

(No Model.)

2 Sheets—Sheet 1.

W. M. BRISBEN.

INSULATING UNDERGROUND ELECTRIC WIRE.

No. 278,087.

Patented May 22, 1883.

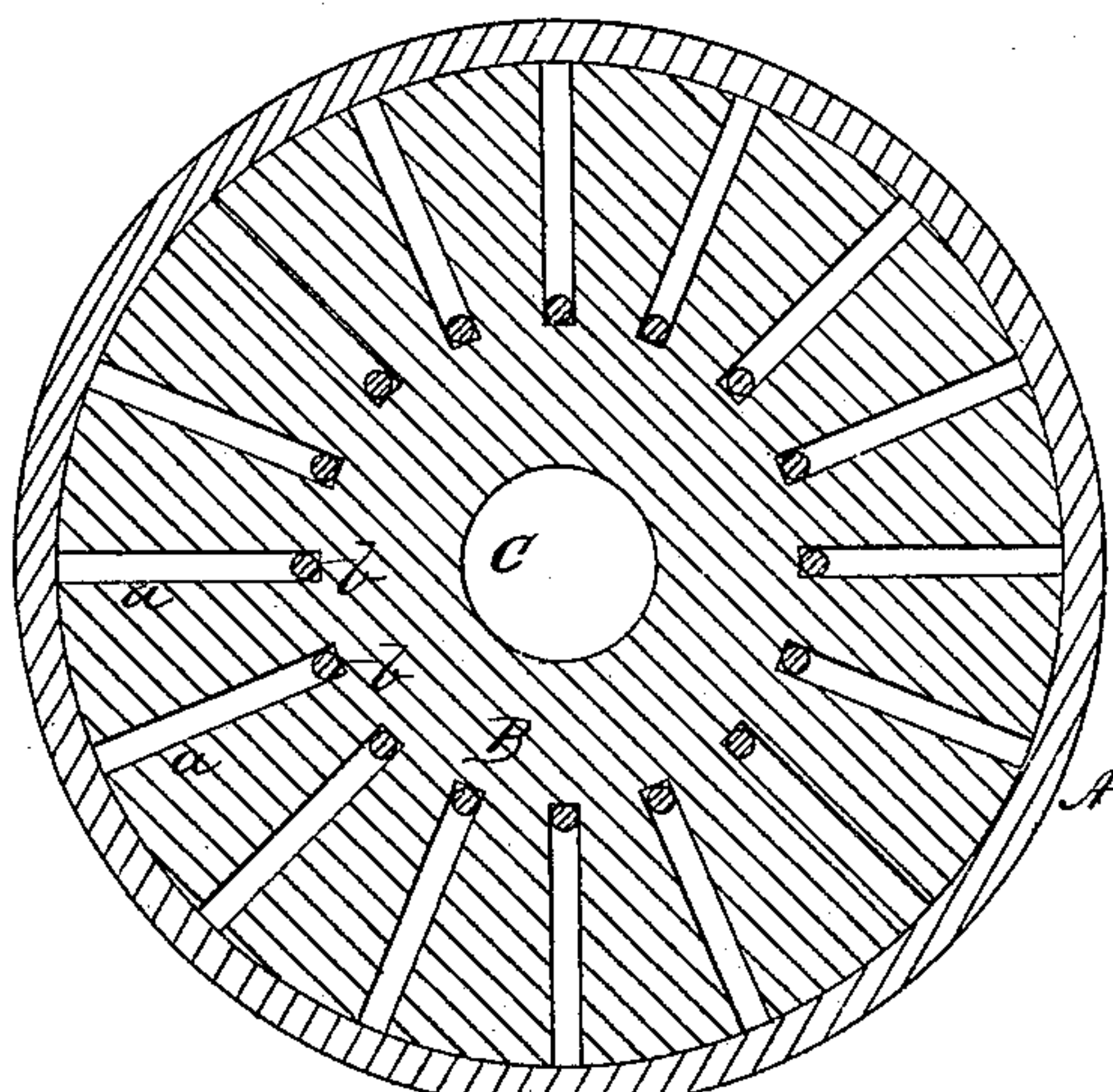


Fig 1

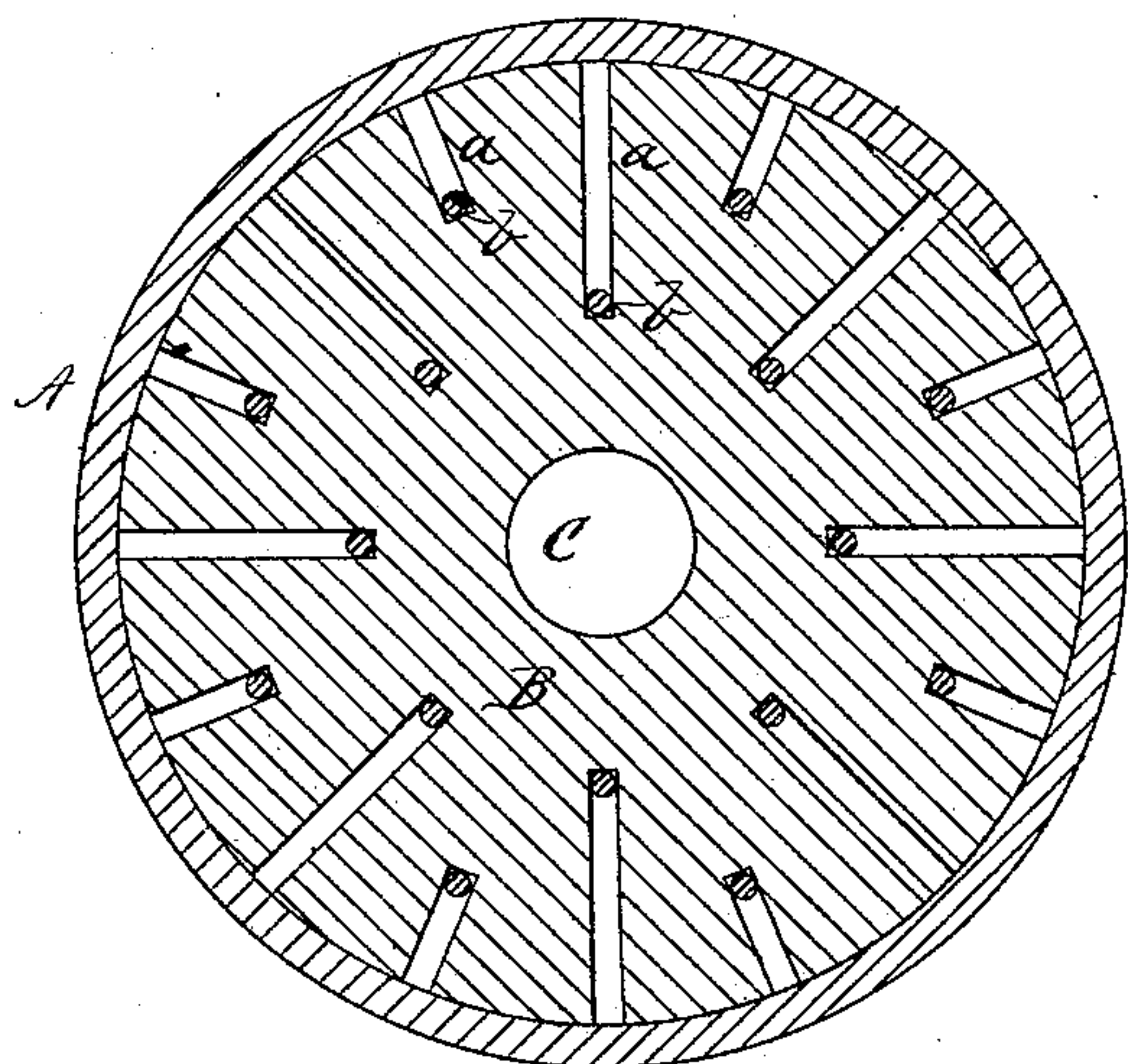


Fig 2

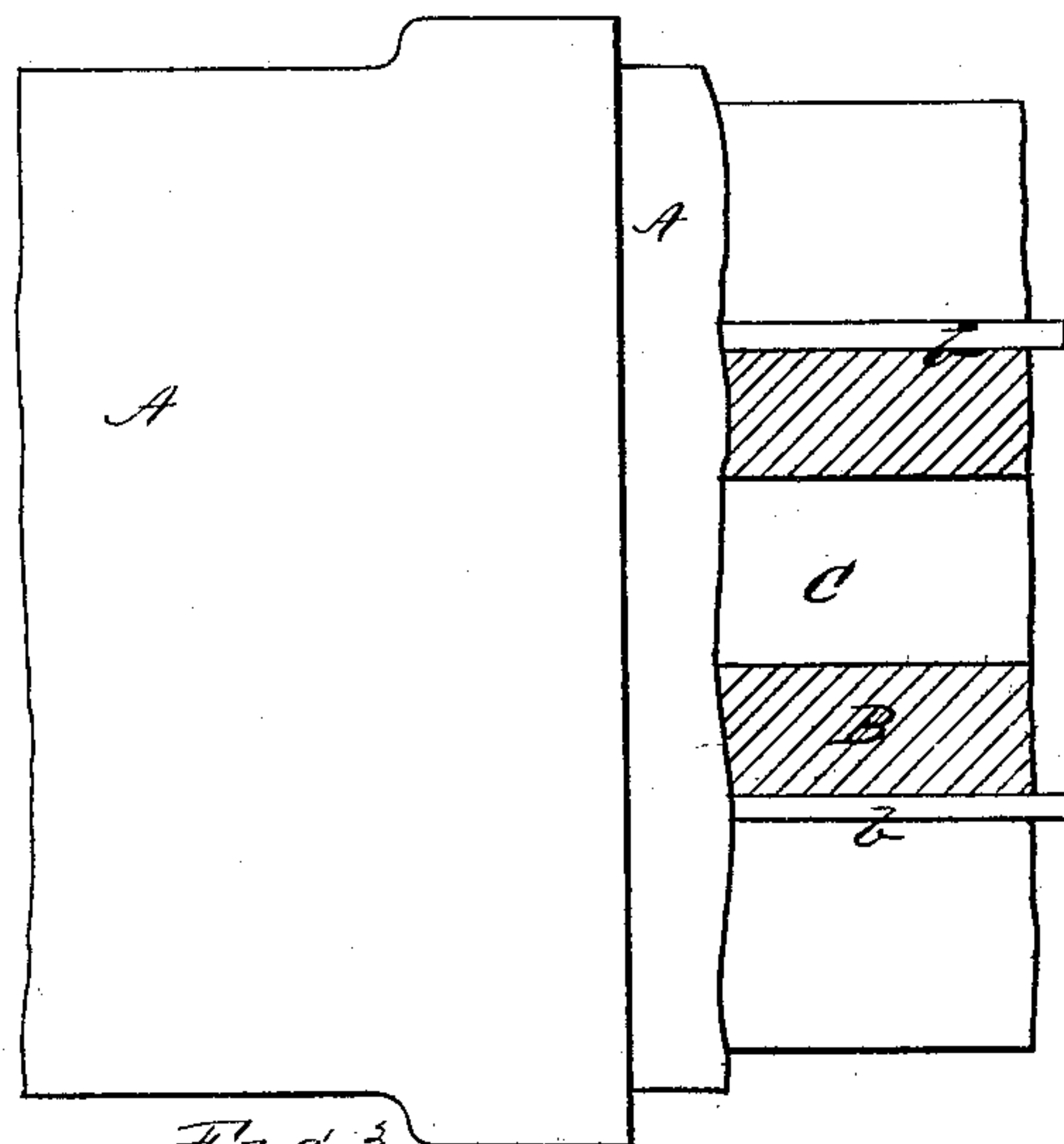


Fig 3

Witnesses

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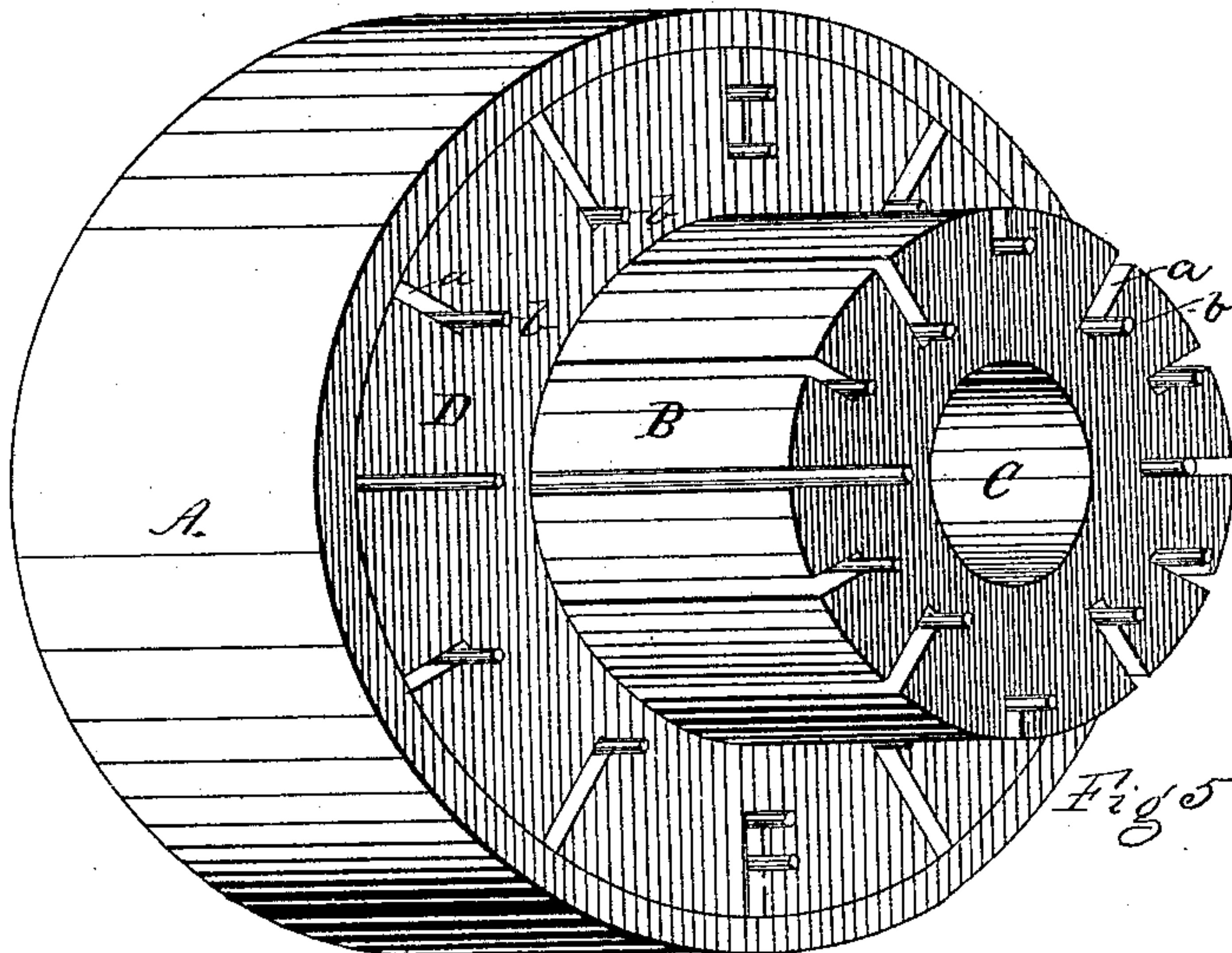
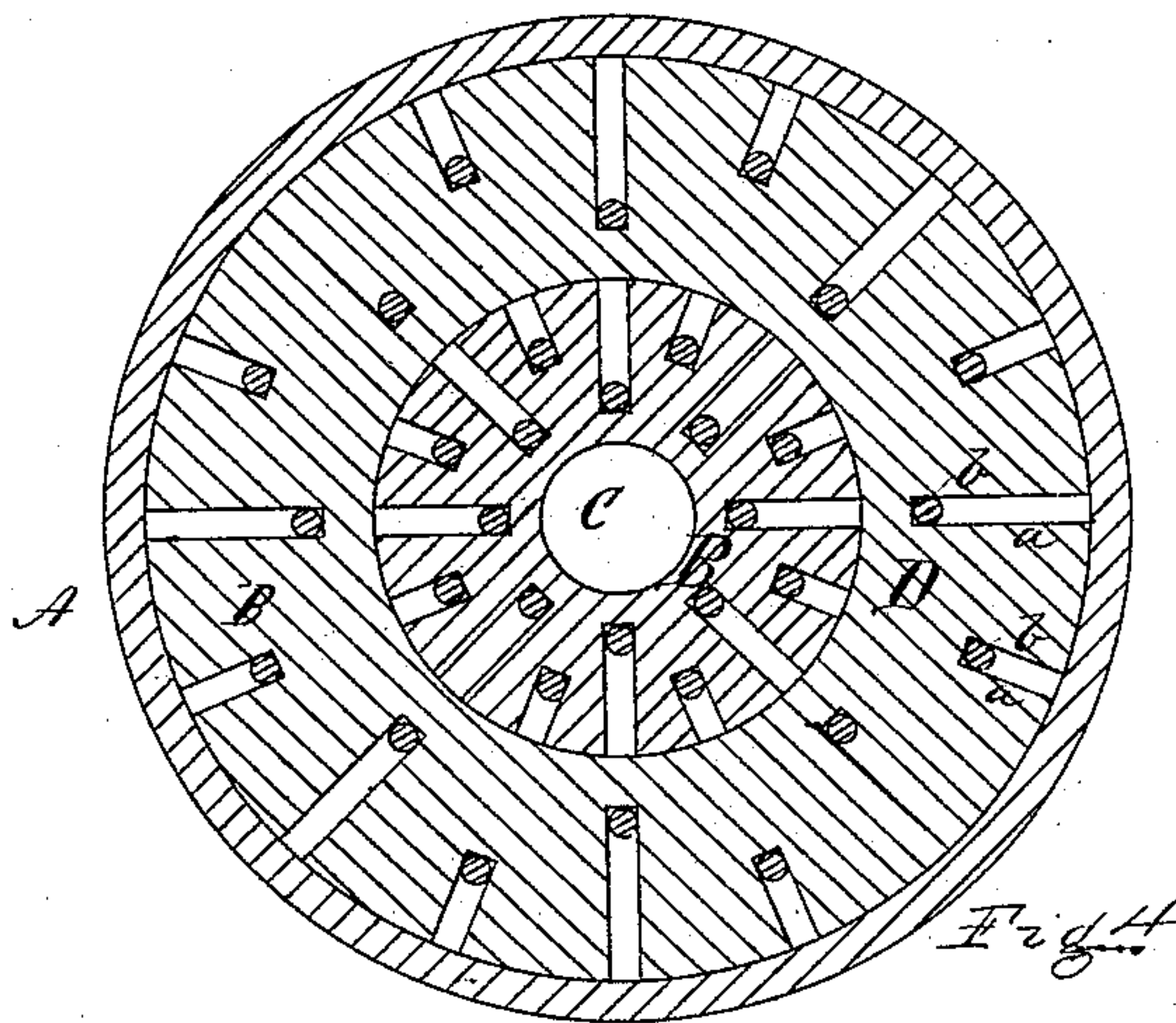
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UNITED STATES PATENT OFFICE.

WILLIAM M. BRISBEN, OF PHILADELPHIA, PENNSYLVANIA.

INSULATING UNDERGROUND ELECTRIC WIRES.

SPECIFICATION forming part of Letters Patent No. 278,087, dated May 22, 1883.

Application filed December 6, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM M. BRISBEN, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Underground Electrical Conduits and Conductors; 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 it, reference being had to the accompanying drawings, which form part of this specification, in which—

Figure 1 is a cross-section. Fig. 2 is a similar view of a modification. Fig. 3 is a side view, partly in section. Fig. 4 is a transverse section of another modification, and Fig. 5 a perspective view of the same.

My invention relates to underground electric conductors, and has for its object the provision of means whereby a number of metallic conductors may be inclosed in and surrounded by a protective covering which will effectually insulate and keep separate such conductors and protect them from the injurious effects of moisture.

My invention consists of sections or lengths of wood formed with radial slots, slits, or kerfs for the reception of metallic conductors, the said sections of wood being impregnated with paraffine or equivalent substance, and the whole being incased in a conduit or casing composed of pipe-sections joined together in any suitable manner.

Referring to the accompanying drawings, A represents a section of pipe composing the exterior casing.

B is the wooden section, in which are cut the several radial slots *a a*, for the reception of the conductors *b b*. The section B is of such size that it will just fit into the pipe A, and the slots *a a* are somewhat narrower than the diameter of the conductors which they are to contain, so that said conductors will have to be forced down into the slots, the wood expanding behind them and serving to retain them in position. The section B, being composed of wood, will readily receive and retain in its pores a considerable amount of paraffine or similar substance, effectually preventing the wood from absorbing moisture, and securing

thorough insulation for the conductors. The slots in the sections B may all be of one depth or of different depths, and, if found desirable or expedient, two or more conductors may be placed in a single slot, one above the other, as shown in Fig. 5, the elastic nature of the wood serving to retain the conductors separate from one another.

A central cavity, C, may be formed in the sections B, which will serve to receive the paraffine when the latter is injected, and also for the reception of a cable or other large conductor.

The several sections of the exterior casing, A, are connected together in the manner usual with pipe-sections, and the wooden sections B may be joined at their meeting ends by dowel-pins or otherwise; or their ends may be simply square, the end of one section abutting against the end of another.

The advantages of the construction shown are briefly as follows: The material of which the major part of the conduit is composed being wood, and the manipulation necessary to fit it for the reception of the conductors being very simple, the cost of the conduit is correspondingly slight. The wires, being held securely in the slots, are prevented from coming in contact with one another, and are fully and completely insulated from each other by the wood of the sections and by the paraffine with which the wood is impregnated, thus avoiding the necessity of using costly insulated conductors or fibrous wrappings.

I have shown the casings and wooden sections as cylindrical in form; but my invention is not limited merely to form; hence the shape of said casing and sections may be varied within the spirit of my invention.

The method of laying the conductors is as follows: A trench is first dug and a layer of broken stone laid therein. A section or length of the casing A is then laid thereon and the metallic conductors passed through the same. A wooden section, B, is now brought up to the end of the pipe-section. The wire conductors are now forced down into the kerfs in the wooden block, and the latter forced or slid lengthwise into the pipe-section. Other sections are then added successively. I next close that end of the inclosing-pipe B at the place of beginning by means of a cap, and by attach-

ing a force-pump and suitable connections to the other end I inject hot paraffine through the core-opening C into the sections laid. The wood from which the cylindrical sections B have been made, having been thoroughly seasoned and all moisture eradicated, will absorb a quantity of the paraffine or other insulating and preservative material, swelling or enlarging it, filling up the pipe A, and entering the slots *a*, thus insulating each wire individually, separate and apart from one another, and all from the outer covering or casing, A. I make branch connections and attachments by dovetailing and mortising to the core of the main line in a similar manner to that commonly practiced in wood-work, and to the outer casing with the couplings used for pipe-connections.

A modification of my invention is shown in Figs. 4 and 5, wherein a cylindrical section, B, is shown as located inside of a tubular wooden section, D, both said sections having radial slots or kerfs, as in the preceding figures. The conductors which fit in the inner section, B, are inserted therein before said section is passed into the section D.

What I claim as my invention is as follows:

1. In an underground carrier for electric conductors, the combination of the external casing, A, with the wooden sections B, fitted therein, and provided with radial slots *a a*, for the reception of metallic conductors, substantially as described.

2. The combination of the cylindrical sections of wood, B, having the radial slots *a a*, with the metallic conductors *b b*, said conductors being of greater diameter than the width of said slots, whereby the conductors will be held in place by the expansion of the wood, substantially as described.

3. An insulating-receptacle for electrical conductors, consisting of a cylindrical section of wood, having radial kerfs or channels for the reception of the wires, said kerfs being cut in the periphery or cylindrical surface of the section, substantially as described.

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Witnesses:

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