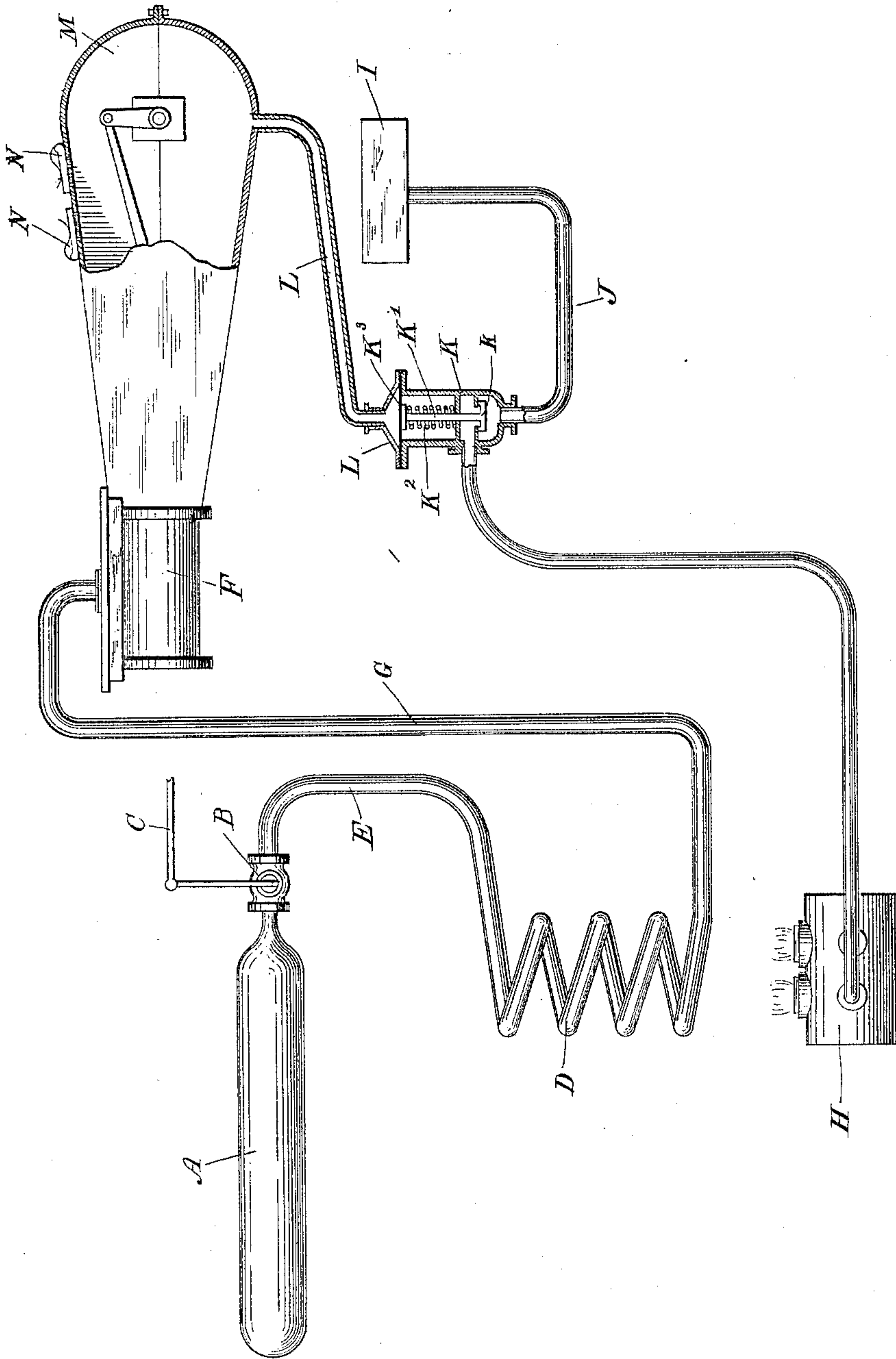


(No Model.)

W. H. KNIGHT.
FLUID PRESSURE ENGINE.

No. 581,826.

Patented May 4, 1897.



WITNESSES:

W. V. Bridgford
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INVENTOR

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UNITED STATES PATENT OFFICE.

WALTER H. KNIGHT, OF NEW BRIGHTON, NEW YORK.

FLUID-PRESSURE ENGINE.

SPECIFICATION forming part of Letters Patent No. 581,826, dated May 4, 1897.

Application filed June 24, 1896. Serial No. 596,772. (No model.)

To all whom it may concern:

Be it known that I, WALTER H. KNIGHT, a citizen of the United States, residing at New Brighton, in the county of Richmond and State of New York, have invented certain new and useful Improvements in Fluid-Pressure Motors, of which the following is a specification.

My invention relates to means for automatically regulating the supply of fuel to the burners of the heaters of fluid-pressure motors.

My invention applies to the form of fluid-pressure motors which exhaust into an inclosed chamber, preferably in the form of a casing inclosing the crank and working parts of the engine and provided with muffling devices which are adapted to prevent the increase of dust by retaining a moderate pressure in the inclosed chamber. I provide an automatic valve in the oil-pipe leading from the oil-reservoir to the oil-burner, which valve is automatically opened and closed by the pressure upon a diaphragm, the diaphragm-chamber being in communication with the exhaust-chamber of the motor. When the motor is performing its utmost amount of work, the pressure in the exhaust-chamber will be greatest by reason of the rapidity of exhaust into the chamber. This pressure will cause the diaphragm to hold the oil-valve open for supplying an increased amount of oil to the oil-burner of the heater. When the motor is at a standstill or is performing a small amount of work, the pressure in the crank-chamber is slight and the valve will be nearly closed, shutting off the main supply of oil, but allowing a sufficient amount to keep the burner lighted.

In the accompanying drawing I have represented my invention diagrammatically, in which—

A is a compressed-air reservoir having throttle-valve B, controlled by the controller-rod C.

D is the heating-coil, communicating with reservoir A through pipe E and with the cylinder F of the motor through the pipe G.

H is the oil-burner of the heater, supported beneath the heating-coil D.

I is the oil-reservoir.

J is the oil-supply pipe, leading from the reservoir to the burner H and having inter-

posed the automatic valve K. The valve K comprises a valve-clapper *k*, mounted upon a vertically-movable valve-spindle K', which is held normally nearly closed by the spiral spring K².

K³ is a diaphragm to which the upper end of the valve-stem K' is attached.

L is a diaphragm-chamber communicating through pipe L' with the inclosed crank-chamber M of the motor.

N N are spring-pressed plates or covers supported over the restricted exhaust-openings leading from the inclosed crank-chamber. These muffling-plates N serve to retain a moderate pressure within the inclosed crank-chamber.

The cylinder F is adapted to exhaust into the crank-chamber in a manner well understood.

The operation of the device will be clear from the above.

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

1. The combination of a motor having an inclosed exhaust-chamber, a fluid-reservoir, a heater, and means controlled by the pressure in the exhaust-chamber for regulating the supply of fuel to the burner of the heater, substantially as set forth.

2. The combination of a fluid-motor having an inclosed exhaust-chamber, a fluid-reservoir, a heating-pipe leading from the reservoir to the motor, an oil-burner for the heater, an oil-reservoir, and means controlled by the pressure in the exhaust-chamber of the motor for regulating the supply of oil to the burner, substantially as set forth.

3. The combination of a motor having an inclosed exhaust-chamber, a fluid-reservoir, a heating-pipe communicating between the reservoir and the motor, an oil-burner, an oil-reservoir, a pipe leading from the reservoir to the burner, an automatic valve interposed in said pipe and having a pressure-diaphragm, and a passage communicating between the exhaust-chamber of the motor and said diaphragm, substantially as set forth.

WALTER H. KNIGHT.

Witnesses:

M. V. BIDGOOD,
WM. E. KNIGHT.