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Patented Apr. 2, 1901.

J. L. ASH.

VAPORIZING DEVICE FOR GAS ENGINES.

(Application filed Nov. 4, 1899.)

(No Model.)

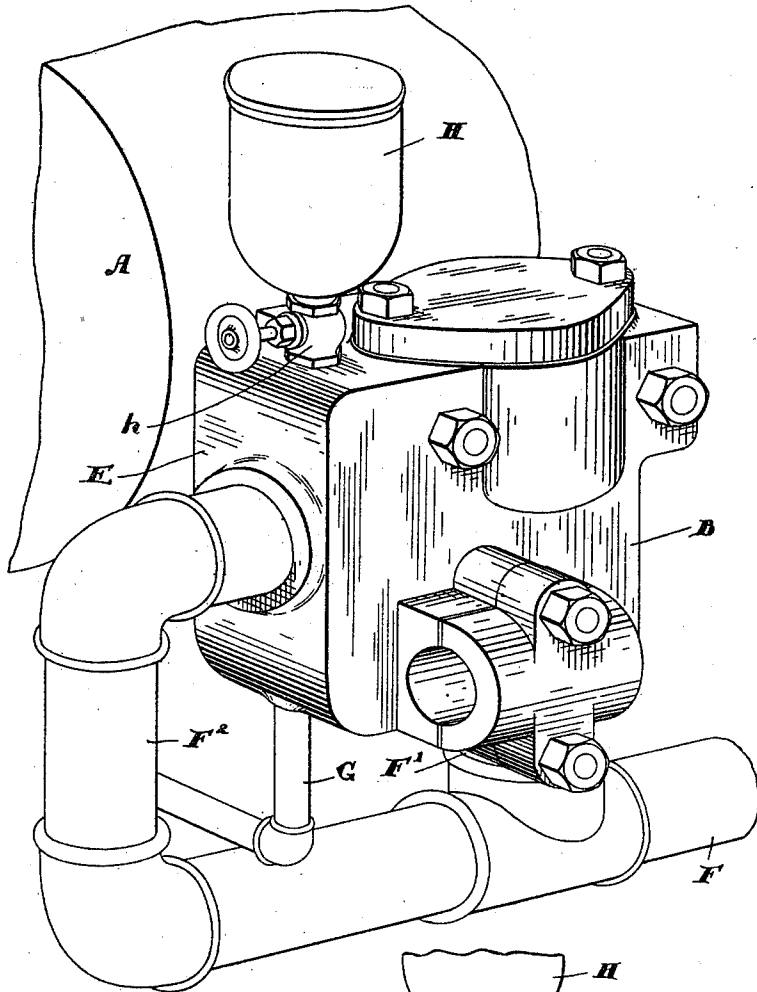


Fig. 1.

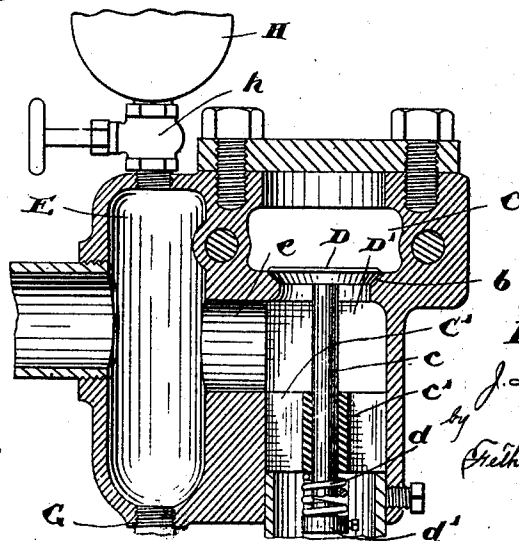


Fig. 2.

Witnesses.

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# UNITED STATES PATENT OFFICE.

JACOB LAGRANGE ASH, OF LANSING, MICHIGAN.

## VAPORIZING DEVICE FOR GAS-ENGINES.

SPECIFICATION forming part of Letters Patent No. 670,945, dated April 2, 1901.

Application filed November 4, 1899. Serial No. 735,811. (No model.)

To all whom it may concern:

Be it known that I, JACOB LAGRANGE ASH, of the city of Lansing, in the county of Ingham, in the State of Michigan, have invented certain new and useful Improvements in Gas-Engines, of which the following is a specification.

My invention relates to improvements in gas-engines; and the object of the invention is to devise an improved means for insuring a perfect mixture of gasolene and air entering the explosion-chamber; and it consists, essentially, of a mixing-chamber formed in the body of the intake-valve and having the air-pipe leading from the base of the engine into the valve-body directly below the valve proper, a branch of the air-pipe extending up to the mixing-chamber, and a suitable reservoir for gasolene being provided at the top of the mixing-chamber, from which the gasolene is delivered in a small stream at the top of the chamber, and the parts being otherwise constructed and arranged in detail, as hereinafter more particularly explained.

Figure 1 is a perspective view of portion of a gasolene-engine to which my invention relates. Fig. 2 is a vertical section through the major portion of Fig. 1, parallel with the cylinder.

In the drawings like letters of reference indicate corresponding parts in each figure.

A is the cylinder of the gasolene-engine, and B the valve casing or body.

C is the passage-way above the valve, leading into the explosion-chamber at the end of the cylinder.

D is the valve, having a seat at *b* and provided with a stem *c*, extending through a spider *c'* in the orifice *C'*. The valve D is held on its seat by the spiral spring *d*, extending between the spider *c'* and the collar *d'* on the end of the valve-stem *c*.

E is the mixing-chamber, connected by the passage-way *e* to the space *D'*, immediately below the valve D.

F is the pipe for the admission of air, which is connected by a branch *F'* to the valve-chamber and a bent extension *F<sup>2</sup>* to the mixing-chamber intermediate of its length.

G is the drain-pipe for the mixing-chamber, which is designed to carry back to the tank all surplus gasolene.

H is a small gasolene-reservoir which is kept supplied with gasolene by a pump, the reservoir being connected to the mixing-chamber by a valve *h*, which is intended to deliver a small stream of gasolene at the top of the mixing-chamber, allowing it to fall down through the mixing-chamber to the bottom. At the time of suction in the engine part of the air will pass around through the bent portion *F<sup>2</sup>* of the pipe, and thence pass directly across the falling stream of gasolene from the reservoir H, which it vaporizes and carries with it enough gasolene to form a proper mixture. When the valve is opened by suction, this mixture passes through the passage-way C into the interior of the engine, where the explosion takes place.

I find in practice that the air passing through the mixing-chamber in the manner hereinbefore described and carrying with it gasolene serves to thoroughly vaporize it and forms a proper mixture suitable for the most efficient working of the engine.

What I claim as my invention is—

1. In combination, a cylinder, a casing, a passage leading to the cylinder, a valve controlling the same, a gasolene-supply, a mixing-chamber, air-passage leading directly across the mixing-chamber and a second air-passage leading through the casing and intersecting the passage from the mixing-chamber below the valve, substantially as described.

2. In combination, a cylinder, a casing, a passage leading to the cylinder, a valve controlling the same, a gasolene-supply, a mixing-chamber, air-passage leading directly across the mixing-chamber and a second air-passage leading through the casing and intersecting the passage from the mixing-chamber below the valve and a return-pipe leading from the mixing-chamber to the gasolene-supply, substantially as described.

JACOB LAGRANGE ASH.

Witnesses:

O. J. CLARK,  
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