F. GATES.

Oil-Stove.

No. 167,236. Patented Aug. 31, 1875.

Fig. 1

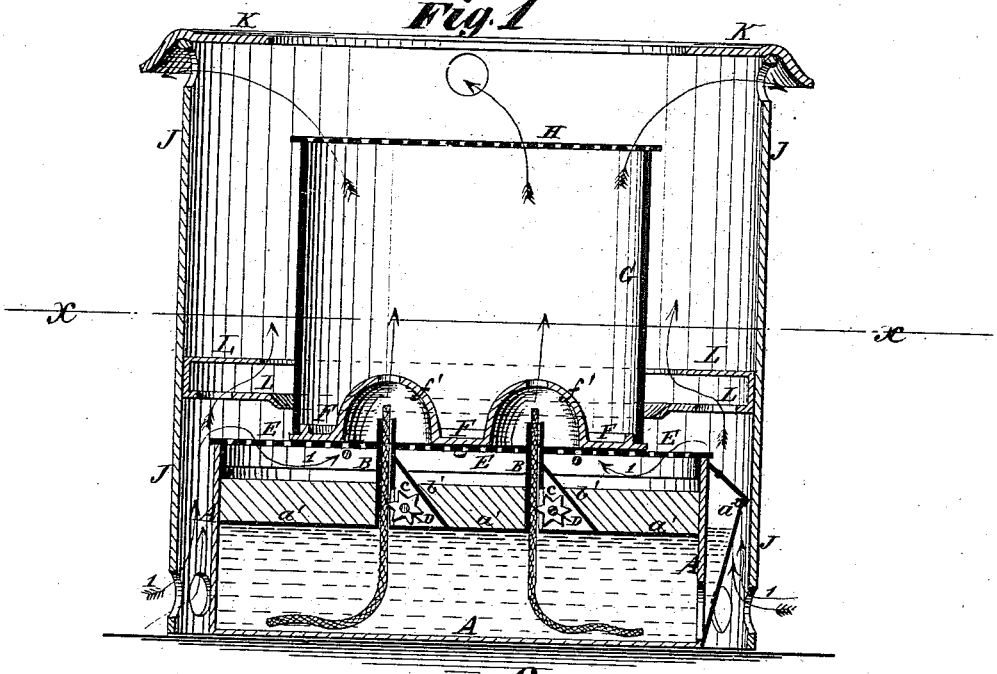
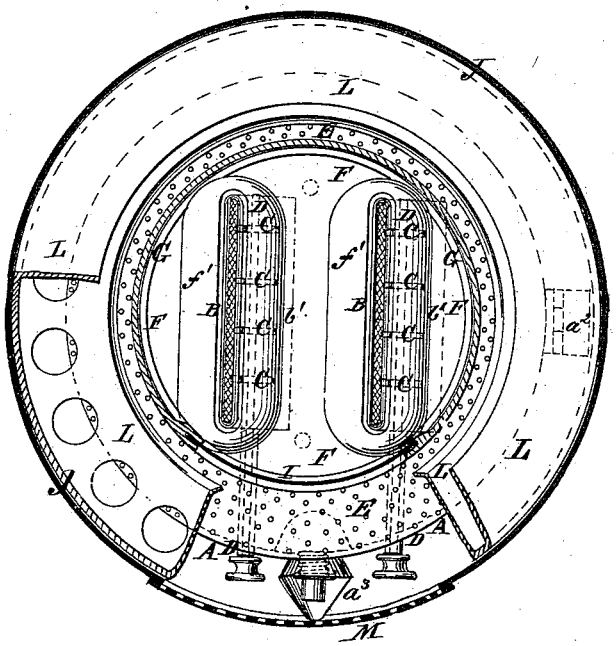


Fig. 2



WITNESSES:

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FREDERICK GATES, OF FRANKFORT, NEW YORK.

IMPROVEMENT IN OIL-STOVES.

Specification forming part of Letters Patent No. **167,236**, dated August 31, 1875; application filed July 31, 1875.

CASE A.

To all whom it may concern:

Be it known that I, FREDERICK GATES, of Frankfort, in the county of Herkimer and State of New York, have invented a new and useful Improvement in Oil-Stove, of which the following is a specification:

Figure 1 is a vertical section of my improved oil-stove. Fig. 2 is a horizontal section of the same, taken through the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved oil-stove, which shall be so constructed as to prevent the oil from becoming heated, and at the same time to utilize the greatest amount of the heat generated by the combustion for cooking purposes, and which shall be simple in construction, and shall afford ready access to all its parts when desired.

The invention will first be described in connection with drawing, and then pointed out in the claims.

A is the body of the lamp, which is divided by a horizontal partition, a^1, into two compartments, the lower one of which is close, and is the oil-chamber, into which the oil is poured through the spout a^2, which is closed with a cap or other suitable means. B are the wick-tubes, which are made wide and thin. The upper compartment of the lamp A is open at the top, and is partially filled with plaster-of-paris, saturated and kept saturated with water. The surplus water may be drawn off, when desired, through a spout, a^3, the discharge-orifice being closed with a screw-plug or other suitable means. At the base of the wick-tubes B are formed small chambers b^1, to receive the toothed wheels C and their shafts D, by which the wicks are raised and lowered. The ends of the shafts D pass out through the wall of the lamp A, and are provided with knobs or milled wheels for convenience in operating them. To the top of the lamp A is secured a plate, E, of perforated sheet metal, the middle part of which is supported by cross-wires, and through slots in which project the upper ends of the wick-tubes B. Upon the middle part of the perforated plate E is laid a metallic plate, F, which is kept in place by two or more points formed upon its lower side, and which pass through holes in the plate E. Upon the plate F are formed elongated cones, f', into the cavities of which the upper ends of the wick-tubes B project, and in the tops of which, directly over the tops of the said wick-tubes, are formed slots, through which the flames rise. G is a metallic chimney, the lower edge of which fits into a rabbet or shoulder in the outer edge of the cone-plate F, so that the said chimney may be conveniently detached when desired. The top of the chimney G is covered with a plate, H, of perforated sheet metal. In the side of the chimney G is formed an opening, in which is inserted a plate, I, of mica, so that the state of the flames can be inspected without removing the said chimney G. The entire lamp is inclosed with a case, J, open at both ends, and upon the upper edge of which is placed a plate, K, in the middle part of which is formed a hole to receive the vessel in which the cooking is to be done. In the lower part of the case J is formed a ring of openings to admit air to support combustion, which air passes up through the space between the lamp A and the said case J, passes down through the outer part of the perforated plate E, and passes up through the middle part of the said plate E into the cavities of the cones f' of the plate F, where it comes in contact with the flames. The course of the air is indicated by arrows 1. Into the case J, just above the top of the lamp A, is fitted a hollow ring, L, open upon its inner edge. The upper plate of the ring L is made a little narrower than the lower plate. In the lower plate of the ring L are formed a number of holes, and the inner edge of said lower plate is flared downward. By this construction the ring L acts as a deflector to cause the air to pass down through the outer part of the plate E, while another portion of the air will pass through the holes in the lower plate of the ring L, and will be projected against, and will rise around, the chimney G, and will thus become heated, and will carry up the heat to assist in the cooking. In the upper part of the case G are formed a number of holes, to allow the air to escape, and thus keep up the

circulation. In the side of the case J is formed an opening, which is closed with a door, M, made of perforated sheet metal. The case J should be so arranged that the door M of the said case may be directly opposite the mica plate I of the chimney G.

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

1. The combination of a layer of plaster-of-paris and water with the horizontal partition a^1 of the lamp A, to protect the oil-chamber of said lamp from the heat, substantially as herein shown and described.

2. The combination of the case J, provided with the inlet-holes in its lower part, the outlet-holes in its upper part, and the door M, with the lamp A, chimney G, and top plate K, substantially as herein shown and described.

3. The combination of the hollow perforated ring L with the case J, the lamp A, the perforated disk E, and the metallic chimney G, substantially as herein shown and described.

FREDERICK GATES.

Witnesses:

JAMES T. GRAHAM,

T. B. MOSHER.