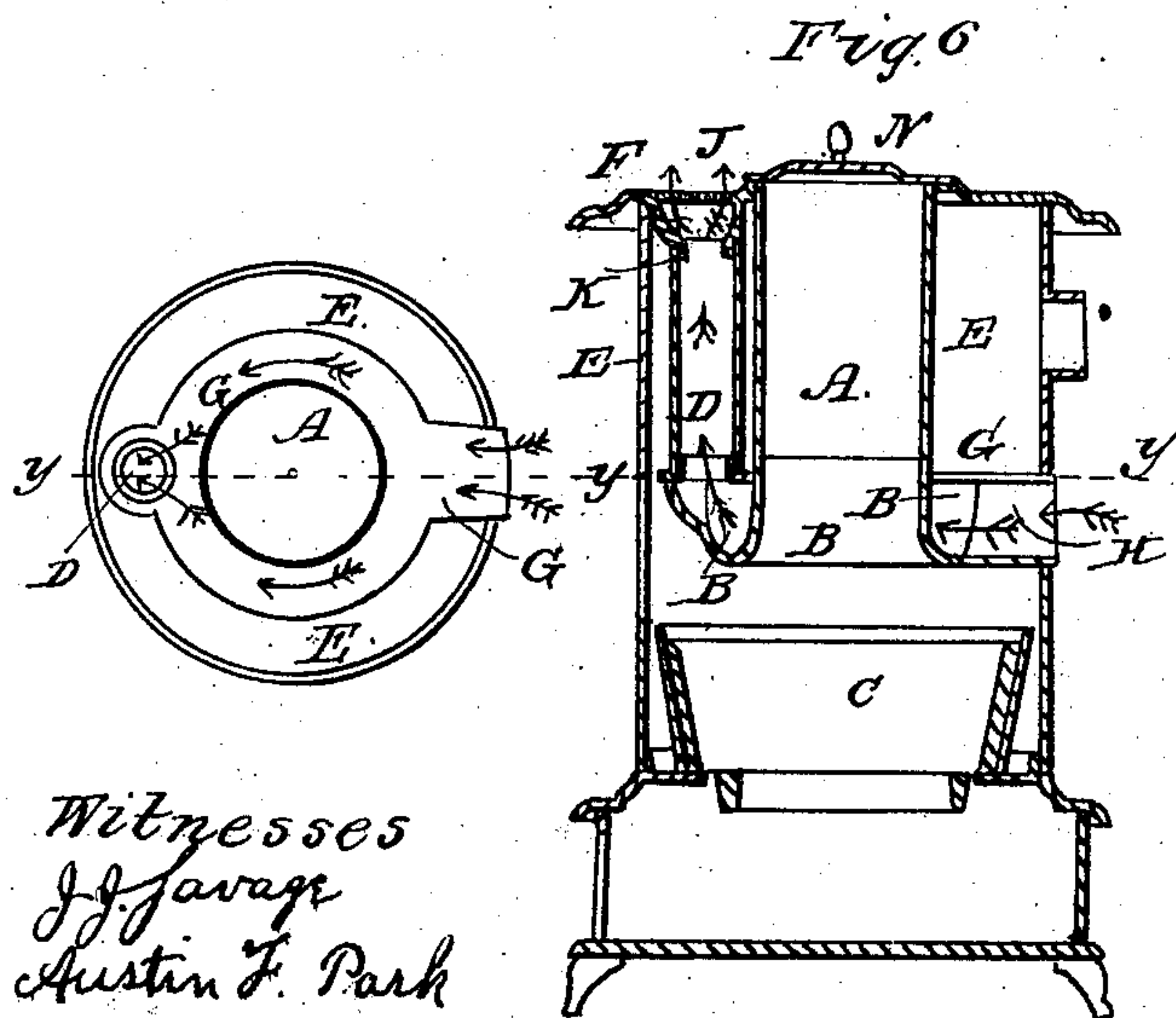
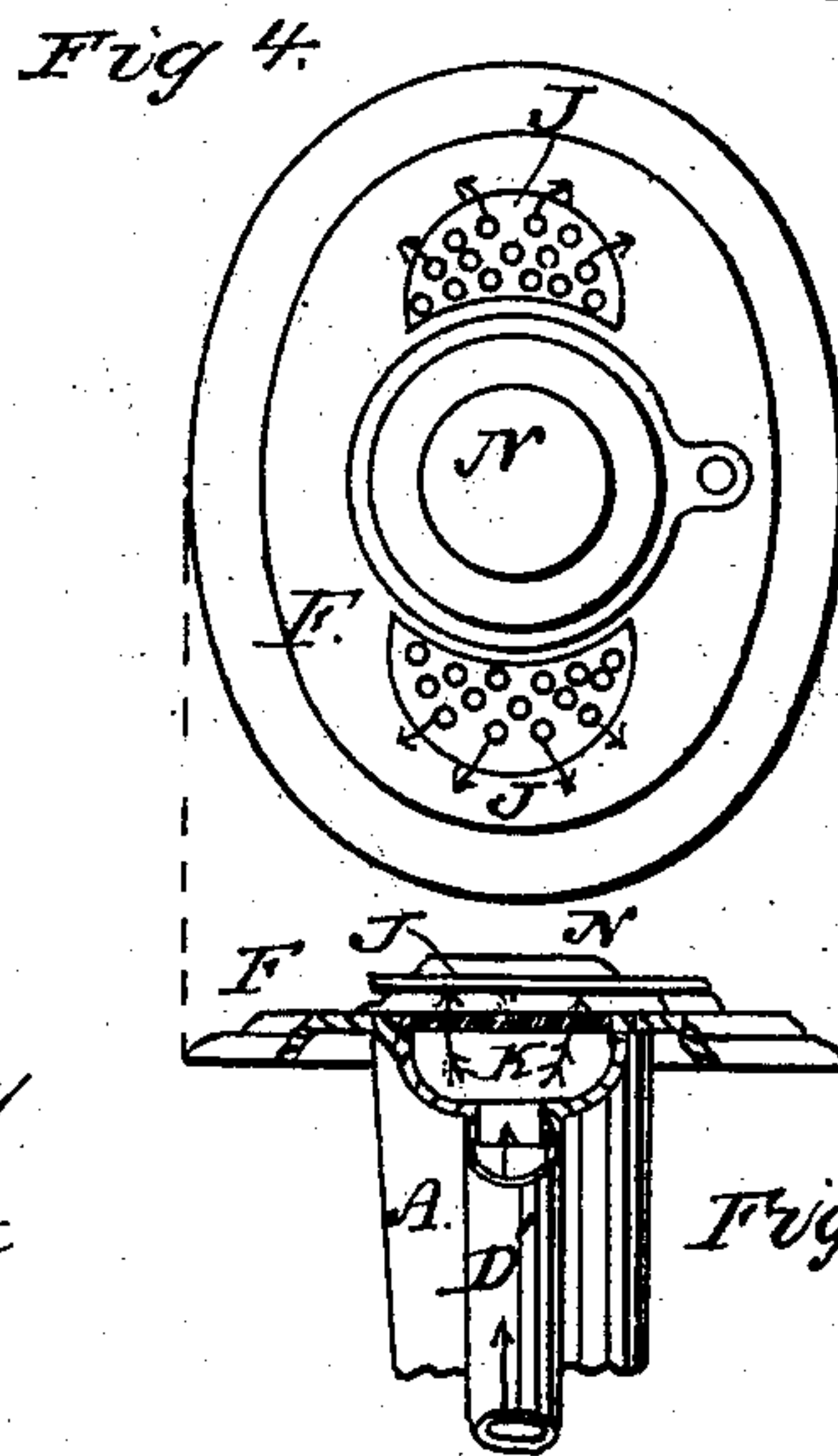
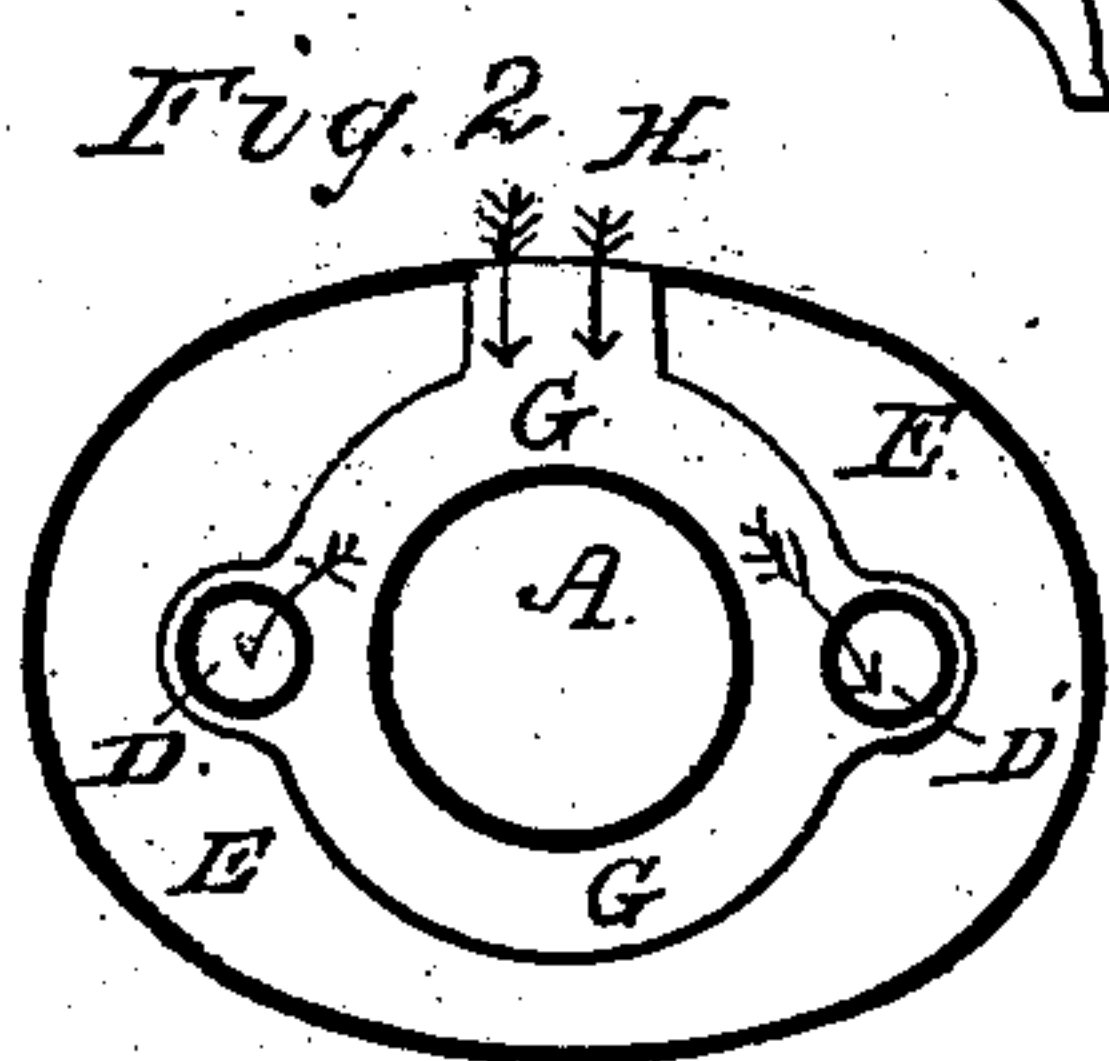
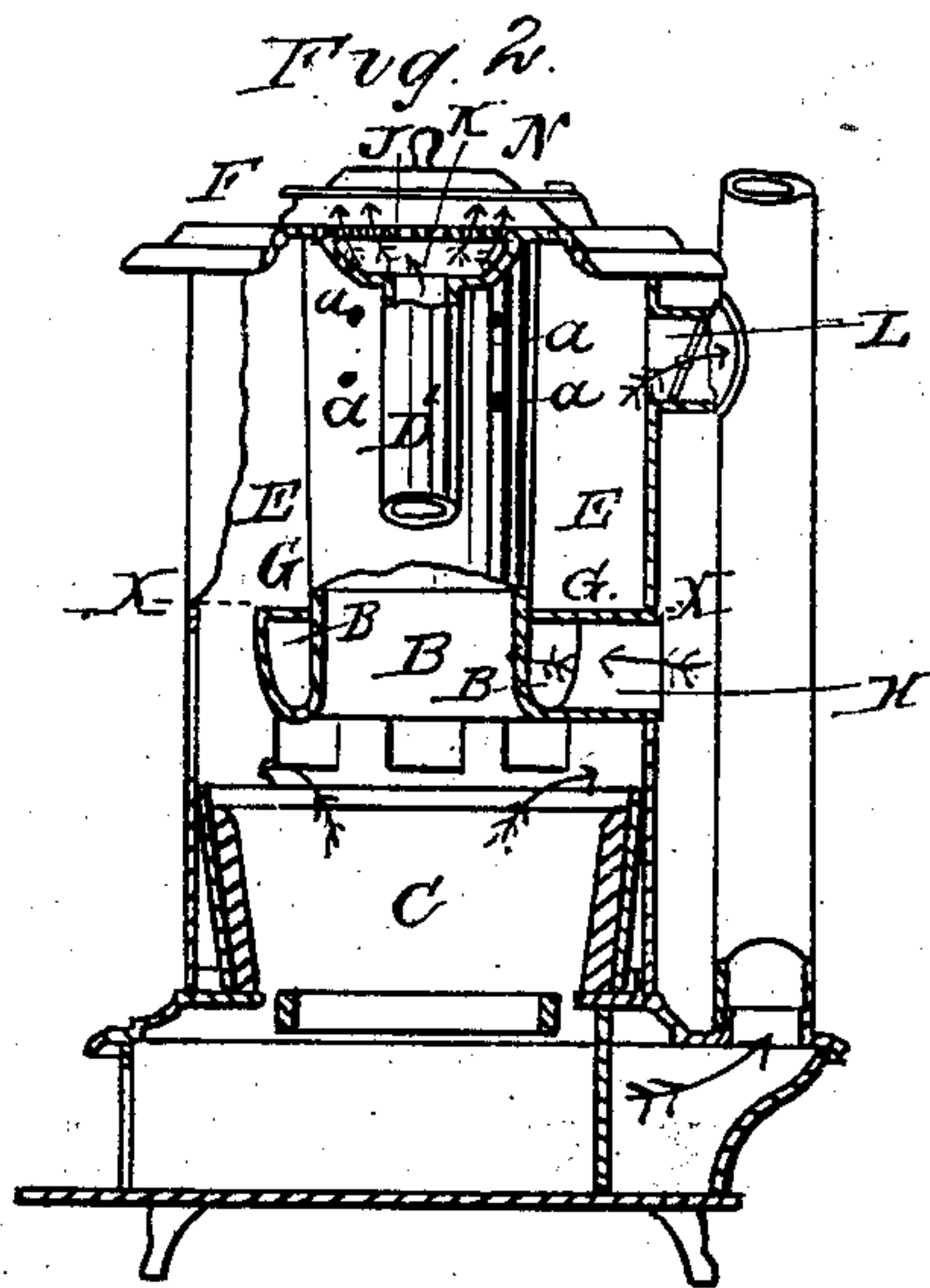
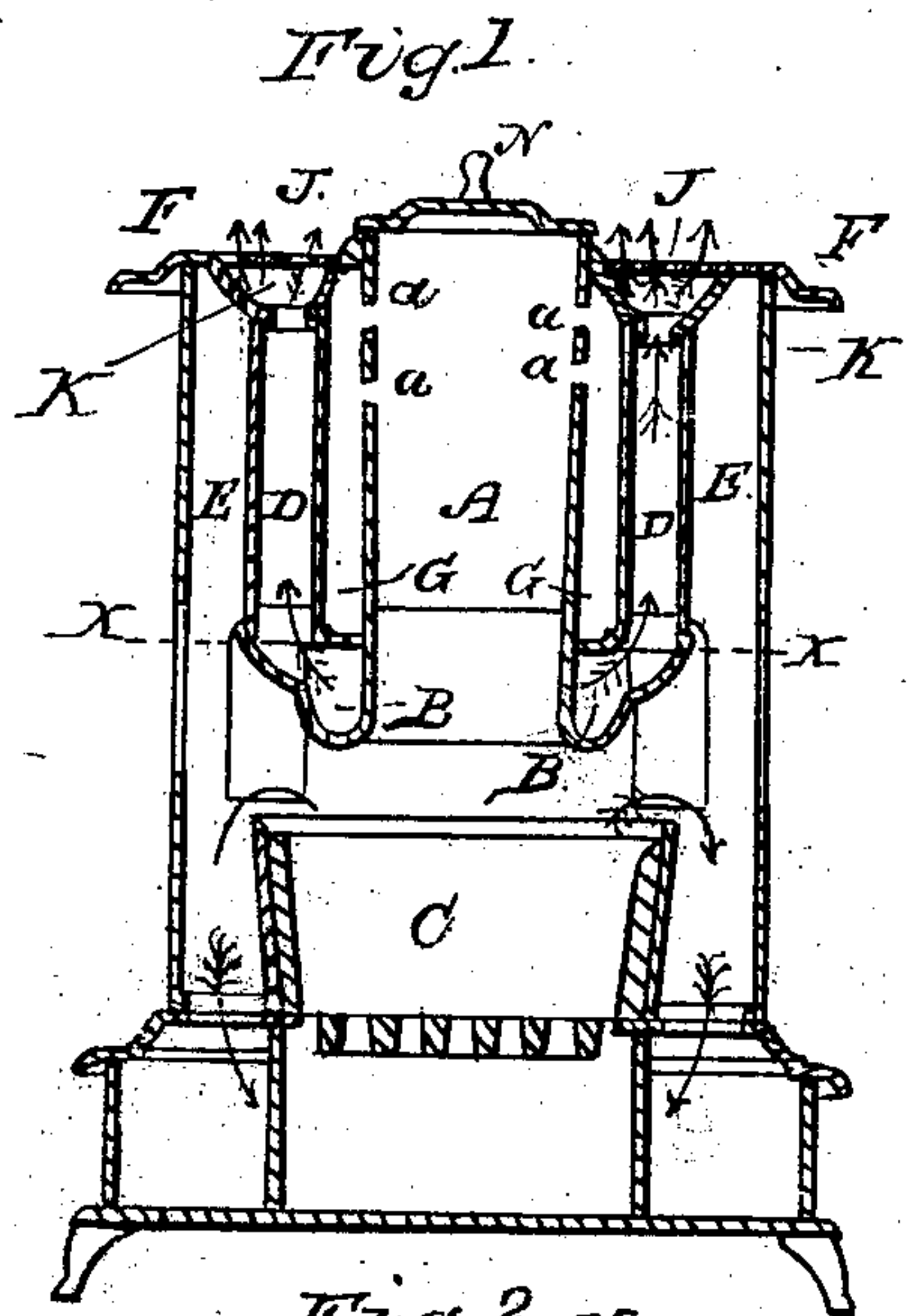


L. W. HARWOOD.

Magazine Stove.

No. 93,821.

Patented Aug. 17, 1869.



Witnesses  
J. J. Savage  
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Inventor  
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# United States Patent Office.

LUTHER W. HARWOOD, OF TROY, NEW YORK.

Letters Patent No. 93,821, dated August 17, 1869.

## IMPROVEMENT IN BASE-BURNING STOVES.

The Schedule referred to in these Letters Patent and making part of the same.

### To all whom it may concern:

Be it known that I, LUTHER W. HARWOOD, of the city of Troy, county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Fuel-Reservoir or Base-Burning Stoves; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawing, and letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a vertical section through the centre of the stove;

Figure 2 is a vertical section, from front to back thereof;

Figure 3 is a horizontal section, taken at the dotted line *x x* of figs. 1 and 2;

Figure 4 is a view of the top plate;

Figure 5 is a vertical section thereof; and

Figure 6 is a vertical section of a stove with one air-exit pipe.

The same letters refer to like parts in each of the said figures.

The object of my invention is to produce an easily-constructed, gas-tight, and more durable device for protecting the base or lower part of the fuel-reservoir of base-burning stoves from injurious action of fire; and

The said invention consists in the improved construction of the hollow base or bottom part of the fuel-reservoir, and in the employment and arrangement of one or more distinct air-escape pipes in combination therewith; and

It also consists in enlarging or bagging out the upper part of said air-escape pipes where connecting with the top plate of the stove, and covering the same with a perforated plate, all in manner substantially as hereinafter fully described and shown, whereby a continual current of cold atmospheric air is circulated horizontally about the hollow bottom part of the fuel-reservoir, to protect the same, and is then conducted therefrom, by the aforesaid air-escape pipes, in separate and distinct currents, not touching or coming in contact with the reservoir-body above said hollow base-part.

That others skilled in the art may make and use my improvements, I now describe the construction of the same, as follows:

A is the fuel-reservoir, made either of sheet or cast-iron, and suspended within the fire-chamber E E of the stove.

The bottom part of this reservoir is formed of the hollow mouth-piece B, attached thereto, and provided with an entrance-way, H, for cold air, thereinto, which enters and circulates therethrough about as shown by the directions of the blue arrows in the drawing.

This hollow mouth or base-part B, of fuel-reservoir A, is made in one piece; or it may be made in two

pieces, and be bolted together. It is made with a top or upper side, G, which is connected to the reservoir's body-part or cylinder near its base, and projects therefrom over the hollow base B, which has one or more recesses or pockets formed therein, over which, in the upper side G aforesaid, there is made an opening or openings, provided with collars or flanges, upon which are arranged the air-conducting pipes D and D', which conduct hot air from the hollow base B aforesaid, in separate and distinct currents, which do not come in contact with the fuel-reservoir A after passing from said hollow base B into said conducting or air-escape pipes D, all in manner substantially as shown in the accompanying drawing.

These pipes, being of much less diameter than the reservoir A, are easily constructed, and more durable in use, and, from their compact form, and small amount of joints where fitted to the fuel-reservoir mouth-part B, are readily fitted, and kept gas-tight in their places.

One or more air-escape pipes are used, as may be deemed necessary.

These pipes D and D' may connect directly with corresponding-sized apertures made in the top plate F of the stove; or, an improved manner of connecting them therewith is to form therein an upward-flaring cup or funnel-shaped mouth or mouths, K, with the air-pipe opening having a flange thereabout in its bottom part, on which are adjusted, gas-tight, the upper ends of the air-exit pipes D and D', substantially as shown in the accompanying drawing.

The mouth or top of this recessed cup K is covered with a perforated guard-plate, J. The perforations therein are equal to, or may, in the aggregate, be greater in area than the cross-sectional area of the air-exit pipe D, so that while said perforated plate forms an effectual shield, to prevent coal falling into said air-exit pipes, when filling the reservoir with fuel, it presents no material obstruction, when placed over the enlarged part K of the air-exit pipe D, to free escape of air thereout; and the enlarged upper part of said pipes D causes a better circulation of cold air into and through the hollow base-part B of the reservoir A; and it also spreads, and the perforated plate J divides the escaping current of warm air, so that it is diffused better about the room.

The other parts of the stove, as the fire-chamber E E, fire-pot O, its grate, and the base-part thereof, with its flues thereabout, are all made in the ordinary known way of constructing such parts of base-burning stoves.

In fig. 6 of the drawing, a stove is shown having but one air-exit pipe D, which is arranged in the front part of the stove fire-chamber E, and opposite to the cold-air entrance-way H, cold air entering and circulating through the fuel-reservoir, hollow base-part B, and escape-pipe D, about as shown by the blue arrows.



By using a separate pipe or pipes, distinct from, and whereof the body of the fuel-reservoir forms no part as a means for the escape of hot air from the hollow base B of reservoir A, as before described, a free circulation of cold air is caused through said base-part B, to protect it from extreme heat; and the upper part of the reservoir-chamber may be ventilated directly into the fire-chamber E, without necessity for using ventilating-tubes, but by apertures only, as shown at *a* in the drawing, made through the reservoir-side, which make direct communication between the two chambers, thus permitting free escape, and preventing accumulation of hot gases within the reservoir, which, if allowed, would tend to ignite the fuel therein from base to top; and the construction of base-burning stoves is simplified, made more durable, and perfectly gas-tight, and at less cost, by my said improvements.

Having thus described my invention in base-burning stoves,

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

1. The construction of the hollow base B of fuel-reservoir A with an upper side, G, connected to and projecting from the body or cylinder of the reservoir near its base, and with one or more air-pipe pockets

and openings D, substantially as before set forth, for the purpose described.

2. The employment of one or more distinct air-pipes D, when attached to the aforesaid-constructed hollow base B of reservoir A of base-burning stoves, and conducting hot air therefrom, in a distinct current or currents, without contact with or surrounding the body of the fuel-reservoir A above its hollow base B, substantially as described.

3. The combination and arrangement of one or more distinct air-conducting pipes D with the aforesaid-constructed hollow base B of fuel-reservoir A, combustion-chamber E, and fire-pot C, of base-burning stoves, arranged and operating separately from that part of the fuel-reservoir above its base B, substantially as and for the purpose described.

4. The enlargement of the top part of the air-conducting pipe or pipes D, or equivalent part K, in the top plate F, where connecting therewith, in combination with the perforated guard-plate J thereon, substantially as and for the purpose described.

LUTHER W. HARWOOD.

Witnesses:

J. J. SAVAGE,  
AUSTIN F. PARK.