

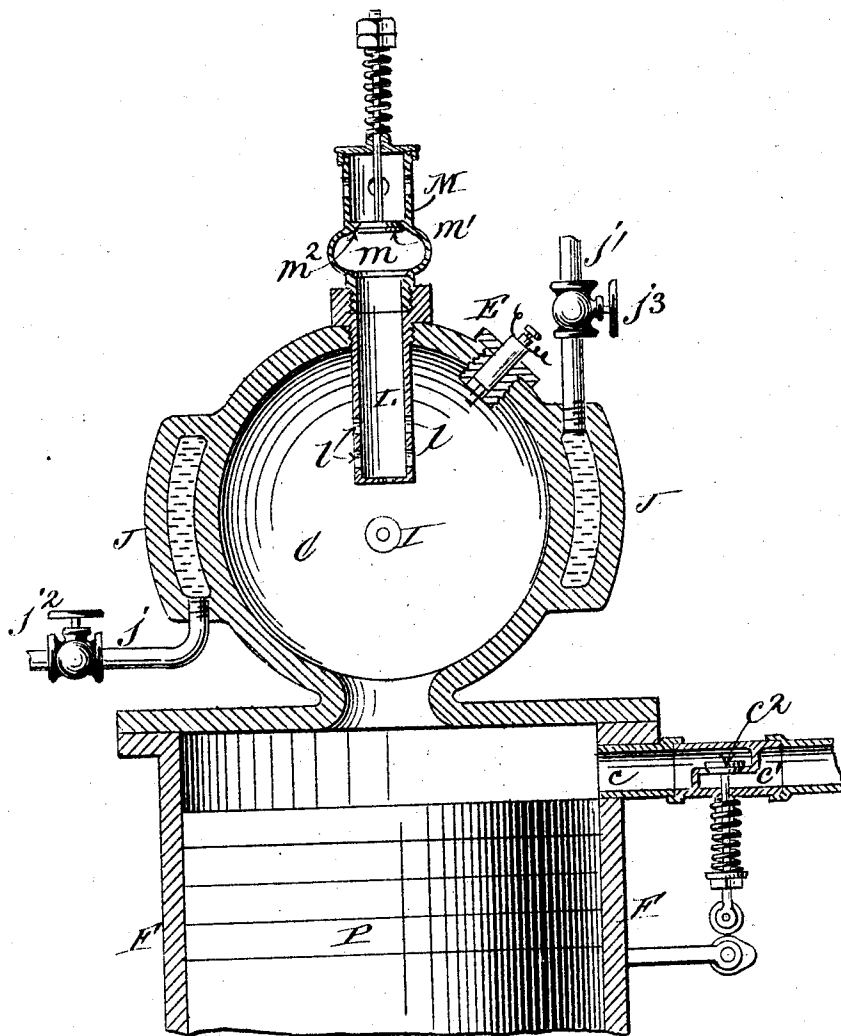
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PATENTED AUG. 8, 1905.

A. WASSMANN & A. A. LOW.

INCANDESCENT IGNITER FOR EXPLOSIVE ENGINES.

APPLICATION FILED MAR. 28, 1904.



Witnesses:

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UNITED STATES PATENT OFFICE.

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INCANDESCENT IGNITER FOR EXPLOSIVE-ENGINES.

No. 796,479.

Specification of Letters Patent.

Patented Aug. 8, 1905.

Application filed March 28, 1904. Serial No. 200,229.

To all whom it may concern:

Be it known that we, AUGUST WASSMANN, residing at Halletts Point, Astoria, Queens county, and ABBOT AUGUSTUS LOW, residing at Horseshoe, St. Lawrence county, State of New York, citizens of the United States, have invented certain new and useful Improvements in Incandescent Igniters for Explosive-Engines, of which the following is a specification.

Our invention relates to explosive-engines in which liquid hydrocarbon is vaporized and exploded in a bulb-shaped combustion-chamber which is in direct communication with the upper end of the piston-cylinder.

The invention consists in the construction and arrangement of parts hereinafter described and claimed specifically.

The accompanying drawing illustrates diagrammatically the essential features of our invention, being a sectional elevation of a combustion-chamber and the upper part of the piston-cylinder and connections.

P is a piston of any well-known construction reciprocating in the cylinder F, upon the top of which is situated the globular or spherical combustion-chamber C.

c is the passage for the discharge of the products of combustion opening into the valve-chamber c', in which is situated the puppet-valve c'', actuated by a cam properly timed for the purpose as heretofore.

I is an injector through which the explosive charge is introduced into the combustion-chamber C.

E is an electric sparker or equivalent device for effecting the preliminary explosions.

J is a water-jacket arranged peripherally around the combustion-chamber C, said jacket being supplied with a cooling liquid circulated through the pipes j j' by any suitable or well-known means, j² j³ being valves by which the liquid may be regulated with accuracy to suit the requirements of use. It is to be noted that this water-jacket J forms an equatorial band around the spherical bulb C, so that the temperature of the latter is regulated centrally and evenly, the object being to prevent the overheating of the inner walls of the com-

bustion-chamber, and thus avoid the carbonizing of the hydrocarbon injected therein.

In our present construction we use an internal igniter L of substantially the same form as set forth in the concurrent application of A. A. Low, Serial No. 168,690, filed August 7, 1903, the distinction in the present case being that the relief-valve casing M is in axial alignment with the igniter L, which is preferably of cylindrical form, screwing into the combustion-chamber or otherwise attached thereto, the valve-chamber m likewise screwing into the dome of the chamber C in a line with the igniter L. The valve-chamber m is provided with the puppet-valve m', held normally on its seat m², but yielding during the discharge of the products of combustion to admit air into the interior of the igniter and through the openings l in the latter into the combustion-chamber to cool and cleanse the same, as set forth in the concurrent application hereinbefore referred to. By arranging the relief-valve in line axially with the igniter and having the valve-chamber open directly into the latter we materially simplify the construction and arrangement of parts and reduce the resistance to the admission of air. In this connection it will be noticed that the valve-chamber m and the area of the valve-seat are at least as large as the area of the igniter in cross-section, so that by making the openings l in the igniter of a sufficient number or size a relative free and unrestricted passage between the atmosphere and the interior of the combustion-chamber is attained.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. The herein-described incandescent igniter for explosive-engines comprising a hollow cylindrical igniter adapted to be engaged in an opening in the wall of the combustion-chamber and having openings near its inner end, an air-inlet-valve casing connected with said igniter in line therewith, a puppet-valve in said casing in a valve-chamber therein and fitted to a seat therein, and means disposed exteriorly of said valve-casing for holding said valve normally yieldingly on its seat.

2. The herein-described incandescent ig-

niter for explosive-engines, comprising a hollow cylindrical igniter adapted to be engaged in an opening in the wall of the combustion-chamber and having openings near its inner end, an air-inlet-valve casing connected with the igniter in line therewith, a puppet-valve in said casing, means disposed exteriorly of the valve-casing for holding the valve normally yieldingly to its seat, the valve-cham-

ber and the area of the valve-seat being of an area equal in cross-section to that of the igniter, as and for the purpose specified.

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