

Bishop & Marks. Electrical Conductor

N^o 79,896.

Patented Jul. 14, 1868.

Fig. 1.

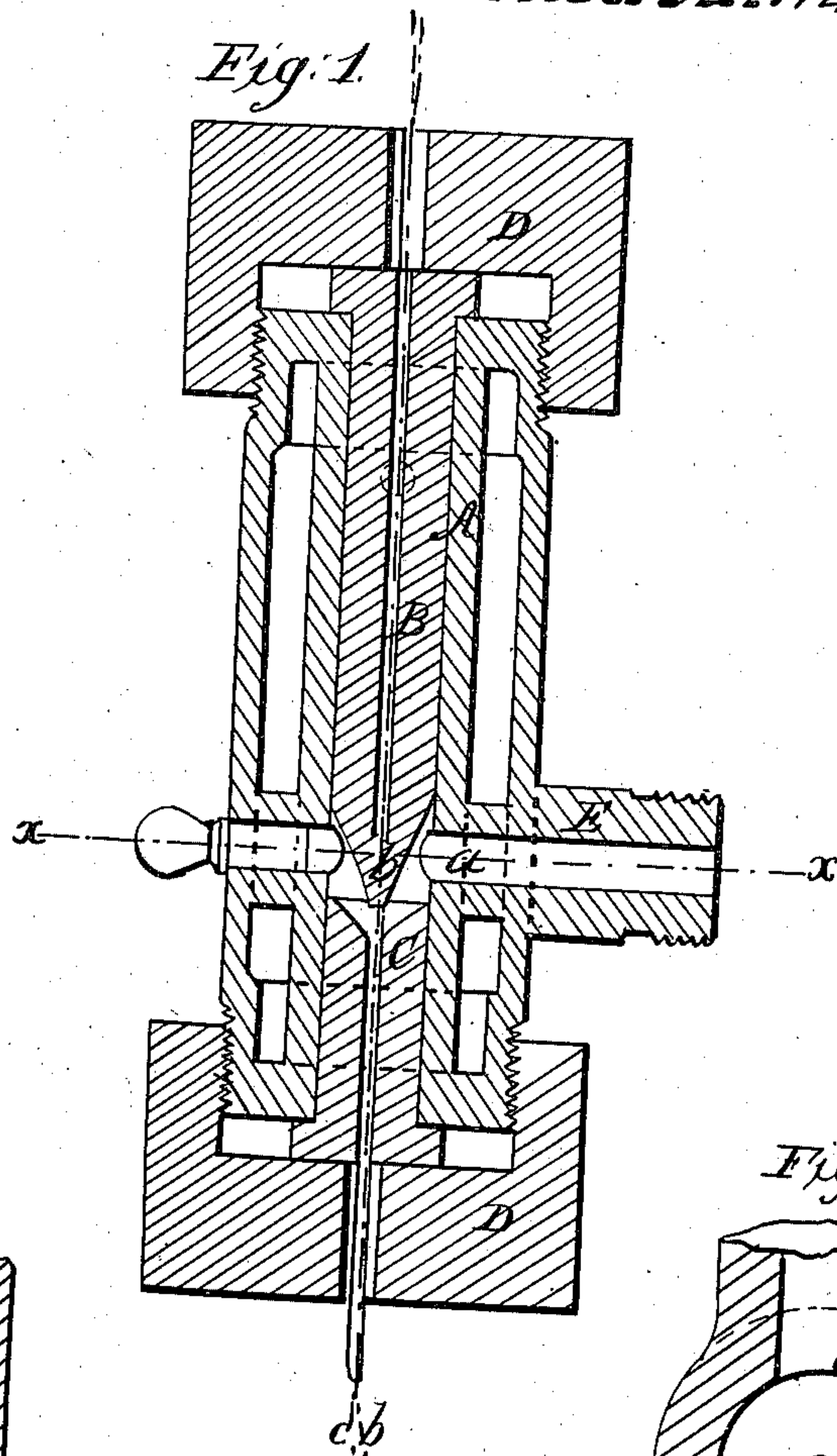


Fig. 3.

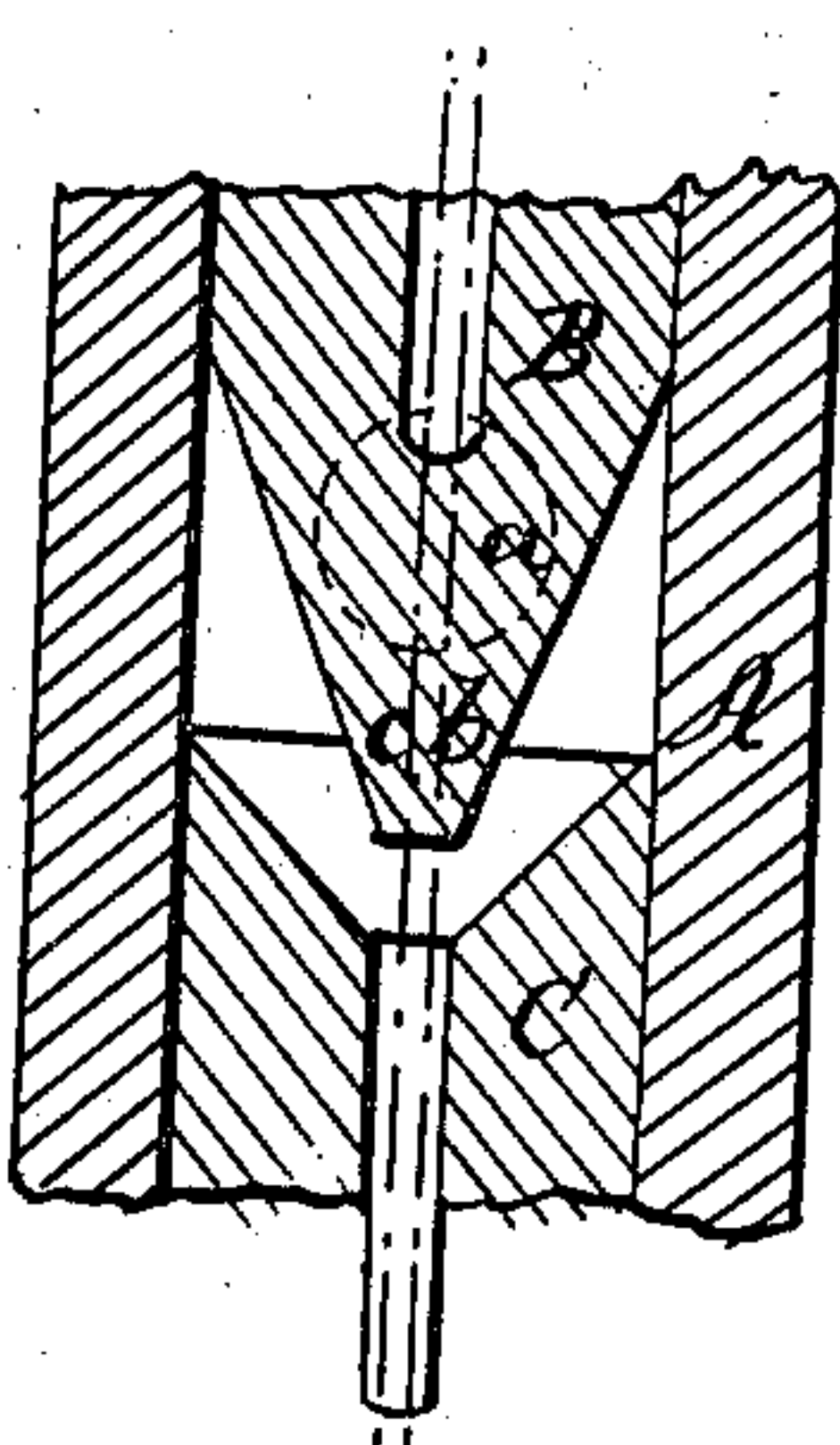


Fig. 4.

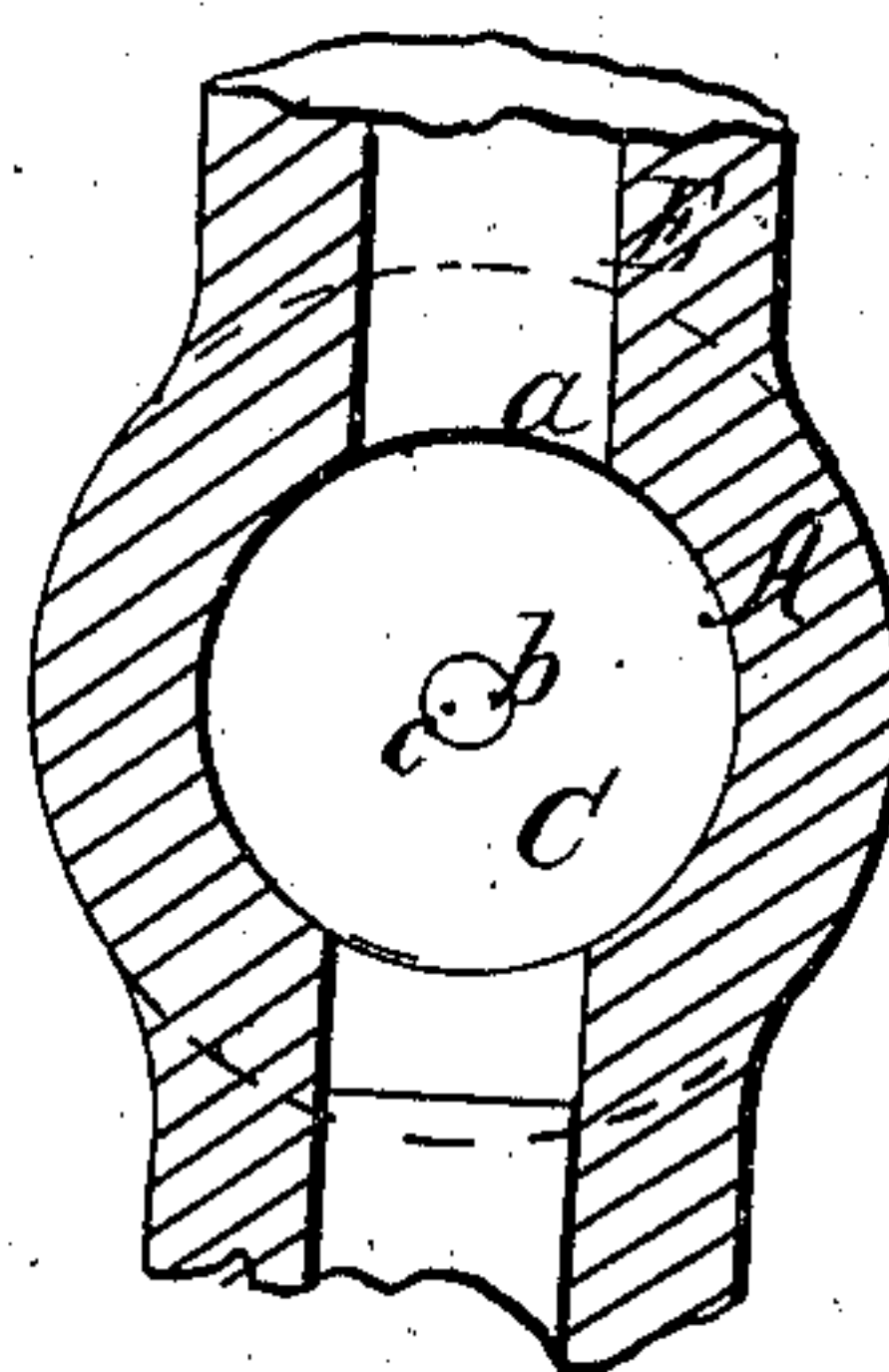
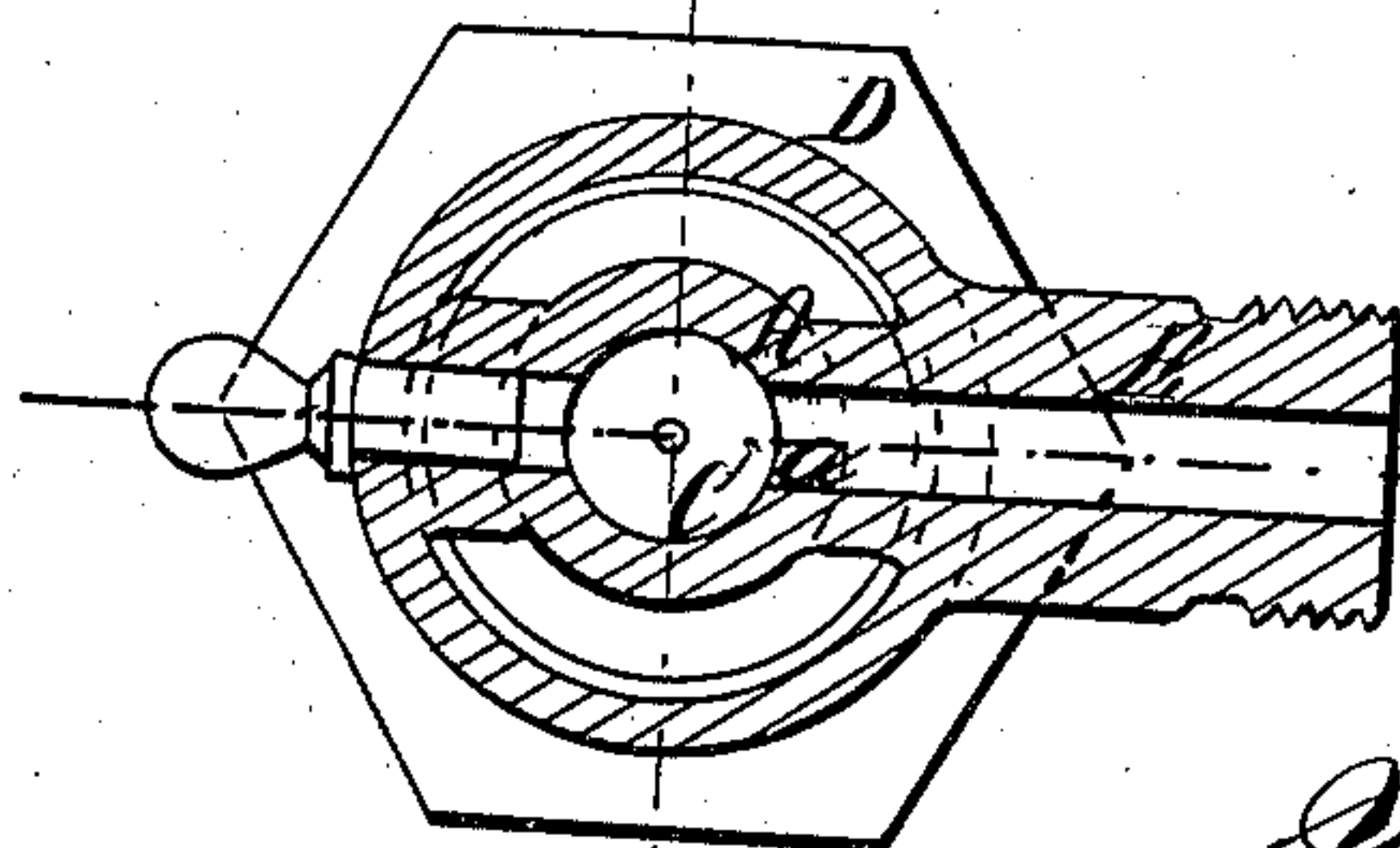


Fig. 2.



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SAMUEL C. BISHOP AND WILLIAM W. MARKS, OF NEW YORK, N. Y.

IMPROVED APPARATUS FOR INSULATING TELEGRAPH-WIRES.

Specification forming part of Letters Patent No. 79,896, dated July 14, 1868.

To all whom it may concern:

Be it known that we, SAMUEL C. BISHOP and WILLIAM W. MARKS, both of the city, county, and State of New York, have invented a new and useful Improvement in Apparatus for Insulating Telegraph-Wires, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure 1 represents a longitudinal section of an apparatus or apparatus in part for insulating telegraph-wires in accordance with our improvement; Fig. 2, a transverse section taken as indicated by the line *xx* in Fig. 1, the back die being removed. Fig. 3 is a longitudinal section in part of the same at right angles to Fig. 1 and on a larger scale; and Fig. 4, a transverse section in part, also on a larger scale, through the line *xx* in Fig. 1.

Similar letters of reference indicate corresponding parts throughout the several figures.

In insulating telegraph-wires it has been customary to coat the wire with the gutta-percha or other insulating material while in a plastic state by forcing said material, through the action of a suitable ram, through a side orifice in a die-cylinder fitted with a back and front or male and female die, the wire being entered through the former and receiving the insulating material round it as it passes on to and through the front die, through which latter it is drawn or forced by and along with the insulating material with which it is covered. Where it is but necessary to insulate a single wire there is little or no difficulty in thus accomplishing the same; but where two or more wires are required to be separately insulated in one and the same core or coating it has been found that there is great danger of the wires running or being forced together, so as to establish contact by reason of the presentation of the wires in an irregular manner across the axial line of the orifice, through which the insulating material is forced into the die-cylinder, and tendency of the material so entering to press on and bring the wires in contact;

hence it has been preferred where two or more wires are required to be insulated, to form, as it were, a single cable to insulate each wire separately in the manner described, and afterward to put a common wrapper or coating around them for the purpose of holding them together. This is a laborious and expensive mode of construction, and our improvement obviates all necessity of resorting to it, the invention consisting in such a construction and arrangement of parts of the apparatus relatively to the feed of insulating material to the die-cylinder thereof, as that more than one wire may be simultaneously coated and insulated by or within the same core without any risk or tendency on part of the incoming insulating material to bring the wires in contact.

Referring to the accompanying drawings, A is the die-cylinder, surrounded, as usual, by a steam-jacket for keeping the insulating material in the necessary soft or plastic state.

B is the back or male, and C the front or female, die, and D D caps for confining the dies.

E is the neck, through which the gutta-percha or other insulating material is forced by the action of the compressing-ram into the die-cylinder, the feed-orifice *a*, through said neck or side of the cylinder, lying, as usual, at right angles, or thereabout, to the axial line of the dies and opposite the one side of the male die at or near its inner tapered end. This male or back die is represented as so constructed at its inner end as that it will admit of two wires, *b c*, being passed through it longitudinally at a suitable distance apart to receive the insulating material between as well as around them, which is done as the wires are passed onto and through the front die, C.

To prevent the forcing of the wires *b c* together or in contact by the action or feed of the incoming insulating material through the orifice *a* we arrange the orifices in the male or back die, B, or so adjust said die as that the wires *b c* in passing out from the same will issue or travel in a plane which is transverse or at right angles to the line of feed established for the insulating material by the side orifice, *a*,

whereby all tendency of the incoming material as it is forced into the die-cylinder to bring the wires *b c* in contact, is entirely obviated.

What is here claimed, and desired to be secured by Letters Patent, is—

The combination of the dies *B C*, with the feed-orifice *a*, when the back or male die, *B*, is perforated for the passage in a separated manner of duplicate wires, and so arranged relatively to the feed of the insulating material through the orifice *a* as that the wires in their passage to and through the front die, *C*, are

caused to travel in a plane which is transverse or at right angles to the feed-orifice *a*, substantially as and for the purpose herein set forth.

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