J. E. FLEMING & A. HAMILTON.

Oil-Stove.

No. 212,305. Patented Feb. 18, 1879.

Fig. 1.

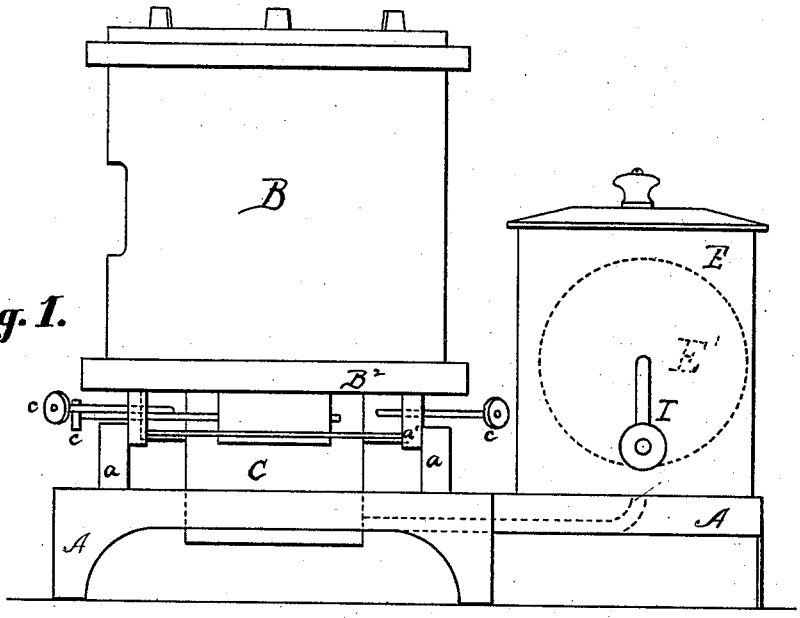
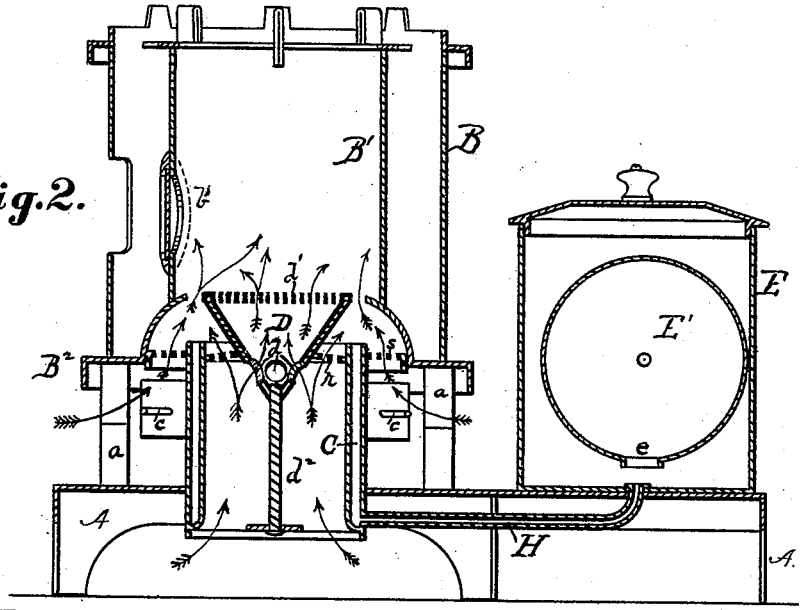


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN E. FLEMING AND ANDREW HAMILTON, OF HYDE PARK, ILLINOIS.

IMPROVEMENT IN OIL-STOVES.

Specification forming part of Letters Patent No. **212,305**, dated February 18, 1879; application filed June 25, 1878.

To all whom it may concern:

Be it known that we, JOHN EUGENE FLEMING and ANDREW HAMILTON, of Hyde Park, in the county of Cook and State of Illinois, have invented certain Improvements in Oil-Stoves, of which the following is a specification:

In the accompanying drawings, forming a part of this specification, will be found at Figure 1 a side elevation of our improved oil-stove, and at Fig. 2 a central vertical section thereof, like letters indicating like parts in both the figures.

In said drawings, A is the stand supporting the stove. B is the outside drum, and B^1 the inside drum surrounding the burner, both of which drums are supported upon a base-plate, B^2, resting upon standards *a* at the four corners of the same, and, if desired, hinged to two of them, as at *a'*. The standards upon the side opposite the hinged ones may be attached either to base-plate or to the stand, or partly to each, as shown in Fig. 2.

A glass window, *b*, may be put in the inner drum, and an opening made in the outer one at a corresponding point, as is usual in this class of stoves.

We employ the Argand burner in our stove, as we believe it to be best adapted to the purpose. The annular wick-tube or receptacle will be found at C. It is supported in the stand and projects through the same.

c c c are the wick-raisers. D is an inverted hollow cone, inserted centrally in the space within the annular wick-holder, with about half its vertical dimensions above and half below the level of the wick-top, and with its largest diameter coincident with the inner line of the wick. The apex is perforated, as at *d*, for the admission of air to the interior of the cone.

By this construction the cone is caused to serve a double function—viz., to deflect the air passing up between it and the wick-tube to the flame, and to conduct other currents of air through its interior to a point above the wick-tube, thereby assisting greatly in feeding the flame and securing perfect combustion. In other words, it divides the air entering through the hollow of the wick-tube into two parts, one of which reaches the point of combustion between the wick-tube and the widest part of the cone, and the other assists in the combustion taking place above the cone.

In an ordinary-sized oil-stove with a burner, say, four inches in diameter, we find the cone to work well if its flaring edge is placed about one-half inch above the wick-tube. That portion of the cone below the wick-tube level may be constructed very differently, if desired—as, for instance, it may be formed with a tube extending to the bottom of the stove or otherwise contrived, it only being necessary to provide an entrance for the air to the interior of the cone.

The top of the cone we prefer to cover with a perforated plate, d^1, the better to divide and disperse the air. Between the cone and the interior of the wick-tube is an annular perforated plate, *r*, and outside the wick-tube is a similar plate, *s*, covering the opening between the exterior of the tube and the interior of the base-plate B^2. Extending downwardly from the cone to braces across the bottom of the opening through the wick-tube is a supporting-stem, d^2.

This device may, however, be constructed in many different ways, or dispensed with by the adoption of other means of fastening.

The interior of the base-plate B^2 is rounded upward, so that it also acts as a deflector upon the outside of the flame to direct the outward air to the point of combustion, and forms the counterpart as such deflector of the interior cone opposite to which it is placed, and terminating upon the same plane therewith. There is thus formed around the entire circle of flame a double-converging deflector, one side acting to turn the air to the interior and the other to the exterior of the flame.

E is a rectangular tank, mounted upon the stand A back of the stove. It contains a horizontal revolving cylinder, E', provided with a valveless opening, *e*, in its periphery, and pivoted in the ends of the tank to one of the pivots, a handle, I, being attached, so that the cylinder may be rotated from the outside.

The tank has a removable top. The cylinder is the oil-receptacle, and when it is filled it is rotated a half-revolution from the position shown in Fig. 2, so that the opening *e* will be

uppermost. After filling it is returned to the position illustrated. The oil finds its way from the bottom of tank E through the tube H to the wick-holder, as clearly appears from the drawings.

We find it unnecessary to employ a valve at the opening *e*, as the oil itself, when it has risen so as to cover the opening and prevent the entrance of air thereat, checks the outflow and automatically regulates the supply of oil.

The arrows in Fig. 2 indicate clearly the course of the different air-supplies.

We are aware that cone and equivalent deflectors have been used in the center of Argand burners; also, that two concentric cones have been employed to form an annular channel guiding the air to the same point as the ordinary central deflector, the cones being placed one above the other, and the lower one being perforated to admit the air to the space between them. Such we do not claim.

Our invention, however, is capable of use with the concentric cones by providing the upper one with air-openings as well as the lower one, as is obvious.

We are also aware that the Letters Patent to Silas Constant, No. 10,443, show an air-tube passing through the wick-tube and the central deflector, and surmounted by a deflecting-head, the under surface of which is perforated to permit the access of the air to the interior of the flame. This construction we also disclaim.

We claim—

1. The combination of the drum of the stove, acting as a chimney, and the Argand burner, said burner being provided with a single central deflector having a vertical passage-way through its interior, which is open centrally at top and bottom, whereby it is adapted to receive an air-supply from below, and to deliver it to the flame above, substantially as set forth.

2. The combination of the drum of the stove, acting as a chimney, and the Argand burner, said burner being provided with a centrally-placed inverted cone, adapted to receive an air-supply through its bottom, and to deliver the same through and above its top to the flame, substantially as set forth.

3. The oil-stove composed of the stand A, drums B B^1, base-plate B^2, circular wick-tube C, wick-raisers *c*, cone D, having openings *d*, tank E, horizontal rotating cylinder E′, having the opening *e*, and the tube H, all the parts being constructed and arranged substantially as set forth.

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Witnesses:
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