No. 789,426. PATENTED MAY 9, 1905.

A. HERZ.

SPARKING DEVICE FOR EXPLOSIVE ENGINES.

APPLICATION FILED JAN. 14, 1903.

Fig. 1

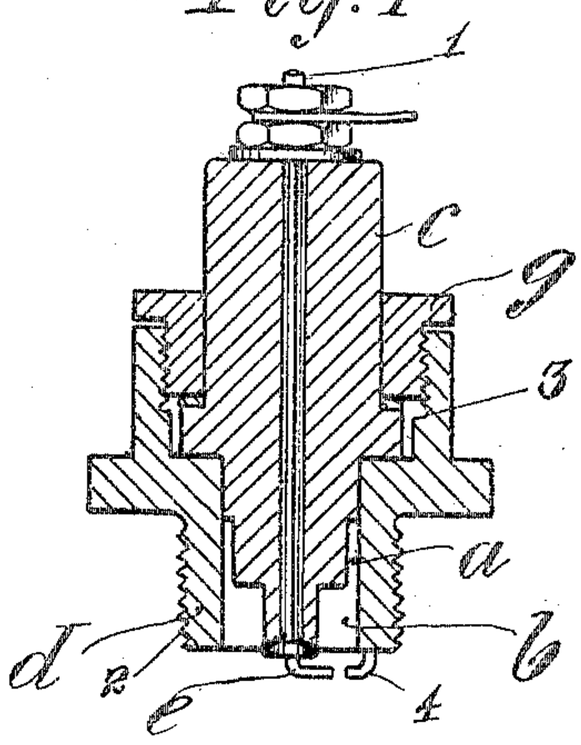


Fig. 3

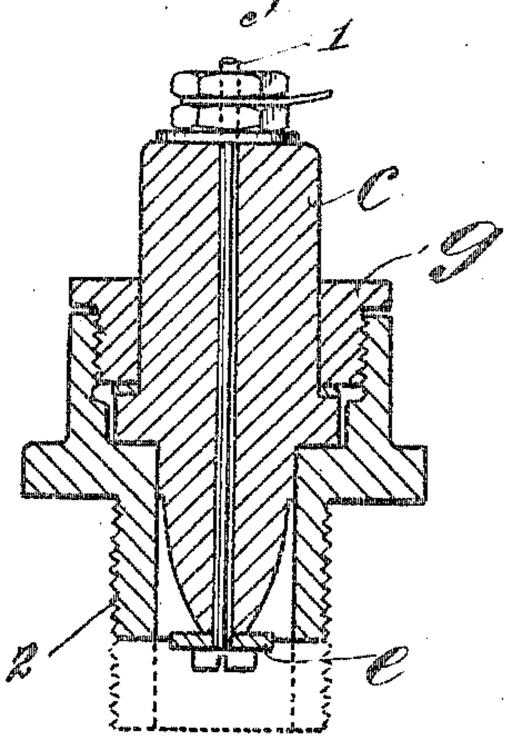


Fig. 2

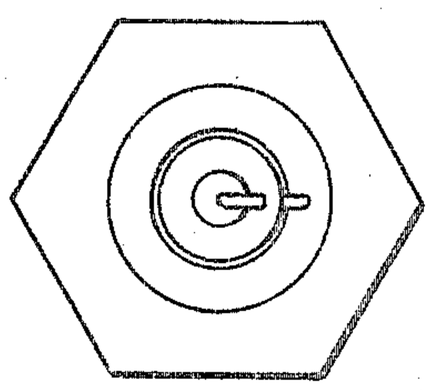


Fig. 4

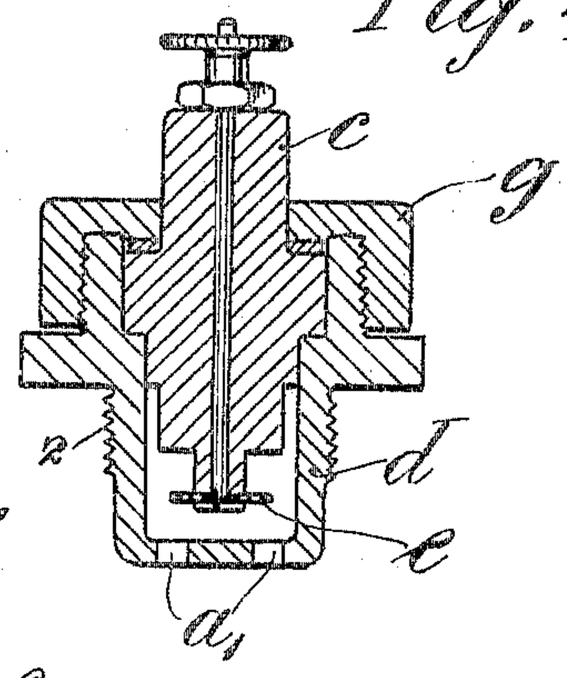
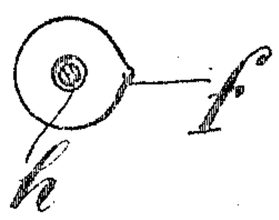


Fig. 5



Witnesses.
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No. 789,426. Patented May 9, 1905.

UNITED STATES PATENT OFFICE.

ADOLF HERZ, OF VIENNA, AUSTRIA-HUNGARY.

SPARKING DEVICE FOR EXPLOSIVE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 789,426, dated May 9, 1905.

Application filed January 14, 1903. Serial No. 139,071.

To all whom it may concern:

Be it known that I, ADOLF HERZ, a subject of the Emperor of Austria-Hungary, and a resident of Vienna, Austria-Hungary, have invented a new and useful Improvement in Sparking Devices for Explosive-Engines, of which the following is a specification.

My invention relates to sparking devices for explosive-engines, and has particularly for its object to provide a sparking device in which the deposit of carbon between the sparking-points is absolutely prevented because of the peculiar construction of the device.

My invention further contemplates certain changes in the construction, form, and arrangement of the several parts of the sparking device whereby a device of improved construction is produced in which the production of the spark at the predetermined time is insured.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 represents the sparking device in longitudinal central section. Fig. 2 is an inverted plan view of the same. Fig. 3 is a longitudinal central section through a modified form of sparking device. Fig. 4 is a longitudinal section through a third form of sparking device, and Fig. 5 is a detail plan view of the disk which forms the inner sparking-point in the form shown in Fig. 3.

The insulating-block of the sparking device is denoted by *c* and may be made of porcelain or other desired material. The conducting-wire 1 of the sparking device passes centrally through the block *c* and is provided at its inner end with the sparking-point *e*.

The plug of the sparking device is denoted by *d*, and it may be provided with the usual hollow exteriorily-screw-threaded lug 2 for attachment to the engine-cylinder. (Not shown herein.) This plug *d* may be further provided with the usual hollow interiorly-screw-threaded lug 3, which is engaged by the nut *g* for securing the insulating-block *c* in position. In Fig. 1 I have shown the lug 2 as being provided with the sparking-point 4 adjacent to the sparking-point *e*, carried by the conducting-wire 1. An annular space *b* is formed between the exterior wall of the insulating-block *c* and the inner wall of the lug 2 of the plug *d*, which space decreases in size as it extends toward the interior of the sparking device. This decrease in the space *b* is accomplished by providing the end of the block *c* within the hollow lug 2 with stepped reductions toward the end of the block, as shown in Figs. 1 and 4, or by tapering the exterior wall of the block, as shown in Fig. 3.

In Fig. 3 I have shown the conducting-wire 1 as being provided with a removable disk *e*, which forms the inner sparking-point of the device, the said disk being provided with one or more points *f* for concentrating the spark at one point on the said disk. In this instance the inner wall of the hollow lug 2 of the plug *d* serves as the other sparking-point, which coacts with the disk *h*.

In Fig. 3 I have shown in dotted lines an extension of the lug 2 to a point a short distance below the disk *h*, which arrangement may be found desirable under certain conditions.

In Fig. 4 I have shown the hollow lug 2 of the plug *d* as being provided with a perforated inner end, the perforations being denoted by *d'*.

By providing a space between the block *c* and the inner wall of the lug 2 of the plug *d*, which space gradually decreases in size toward the interior of the device, I am enabled to produce a device in which the compression of the gases within the said space serves to keep the walls of the space entirely free from the deposit of carbon when the device is in use. The gas-pressure within the space *b* when the device is in use is sufficient at all times to prevent the carbon particles from depositing either on the periphery of the block *c* or the inner wall of the hollow lug 2 of the plug *d*. The reason that the particles of carbon are prevented from depositing along the walls of the space *b* is that the space is at all times kept under the same pressure as the interior of the cylinder of the engine in connection with which the device is being used, so that fresh mixtures of the gases as they are admitted to the engine-cylinder

are prevented from entering the narrower or more confined portions of the space *b*, surrounding the block *c*.

Any oil which may tend to collect upon the sparking-points is forced away from the same by the ignition of the compressed gases within the larger part of the space surrounding the insulating-block *c*.

It is evident that slight changes may be made in the construction, form, and arrangement of the several parts without departing from the spirit and scope of my invention. Hence I do not wish to limit myself strictly to the structure herein set forth; but

What I claim as my invention is—

1. A sparking device comprising a hollow plug, an insulating-block therein, the two being so formed as to produce an annular space between them, a conducting-wire within the block and a disk carried by the conducting-wire serving to partially close the mouth of the annular space and forming one of the sparking-points, the said plug carrying the other sparking-point of the device.

2. A sparking device comprising a hollow plug carrying one of the sparking-points, an insulating-block, a conducting-wire within the block carrying the other sparking-point, the exterior of the block having stepped reductions toward the end of the block for forming an annular space between the block and plug.

3. A sparking device comprising a hollow plug, an insulating-plug therein, a conducting-wire within the block and a disk carried by the wire, said disk being provided with an outwardly-projecting point arranged to coact with the plug to produce a spark.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ADOLF HERZ.

Witnesses:

ALVESTO S. HOGUE,

JOHANN FLOTSINDERT.