

No. 801,452.

PATENTED OCT. 10, 1905.

B. G. GILBOUGH.
SPARKING DEVICE.
APPLICATION FILED DEC. 30, 1904.

Fig. 1.

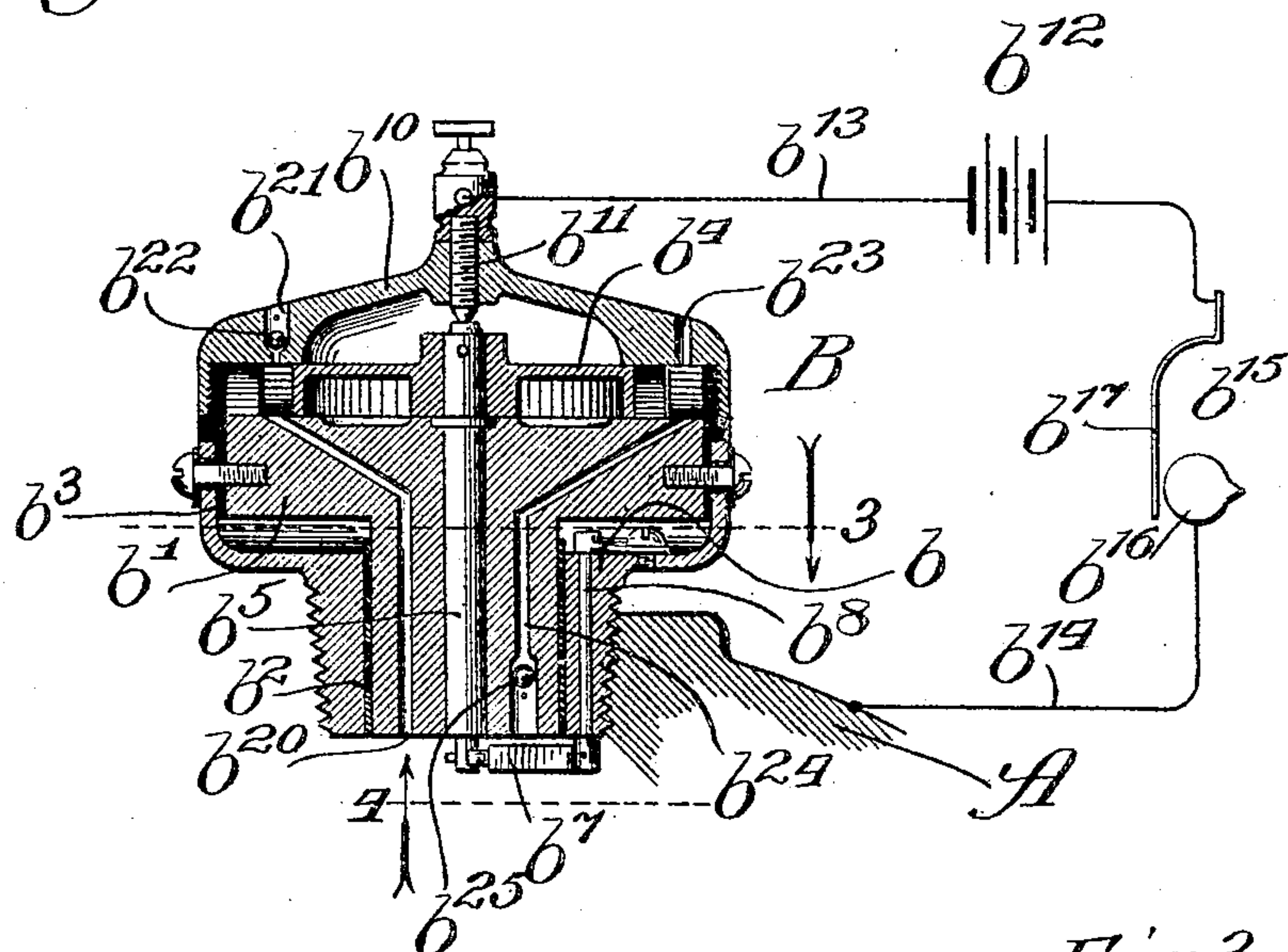


Fig. 2.

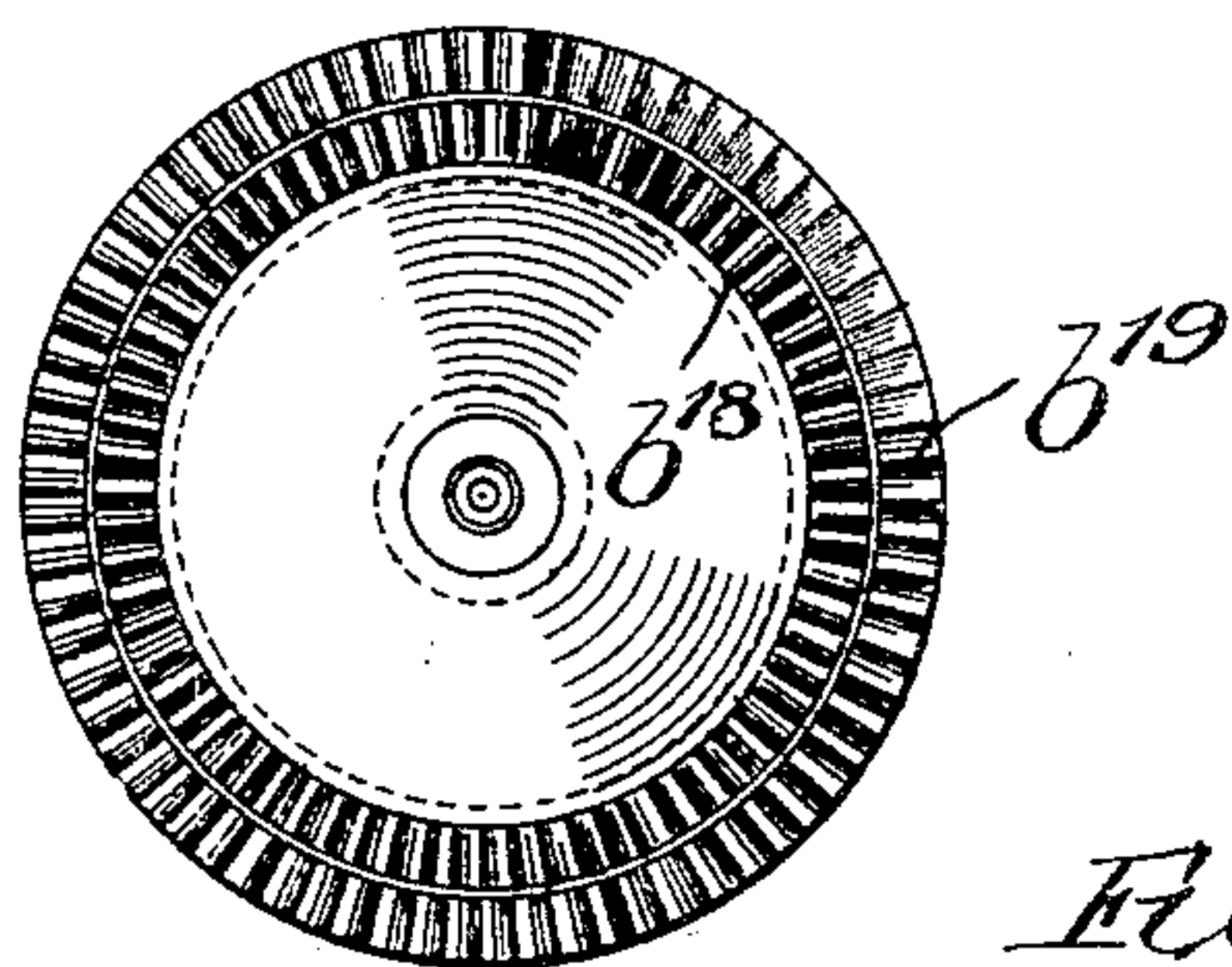


Fig. 3.

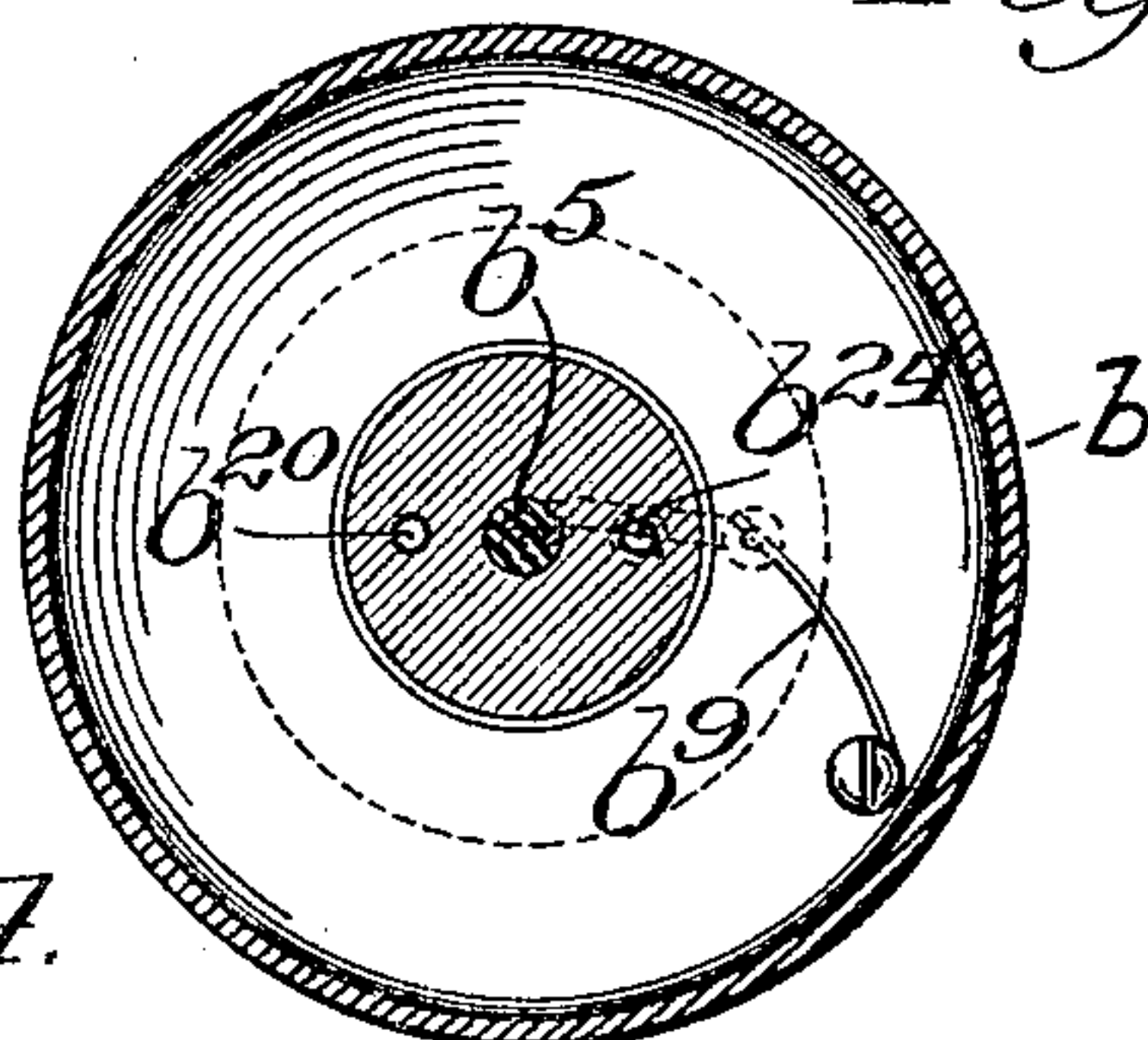
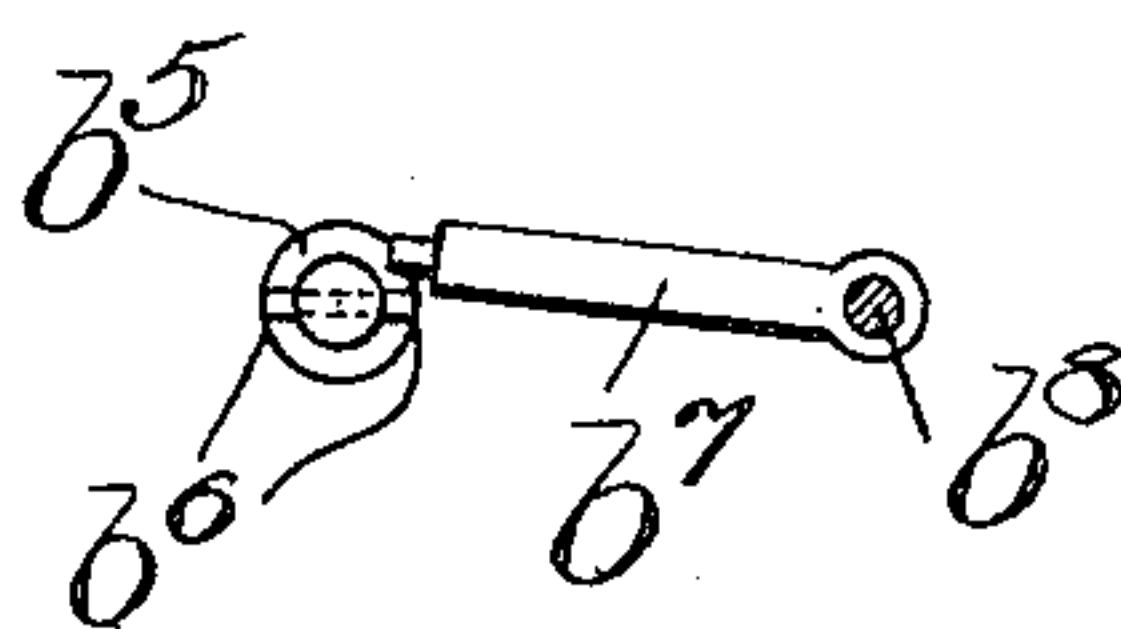


Fig. 4.



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UNITED STATES PATENT OFFICE.

BENJAMIN GARTSIDE GILBOUGH, OF CHICAGO, ILLINOIS.

SPARKING DEVICE.

No. 801,452.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed December 30, 1904. Serial No. 238,927.

To all whom it may concern:

Be it known that I, BENJAMIN GARTSIDE GILBOUGH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Sparking Devices, of which the following is a specification.

My present invention relates to ignition or sparking devices for the same general purpose as the one described in my application, Serial No. 238,926, of even date herewith.

My primary object is to provide an ignition device of exceedingly simple construction and great certainty of operation.

My invention is illustrated in the accompanying drawings, in which—

Figure 1 is a sectional view of an engine-cylinder with my improved ignition device applied thereto; Fig. 2, a plan view of a motive wheel employed; Fig. 3, a section taken as indicated at line 3 of Fig. 1, and Fig. 4 an illustration of the internal contact members viewed as indicated at line 4 of Fig. 1.

In the preferred construction illustrated, A represents the cylinder of an engine, and B my improved ignition device applied thereto.

The ignition device comprises a casing or shell b , having a threaded hollow stem screwed into a threaded opening in the cylinder; a core b' within said casing and electrically separated therefrom by insulations b^2 b^3 ; a rotary wheel b^4 , surmounting the core and connected with a shaft b^5 , whose lower end projects into the engine-cylinder and is equipped with lateral contact or electrode points b^6 ; a contact member or electrode b^7 , secured to a shaft b^8 , extending through a vertical perforation in the stem of the casing; a spring b^9 , secured to the internal surface of the casing and serving, through the medium of the shaft b^8 , to hold the contact member b^7 in a given position; a casing-top b^{10} , equipped with a stud b^{11} , bearing on the upper end of the shaft b^5 ; a battery b^{12} , having a conductor b^{13} , connected with the casing-top, and a conductor b^{14} , connected with the engine-cylinder, and a make-and-break device b^{15} , comprising a cam b^{16} , operated from the engine-shaft, and a contact member b^{17} , coacting with said cam. The wheel b^4 is provided with an inner series of fan-blades b^{18} , beveled or inclined in one direction, and an outer series of blades b^{19} , beveled or inclined in the opposite direction. The core b' is provided with a passage b^{20} , which leads to the inner set of blades of the wheel, and the cas-

ing-top is provided with an outlet-channel b^{21} , which registers with the channel b^{20} and is provided with a suitably-confined upwardly or outwardly opening ball-valve b^{22} . The casing-top is provided with an intake-passage b^{23} , which registers with the outer set of blades of the wheel, and the core is provided with a passage b^{24} , which registers with the outer series of blades and is equipped with a downwardly or inwardly opening suitably-confined ball-valve b^{25} .

From the foregoing detailed description the manner of operation will be readily understood. The wheel b^4 rotates continuously in one direction, being operated by the passage of gas through the channel b^{20} during the time that the engine-piston is making its working stroke and its compression stroke and being operated by the intake of air through the passage b^{23} when the engine-cylinder is being charged. The make-and-break device b^{15} operates to make and break the external portion of the electric circuit at regular intervals in the usual manner, and at each half-revolution of the wheel b^4 the internal portion of the electric circuit is made and broken at the contact members b^6 b^7 . It may be observed that the internal portion of the electric circuit is continuously made and broken, while the external portion of the circuit is made at proper intervals to deliver the current for producing a spark at the exact instant required in the operation of the engine.

While it is preferred to operate the internal rotary contact member by means of gas-pressure or gas and air pressure in the manner shown, still said contact member may be continuously rotated in any desired manner. The construction obviates the necessity of employing secondary circuits and electromagnets, with the attendant disadvantages thereof, and the construction is peculiarly advantageous when used in connection with high-speed engines.

Changes in details of construction within the spirit of my invention are feasible. Hence no undue limitation should be understood from the foregoing description.

What I regard as new, and desire to secure by Letters Patent, is—

1. The combination with an engine-cylinder of an ignition device connected therewith, comprising a fluid-actuated rotary wheel, an electrode actuated by said wheel, a coacting electrode, an electric circuit completed

through said electrodes, and means for making the external portion of the circuit at proper intervals, for the purpose set forth.

2. An ignition device for the purpose set forth, comprising a casing, an insulated core provided with a fluid-passage, a wheel having blades registering with said passage, an electrode actuated by said wheel and an electrode carried by said casing.

10 3. An ignition device for the purpose set forth, comprising a casing and a core having valved inlet and outlet passages, a wheel having two oppositely-disposed series of blades registering respectively with the inlet and
15 outlet passages, a rotary electrode actuated by said wheel, and a coacting electrode connected with the casing.

4. An ignition device for the purpose set forth, comprising a casing having a removable cap and a hollow threaded stem, a core with- 20 in said casing provided with a passage, the top having a passage registering with said first-named passage, a wheel located between the core and the casing-top and having blades registering with said passages, a shaft connected 25 with said wheel and extending through said core, said shaft bearing a contact-electrode, and a contact-electrode connected with the casing.

BENJAMIN GARTSIDE GILBOUGH.

In presence of—

L. HEISLAR,

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