No. 682,856. Patented Sept. 17, 1901.

W. C. MATTHIAS.

SPARKING IGNITER FOR EXPLOSIVE ENGINES.

(Application filed Apr. 13, 1901.)

(No Model.)

Fig. 1.

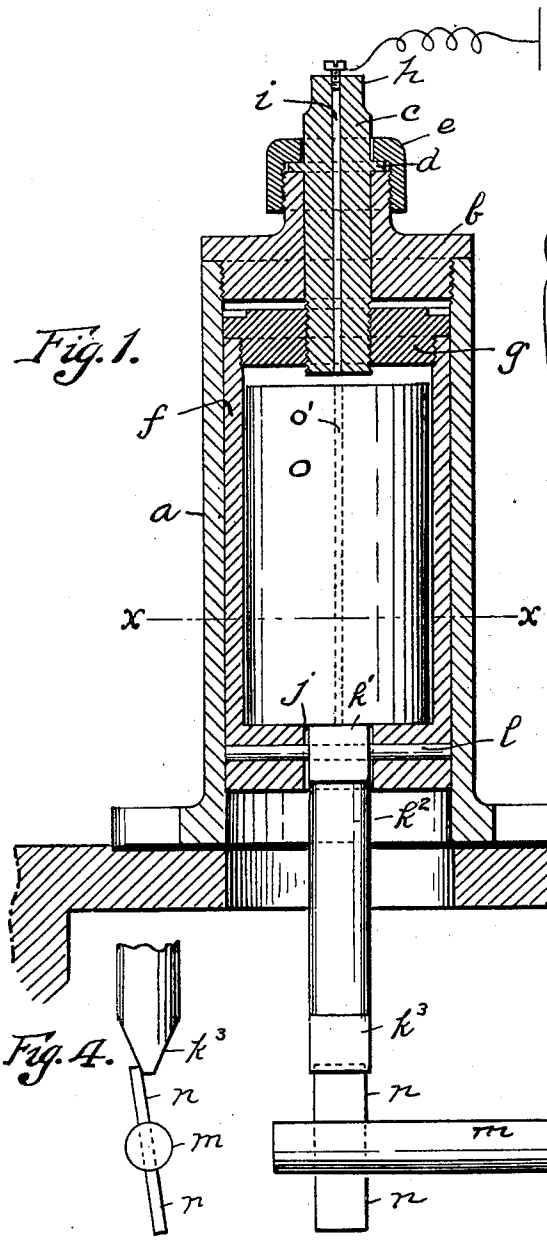


Fig. 2.

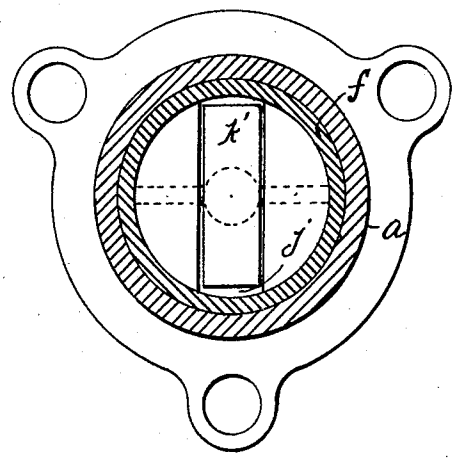


Fig. 3.

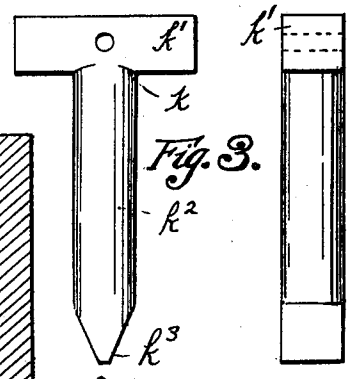


Fig. 4.

Witnesses
Florence Kelly
Katharine Kelly.

William C. Matthias, Inventor

By Attorney E. W. Kelly.

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UNITED STATES PATENT OFFICE.

WILLIAM C. MATTHIAS, OF READING, PENNSYLVANIA, ASSIGNOR TO ADAM H. LEADER AND HENRY H. ROLAND, OF SAME PLACE, AND ALEXANDER MURDOCK, OF HAMBURG, PENNSYLVANIA.

SPARKING IGNITER FOR EXPLOSIVE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 682,856, dated September 17, 1901.

Application filed April 13, 1901. Serial No. 55,602. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM C. MATTHIAS, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Sparking Igniters for Explosive-Engines; and I do hereby declare the following to be a full, clear, and exact desciption of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in sparking igniters for gas-engines.

The object of the invention is to produce a spark by means of a wiping instead of a striking action, and to accomplish this result I employ a device of comparatively simple construction.

The action of my improved device is positive and the construction such that a spark will be created only when needed, as all danger of sparking accidentally is obviated.

The invention is fully described in the following specification and clearly illustrated in the accompanying drawings, in which—

Figure 1 is a vertical sectional view of my device. Fig. 2 is a cross-sectional view on line $x\ x$ of Fig. 1 with weight removed. Fig. 3 is a detail of the sparking-pin. Fig. 4 is an end view of the igniter-shaft, showing the sparking-points.

The casing a is secured in any preferred manner to the head of the engine (dotted lines) and is insulated therefrom in the usual manner. A cap b is screwed into the open top of the casing a and carries a regulator-pin c, which passes through said cap. This pin is formed with a ledge d, adapted to rest on the top of the cap, and a nut e passes over the top of the pin and rests against said ledge. The nut e is screw-threaded internally and adapted to screw onto the reduced upper end of the cap b and when drawn tightly thereon will form a secure joint against the ledge d.

An inner casing f fits easily in the outer casing a and is provided with a screw-cap g, through which the regulator-pin c is screwed. This pin has a square head h and a central opening i extending its full length The base of this inner casing f is formed with a slot j, extending across its center, in which is pivotally mounted the sparking-pin k on a pin l. This sparking-pin is formed with a head k', which fits loosely in the slot j, and a depending body portion k^2, tapered at its lower end k^3. The igniter-shaft m is so arranged that the trips n, secured thereon near its end, will come in contact with the tapered end k^3 of the sparking-pin with a wiping or sweeping movement when said shaft is revolved. A weight o fits loosely in the inner casing f and is arranged to bear against the head k' of the sparking-pin k to insure its return to normal position after each pass of the trips n. The pin k forms one pole and the trips n the other.

When it is desired to lubricate the pin l, the screw p is removed from the top of the regulator-pin c and the lubricant inserted in the opening therein. The weight o is formed with an opening o', which registers with the opening in the pin and serves to convey the lubricant to the head of the pin k, and it will then find its way to the desired point around the pin l.

The action is simple. The shaft m on being revolved will cause the trips n carried thereon to wipe across the tapered end k^3 of the sparking-pin, causing it to swing on its pivotal connection l, and as both contact-points are electrically connected, one positive and the other negative, a spark will be the result at each contact. When the contact-points become worn, the pin l is turned sufficiently to lower the end of the pin k to the desired point.

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

In a sparking igniter, an outer casing a having a cap through which passes a regulator-pin c, an inner casing f having a cap carrying said pin c, and a slotted base in which is pivotally mounted a sparking-pin k, and

weight *o* inside said inner casing adapted to rest against the head of said pin *k*, in combination with a revolving shaft *m* carrying one or more trips *n* adapted to contact with the depending end of said pin *k* with a wiping movement, substantially as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM C. MATTHIAS.

Witnesses:
ED. A. KELLY,
E. P. VAN REED.