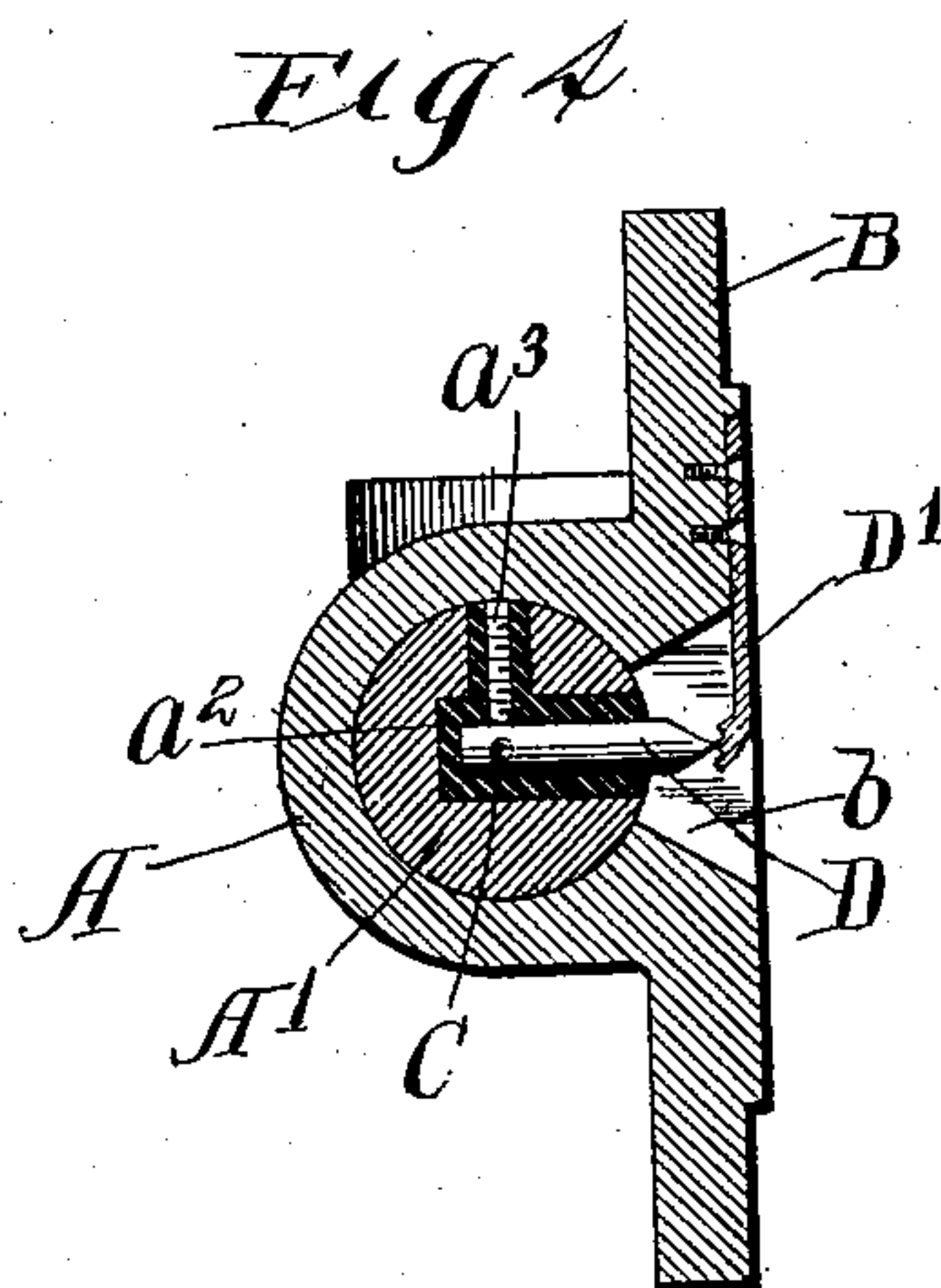
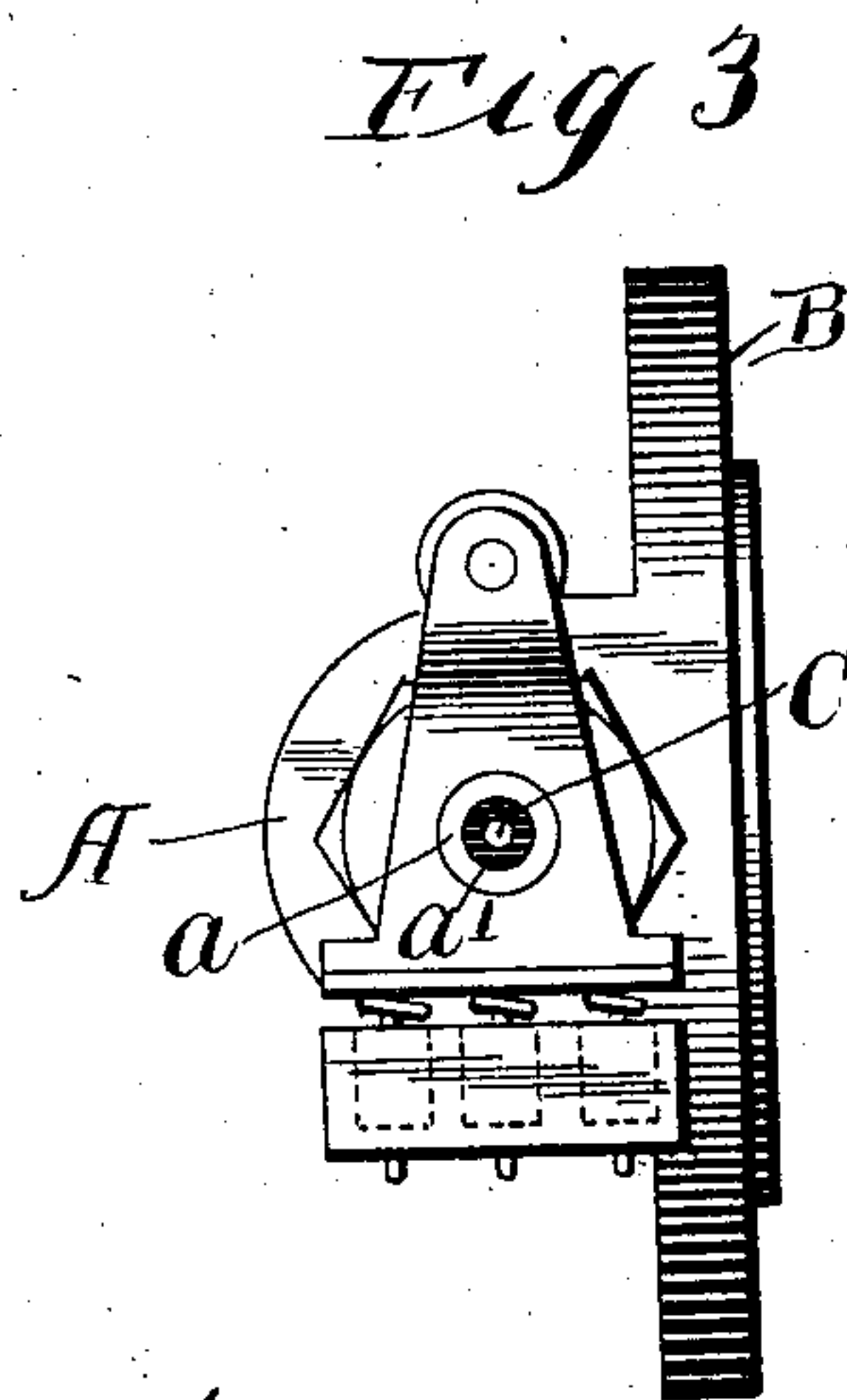
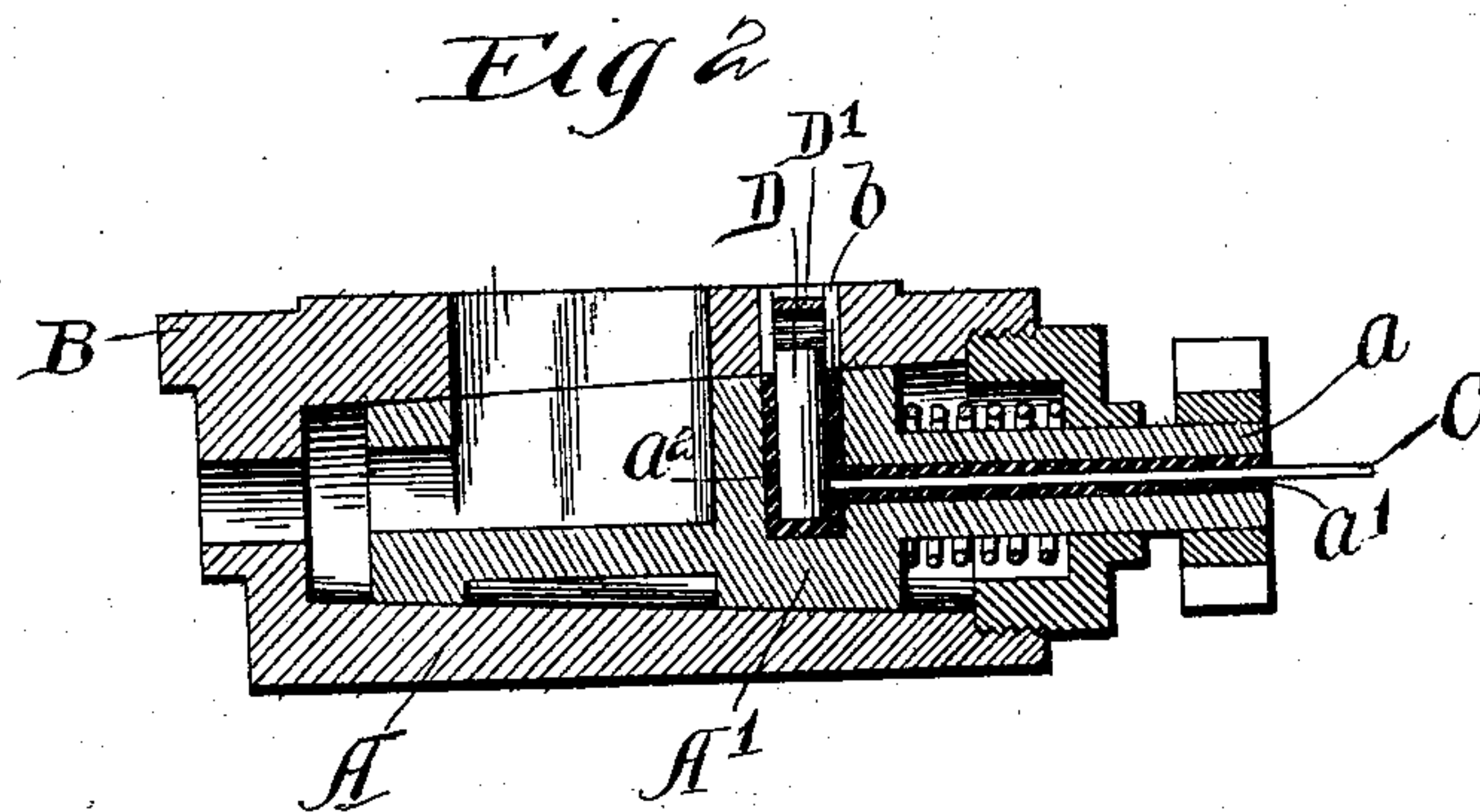
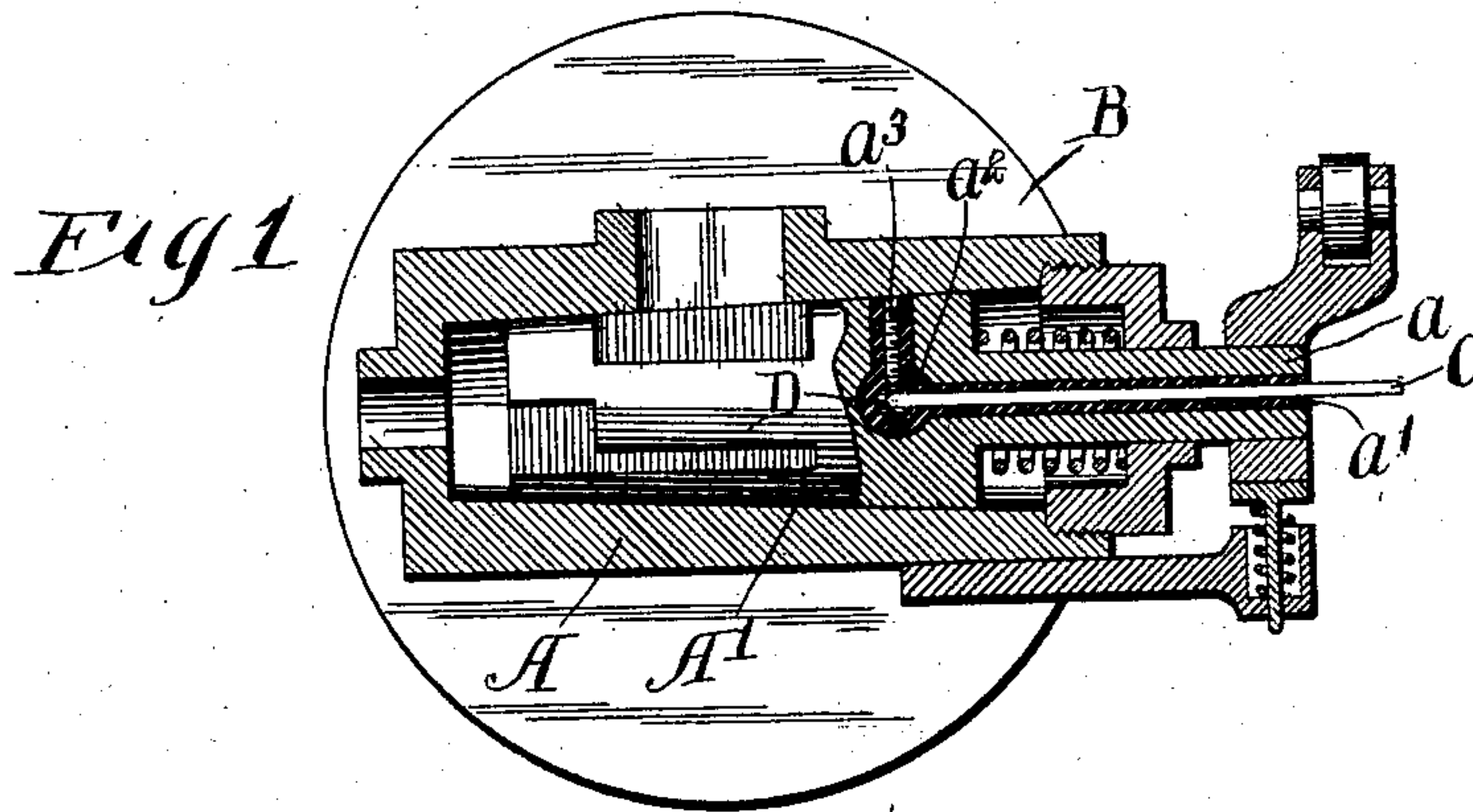


No. 721,873.

PATENTED MAR. 3, 1903.

A. EVENSEN.  
SPARKING IGNITER FOR EXPLOSIVE ENGINES.  
APPLICATION FILED MAR. 11, 1901.

NO MODEL.



*Witnesses:*  
*Carl H. Crawford*  
*Almond R. Stickney*

*Inventor:*  
*Anton Evensen*  
*by Poole & Brown his Attorneys*



# UNITED STATES PATENT OFFICE.

ANTON EVENSEN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO  
CHARLES R. HANNAN, OF COUNCIL BLUFFS, IOWA.

## SPARKING IGNITER FOR EXPLOSIVE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 721,873, dated March 3, 1903.

Original application filed November 2, 1900, Serial No. 35,203. Divided and this application filed March 11, 1901. Serial  
No. 50,617. (No model.)

*To all whom it may concern:*

Be it known that I, ANTON EVENSEN, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Sparking Igniters for Explosive-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of  
10 reference marked thereon, which form a part of this specification.

This invention relates to igniting devices for explosive-engines of that kind actuated by the valve mechanism of said engine.

15 The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a view of a cylinder-head of an explosive-engine, showing  
20 in longitudinal vertical section a valve-closure and casting fitted with an igniting device which embodies the features herein claimed. Fig. 2 is a view in horizontal longitudinal section through the head and valve. Fig. 3 is a  
25 view in end elevation of the valve and head. Fig. 4 is a vertical cross-section through the valve and head.

The igniting device herein claimed is especially adapted for use in explosive-engines  
30 having a rocking valve of the type set forth in an application for explosive-engines filed by me November 2, 1900, Serial No. 35,203, this application being a division of said application Serial No. 35,203 for explosive-engines.  
35 While adaptable to any form of valve mechanism, the device is herein described in conjunction with a valve of the kind set forth in the above-mentioned application.

Referring to the drawings and the general  
40 disposition and arrangement of the parts of an engine to which an igniting device of the kind claimed by me herein may be fitted, A represents the casing of a valve which is connected with a cylinder-head B, said valve being  
45 operated by a cam-and-tappet mechanism, as described in said application for explosive-engines above mentioned.

Referring to the detail of the valve itself, which, while it is somewhat minutely de-

scribed herein, is not made the subject of this  
application, as above noted, the valve itself  
comprises a casing A and plug A'. The casing is shown as having the form of a hollow  
cylinder extending across the outer face of  
the cylinder-head B of the engine, preferably  
55 integral therewith and transverse to the line of action of the engine. Said casing A is bored out to form a slightly-tapered bearing or coned valve-seat. The valve-plug A'  
is in the form of a truncated cone, which is  
60 fitted to the tapered seat of the valve-casing. Said closure, which is bored and cored out to form exhaust and intake ports for the main  
engine, as set forth in said application for  
valves, is actuated by outer mechanism of any  
65 suitable kind, so that the closure rotates on its tapered seat, oscillating back and forth in unison with the piston movement of the engine. The plug A' is provided with a valve-  
stem  $a$ . Said valve-stem has an insulating-  
70 bushing  $a'$ , which extends into the plug to a point approximately midway between the larger end face thereof and the inner end  
wall of a central orifice which forms a part  
of the intake-port hereinbefore mentioned. 75  
A laterally-extending bushing  $a^2$  extends from the inner end of said central bushing to a slot  $b$  in the cylinder-head B. Said insulating-bushing  $a^2$  contains an electrical conductor C of any suitable material, which is  
80 connected at its inner end with a terminal D, secured in the said laterally-extending insulating-bushing  $a^2$  by a set-screw  $a^3$ . Said  
terminal D projects into a slot  $b$  of the cylinder-head B, said slot being so disposed in size  
85 and position that the outer end of the terminal projects into said slot throughout the partial revolutions of the closure. Said terminal has intermittent sliding connection with  
the fixed spring-terminal D', which is secured  
90 to the inner face of the cylinder-head B and over the aperture  $b$ . Said terminal D' is suitably insulated and has an electrical conductor leading therefrom. (Not shown.) Said terminals are of suitable material to withstand  
95 wear and oxidization. The relation and position of the two terminals D D' are such that the oscillation of the valve-plug A' causes



them to make and break the igniting-circuit at each stroke of the piston, thereby producing the usual spark within the cylinder at the moment required.

5 The construction described affords a minimum of wearing parts, a certainty and ease of adjustment, and consequent minimum wear and low cost of production.

10 The parts herein shown and described may be of any convenient design to fit different engines, and I do not limit myself to the form and arrangement of the parts except as set forth in the claims.

I claim as my invention—

15 1. The combination with an engine-cylinder provided with a valve-casing, having a tapered valve-seat, and a slot opening from the valve-seat into the cylinder, a valve-plug which has oscillatory motion in the valve-seat,  
20 an electric conductor extending through and insulated from the valve-plug and having a terminal which projects from the bearing-surface of the plug into the said slot, and a spring-terminal secured to the cylinder-wall  
25 with its free end overhanging said slot in position for contact of the first-mentioned ter-

minal therewith in the oscillatory movement of the plug.

2. The combination, with an engine-cylinder provided with a valve having a tapered 30 valve-seat and a slot opening from the valve-seat into the cylinder, an oscillatory valve-plug provided with a stem through which motion is communicated to the said plug, an electric conductor which extends axially 35 through the stem and outwardly through the plug, is insulated from the stem and plug, and is provided with a terminal which projects from the bearing-surface of the plug into said slot, and a spring-terminal which over- 40 hangs the said slot in position for engagement of the first-named terminal therewith in the oscillatory movement of the plug.

In testimony that I claim the foregoing as my invention I affix my signature, in presence 45 of two witnesses, this 6th day of March, A. D. 1901.

ANTON EVENSEN.

Witnesses:

CLEMENS R. STICKNEY,  
BERTHA A. PRICE.