

(No Model.)

I. F. ALLMAN.
VAPORIZER FOR OIL ENGINES.

No. 563,541.

Patented July 7, 1896.

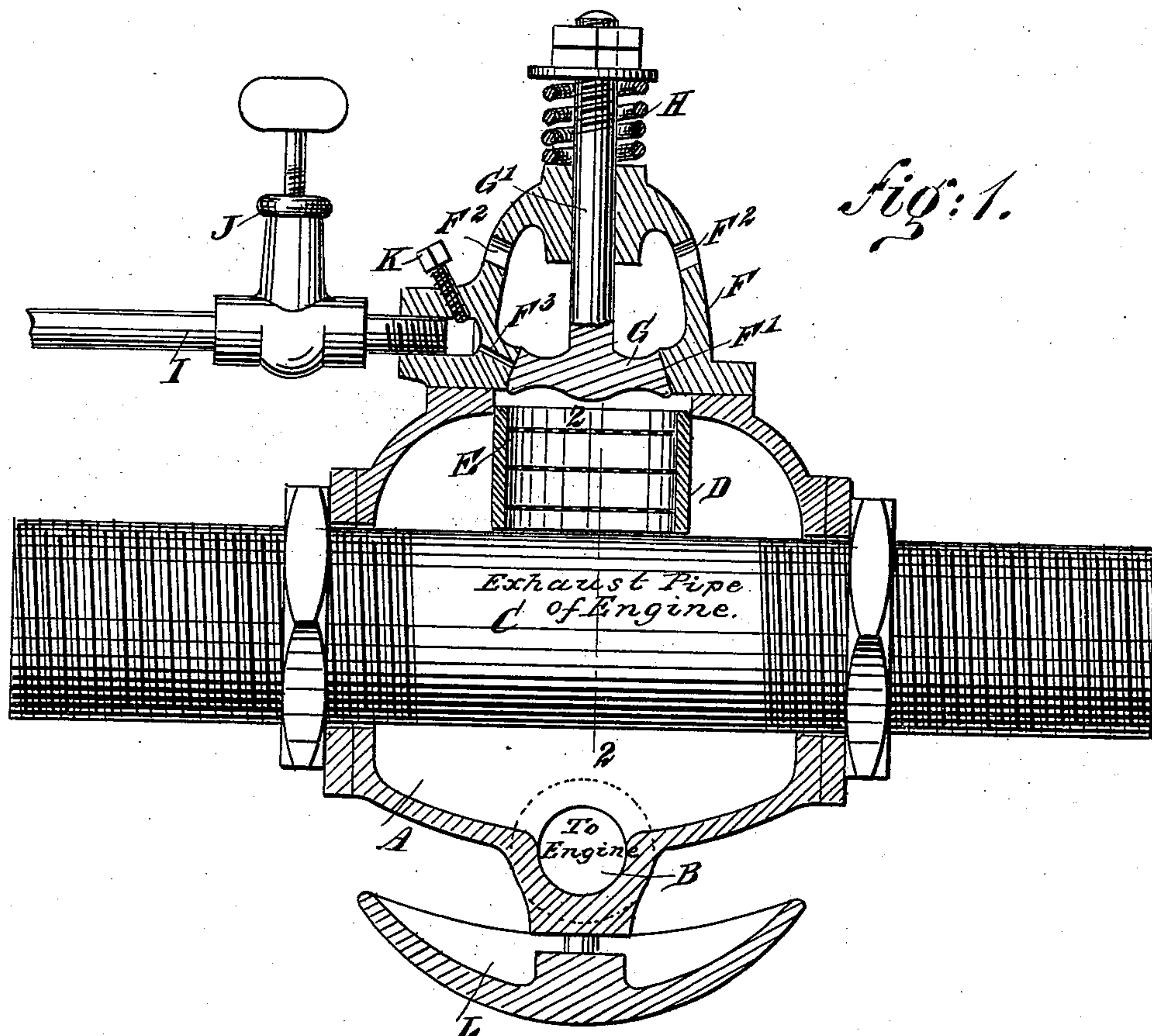
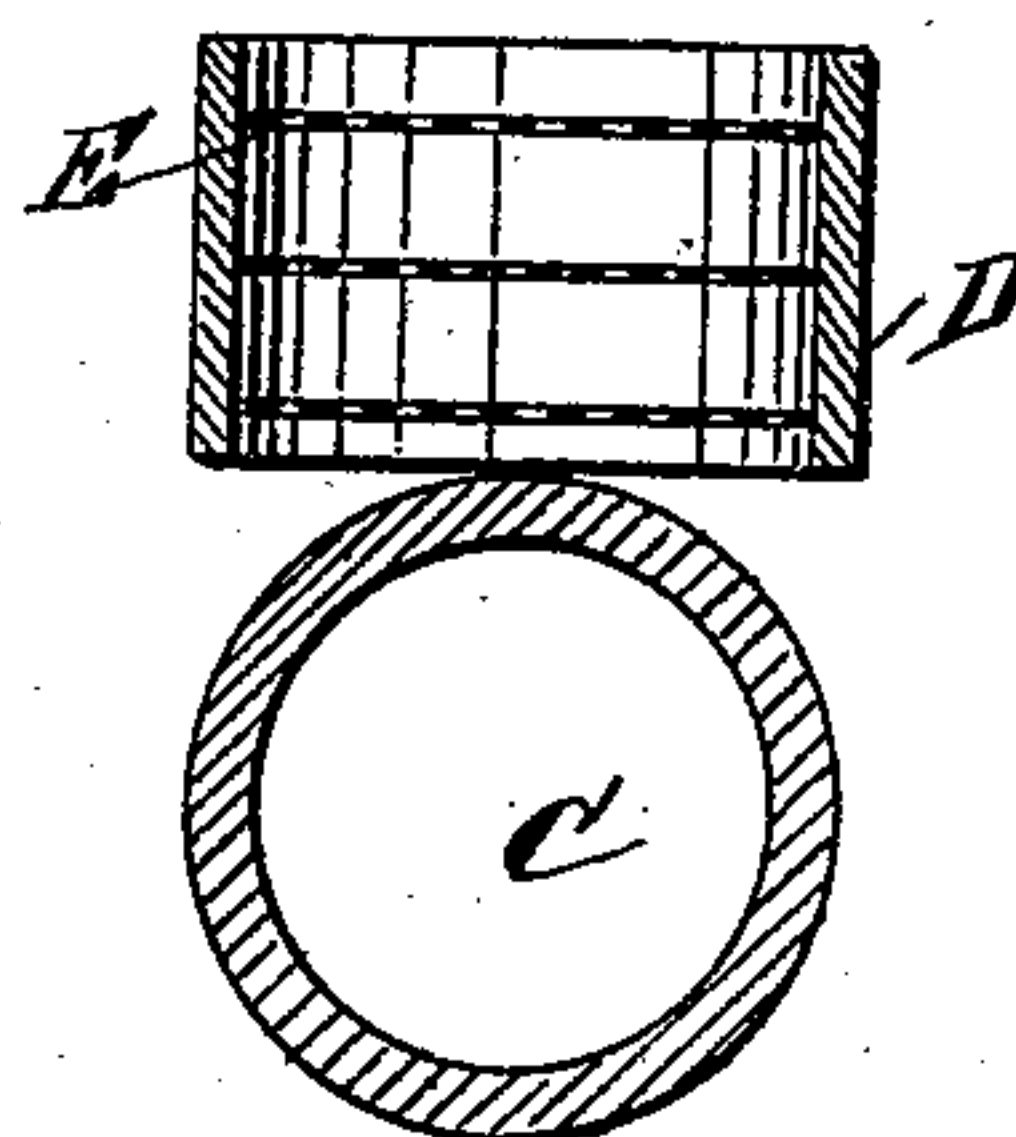


Fig: 2.



WITNESSES:

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VAPORIZER FOR OIL-ENGINES.

SPECIFICATION forming part of Letters Patent No. 563,541, dated July 7, 1896.

Application filed September 19, 1895. Serial No. 562,934. (No model.)

To all whom it may concern:

Be it known that I, ISAAC F. ALLMAN, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and Improved Vaporizer for Oil-Engines, of which the following is a full, clear, and exact description.

The invention consists principally of a valve box or casing having air-inlets, a valve-seat into which opens an oil-supply channel, and a valve seated in said valve-seat, so as to cover the orifice of said oil-supply channel, adapted to open upon suction from the cylinder to draw air in through said openings and through said valve-seat, the air on its passage through the valve-seat taking up the oil discharged into the seat through the said channel.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claim.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional side elevation of the improvement, and Fig. 2 is a transverse section of part of the same on the line 2 2 of Fig. 1.

The improved vaporizer is provided with a mixing-chamber A, connected by a pipe B with the cylinder of the engine, so that a suction is produced in the said chamber on the outward stroke of the piston and at the time the charge is to pass into the cylinder. Through the mixing-chamber A passes the exhaust-pipe C of the engine, so that a proper vaporization of the oil and mixing of the vapor with the air is obtained within the chamber A by the heat emanating from the hot gases passing through the pipe C.

On the top of the exhaust-pipe C, within the chamber A, is set a cylinder D, containing a number of sieves E, placed one above the other. The upper end of the cylinder D opens onto the valve-seat F' of a valve box or casing F, secured to the top of the chamber A, as is plainly illustrated in Fig. 1. On the said valve-seat F' is adapted to be seated a valve G, formed with a valve-stem G', fitted

to slide in the top of the box F, and pressed on at its outer end by a spring H, so as to hold the valve G normally to its seat F', the said valve being adapted to open inwardly against the tension of the spring H on suction produced in the chamber A from the piston in the cylinder, as previously explained.

The box F is provided with air-inlets F², so that when the valve G opens atmospheric air passes through the said openings into the box and through the valve-seat F' into the cylinder D. Into the wall of the seat F' opens a channel F³, connected with an oil-supply I, provided with a valve J for regulating the amount of oil passing to the channel F³. Now it will be seen that when the valve G opens, the air rushing through the said valve-seat F' carries along the oil discharged into the seat from the channel F³, and the air is thus used as a vehicle for carrying the oil along into the mixing-cylinder D, in which the oil is quickly vaporized by the heat emanating from the exhaust-pipe C, as previously explained. The air and vapors are very intimately mixed in passing through the several sieves E in the cylinder D, and finally pass through the pipe B to the cylinder of the engine in a highly explosive state and in a quantity such as required to form a proper charge. A screw K normally closes an opening leading to the channel F³, the said opening serving for introducing a piece of wire to clean the channel F³ from time to time.

On the bottom of the chamber A is secured a tank L, adapted to contain oil for heating the chamber A in starting the engine—that is, previous to the hot gases passing through the pipe C. Other suitable means, however, may be employed for heating the chamber A externally previous to starting the engine. If desired, a continuous heating externally by other means than the exhaust-pipe C may be employed.

When using a lamp or other continuous heating means for the chamber A, very heavy oil may be vaporized. It is understood that the oil passing through the pipe I to the channel F³ flows by its own gravity and only such an amount is taken for each mixture as is required by the engine. When the suction period is past, the spring H causes a sudden

seating of the valve G on the valve-seat F', thereby cutting off the air supply as well as closing the channel F³ to cut off the oil supply.

Having thus fully described my invention,
5 I claim as new and desire to secure by Letters Patent—

A vaporizer, comprising a chamber provided with a valve-seat having an aperture,
10 a fuel-supply channel leading to said aperture, a valve adapted to engage said seat, an air-supply channel on the outer side of the

said valve, a casing set within the chamber on the inner side of the said valve, a series of sieves located within the casing and adapted to successively receive the fuel from the inlet, and means for heating the chamber, substantially as described. 15

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Witnesses:

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