(No Model.)

H. EBBS.

IGNITING DEVICE FOR GAS, PETROLEUM, OR OTHER ENGINES.

No. 566,300. Patented Aug. 25, 1896.

Fig. 2.

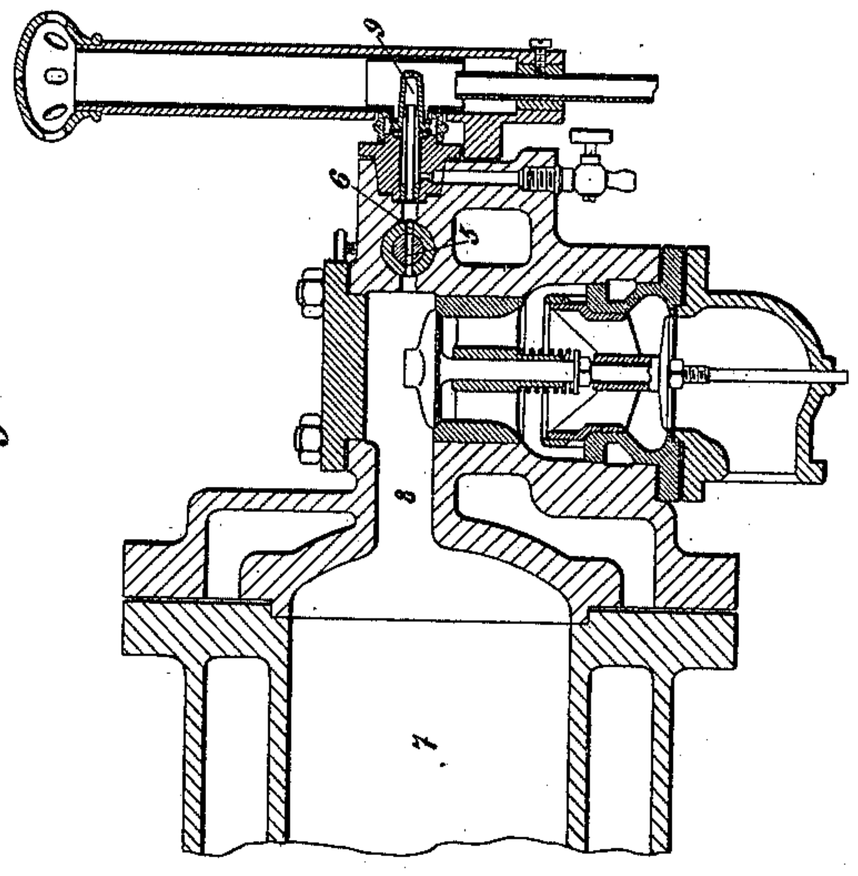
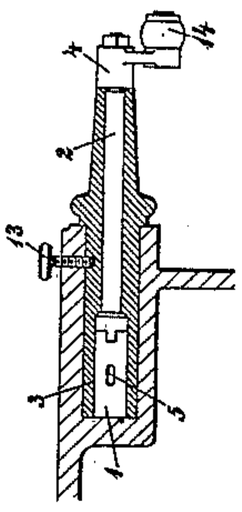


Fig. 1.



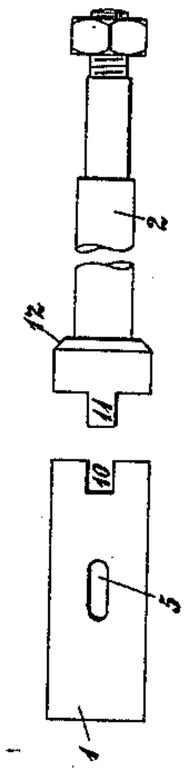
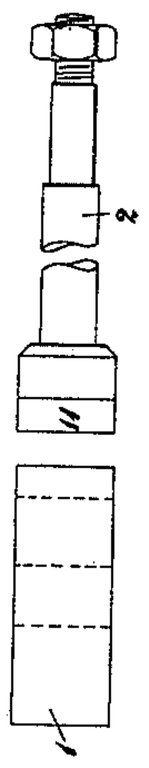


Fig. 3.



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UNITED STATES PATENT OFFICE.

HERMANN EBBS, OF MAGDEBURG, GERMANY, ASSIGNOR TO THE FRIED. KRUPP GRUSONWERK, OF SAME PLACE.

IGNITING DEVICE FOR GAS, PETROLEUM, OR OTHER ENGINES.

SPECIFICATION forming part of Letters Patent No. 566,300, dated August 25, 1896.

Application filed November 6, 1896. Serial No. 568,124. (No model.) Patented in Germany June 12, 1892, No. 68,188.

To all whom it may concern:

Be it known that I, HERMANN EBBS, engineer, a subject of the King of Prussia, Emperor of Germany, and a resident of Magdeburg, Prussia, German Empire, have invented new and useful Improvements in Igniting Devices for Gas, Petroleum, and other Motors, (for which Letters Patent have been granted in Germany, No. 68,188, dated June 12, 1892,) of which the following is a specification.

This invention relates to an improved igniting device for gas, petroleum, and other motors.

This improved device is intended to secure in a simple manner a sufficiently tight closure between the igniting-space and the cylinder or compression-space during the period of compression, in order to prevent a premature ignition of the explosive mixture, as will appear by the accompanying drawings, in which—

Figure 1 is a vertical sectional detail of the parts of an explosive-engine embodying my improvements. Fig. 2 is a vertical section at right angles to the plane of Fig. 1, showing the location of my improvement between the compression-chamber and the igniting-chamber. Fig. 3 shows by two views, in directions at right angles to each other, the construction of the plug and its turning-key.

The igniting device, as is apparent from Figs. 1, 2, and 3, substantially comprises the plug 1, the key 2, the casing 3, and the lever 4. The plug and the casing are provided with appropriate passage-openings 5 and 6, which toward the end of the period of compression present themselves in such a position against each other that the explosive mixture arriving from the cylinder 7 and the compression-space 8, respectively, passes through the plug to the incandescent body, where it is ignited. The oscillating movement of the plug 1 is imparted through key 2 by means of the lever 4 and the slide-rod 14.

In order to secure a sufficiently tight closure between the plug 1 and the channel 6, leading toward the incandescent body, the plug is not made in one piece with the key, but is so connected by the tongue 11, arranged on the key and engaging the slit 10 of the plug, that the plug must of necessity follow the oscillating movement of the key, but is enabled to be displaced in the direction of the slit 10 and of the passage-opening 5, running parallel to the said slit. By this separation of the two parts 1 and 2 the plug is kept forced against the channel 6 by the action of compression, even when after long use its diameter becomes reduced, so that a sufficiently tight closure is always secured and premature ignition prevented between the compression-space and the incandescent body.

In order to secure a tight closure between the space containing the plug and the socket or casing of the key 2, communicating with the atmosphere, the said key is provided with a tapered shoulder or washer 12, which latter is, by the action of the compression, forced against a correspondingly-shaped surface of the key socket or casing.

By constructing the two parts 1 and 2 separately the further advantage is obtained that the plug need not be fitted into the casing with absolute accuracy. Even when owing to wear and tear the internal diameter of the casing has worn oval a sufficiently tight closure is still always secured by the action of compression against the wall in which the opening 6 is arranged, since the connection of the plug and of the key is such that the plug is enabled to yield to this pressure without being prevented from so doing by the key. For the same reason the key permanently remains in its axial position and is not subject to lateral pressure from the plug, and the washer 12 will consequently be always enabled to tightly close the plug-space against the atmosphere.

The casing 3 is secured in the head of the cylinder by means of a screw 13. After loosening the screw the casing can be withdrawn, thus allowing of removing the plug out of the casing when the same is to be cleaned or replaced.

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. In an igniting device, of substantially the character specified, the combination of a casing interposed in the passage to be controlled, a plug oscillating in said casing and having a transverse passage, a key having connection for imparting oscillatory movement to it and connected with the plug by a tongue and slot

as shown whereby it imparts oscillatory movement to the plug while permitting independent transverse displacement thereof, for accomplishing an automatic tightening of the closure by pressure of the explosive, as explained.

2. In a device for controlling the communication of explosives from the compression-chamber to the igniting-chamber in an explosive-engine, the combination of a casing interposed in the passage and containing an oscillating plug with a transverse port for opening and closing said passage and a reduced socket extending axially from the bore of the casing and containing a key having at one end tongue-and-slot connection with the plug for the purpose stated, and at the other connections for imparting oscillatory movement to it; said key being formed with the beveled bearing at the inner end of the socket.

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Witnesses:
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