

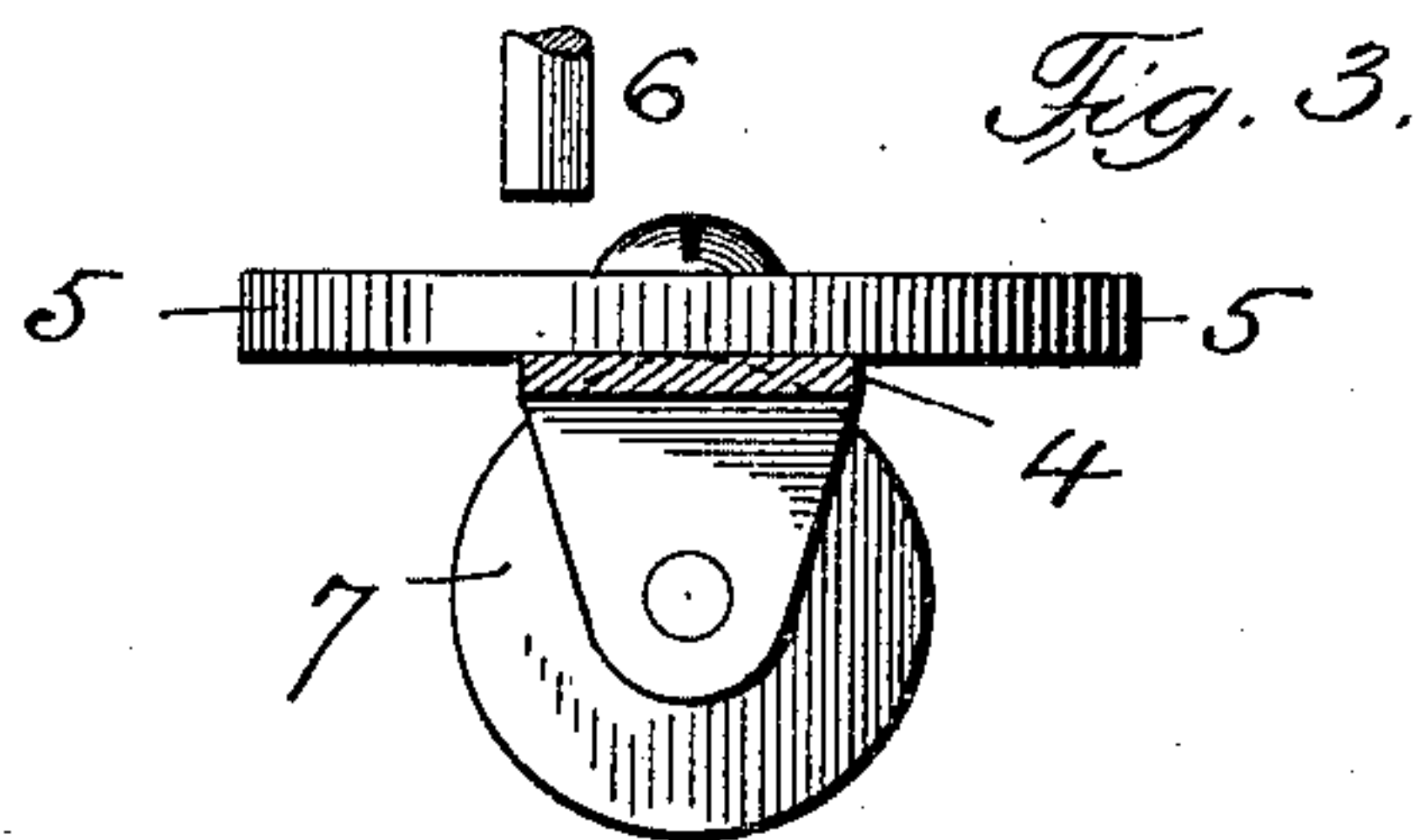
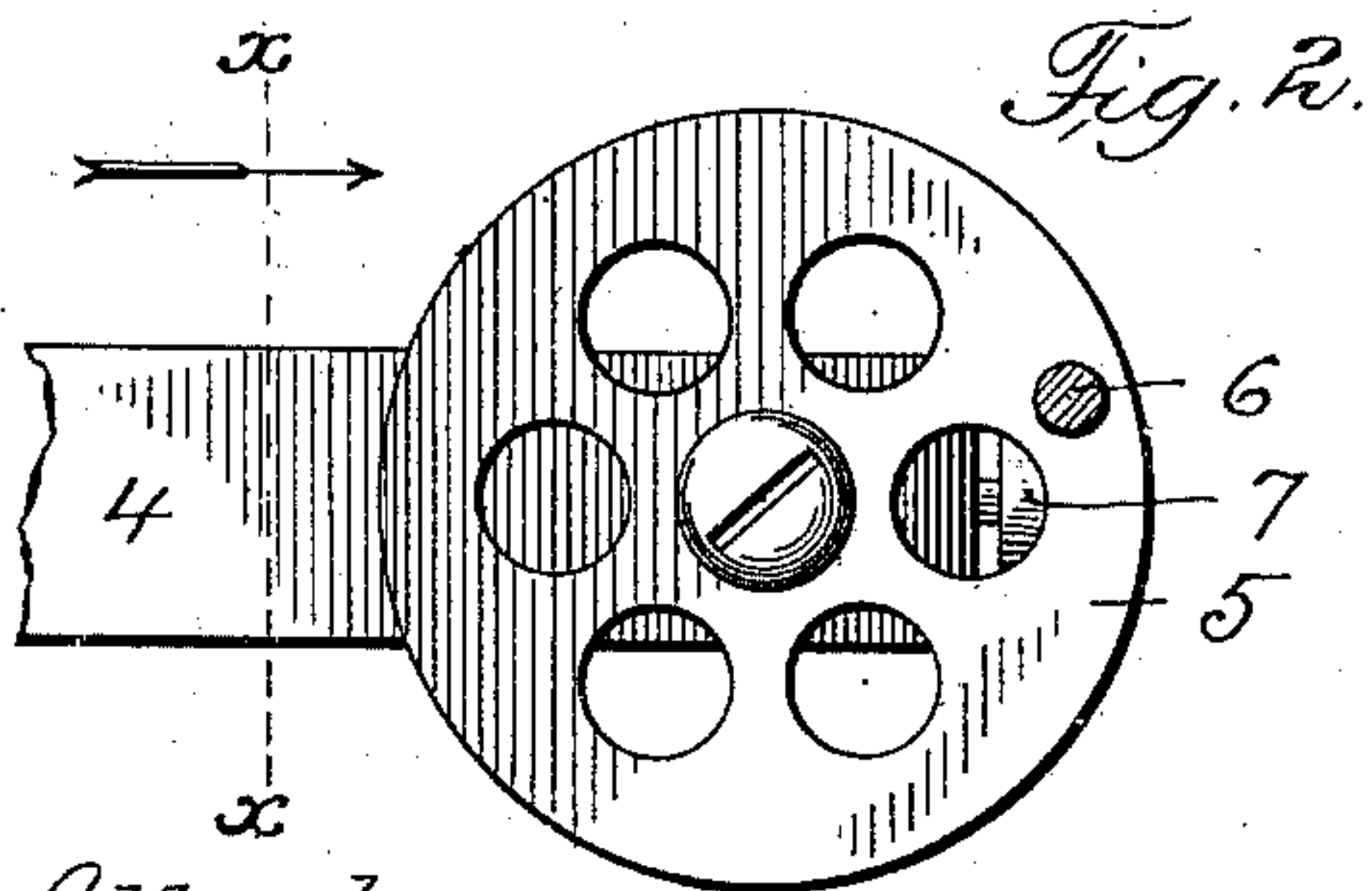
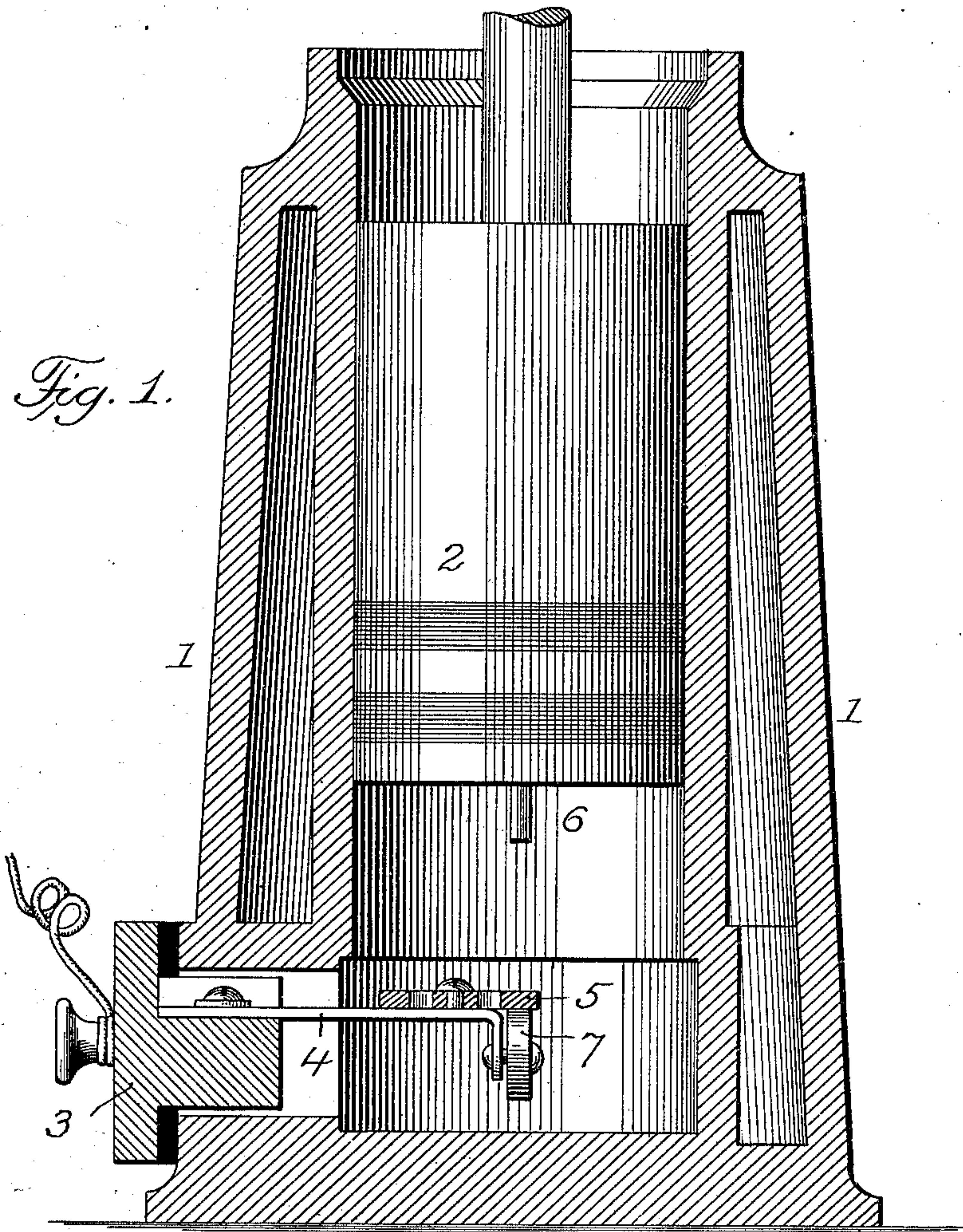
No. 663,798.

Patented Dec. 11, 1900.

G. A. TUEBK.
IGNITER FOR EXPLOSIVE ENGINES.

(Application filed Dec. 29, 1899.)

(No Model.)



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UNITED STATES PATENT OFFICE.

GUSTAVUS A. TUERK, OF CHICAGO, ILLINOIS.

IGNITER FOR EXPLOSIVE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 663,798, dated December 11, 1900.

Original application filed March 23, 1899, Serial No. 710,481. Divided and this application filed December 29, 1899. Serial No. 741,987. (No model.)

To all whom it may concern:

Be it known that I, GUSTAVUS A. TUERK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Explosive-Engines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The present invention relates to the electrical igniting mechanism for reciprocating gas-engines in which the movement of the piston produces at the proper times the igniting-spark for the mixed volume of combustible vapor or gas and air used in propelling the engine.

The object of the present improvement is to provide a durable, simple, and effective electrical igniting mechanism for gas-engines in which the electrical conductivity of the contact or sparking surfaces is preserved during continued use. I attain such object by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a fragmentary longitudinal sectional elevation of the cylinder portion of a gas-engine, illustrating the preferred form of the present igniting mechanism; Fig. 2, a detail plan view of the same with the contact-point of the piston in section; Fig. 3, a transverse sectional elevation at line *x x*, Fig. 2.

Similar numerals of reference indicate like parts in the different views.

Referring to the drawings, 1 represents a portion of the engine-cylinder, and 2 the piston thereof, of any usual and approved construction.

3 is a head or cap piece secured in an insulated manner to the cylinder 1 and constituting a closure for a lateral opening at the lower or compression end of the engine-cylinder.

4 is a spring-finger secured at one end to the head or cap piece 3 and arranged to project horizontally into the lower piston-chamber of the engine-cylinder 1, as shown.

5 is a horizontally-arranged disk loosely journaled on the free end of the spring-finger 4 and so arranged in the path of the con-

tact pin or stud 6, carried by the main piston, that such contact-pin will in the reciprocating movement of the engine-piston strike the surface of such disk near the margin of the same and at one side of a line drawn through the axis of said disk and parallel with or lengthwise of the spring 4, as illustrated in Figs. 2 and 3 of the drawings, the arrangement being such that with each engagement of the contact-pin 6 with such disk and with the consequent depression of such disk a partial rotation of the same will be effected to present a fresh surface for contact on the next succeeding impact of the contact-pin 6, such action continuing during the operation of the engine, so that an intermittent or step-by-step rotation of such disk will take place during the running of the engine.

The insulated head or cap piece 3 will be in circuit with one pole of the battery or other source of electrical energy and the piston 4 with the other pole of such battery, as usual in the present type of electrical appliances.

7 is a bearing-roller on the outer end of the spring finger or arm 4 and adapted to support the projecting edge of the horizontal contact-disk 5 at a point beneath and immediately adjacent to where the contact-pin 6 impacts against such disk.

The disk 5 will preferably be of a perforate nature, as shown, so as to present but a minimum obstruction to the upward passage of the gases, &c.

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

1. The combination with the cylinder and piston of an explosive-engine, of a contact-pin carried by the piston, a spring insulated finger carried by the cylinder, and a rotatable contact-disk on said finger the contact-disk and contact-pin being relatively arranged so that the pin will contact with the disk near the margin thereof, substantially as set forth.

2. The combination with the cylinder and piston of an explosive-engine, of a contact-pin carried by the piston, a spring insulated finger carried by the cylinder, and a rotatable contact-disk on said finger, the contact-disk and contact-pin being relatively arranged so that the pin will contact with the

disk near the margin thereof and at a point to one side of a line drawn through the axis of such disk and lengthwise of the spring-finger, substantially as set forth.

5 3. The combination with the cylinder and piston of an explosive-engine, of a contact-pin carried by the piston, a spring insulated finger carried by the cylinder, and a rotatable perforated contact-disk arranged at the free
10 end of said finger, the contact-disk and contact-point being relatively arranged so that the pin will contact with the disk near the margin thereof, substantially as set forth.

4. The combination with the cylinder and

piston of an explosive-engine, of a contact- 15 pin carried by the piston, a spring insulated finger carried by the cylinder, a rotatable contact-disk on said finger, and a bearing-roller secured to the finger and adapted to support the projecting edge of the contact-disk, sub- 20 stantially as set forth.

In testimony whereof witness my hand this 26th day of December, 1899.

GUSTAVUS A. TUERK.

In presence of—

PAUL J. TOTZKE,
ROBERT BURNS.