

No. 672,332.

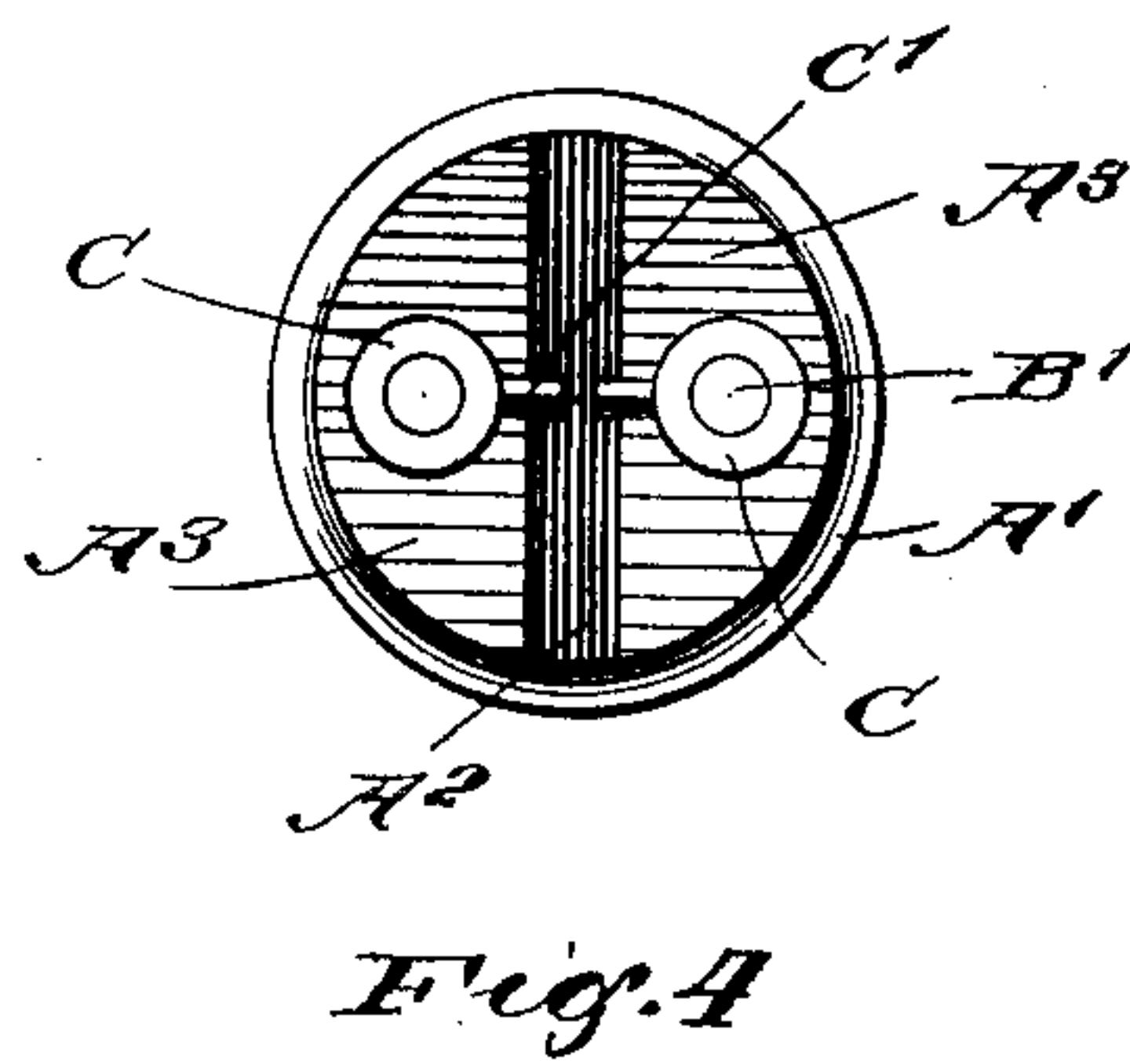
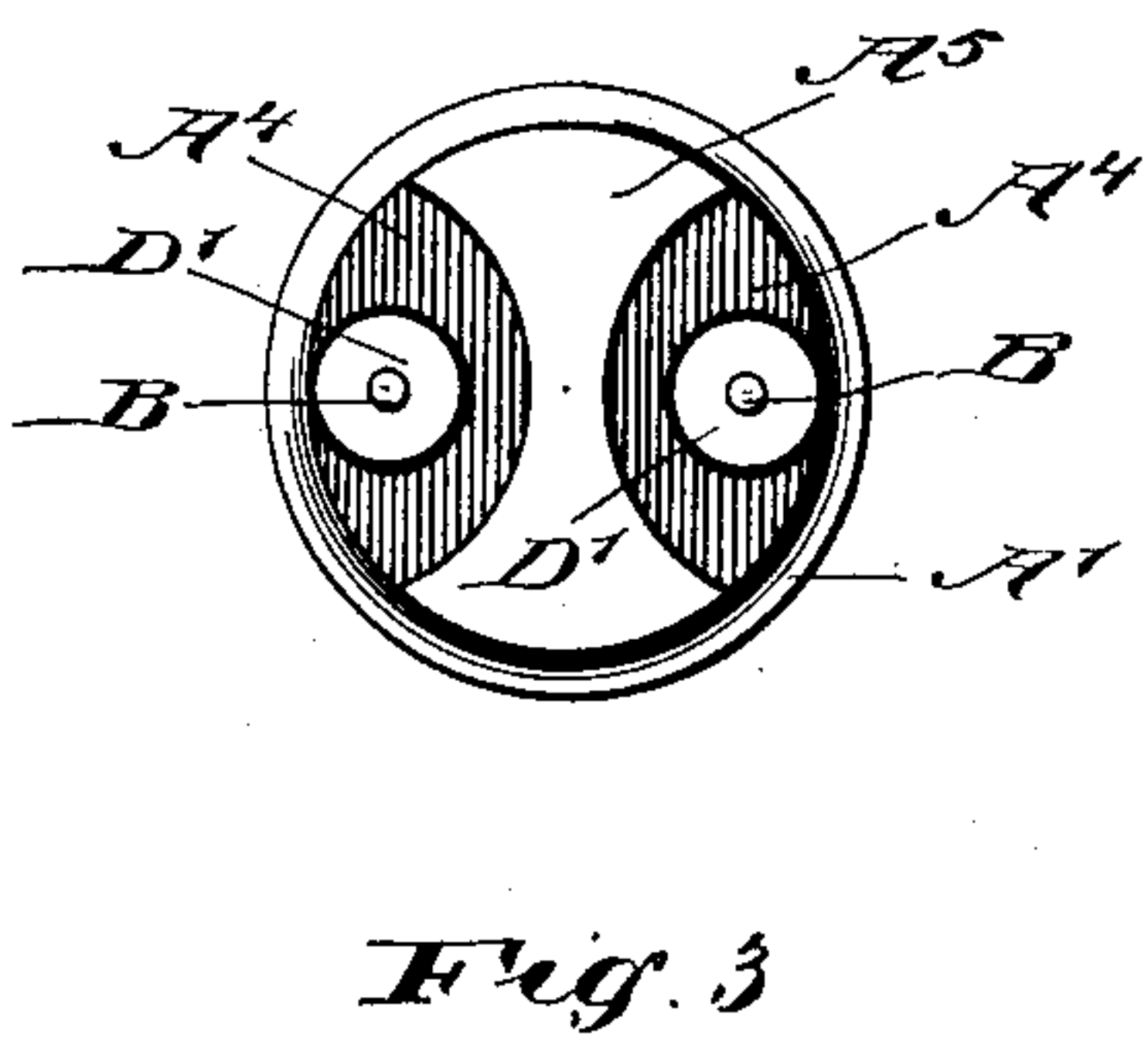
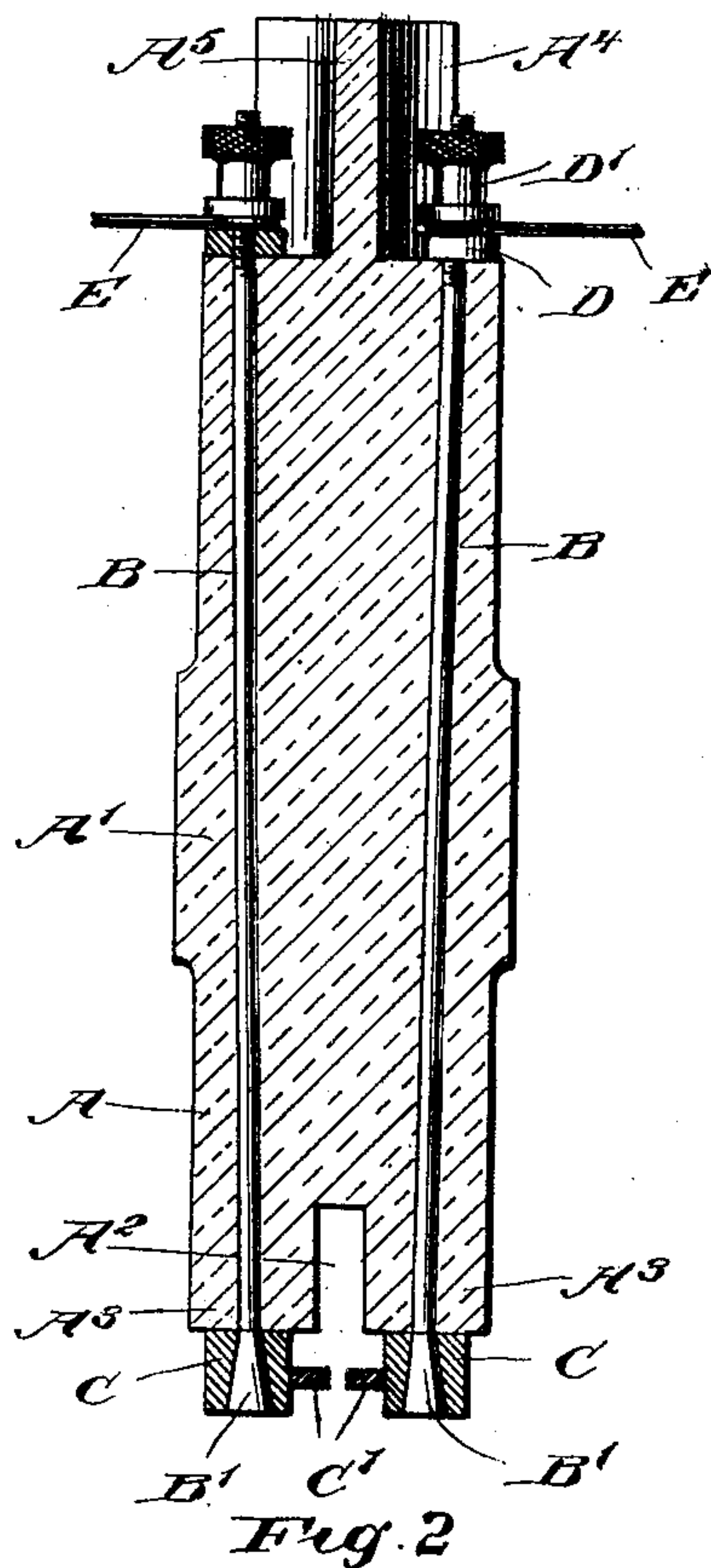
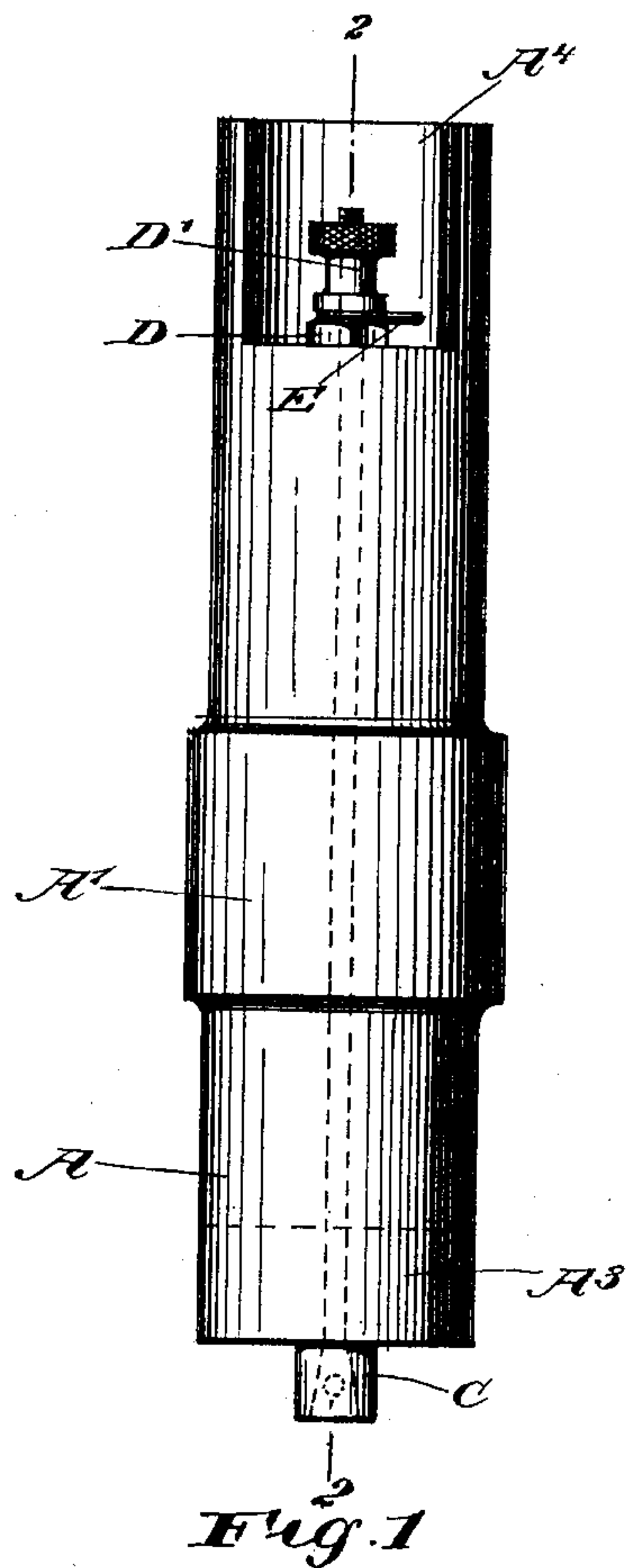
Patented Apr. 16, 1901.

W. ROCHE.

SPARKING IGNITER FOR EXPLOSIVE ENGINES.

(Application filed Nov. 20, 1900.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## SPARKING IGNITER FOR EXPLOSIVE-ENGINES.

**SPECIFICATION** forming part of Letters Patent No. 672,332, dated April 16, 1901.

Application filed November 20, 1900. Serial No. 37,106. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM ROCHE, a citizen of the United States, and a resident of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Electric Igniter for Explosive-Engines, of which the following is a full, clear, and exact description.

My invention relates to electric igniters for explosive-engines, and has for its object to provide a device of this class which will be simple and compact and which is so constructed as to considerably diminish if not altogether obviate the liability of such devices to form sparks at points where sparking should not occur.

The invention will be fully described hereinafter and the features of novelty pointed out 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 an elevation of my improved igniter. Fig. 2 is a sectional elevation on the line 2 2 of Fig. 1. Fig. 3 is a top view, and Fig. 4 is a bottom view of the igniter.

The improved igniter comprises a body A of an approximately cylindrical shape, said body being adapted to be fitted in any approved manner in the cylinder-head of an explosive-engine or in some other part of the cylinder, and preferably the body has an enlargement or collar A' at its central portion, forming shoulders which serve as stops to properly determine the position of the igniter-body in the receiving-recess of the cylinder or cylinder-head.

The body A is made of insulating material, as porcelain, and is provided at its inner end—that is, the end which is within the explosion-chamber of the cylinder—with a central notch or recess A<sup>2</sup>, so as to form two spaced lugs or projections A<sup>3</sup>. At the other or outer end of the body I provide segmental recesses A<sup>4</sup>, located on opposite sides of the body, so as to leave between them a central partition A<sup>5</sup>, which is of greater thickness at its ends than at its middle. From points located about centrally of the lugs A<sup>3</sup> longitudinal channels extend within the body A to points at the

bottoms or inner ends of the recesses A<sup>4</sup>, said channels converging from the recesses inward. Within the channels are received conductors B in the nature of thin rods or wires, and the inner ends B' of said conductors fit into inwardly-tapering through-openings in conducting-caps C, said caps being held in position by the conductors B, as will be explained presently, and to connect the conductors with the caps the inner ends of the conductors are passed through the openings in the caps, and then the said ends are upset, so as to widen them, as shown. The caps C have the usual spark-points C', (of platinum,) soldered or otherwise secured thereto, said points projecting over the recess A<sup>2</sup>, while the caps C bear against the lugs A<sup>3</sup>. The outer ends of the conductors B, which are separated by the partition A<sup>5</sup>, are screw-threaded to receive nuts D and D', respectively. Of these the inner nuts D are adapted to engage the bottom walls of the recesses A<sup>4</sup>, so as to exert a pulling strain on the conductors B, and thus to press the caps C firmly against the projections A<sup>3</sup>. The outer nuts D' serve to clamp the connecting-wires E against the nuts D.

Owing to the divergent arrangement of the conductors B, their inner ends are closest to each other, and there is therefore little or no liability of a spark occurring within the body A injuring the same and interfering with the proper operation of the igniter. In order that no spark may cross between the adjacent edges of the nuts D or D', (which edges are closer together than the outer ends of the conductors C,) I have interposed the partition A<sup>5</sup> between said nuts D and D'. The recess A<sup>2</sup> prevents the bridging of the space between the two caps B by matter deposited on the lugs A<sup>3</sup> by the action of the electric current. It will be understood that the wires E are connected with a spark-coil or other source of high-tension electricity.

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

1. An electric igniter, comprising an insulating-body, conductors extending longitudinally therethrough, and conducting-caps provided with spark-points and with apertures



tapering toward the conductors, the inwardly-widened inner ends of the conductors fitting into said apertures.

2. An electric igniter, comprising an insulating-body, provided with a central projection or partition at its outer end, and at its inner end with a central notch or recess and with lugs at each side of said recess, conducting-caps engaging said lugs and provided with spark-points and with flaring apertures, conductors extending lengthwise through said body and having their widened inner ends fitted into the apertures of the caps, said conductors converging toward their inner ends

and having screw-threaded outer ends projecting on opposite sides of said partition, holding-nuts screwed on said conductor ends, and engaging the body at opposite sides of the partition, and binding-nuts likewise screwing on said conductor ends and adapted to clamp conducting-wires. 15 20

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

WILLIAM ROCHE.

Witnesses:

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JNO. M. RITTER.