

E. G. ADAMS.
OIL BURNING STOVE.

No. 171,641.

Patented Jan. 4, 1876.

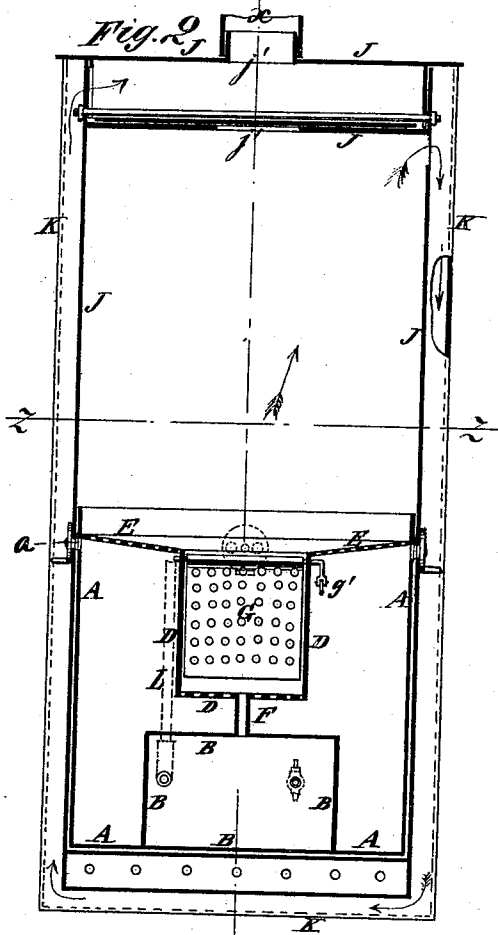
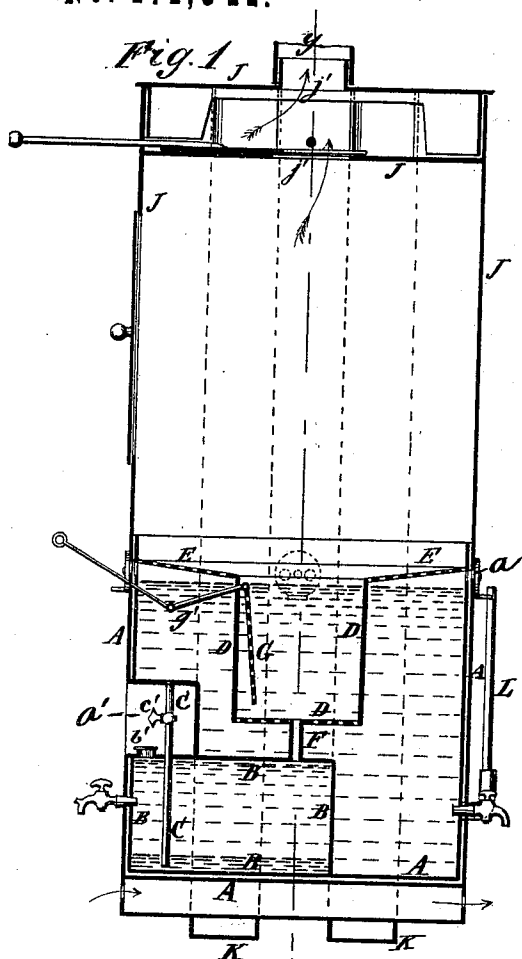


Fig. 1

Fig. 2

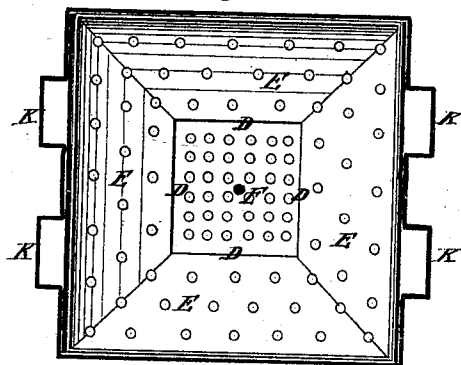
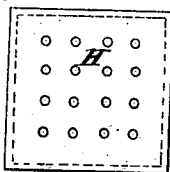


Fig. 3

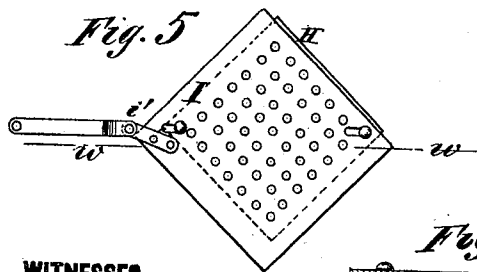


Fig. 4

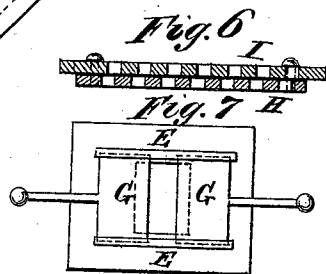


Fig. 5

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UNITED STATES PATENT OFFICE.

EDWIN G. ADAMS, OF COHOES, NEW YORK.

IMPROVEMENT IN OIL-BURNING STOVES.

Specification forming part of Letters Patent No. **171,641**, dated January 4, 1876; application filed November 27, 1875.

To all whom it may concern:

Be it known that I, EDWIN G. ADAMS, of Cohoes, in the county of Albany and State of New York, have invented a new and useful Improvement in Oil-Burning Stoves, of which the following is a specification:

Figure 1 is a vertical longitudinal section of my improved stove, taken through the line *x x*, Fig. 2. Fig. 2 is a vertical cross-section of the same, taken through the line *y y*, Fig. 1. Fig. 3 is a horizontal section of the same, taken through the line *z z*, Fig. 2. Fig. 4 is a top view of a wick-plate. Fig. 5 is a top view of a wick-plate provided with a damper. Fig. 6 is a cross-section of the same, taken through the line *w w*, Fig. 4. Fig. 7 is a top view of the fire-box, showing sliding dampers.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved stove for burning crude petroleum and other inflammable oils, which shall be simple in construction, convenient and safe in use, and of great heating capacity.

The invention consists in combining a bottom-perforated chamber, placed in water, and a subjacent oil-chamber, the two connected so that the oil can be gradually forced to the surface of water in upper chamber by pressure; secondly, in the particular means by which I force the oil to the place where it is burned, consisting of an open-ended pipe, one end of which is situated in the water-space above oil-chamber, and the other opening below the oil; thirdly, in hinging a perforated plate to top of burner-chamber, and providing it with a jointed arm extending to the outside, so that the flame may be extinguished by raising the perforated plate.

A is the lower part of the case, which is made water-tight, and with a water-tight recess, *a'*, in its forward part. B is a water-tight compartment or vessel, placed in the lower part of the case A. C is a pipe open at both ends, leading down through the recess *a'*, and almost to the bottom of the vessel B. In the part of the pipe C that passes through the recess *a'* is a stop-cock, *c'*, to enable the said pipe C to be opened and closed at will. D is the fire-chamber, which is made with close sides and a perforated bottom, and is

placed in the center of the upper part of the case A. The fire-chamber D may be supported from the sides or bottom of the case A, and its upper edge may be connected with the case A by a perforated plate, E, which inclines upward slightly, as shown in Figs. 1 and 2. From the bottom of the fire-chamber D a pipe, F, open at both ends, leads into the upper part of the vessel B.

In using the stove a little water, enough to cover the lower end of the pipe C, is poured into the vessel B. Oil is then poured into the vessel B, to fill or nearly fill it. The case A is then filled with water, which rises through the holes in the bottom of the fire-chamber D.

With this construction, by opening the stop-cock *c'* the water will flow down through the pipe C into the oil-vessel B, and will force the oil up through the pipe F into the fire-chamber D. The oil will then rise through the water in the fire-chamber D, and is burned as it floats upon the surface of the said water. G is a perforated damper, of such a size as to fit into the fire-chamber D, and which is hinged at one edge to the top edge of one side of said fire-chamber D. The damper G is provided with a jointed handle, *g*, passing out through the side of the case A.

By this construction, as the damper G is raised into a horizontal position the water and oil will flow through its perforations, and, as it comes to the surface of said water and oil, the fire will be extinguished. If desired, sliding dampers G may be used, as shown in Fig. 7, and in this case they need not be perforated. An advantage of the sliding dampers is that they may be adjusted to leave any desired amount of fire-surface.

Air to support combustion enters through holes *a* in the case A, which holes are provided with dampers. Combustion is also supported and the fire is intensified by the steam that rises from the water in the case A.

If desired, the mouth of the fire-chamber D may be covered with a plate, H, having numerous holes through it to receive wicks for burning the oil, instead of burning it upon the surface of the water. The perforated plate H may be provided with another perforated plate, I, placed upon it, and having a slight sliding movement, so that it may be moved to com-

press the wicks and thus put out the fire. The damper I is moved by a handle, *i'*, attached to it, and which passes out through the case A. The oil-vessel B may be placed within the case A, as hereinbefore described, or it may be placed beneath the stove or in the cellar, the pipes C F being extended accordingly. J is the upper part of the case, which may be made of any desired size.

The products of combustion may be allowed to pass off directly to the chimney through the openings *j'*, or they may be made to pass around the stove through the flues K, before escaping to the chimney, their course being controlled by dampers. The amount of oil consumed, and, consequently, the intensity of the fire, may be regulated by adjusting the stop-cock *c'*. Oil may be poured into the vessel B through a pipe, *b'*, which must be tightly closed. The stove may be provided with a gage, L, to show the height at which the water stands in the case A, which gage may also serve as a funnel for pouring water into the case A, or the case A may be provided with an inlet-pipe and an overflow-pipe, so that it may be always kept full without frequent attention.

The case A and vessel B should also be provided with stop-cocks for drawing off the water when desired.

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

1. The combination, with case A, of bottom-perforated chamber D, suspended in water, and a subjacent oil-chamber, B, the two chambers connected by a pipe, F, shown and described, whereby the oil may be forced by any suitable pressure out of its chamber and up to the surface of water in burner-chamber.

2. The combination, with pipe-connected chambers B D, of the tube C, open at both ends, one in the water-space of case, and the other below the oil, as and for the purpose set forth.

3. The perforated plate G, hinged to top of chamber D, and provided with a jointed handle, *g*, extending to the outside, as and for the purpose specified.

EDWIN G. ADAMS.

Witnesses:

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