(No Model.)

J. H. LORIMER.

MOTOR.

No. 421,736. Patented Feb. 18, 1890.

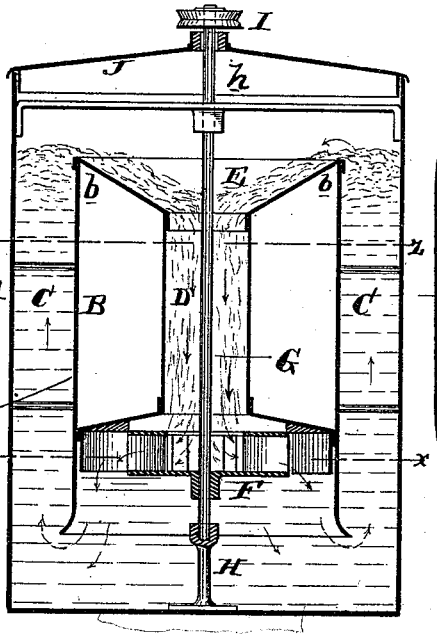

Fig. 1.

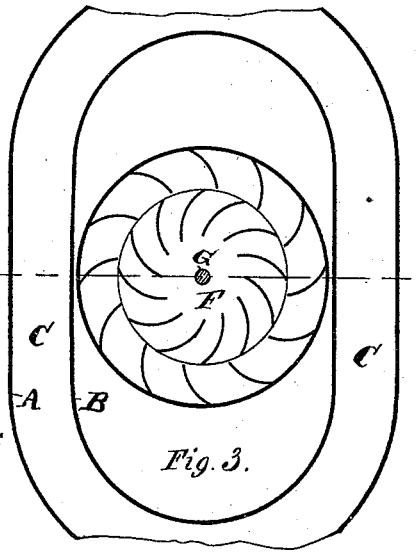

Fig. 3.

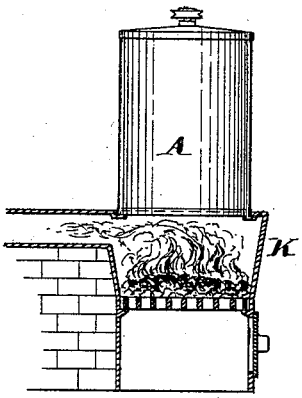

Fig. 4.

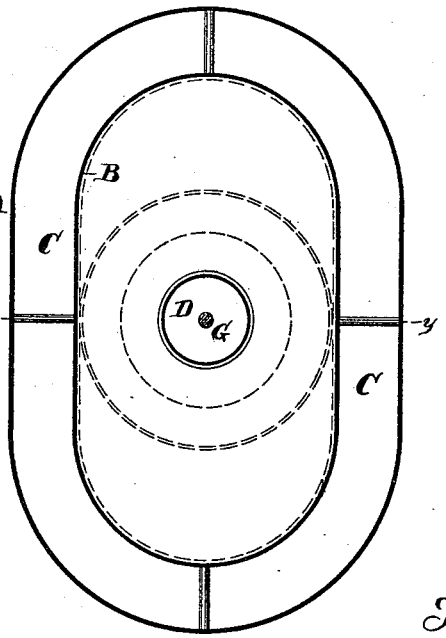

Fig. 2.

Witnesses.
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By his atty

UNITED STATES PATENT OFFICE.

JOHN H. LORIMER, OF PHILADELPHIA, PENNSYLVANIA.

MOTOR.

SPECIFICATION forming part of Letters Patent No. 421,736, dated February 18, 1890.

Application filed May 16, 1889. Serial No. 311,033. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. LORIMER, of the city and county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Motors, of which the following is a specification.

My invention has reference to motors; and it consists of certain improvements which are fully set forth in the following specification, and shown in the accompanying drawings, which form a part thereof.

In carrying out my invention I provide a tank or chamber for containing water with an inner and outer channel or passage-way, through which the water is caused to circulate by the application of heat. The water passing upward through the outer or cooler passage-ways overflows a diaphragm at the top and passes downward through the inner passage-way, operating a suitable turbine or other water-wheel located therein, the shaft of which extends upward and is provided with a suitable power-transmitting pulley.

I do not limit myself to any particular construction of water-wheel, as almost any type of turbine is excellently adapted to the purpose. The rotation of the water-wheel is due to the column of water necessarily formed above the same, owing to the boiling action and rushing of the water by the outer passage-ways and its overflow at the top into the central passage-way. The current thus formed sucks the water down through the turbine, and thus assists the column of water in the development of power.

In the drawings, Figure 1 is a sectional elevation of apparatus embodying my invention, taken on line *y y* of Fig. 2. Fig. 2 is a sectional plan view of same, taken on line *z z* of Fig. 1. Fig. 3 is a sectional plan view of same on line *x x* of Fig. 1, and Fig. 4 is a sectional elevation showing my improved motor apparatus arranged above a furnace.

A is the outer shell, and may be elliptical or of any other shape desired, and is provided with an inner shell V of less height, forming an annular passage-way C between them. Located within the chamber B is a tubular passage-way D, arranged vertically, opening into the upper part of the chamber A and communicating with the annular passage-way C.

E is a conical diaphragm connecting the top of the chamber B with the top of the tubular passage-way D, and forming a horizontal shoulder *b*, over which the water flows in its passage to the tube D, as indicated on Fig. 1.

J is a cover to the outer chamber A, to prevent the escape of the steam, and thus reduce the loss of water, due to evaporation, to a minimum. Arranged at the lower part of the tube D, and at the juncture of said tube with the lower part of the chamber A, is a turbine water-wheel F, having a vertical shaft G, supported by a step-bearing H at the bottom and at the top by a bearing *h*.

The upper end of the shaft G extends beyond the cover J of the chamber A, and is provided with a power-transmitting pulley I. The outer annular passage-way C is much larger in area than the inner passage-way D, so as to provide sufficient overflow to insure the passage-way D remaining full of water. It will now be seen by placing the chamber A upon furnace K, as shown in Fig. 4, the water will circulate, as indicated by the arrows in Fig. 1. This will cause the turbine to rotate rapidly, and its speed is commensurate with the temperature of the furnace. The rapid rotation imparted by the wheel to the pulley I will enable sufficient power to be produced to operate small machines, such as sewing machines, fans, &c.

It is evident that the particular shape of the apparatus here shown is immaterial, and is only given to illustrate a good practical method of carrying out my invention, and the details may be considerably modified without in the least departing from the spirit of my invention.

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

1. The combination of a stationary water-circulating chamber having two passage-ways communicating only at top and bottom, with a turbine or equivalent water-wheel located within one of the passage-ways, and a power-shaft extending from said turbine or water-wheel to a point exterior to the water within the circulating-chamber.

2. A stationary water-circulating chamber having two passage-ways communicating only

at top and bottom, of which one is an annular passage-way and encircles the other or inner passage-way, in combination with a turbine or equivalent water-wheel located within the inner of the passage-ways, and a power-shaft extending from said turbine or water-wheel to a point exterior to the water within the circulating-chamber.

3. A water-circulating chamber having two fixed or stationary passage-ways communicating with each other at top and bottom, in combination with a turbine or equivalent water-wheel located within one of the passage-ways, a power-shaft driven by said turbine or water-wheel to a point above the water in the circulating-chamber, and a furnace under said chamber.

4. The combination of a chamber having a large outer passage-way, a small inner passage-way having communication at both top and bottom, and a power water-wheel or turbine arranged in the inner passage-way.

5. The combination of a chamber having a large outer passage-way, a small inner passage-way having communication at both top and bottom, and a power water-wheel or turbine arranged in the inner passage-way and at the bottom thereof.

6. The combination of a water-circulating chamber having two passage-ways communicating at top and bottom, with a turbine or equivalent water-wheel located within one of the passage-ways and close to the bottom of the chamber, and a power-shaft extending from said turbine or water-wheel.

7. The combination of a chamber having a large outer passage-way, a small inner passage-way having communication at both top and bottom, and a power water-wheel or turbine arranged in the inner passage-way, and a furnace under said chamber.

In testimony of which invention I have hereunto set my hand.

JOHN H. LORIMER.

Witnesses:
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S. T. YERKES.