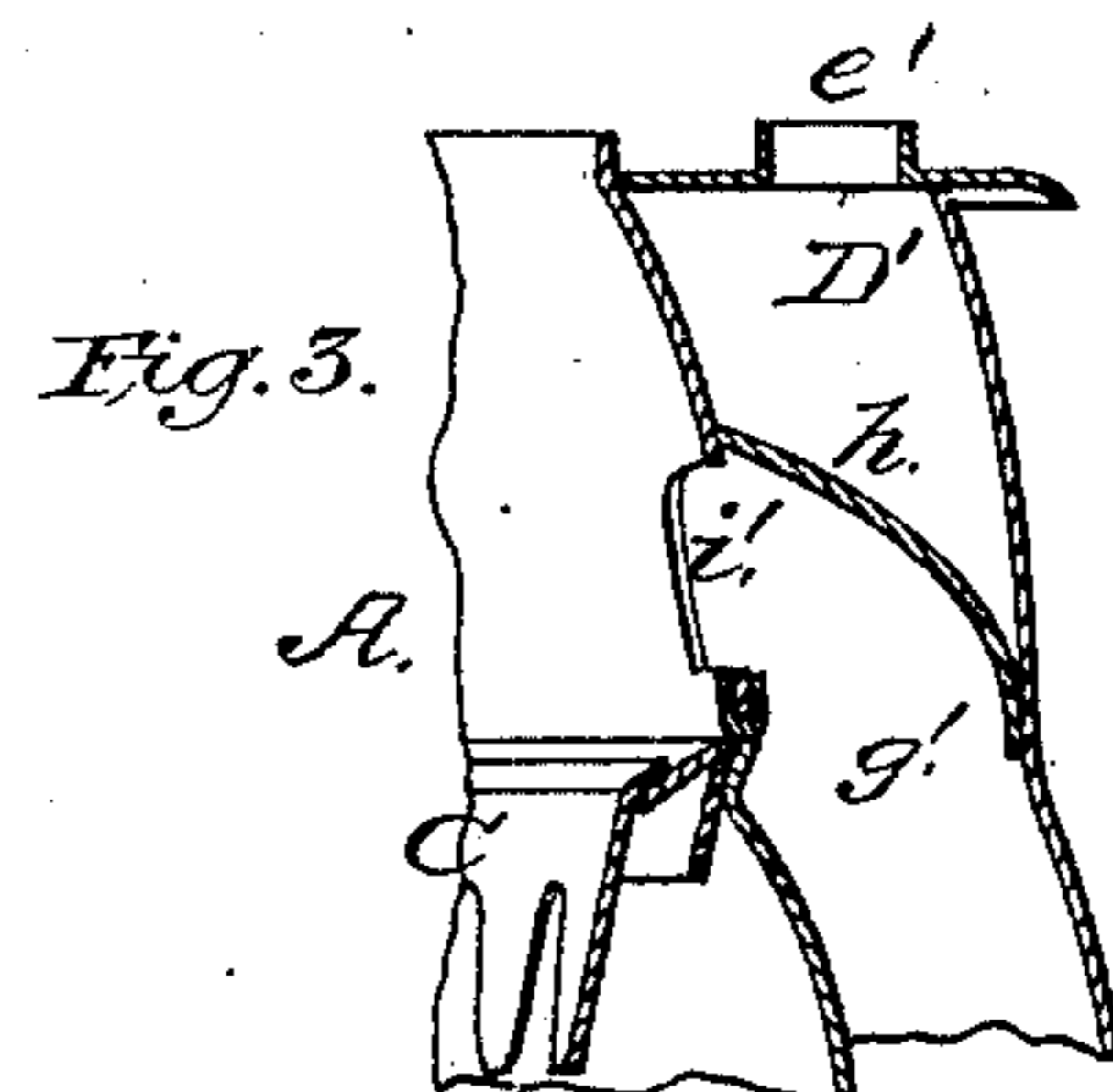
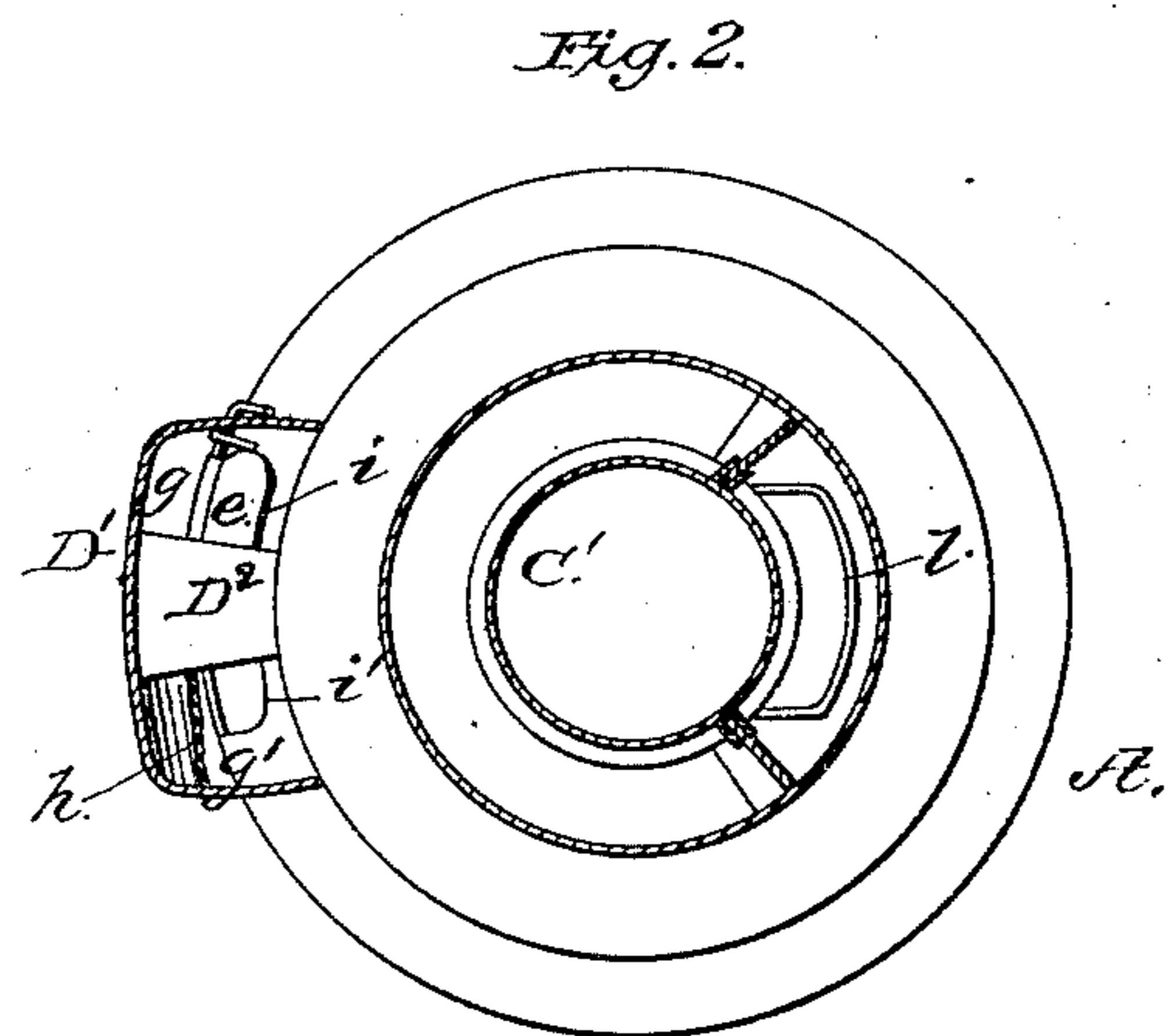
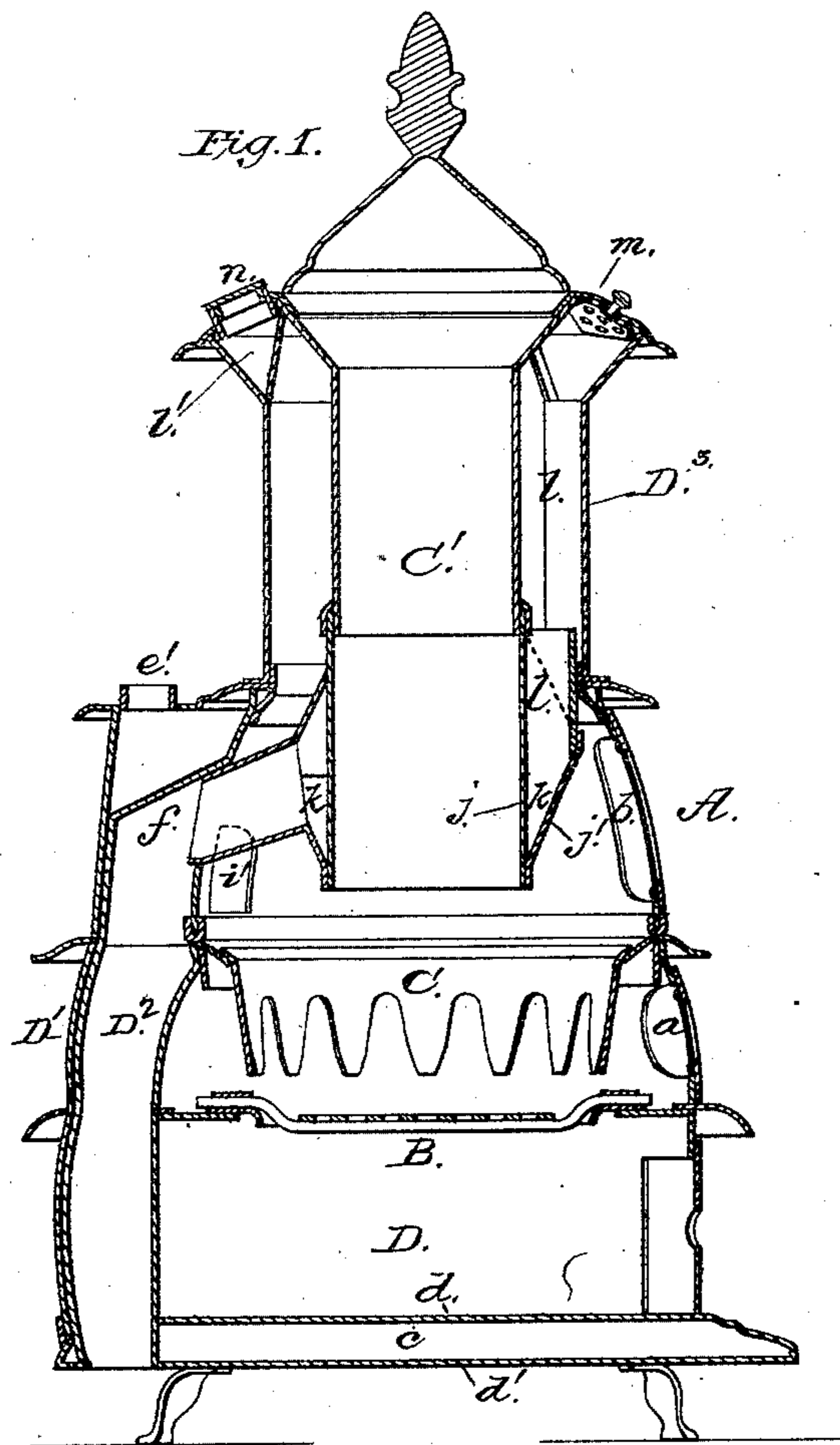


W. J. McSHERRY.
Air Heater for Self-Feeding Stoves.

No. 232,289.

Patented Sept. 14, 1880.



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Fig. 1.

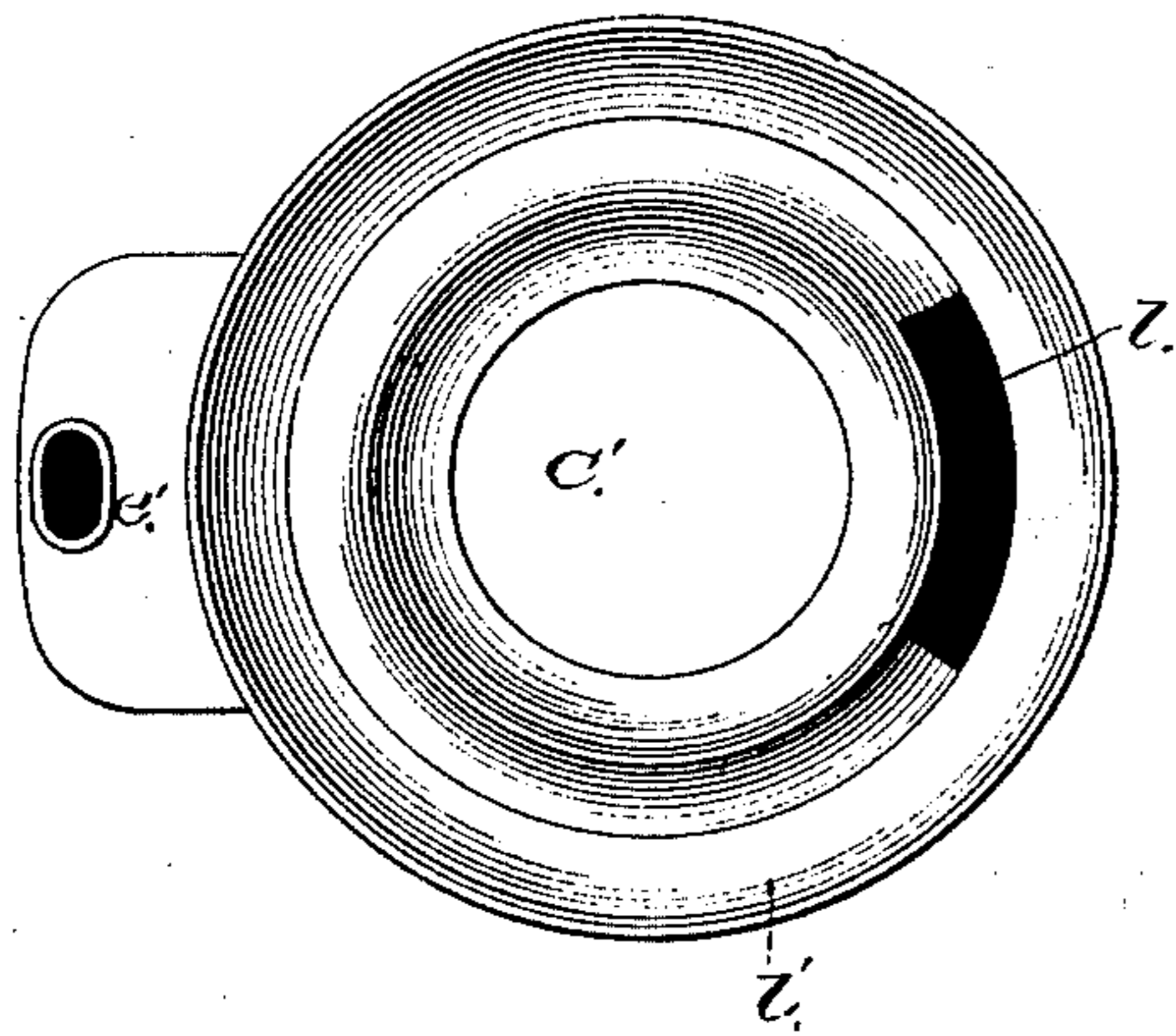


Fig. 5.

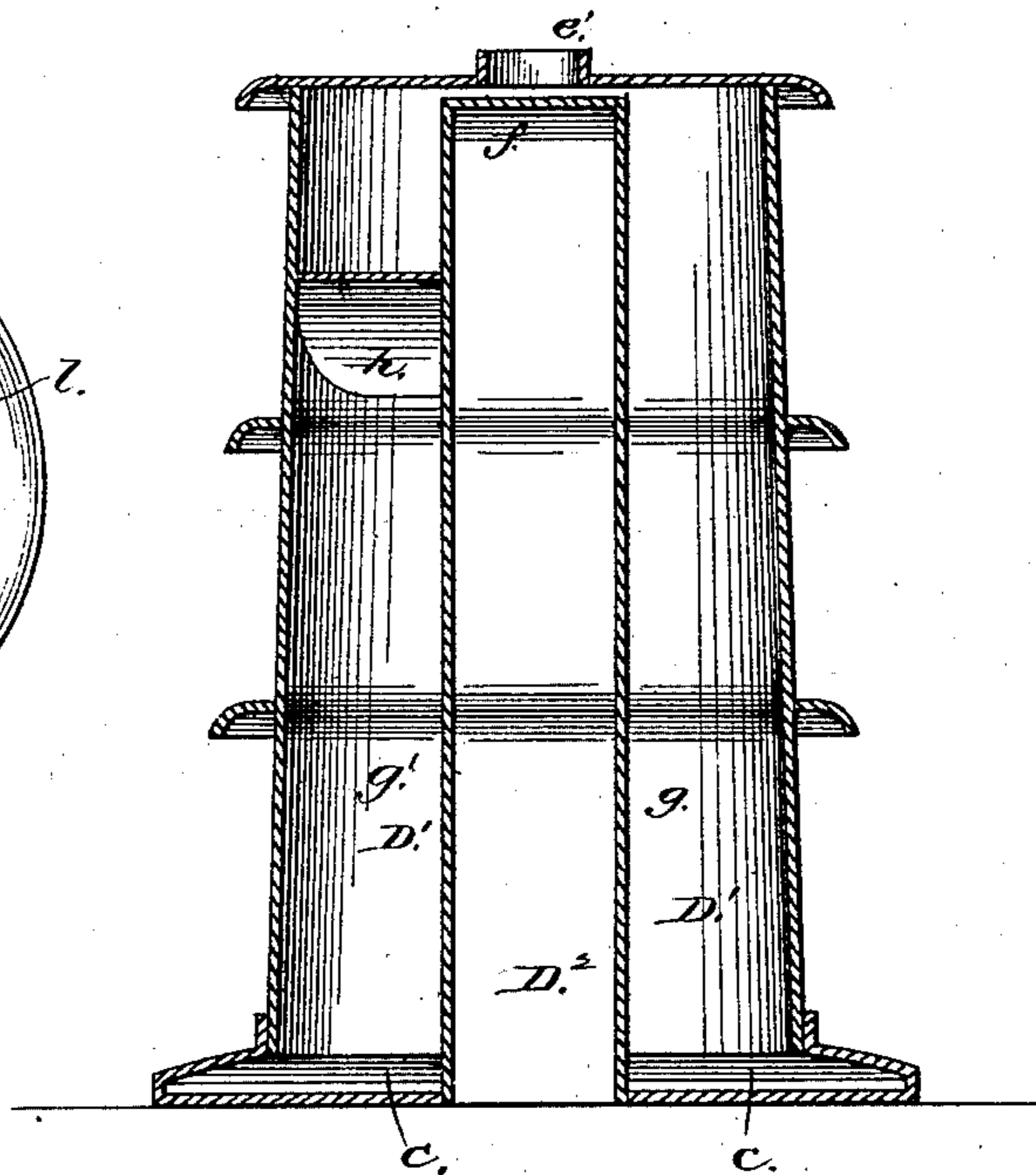
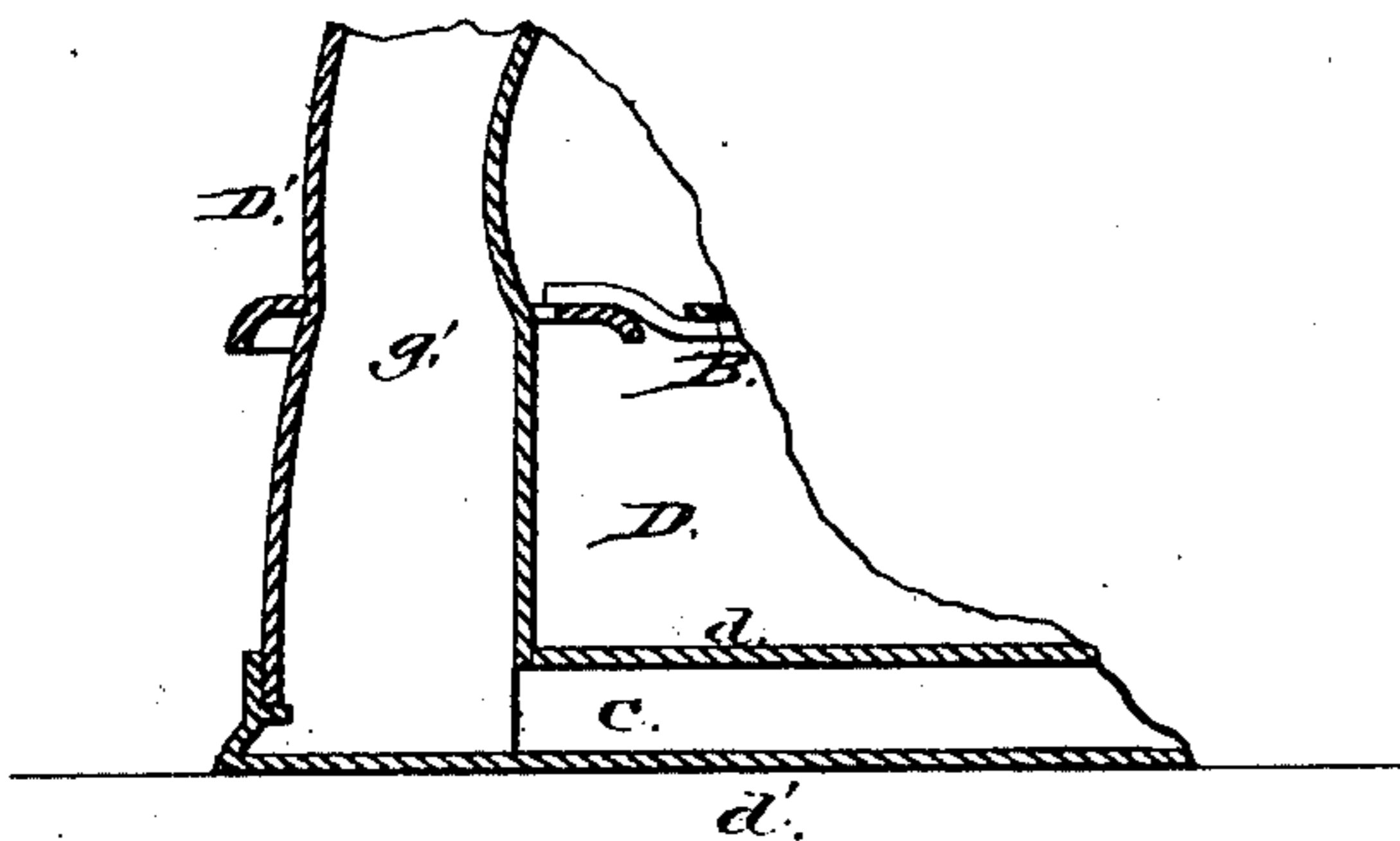


Fig. 6.



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WASHINGTON J. McSHERRY, OF GREENVILLE, OHIO.

AIR-HEATER FOR SELF-FEEDING STOVES.

SPECIFICATION forming part of Letters Patent No. 232,289, dated September 14, 1880.

Application filed February 27, 1880.

To all whom it may concern:

Be it known that I, WASHINGTON J. McSHERRY, of Greenville, in the county of Darke and State of Ohio, have invented a new and valuable Improvement in Air-Heaters for Self-Feeding Stoves; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a vertical central section of my improved stove. Fig. 2 is a horizontal section of the same, and Fig. 3 is a detail section. Fig. 4 is a top view, and Figs. 5 and 6 are details.

This invention has relation to improvements in base-burning or air stoves; and it consists in the construction and novel arrangement of parts, as hereinafter shown, described, and set forth in the claim.

In the annexed drawings, the letter A designates the body of the stove, provided with the usual grate B, an annular basket, C, and cylindrical hopper C'. On a level with the basket the stove-body is provided with hinged mica doors *a*, and above it with like, but larger, doors *b*. Below the grate is the ash-pan D, having a double bottom, with an air-space, *c*, between its top and bottom walls, *d d'*, into which the descending smoke-flue D' opens. This flue is outside of the body of the stove, and terminates above at the junction of the body thereof with the cylindrical upper extension, D², surrounding the magazine. It communicates with the stove by means of two openings, *i i'*, one of which is permanently open, and the other wholly or partly closed by a valve, *e*, and has at its upper end a collar, *e'*, for the attachment of a pipe leading into the chimney-flue.

Within the flue D' is a second flue, D², extending downward through the bottom of the ash-pan and upward between the openings *i i'* through the stove-wall by a bend, *f*. This flue divides flue D' into two vertical ducts, *g g'*, one of which communicates with the valved opening *i* and the other with the opening *i'*, the latter being provided above said opening *i'* with a dividing-wall or diaphragm, *h*, that

prevents the products of combustion from passing directly into the chimney-flue through the collar *e'*. When the valve of opening *i* is closed, either in whole or in part, such products pass down the ducts *g* wholly or partly and enter the space between the bottoms of the ash-pan, when they pass up duct *g* and readily pass out into the chimney-flue.

It is thus apparent that the flue D' acts as a jacket to the flue D², the latter being surrounded, except at the rear, when the stove is in use, by the heated products of combustion.

The magazine or hopper is made in two sections usually, the one forming a continuation of the other and reaching down nearly to the top of the basket or grate C, and the lower section is constructed with double walls *j j'*, between which is a hot-air chamber, *k*, of annular form. The flue D' opens into chamber *k* and conducts fresh air from the outside of the stove into it, which, being greatly heated by the direct impact of the heat from the grate, escapes up through a vertical flue, *l*, between the magazine and extension, into an annular distributing-flue, *l'*, at the top of the stove, whence it passes out either through a register, *m*, into the stove-room, or through pipes attached to a collar, *n*, into other apartments.

It will be observed that flues *l* and *l'* are jacketed by the magazine and extension, the former wholly and the latter in part, and that the air heated in the chamber *k* can lose but little of its caloric before being discharged into the room.

The air-supply pipe D² is partially surrounded with the products of combustion in flue D'. Consequently the chill is taken off the air conducted to chamber *k* before entering the same. The lower part of the outer wall of this chamber is in the form of an inverted conical frustum, thus presenting increased heating-surface to the fire and deflecting the heat outward against the upper mica doors, *b*, and causing an increased radiation of heat from that portion of the stove into the room.

In practice, the stove will be constructed in sections, and the sections of the various flues connected by slip-joints or other practical means.

I am aware that the lower end of the maga-

zine of a heater has been made hollow, and that hot-air chambers and flues have been arranged around the magazine and partly around the body of the stove, and I do not claim such devices, broadly.

What I claim as new, and desire to secure by Letters Patent, is—

In a heating-stove, the combination, with the annular closed chamber *k*, formed around the lower end of the magazine-extension, the annular distributing-flue *l'* at the top of the stove, and the vertical flue *l*, connecting said parts, as described, of the lateral-smoke-flues *g g'* at the back of the lower portion of the

stove and connecting with the bottom air-space, *c*, said flues having the inlets *i i'*, and provided, respectively, with the valve *e* and the diaphragm *h*, and the middle cold-air flue, *D²*, between said lateral flues, and communicating with the terminal magazine-flue *k* by an interior passage, *f*, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

WASHINGTON JEFFERSON McSHERRY.

Witnesses:

JAMES M. LANSDOWNE,

JAMES T. KING.