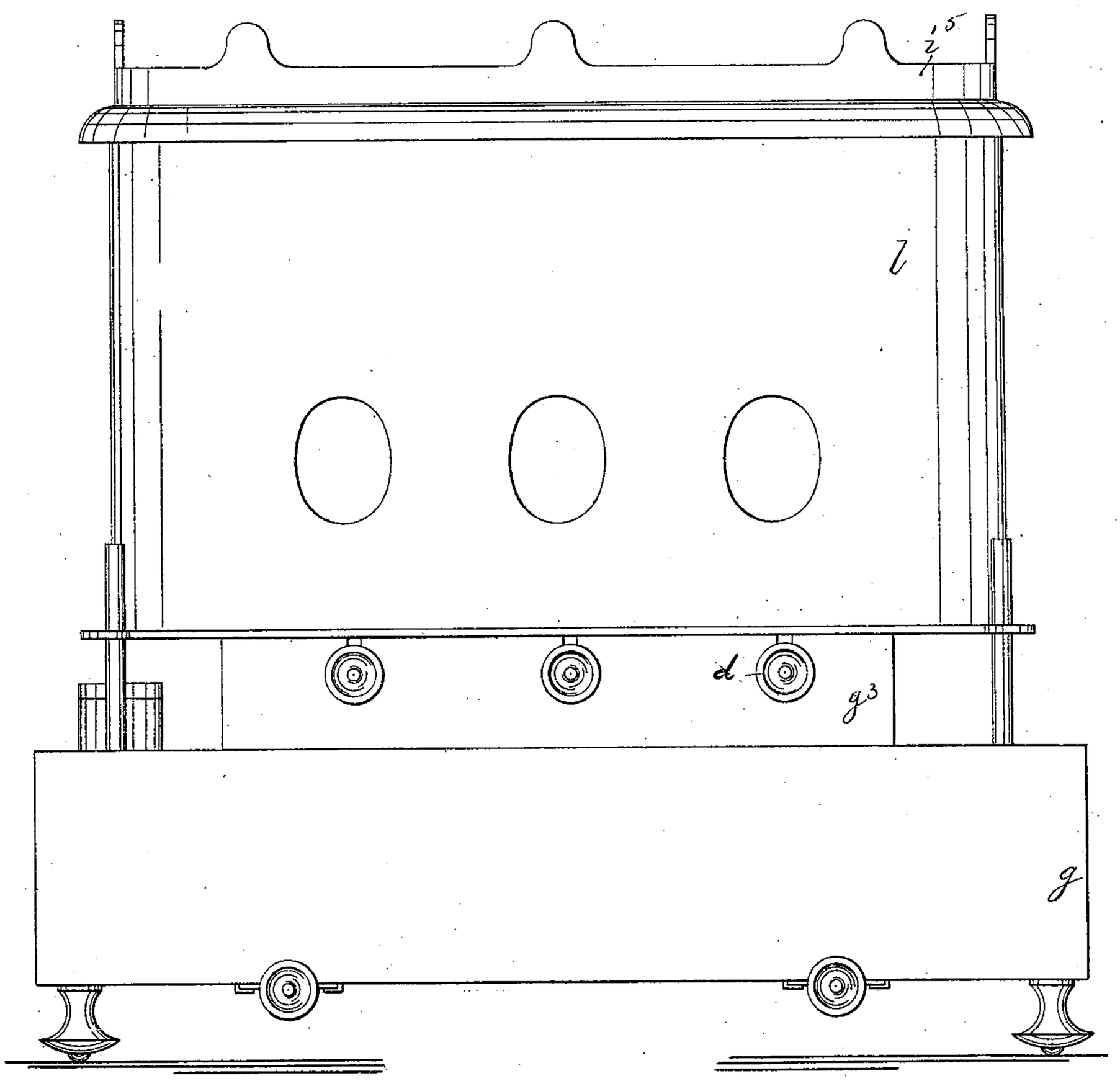
(No Model.) 2 Sheets—Sheet 1.

# A. C. MACALLISTER.

## Oil Stove.

No. 233,865. Patented Nov. 2, 1880.

Fig: 1.




WITNESSES.

V. D. Dearborn,

Arthur Reynolds.

INVENTOR.

Alma C. Macallister.

By Crosby & Gregory Attys.

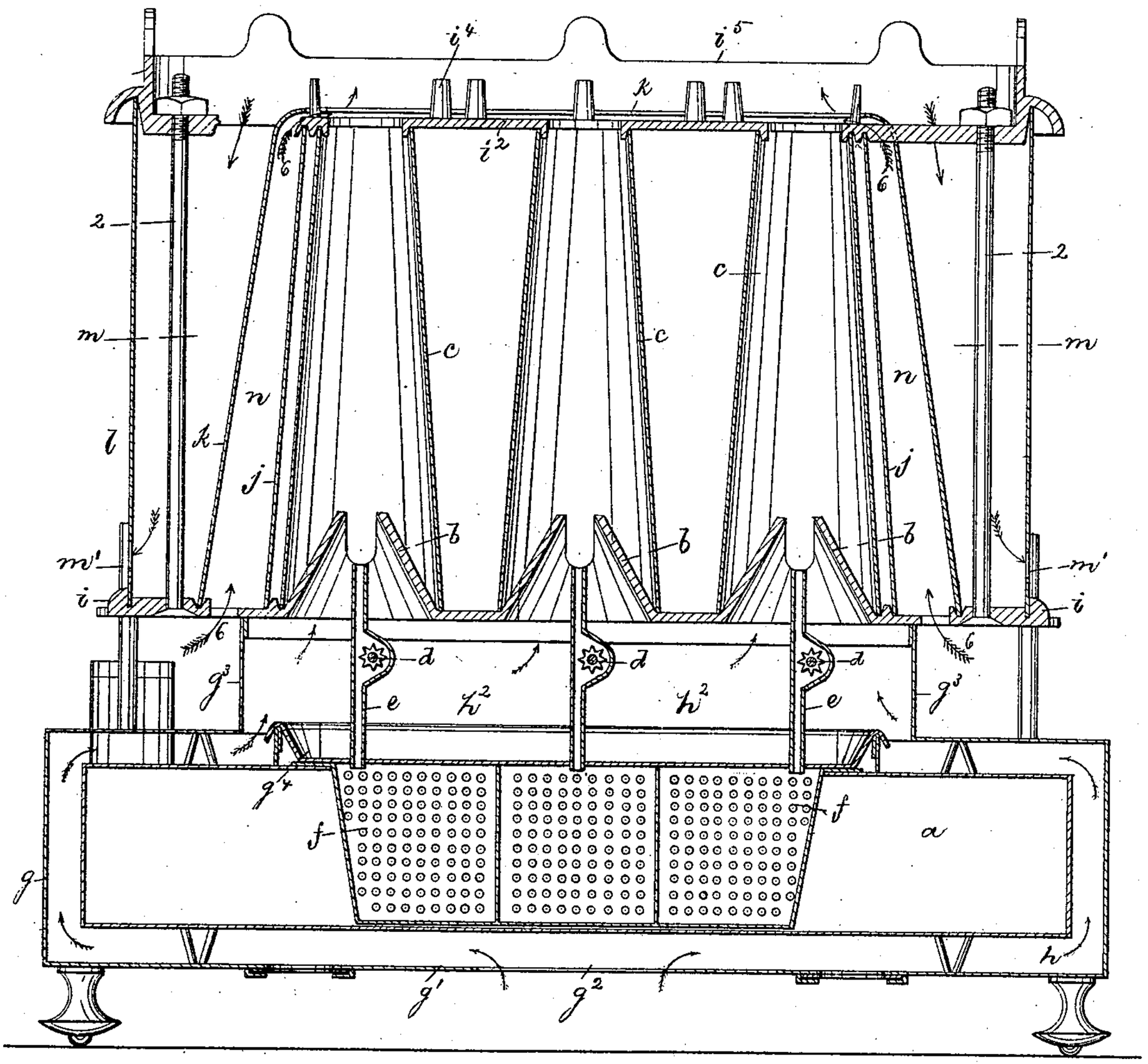
(No Model.)

2 Sheets—Sheet 2.

# A. C. MACALLISTER.
## Oil Stove.

**No. 233,865.** **Patented Nov. 2, 1880.**

Fig: 2.




WITNESSES—
V. D. Dearborn.
Arthur Reynolds.

INVENTOR—
Alma C. Macallister
by Crosby Gregory Attys.

# UNITED STATES PATENT OFFICE.

ALMA C. MACALLISTER, OF BROOKLINE, MASSACHUSETTS.

## OIL-STOVE.

SPECIFICATION forming part of Letters Patent No. 233,865, dated November 2, 1880.

Application filed August 9, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, ALMA C. MACALLISTER, of Brookline, county of Norfolk, State of Massachusetts, have invented an Improvement in an Oil-Stove, of which the following description, in connection with the accompanying drawings, is a specification.

This my improvement in oil-stoves is herein shown embodied in a stove having several burners.

The chief object of my invention is to so construct the stove, substantially as hereinafter described, that the flame of the burner or burners will be steady and not liable to be put out or extinguished by reason of unsteady or too strong currents of air, as is the case with the majority of hydrocarbon-burners when exposed to strong drafts or used out-of-doors, where the air-currents are liable to sudden fluctuations.

I have so constructed my stove that all the air to support combustion of the oil is delivered to the burners just at the point of combustion and within or just at the burner-cap, the said air being admitted through the bottom of the stove, and not at all at its sides, as is usual, the air so admitted always rising and passing steadily upward into the said cap at the point of combustion. I have also added to the stove a draft-shield, which surrounds the usual inclosing-case, in which are located the chimneys being used, the said draft-shield being contracted toward its upper end and curved inwardly, so as to deflect and discharge, near the top of the inclosing-case in which the chimneys are placed, air taken from the atmosphere near the base of the inclosing-case, the said air so discharged being heated during its ascent between the inclosing-case and draft-shield. The space between the inclosing-case and draft-shield is tapered or contracted toward the tops of the chimneys, and as the air in the said space is heated it expands and has its velocity increased, causing the heated air to be discharged near the top of the inclosing-case, and being heated, it has a tendency to rise, and stimulates or urges upward the draft in the chimneys, but has no tendency whatever to blow down into the chimneys. The draft-shield is, in turn, inclosed by a wall or shell, which forms the outside jacket of the stove. The space left between this jacket and the draft-shield is made tapering toward the bottom of the apparatus, and the cold air forced therein, or caught at the top of the stove, is discharged outward into the atmosphere through apertures made at the base of the jacket.

Figure 1 represents, in front elevation, a hydrocarbon or petroleum burning stove containing my improvements; Fig. 2, a longitudinal vertical section of the same.

The oil-tank *a*, caps *b*, chimneys *c*, wick-lifters *d* and tubes *e*, and perforated cages *f*, into which the lower ends of the wicks extend, are and may be all as usual. This oil-tank is placed within a casing, *g*, which, instead of being provided with holes, as usual, is imperforate, thus making a close case, except at its bottom, $g'$, where, at its center, it is provided with an air-receiving opening, $g^2$, there being left between the casing *g* and the oil-tank an air-space, *h*, up through which the air admitted at $g^2$ passes into the open lower ends of the caps *b*, the air so admitted circulating freely about the tank in the said space *h* and rising into the space or chamber $h^2$, in which are located the burner-tubes *e*. This chamber $h^2$ is also inclosed by an unbroken tight wall or shell, $g^3$, so that it is impossible for any side drafts or horizontal currents of air or wind from the outside to enter the said chamber $h^2$ or blow across the burners. In all other stoves heretofore known to me this case $g^3$ has been of perforated metal or wire-gauze. The cover for the tank is lettered $g^4$, and supports the tubes in the regular way.

The caps *b* are herein shown as forming part of one cast-metal plate, *i*, it having suitable ledges to enable the lower ends of the burner-inclosing case *j*, draft-shield *k*, and jacket *l* to be held thereon, and this plate *i* is suitably bolted to the upper plate, $i^2$, by bolts 2. This upper plate, $i^2$, has, also, suitable ledges to cooperate with the upper ends of *j*, *k*, and *l*, as shown in Fig. 2, and is also provided with the usual projections $i^4$, by which to support the kettles.

The top shield, $i^5$, aids in preventing the injurious effects of horizontal drafts or currents

of air; but should such currents of air enter or pass over the shield the air will be caught in the air-space *m*, and will be deflected downward and out through the openings *m'*, as denoted by the arrows in the said space.

To stimulate the draft in the chimneys I have added outside the inclosing-case *j*, and between it and the jacket *l*, a draft-shield, *k*, shaped as shown, making between it and the inclosing-case a tapering space, *n*, decreasing in size toward the tops of the chimneys, and air from the outside entering therein, as designated by the arrows 6, will be discharged therefrom under the inwardly-turned lip at the top of the draft-shield, and, being heated and having its velocity increased as it rises through the said space *n*, will, at the tops of the chimneys, act to stimulate and draw upward the contents of the burners, air-space *h*, and chamber $h^2$, the said open space and chambers acting as a continuation of the chimney to prolong it quite to the floor or ground upon which the stove rests.

Some of the features of this my stove are applicable to lamps for giving light, and I shall show them so applied in another application to be filed for United States Patent.

I claim—

1. In an oil-stove, the tank, casing $g\,g^3$, open only at its bottom at $g^2$, the burner, chimney, and wick-tube, and inclosing-case, combined with the draft-shield and air-space between the said draft-shield and inclosing-case, it being made tapering to operate all, substantially as described.

2. In an oil-stove, the tank, casing $g\,g^3$, burner, chimney, wick-tube, and inclosing-case, combined with the draft-shield and jacket, the draft-shield being located as described, to form tapering spaces or passages *n m* between it and the inclosing-case and jacket, to operate substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALMA C. MACALLISTER.

Witnesses:

RUTH A. WEST,

PAUL WEST.