

No. 687,648.

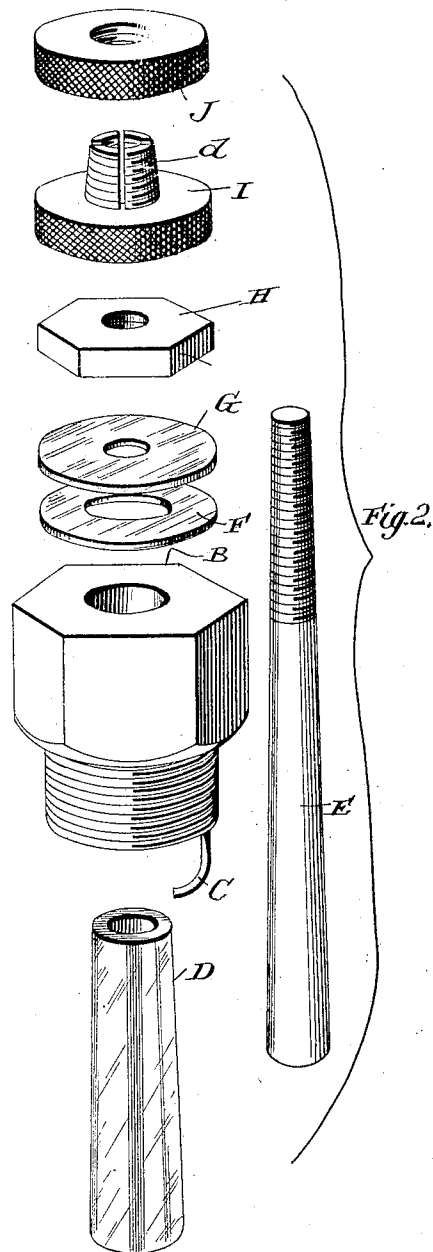
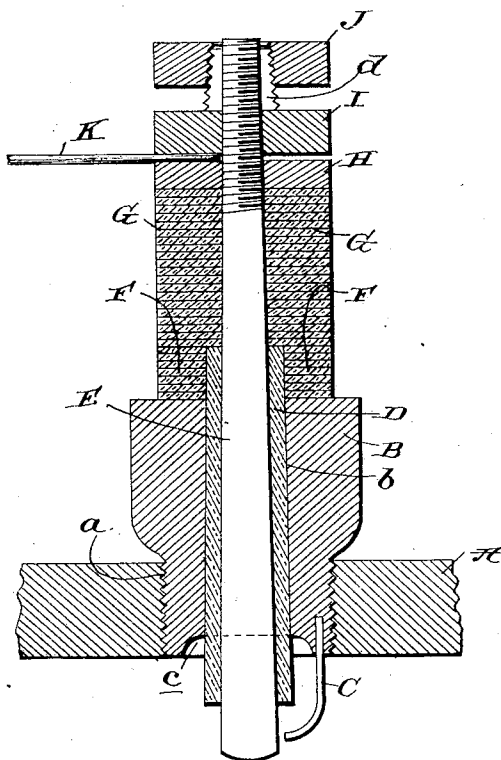
Patented Nov. 26, 1901.

I. C. ORSWELL.
ELECTRIC SPARKING PLUG.

(Application filed Jan. 3, 1901.)

(No Model.)

Fig. 1.



witnesses:

E. H. Rader
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UNITED STATES PATENT OFFICE.

ISRAEL C. ORSWELL, OF CAMBRIDGEPORT, MASSACHUSETTS.

ELECTRIC SPARKING PLUG.

SPECIFICATION forming part of Letters Patent No. 687,648, dated November 26, 1901.

Application filed January 3, 1901. Serial No. 41,992. (No model.)

To all whom it may concern:

Be it known that I, ISRAEL C. ORSWELL, a citizen of the United States, residing at Cambridgeport, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Electric Sparking Plugs, of which the following is a specification.

My invention relates to improvements in electric sparking plugs for explosive-engines; and it consists in a certain peculiar construction, the novelty, utility, and advantages of which will be fully understood from the following description and claim when taken in conjunction with the accompanying drawings, in which—

Figure 1 is a section illustrating my improved plug as connected to one of the walls of the explosion-chamber of an explosive engine, and Fig. 2 comprises disconnected perspective views of the parts of which my improved plug is made up.

Referring by letter to the said drawings, A is a wall of the explosive-chamber of a gas or other explosive engine, the same being provided with a screw-tapped aperture *a*.

B is a metallic sleeve having a threaded portion designed to occupy the aperture *a* and also having a taper bore.

C is an electrode carried by and projecting from the inner end of the sleeve B at one side of the concavity *c* therein.

D is an exteriorly and interiorly tapered bushing preferably of mica, which is of about the proportional size illustrated, so as to snugly occupy the bore *b* of sleeve B and project above and below the same, as illustrated in Fig. 1.

E is a tapered rod which constitutes the other electrode of the plug and snugly occupies the bore of bushing D and extends above and below the same, as illustrated.

F F are superposed disks, also preferably of mica, which surround that portion of the bushing D which projects above the sleeve B.

G G are superposed disks, also preferably of mica, which surround the electrode E and are disposed above the disks F.

H is a jam-nut arranged on the threaded upper portion of the rod or electrode E and having for its purpose to clamp the mica disks against the sleeve B.

I is a binding-nut arranged above the jam-

nut and having the tapered, split, and threaded sleeve *d*.

J is a nut having a tapered screw-tapped aperture and adapted to be screwed down on the sleeve *d* of the nut I to fix the latter on the rod or electrode E, and K is a wire bound between the nuts H I and forming part of an electric circuit, in which the sleeve B is also arranged.

The meeting faces of the superposed mica disks F G are preferably shellacked in order to exclude moisture.

Mica when employed as an insulating material is highly advantageous for the reasons that it is not affected in any way by heat and moisture and also because it is inexpensive and while very strong and durable is susceptible of being readily reduced to various forms. When applied in the manner shown in Fig. 1 and hereinbefore described, the mica not only serves as insulation, but effects a perfectly gas-tight joint. This latter is due in large measure to the employment of the taper electrode E in the taper bushing D and the snug arrangement of the latter in the taper bore of the sleeve B, together with the interposition of the mica disks between the sleeve B and the jam-nut H, which latter is calculated to crowd the disks down on the sleeve and draw the taper electrode tight in the mica bushing D and the said mica bushing tight in the taper bore of the metallic sleeve.

The concavity *c* in the inner end of the metallic sleeve B is advantageous since it increases the distance between the end of the sleeve and the inner end of the electrode E and the portion of the bushing D between the sleeve and electrode, which contributes materially to the isolation of the electrode from the sleeve.

Notwithstanding the advantages it possesses it will be appreciated that the specific construction of the "jump-spark" plug shown and described is at once simple, compact, and strong.

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

An electric sparking plug comprising a conductive sleeve having a concave inner end, and also having a bore tapered or gradually reduced in diameter toward its outer end, an

electrode extending from the inner end of the sleeve at the side of the concavity therein, a bushing of insulating material exteriorly tapered in conformity to and occupying the
5 taper bore of the sleeve, and having a bore tapered or gradually reduced in diameter toward its outer end; said bushing being extended beyond the inner and outer ends of the sleeve, an electrode tapered in conformity
10 to and occupying the bore of the bushing and extending beyond the inner and outer ends thereof, and having its outer portion threaded, superposed disks of insulating material

surrounding the outer extended portion of the bushing, other superposed disks of insulating material surrounding the extended
15 portion of the latter electrode, and a nut on said electrode for crowding and holding said disks.

In testimony whereof I have hereunto set
20 my hand in presence of two subscribing witnesses.

ISRAEL C. ORSWELL.

Witnesses:

CORNELIUS E. ROGERS,
SIMON MAC ASKILL.