

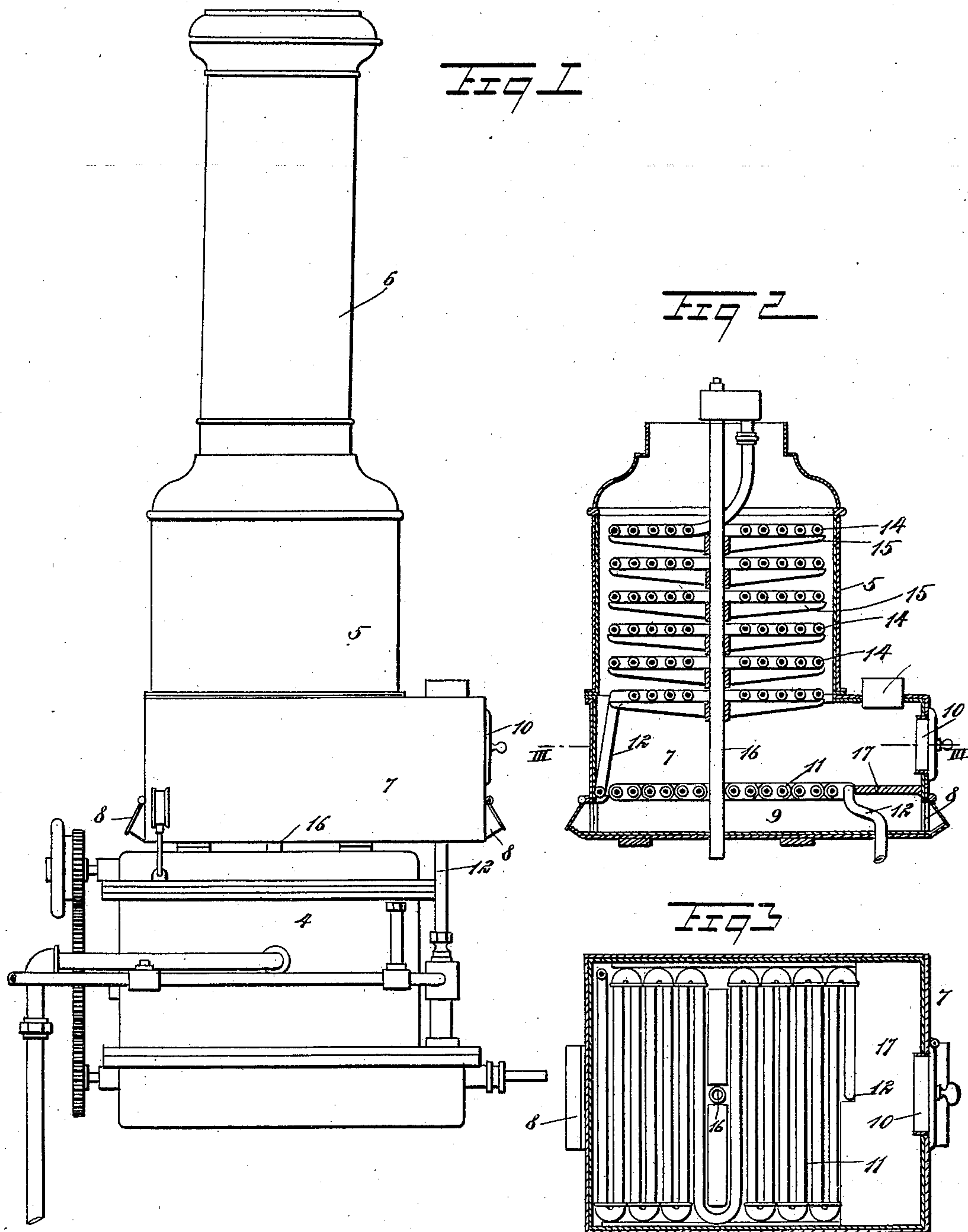
No. 624,355.

Patented May 2, 1899.

E. L. LOWE.
VAPOR ENGINE.

(Application filed June 27, 1898.)

(No Model.)



WITNESSES:

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EDWARD LESLIE LOWE, OF ASTORIA, OREGON.

VAPOR-ENGINE.

SPECIFICATION forming part of Letters Patent No. 624,355, dated May 2, 1899.

Application filed June 27, 1898. Serial No. 684,599. (No model.)

To all whom it may concern:

Be it known that I, EDWARD LESLIE LOWE, of Astoria, in the county of Clatsop and State of Oregon, have invented a new and Improved Vapor-Engine, of which the following is a full, clear, and exact description.

This invention is a vapor-engine of that class in which hydrocarbon oil is vaporized by the action of heat and the resultant vapor is employed to drive a motor forming part of the engine.

The invention is particularly adapted for light marine service, but of course is applicable to all other industrial purposes.

This specification is the disclosure of one form of my invention, while the claims define the actual scope of the invention.

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 all the figures.

Figure 1 is a side elevation of the invention. Fig. 2 is a sectional view taken through the vaporizing-chamber thereof, and Fig. 3 is a sectional view on the line III III of Fig. 2.

The improvement consists in providing the engine with a peculiarly-constructed fire-chamber, in which a fire may be built from fuel other than that of the oil employed in driving the motor and in which a coil or other retort is arranged for the passage of the oil that drives the motor, so that such oil is vaporized, as is usual in this class of apparatus. The invention is shown applied to an engine in which a motor 4 supports a vaporizing-chamber 5. This chamber is provided with the usual smoke-stack 6 for carrying off the products of combustion in the vaporizing-chamber.

The base of the vaporizing-chamber is formed into a rectangular fire-box 7, which communicates directly with the vaporizing-chamber and which has damper-controlled draft-orifices 8 in the ash-pit 9 thereof and a door 10 in the front through which to feed the fuel. The fire-box 7 is provided with a grate 11, formed by a series of return-bends in the pipe 12, that leads from the oil-supply. From the bends forming the grate 11 the pipe

12 passes up into the vaporizing-chamber 5 and is arranged in a series of connected coils 14, supported on arms 15, in turn held by a central return-pipe 16, which is connected with the pipe 12 at the top of the vaporizing-chamber 5 and which passes downward through the fire-box and into the motor 4 to feed the vaporized fluid thereto. Forward of the grate 11 the fire-box is provided with a dead-plate 17, on which the fire may be raked from the grate 11 when it is desired to restrain the operation of the engine.

The engine is operated by inducing the circulation of the oil for driving the motor through the pipe 12, which, as will be understood, is done in the usual well-known manner. A fire should now be started in the fire-box 7 on the grate 11. This fire may be built of any desired fuel—wood, coke, or even oil, if desired; but should oil be used it is essential to keep the same separate from the oil used as a motive force. The fire in the box or furnace 7 will heat the pipe 12 and vaporize the oil therein, so that the vapor passes down the pipe 16 into the motor 4 to be employed in the well-understood manner. By such an arrangement it is possible to dispense with the usual oil-burner of the vaporizing-chamber, as well as the air-injector and the other devices incident to the burning of the oil from the pipe 12. By this apparatus the cost of running the vapor-engine is reduced to the lowest possible degree, and the unpleasant odors and noises resulting from the action of the burner in the combustion-chamber are avoided.

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

1. A vapor-engine having a motor, a vaporizing-chamber, a fire-box rested on the motor and beneath the vaporizing-chamber, a pipe leading from the oil-supply into the fire-box and coiled therein to form a grate, the pipe passing upwardly into the vaporizing-chamber and being coiled therein so as to be subjected to the action of the heat from the fire-box, and a central return-pipe passing downwardly through the vaporizing-chamber and

through the fire-box and leading the vaporized oil to the motor.

2. A vapor-engine having a motor, a fire-box mounted thereon, a vaporizing-chamber
5 mounted on the fire-box and communicating directly therewith, and a pipe leading from the oil-supply into the fire-box and coiled

therein to form a grate, the pipe being extended up into the vaporizing-chamber and thence downwardly to the motor.

EDWARD LESLIE LOWE.

Witnesses:

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