H. BENOIST.

IGNITER FOR EXPLOSION ENGINES.

APPLICATION FILED SEPT. 24, 1907.

898,427.

Patented Sept. 15, 1908.

FIG_1_

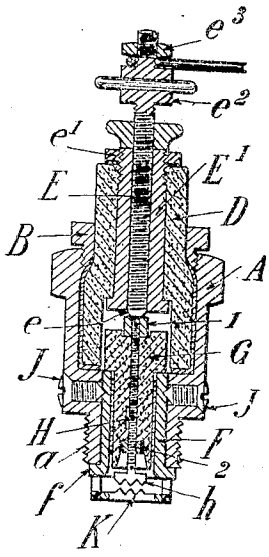
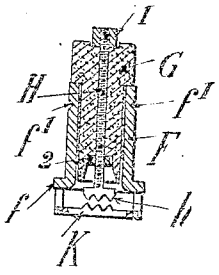


FIG_2_



Witnesses:-

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UNITED STATES PATENT OFFICE.

HENRI BENOIST, OF PARIS, FRANCE.

IGNITER FOR EXPLOSION-ENGINES.

No. 898,427. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed September 24, 1907. Serial No. 394,334.

To all whom it may concern:

Be it known that I, HENRI BENOIST, engineer, citizen of France, residing at 30bis Rue Bergère, Paris, in the Republic of France, have invented certain new and useful Improvements in Igniters for Explosion-Engines, of which the following is a specification.

The object of this invention is to provide an improved igniter for explosion engines, in which the electrodes between which the spark is discharged are supported by a small igniter removably arranged in the main body or igniter support intended to be secured to the engine, such support being connected with an electrical source as in an ordinary igniter, its sole object being to carry the small igniter and to transmit the current thereto. By this construction, when for any reason the igniter is to be changed, only the small removable sparker is replaced, the main body or frame which is screwed on the engine and connected with the electrical source, continuing to be used.

The present invention corresponds to that included in French Letters Patent No. 7546 issued to me August 21st, 1907, the application therefor having been filed on April 5th, 1907; and said patent is a patent of addition to French Letters Patent No. 370119 issued to me on January 29th, 1907 on an application filed on September 29th, 1906.

In the accompanying drawing: Figure 1 shows, in longitudinal section, the complete igniter, that is the combination of the main body or support and of the small removable igniter, and Fig. 2 shows a part in longitudinal section, the small removable igniter.

The main body or igniter support consists of a metallic sleeve A provided with a thread a by means of which the igniter is screwed on the engine. In the sleeve A is a porcelain member D which bears on a shoulder of such member A and is held in position by a nut B. In the axis of the porcelain member D is located a metallic tube E′, held in position by a nut e' and, screwed in this tube, is a threaded stem E whose lower end e projects beyond the tube E′ into the cylindrical cavity of the porcelain member D and whose upper end projects on the outside; on this upper end of the screw E is formed a seat e^2 provided with arms for manipulating the screw, and a nut e^3 is screwed above to allow the electrical connecting wire to be secured, such wire being clamped between the base e^2 and the nut e^3.

The electrodes between which the spark is discharged are carried on the one hand by a small removable igniter formed by a small metallic tube F, provided at one end with a transverse rod K constituting one of the electrodes, and on the other hand by a small porcelain part G in the center of which is placed a metallic pin H constituting the other electrode. The porcelain part G is located in tube F with an asbestos ring interposed and rests on the upper edge of such tube by a shoulder. The combination of tube F and of part G is inserted in the lower tubulure of body A and is securely held on such body by the lower shoulder f of the tube and by screws J J the ends of which project into the annular recess f' provided on the outside of tube F.

The metallic pin H, which forms one of the electrodes, has on its upper part a head against which is caused to bear the lower end of the stem E, when this stem is suitably rotated by means of the base e^2 provided with arms: contact is thus perfectly established and the current brought as has been said, to stem E, thus passes to the lower end h of the electrode H.

As to the second electrode K, it is connected to the mass by the metallic tube F and the metallic body A which is screwed on the engine.

It will be observed that with this construction, the electrodes proper are respectively made solid with the small porcelain part G and with the small metallic tube F and they may easily be taken off by unscrewing the screws J J, and readily cleaned or changed when the electrodes are fouled. This combination of parts G and F, and of the electrodes H and K, thus forms a real complete little igniter that may be separated from the main body, which is now only used as a support, connected with the electrical source as with an ordinary igniter which passes the connection to the small igniter. To allow the distance between the electrodes to be adjusted, the pin H is threaded throughout its length and receives two nuts 1 and 2 that may be displaced on said pin so as to clamp it in the porcelain part G in the position corresponding to the required distance between the electrodes.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a device of the character described, the combination with a main supporting

member, of an insulated stem extending therethrough, an auxiliary supporting member designed to be telescopically, removably secured to the main supporting member and terminating in an electrode, an insulating member contained within said auxiliary supporting member and a pin passing through said insulating member and terminating in an electrode, said pin being designed to contact with said stem to conduct current to the said electrodes.

2. In a device of the character described, the combination with a main supporting member, of an insulating member therein, a stem surrounded by a metallic sleeve within said main supporting member, an auxiliary supporting member comprising a metallic tube adapted to telescope with and be secured in said main supporting member, an electrode formed on said auxiliary supporting member, an insulating member within the auxiliary supporting member, and a pin within said insulating member, said pin contacting at one end with said stem and having its other end formed into an electrode spaced from said first mentioned electrode to form a spark gap therebetween.

3. In a device of the character described, the combination with a main supporting member embodying suitable current conducting means, of an auxiliary supporting member designed to be telescopically secured in vertical alinement with said main supporting member, means for removably securing the two members together, an electrode formed on the auxiliary supporting member, an insulated pin in said auxiliary member, an electrode formed at one end of said pin and spaced a distance from said first mentioned electrode to form a spark gap therebetween, and means for varying the distance between said electrodes.

4. In a device of the character described, the combination with a main support comprising a metallic sleeve, an insulating member partially inclosed thereby and a metallic tube holding a screw within said insulating member, of an auxiliary support comprising a metallic tube telescoping with a portion of the metallic sleeve of the main support, an insulating member partially inclosed by said metallic tube, and a pair of electrodes carried entirely by said auxiliary support, one of said electrodes having an extension adapted to make electrical contact with the screw in the main support.

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

HENRI BENOIST.

Witnesses:

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DEAN M. MASON.