 the groove for the conductor is inclined. The object of making it in this form is twofold: First, to jam or hold the conductor in its required position, by reason of being under strain or tension, the conductor bears against the angles or points 'T' 'T' on the ribs 'C' 'C' of the raised portion C; second, by its inclined direction, to allow any water which may leak into the joint to flow away.

G is the retaining slide or plate having its edges beveled and adapted to fit into the longitudinal orifice between the ribs 'C' 'C'. Upon the upper end of the plate is a storm cap or hood inclined or curved upon its upper surface to conform to the contour of the top of the insulator, and inclined upon its under side to fit upon a seat formed by the upper edges of the ribs 'C' 'C'.

The retaining-plate G may be of glass, baked wood, hard rubber, or any non-conducting material having sufficient tensile strength to stand the strains to which it is subjected.

In the modification of my device as shown in Figs. 5, 6, and 7, the insulator consists of a disk of glass, porcelain, or other insulating material, I, having a groove cut transversely across the face thereof, J, for the reception of the electrical conductor, and a countersunk orifice in the center of the disk for receiving a screw, K, used to attach the insulator to the wall. The screw may be of metal, and is preferably capped with rubber, or has a small portion of insulating material of any kind interposed between it and the electrical conductor D, when in the slot made to receive it. Cut into the face of the disk is the wedge-shaped or tapering slot L, having its opposite edges beveled or inclined inwardly, adapted to receive the tapering beveled plate M, which retains the conductor in position.

The operation of my device is as follows: The conducting-wire is inserted into the groove made to receive it, and the plates G or M, in either form of the insulator, are inserted into the slots made to receive them, and act to hold the conducting-wire in its proper position.

I claim as my invention—

1. A supporting-insulator for telegraphic line wires or other electrical conductors, having arranged upon one side thereof a raised or elevated portion, through which is cut a transverse groove or slot for receiving the electrical conductor, said conductor being held in position by means of a retaining-plate adapted to fit in a longitudinal groove cut in said raised portion, substantially as described.

2. A supporting-insulator for telegraphic line wires or other electrical conductors, having arranged upon one side thereof a raised or elevated portion, through which is cut a transversely-inclined groove or slot for receiving the electrical conductor, said conductor being held in position by means of a retaining-plate adapted to fit in a longitudinal groove cut in said raised portion, substantially as described.

3. A supporting-insulator for telegraphic line wires or other electrical conductors, having upon its exterior surface a transverse groove or slot adapted to receive an electrical conductor, and a wedge-shaped groove or slot for receiving a wedge-shaped retaining-plate, substantially as described.

4. The combination, substantially as hereinbefore set forth, of an insulator composed of non-conducting material, having a raised portion on one side thereof, with a plate of non-conducting material adapted to fit into a longitudinal slot cut into said raised portion, substantially as described.

5. The combination, substantially as hereinbefore set forth, of an insulator having a raised portion on one side thereof, with a plate of non-conducting material upon which is arranged a storm-hood adapted to fit over the end of a longitudinal slot cut into said raised portion, substantially as described.

6. As a new article of manufacture, an insulator for electrical conductors, having a raised portion on one side thereof, and having a transverse or transversely-inclined slot cut through said raised portions for receiving the conductor, and the means for securing the conductor in position, consisting of a retaining-plate, straight or wedge-shaped, and adapted to fit into a longitudinal groove cut in said raised portions, substantially as described.

7. As a means of supporting an electrical conductor in a non-conducting insulator, a straight or inclined slot cut across the side of said insulator, and a plate of non-conducting material adapted to fit into a longitudinal groove formed upon said insulator, in such a manner that said retaining-plate shall act to retain the conductor within the groove, substantially as described.

HAMILTON L. JAMES.

Witnesses:

WM. H. BLAIN,
GEO. H. BENJAMIN.