

(No Model.)

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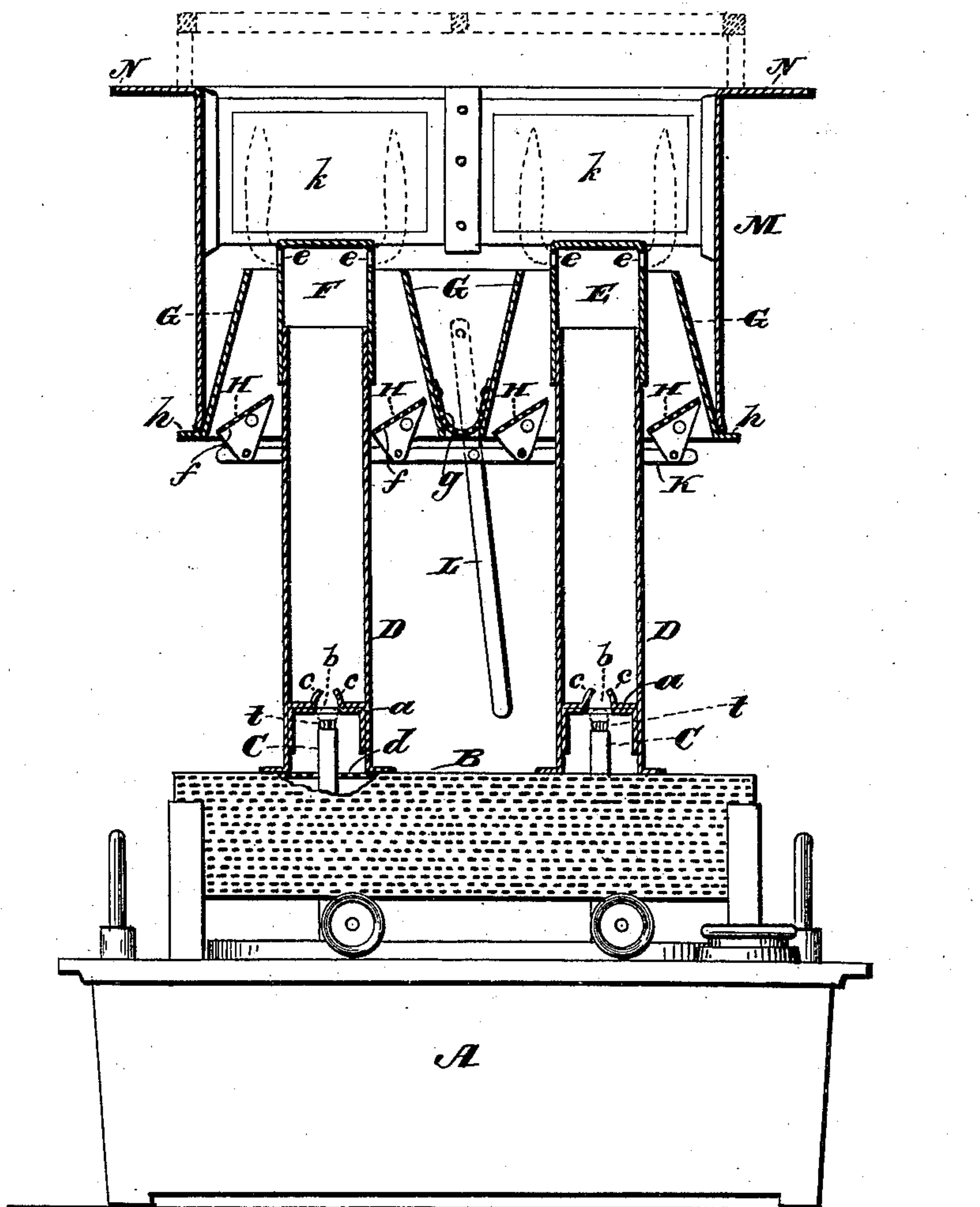
W. W. BATCHELDER.

OIL HEATER FOR STOVES.

No. 358,185.

Patented Feb. 22, 1887.

Fig 1.



Witnesses.
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By
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

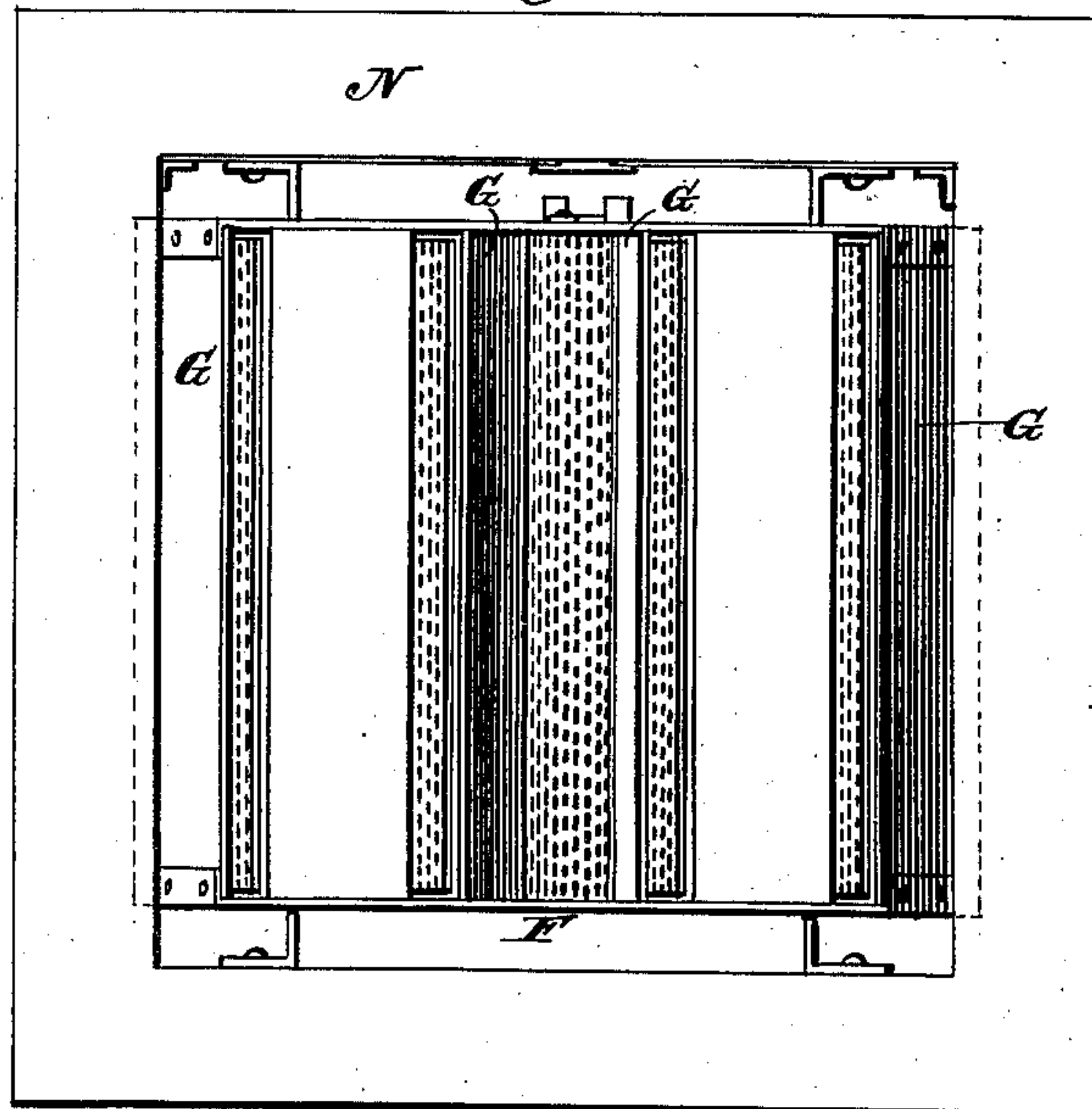


Fig. 3.

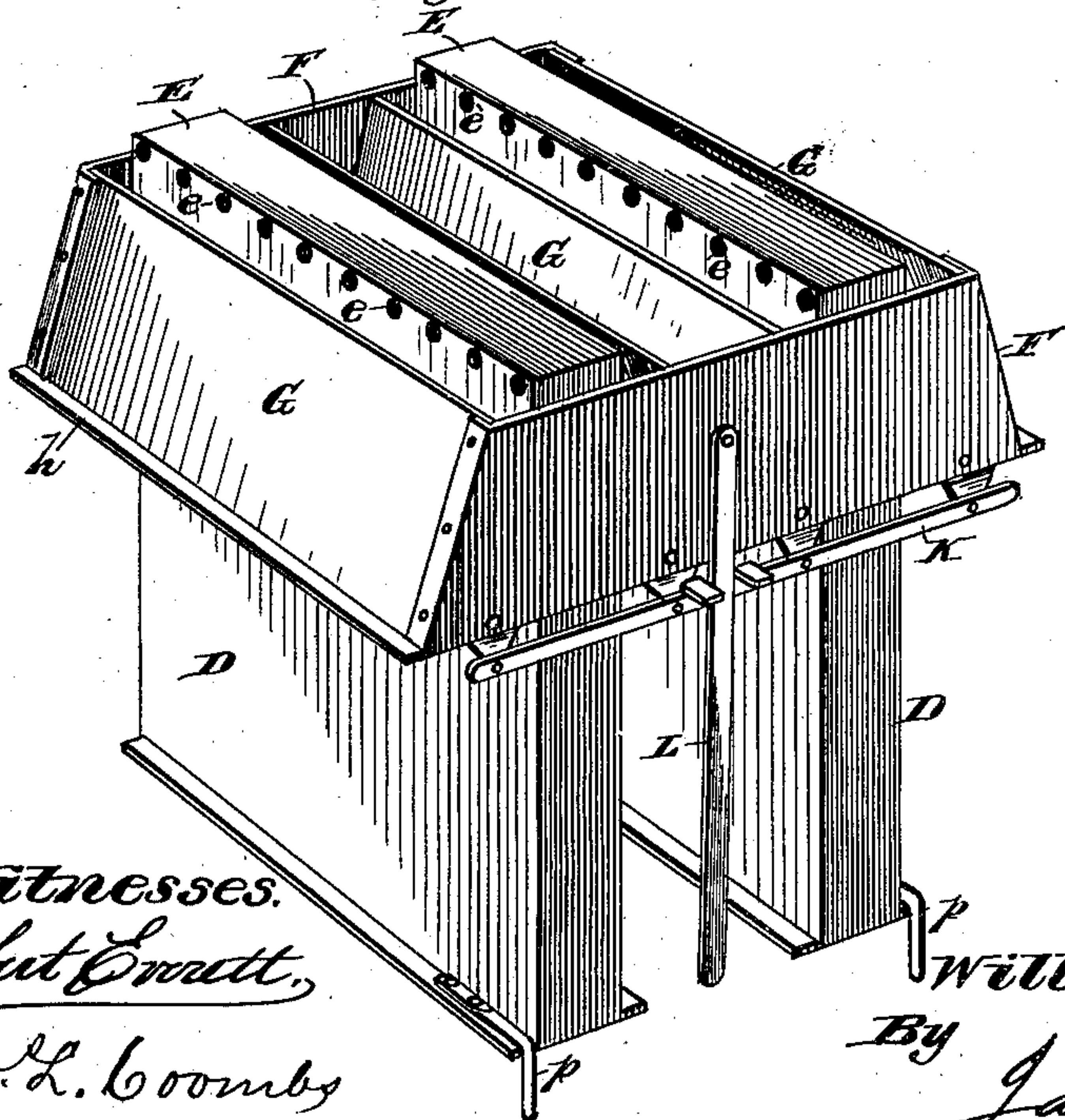
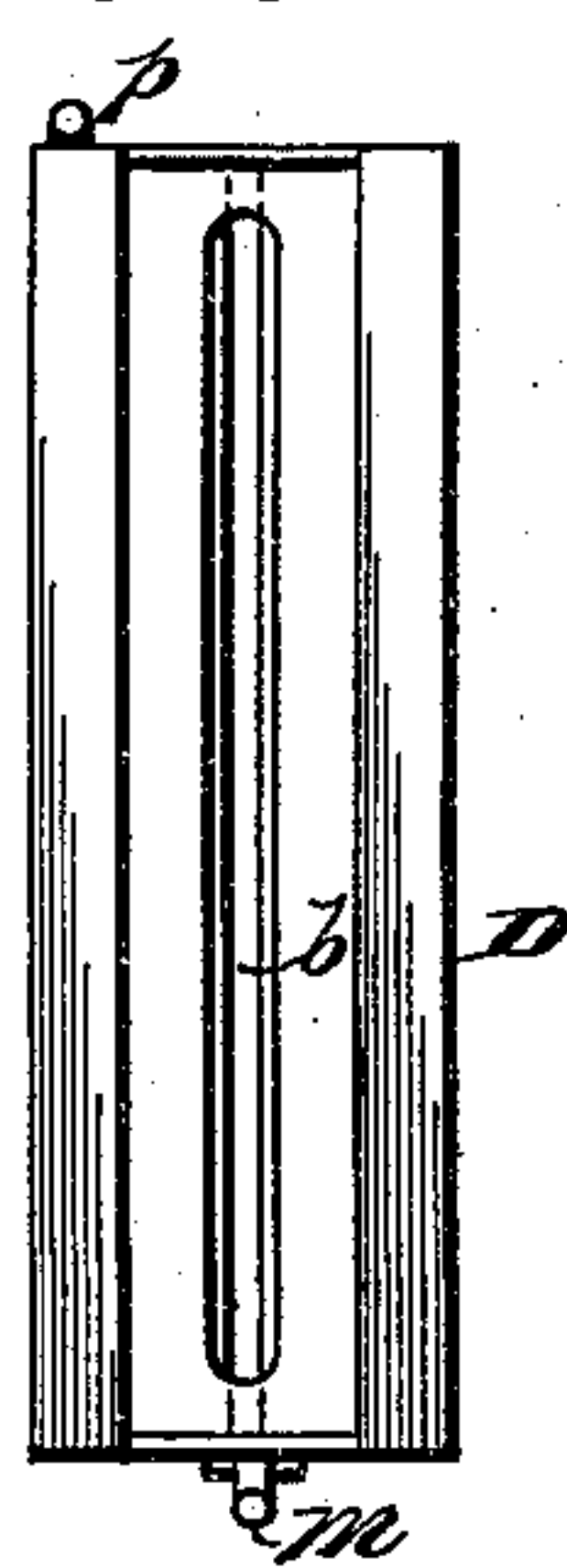


Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM W. BATCHELDER, OF NEW YORK, N. Y.

OIL-HEATER FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 358,185, dated February 22, 1887.

Application filed January 11, 1886. Serial No. 183,243. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. BATCHELDER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Oil-Heaters for Stoves, of which the following is a specification.

The object of my invention is to provide an oil-vapor burner which can be applied or attached to all ordinary oil-founts having a flat wick-tube now in use in oil-stoves without the necessity of any material change in their construction, and which will afford a much larger heating-surface than is possible with ordinary oil-stove burners where the flame burns directly on the wick and is confined to the size of the wick.

My invention comprises an oil-heating apparatus having an ordinary oil-chamber and wick-tube, both of which are located in the base of the stove or heating apparatus, a vapor-chamber surrounding each wick-tube, a multiple-jet burner at the upper end of said vapor-chamber, and means for conveying and regulating a supply of heated air to the jet-burners to correspond with the consumption of vapor generated by the wicks.

The invention consists in the construction and combination of parts, as hereinafter more fully set forth.

In the annexed drawings, Figure 1 is a vertical section of an oil-heating apparatus embodying my invention. Fig. 2 is a top view of the same. Fig. 3 is a perspective view of the vapor-chambers, jet-burners, and deflecting-rim. Fig. 4 is a plan view of the lower end of one of the vapor-chambers.

The oil-reservoir A is of any ordinary or well-known construction, and is provided above with an air-chamber, B, through which the wick-tubes C pass as usual. These wick-tubes are provided with the ordinary wick-raising devices, by which the protrusion of the wicks is regulated as required. Any desirable number of wick-tubes can be employed.

Resting on the upper surface of the air-chamber B and surrounding the wick-tubes C are the vapor-generating chambers D, which have an oblong rectangular form corresponding to that of the wick-tubes, but of much greater width. In the lower end of each vapor-chamber D is a diaphragm, a, having a

longitudinal opening, b, provided with upward and inward curved lips c c, forming a contracted passage for vapor. The top and walls of the air-chamber are perforated, as shown, for the admission of air, and the perforations d in the top are distributed within and at the base of the vapor-chamber to afford access of air to the ignited wicks.

Attached to the upper end of each vapor-chamber D, or forming a part thereof, is an oblong burner, E, having a series of burner-jets, e, on each side, at or near the upper edge. The several burners are connected by a flanged rim consisting of the vertical metallic strips F, extending transversely across the ends of said burners; and the inclined longitudinal strips or plates G at the sides thereof. This rim, with its inclined plates G, constitutes an air receiving and deflecting chamber or space for concentrating an air-supply around the multiple-jet burners.

It will be observed that the plates G are inclined upward and inward toward the jets e on each side of the burner, and terminate in a line a little below and exterior to said jets. By this means the heated air, rising along the outer surface of the heated vapor-chambers D, will be conducted to the burner-jets e and be uniformly distributed around the several jets of flame, and in the central space above the burners, between the opposite lines of jets, and the jets of the flame are thus caused to burn in a vertical direction, each forming a distinct heat-center beneath or within the object or space to be heated.

For the purpose of controlling the air-supply of the burner-jets e, valves or dampers H are pivoted within the space or chamber on each side of the burners E, between said burners and the air-deflecting plates G, as shown in Fig. 1. These valves H are connected by a transverse rod, K, having a handle or lever, L, by which the several valves can be simultaneously actuated to control the inlet of air as required. The valves or dampers H may consist of solid metallic plates; but are preferably perforated, as shown at f, so that when the valves are closed the air-supply will not be entirely cut off, but will be delivered to the jets of flame in finely-divided currents. When perforated valves are used, as above, the air-supply is thus more equally distributed, whether the valves are wholly or partly closed.

In the space between the two oppositely-inclined plates G of each adjacent pair of burners is placed a stationary perforated plate, g, for distributing the air admitted between the
5 burners.

At the lower end of each outer inclined plate, G, is a flange, h, on which is supported a metallic open top casing, M, that forms a heat-chamber around the jets of flame, and prevents the access of cold-air currents and consequent flickering of the flames and loss of heat. This casing M may also serve to conduct the heated air to an oven or other desired point, and, if desired, it may at the top have
10 a surrounding flange, N, to support a grating of any suitable construction, as shown in dotted lines, on which a cooking utensil or other object can be placed. In the front of the casing M are mica-glazed openings k k,
15 through which the jet-flames can be inspected, and which will enable them to throw light into the apartment without interfering with their heating function.

The lower end of each vapor-chamber, D, is
25 flanged to rest firmly on the top of the air-chamber B, and at the rear lower end of each chamber D is a pin, m, that fits loosely in a suitable opening in the top of the air-chamber. These pins m serve as pivots on which
30 the vapor-chambers and attached heating-burners are fulcrumed in turning said parts back to gain access to the wick-tubes C. To the forward lower end of each vapor-chamber D is attached a fastening or guide pin, p, that
35 also enters a corresponding opening in the top of the air-chamber A, and holds the heating attachments in proper position with relation to the wick-tubes.

In using the apparatus the vapor-chambers
40 D are raised at their front ends and turned back on the pivot-pins m to give access to the wicks t t, which are then lighted and turned down sufficiently to prevent smoking or deposition of soot. The vapor-chambers D D
45 are then replaced in proper position to surround the ignited wicks. The wicks t t should remain turned down until the vapor-chambers have become sufficiently heated to prevent condensation of vapor therein, after
50 which the wicks are raised, and the vapor generated thereby may be lighted at the multiple burner-jets e immediately. By means of the air-receiving rim or chamber surrounding the heating-burners E the vapor-flames
55 at the jet-openings e are afforded a concentrated supply of heated air, which rises along the heated surfaces of the vapor-chambers. The valves or dampers H, located in the spaces between the inclined plates G, and burners E,
60 enable the supply of heated air to be regulated to correspond with the quantity of vapor consumed, and the inwardly-inclined deflecting-plates G conduct this air-supply toward and in intimate contact with the flames,
65 so as to accomplish the greatest possible economy of material with the best effect in

producing the quantity or degree of heat required.

The diaphragm a, with its contracted opening or passage b and curved lips c, serves as
70 a guard to prevent the entrance of flame from the wick t into the vapor-chamber and obstructs the volume of said wick-flame sufficiently to barely maintain a small blue vapor-generating flame.

What I claim as my invention is—

1. In an oil-heating apparatus, the combination of a wick-tube, a vapor-chamber located above said wick-tube, a multiple-jet burner at the upper end of the vapor-chamber, and valves to regulate the supply of air to the burner, substantially as described.
80

2. In an oil-heating apparatus, the combination of a wick-tube, a vapor-chamber provided with a diaphragm having a contracted
85 opening located above said wick-tube, a multiple-jet burner at the upper end of said vapor-chamber, and perforated valves to regulate the supply of air to the burner, substantially as described.

3. In an oil-heating apparatus, the combination of a wick-tube, a vapor-chamber provided with a diaphragm having a contracted opening formed with upwardly and inwardly curved lips, said opening being located directly above the wick-tube, a multiple-jet
90 burner at the upper end of the vapor-chamber, and air-supply-regulating valves, substantially as described.

4. In an oil-heating apparatus, the combination of a wick-tube, a vapor-chamber located above said wick-tube, a burner having multiple side jets, and perforated valves for regulating the supply of air to the burner, substantially as described.
100

5. In an oil-heating apparatus, the combination of a wick-tube, a vapor-chamber located above said wick-tube, a multiple-jet burner at the upper end of the vapor-chamber, and an air-receiving rim and deflector surrounding said burner, and valves for regulating the supply of air to the burner, substantially as described.
105

6. In an oil-heating apparatus, the combination of a wick-tube, a vapor-chamber located above said wick-tube, a multiple-jet burner at the upper end of the vapor-chamber, and an air-receiving deflector inclined upward and inward toward the burner-jets, and provided with valves, substantially as described.
115

7. In an oil-heating apparatus, the combination of a wick-tube, a vapor-chamber above said wick-tube, a multiple-jet burner, an air-receiving rim and deflector, and valves located
120 in the space between said deflector and burner, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

Witnesses: W. W. BATCHELDER.
JAMES L. NORRIS,
J. A. RUTHERFORD.