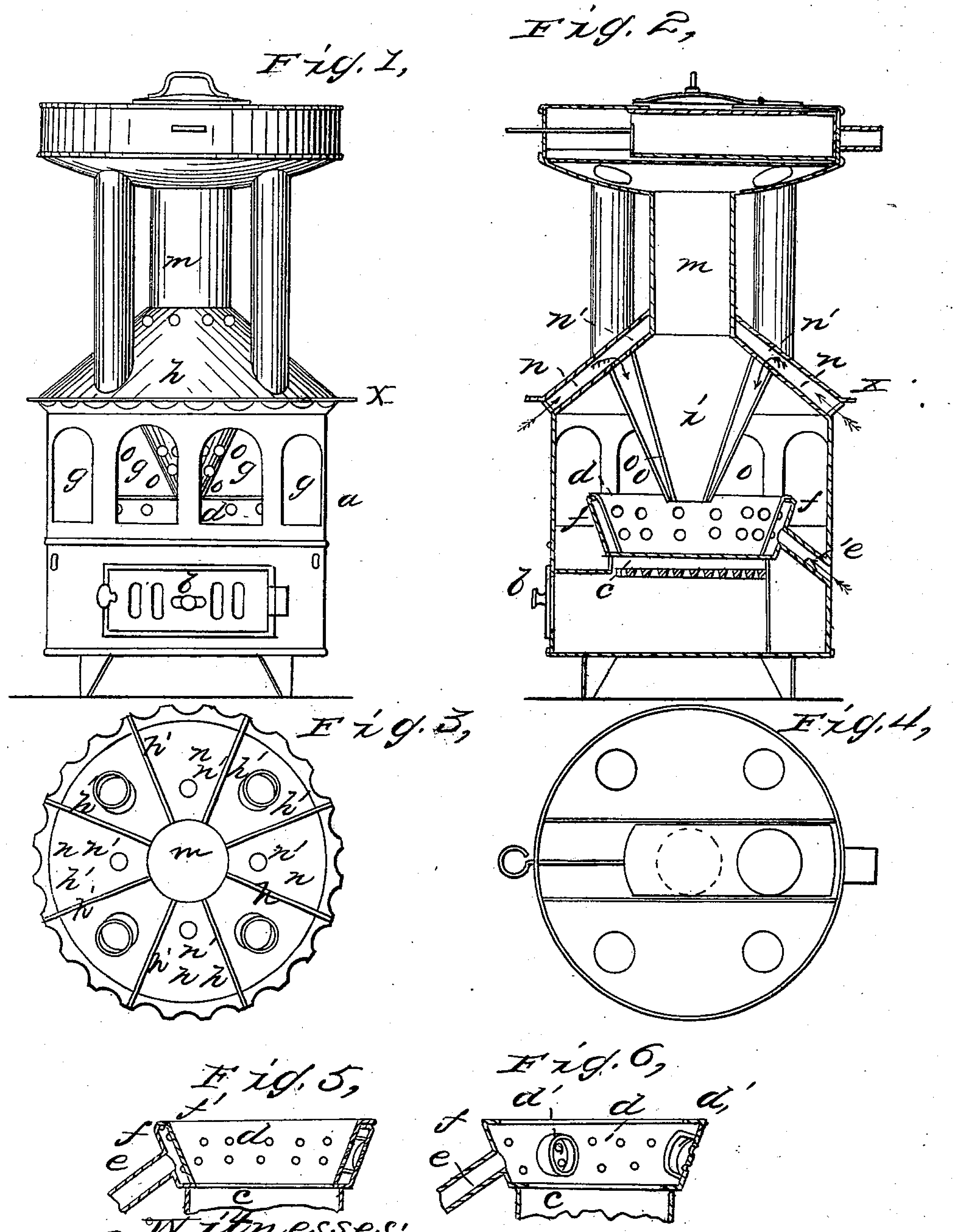
W. S. BRONSON.

Base Burning Stove.

No. 85,062. Patented Dec. 22, 1868.



Witnesses:

Inventor:

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UNITED STATES PATENT OFFICE.

WILLIS S. BRONSON, OF HARTFORD, CONNECTICUT.

IMPROVEMENT IN BASE-BURNING STOVES.

Specification forming part of Letters Patent No. **85,062,** dated December 22, 1868.

To all whom it may concern:

Be it known that I, WILLIS S. BRONSON, of the city and county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in Base-Burning Stoves; and to enable others skilled in the art to make and use the same, I will proceed to describe its construction by referring to the drawings, in which the same letters indicate like parts in each of the figures.

The nature of this invention consists in making the fire-pot in two parts, or with two walls—viz., an inner pot and an outer pot—thus forming space between the two pots for the circulation of air.

It consists in perforating the sides or edges of said pot for induction and eduction of air, for the purpose of cooling the outer surface of the inner pot and to aid combustion.

It consists in providing induction air-tubes, leading from the outside or body of the stove to the outer wall of the pot, for introducing air into the space between the two walls of the pot.

It consists in making the lower portion of the coal receiver or reservoir in two parts, having an inner wall and outer wall, thus forming air-space between the two walls to protect the walls and facilitate combustion.

It consists in combining the lower portion of a two wall or part coal-receiver with a two-part or two plate cover over the combustion-chamber, whereby an air-passage is secured, upon the siphon principle, to greatly facilitate the passage of air to the fire-surface.

It consists in arranging or combining two air-conducting spaces so as to bring two heated currents of air from opposite directions, one ascending upward between the inner and outer walls of the fire-pot, discharging itself through apertures in the side or edge thereof to the fire-surface, and the other up between the plates of the cap of the combustion-chamber and down between the plates of the coal-receiver, upon the siphon principle, discharging itself through orifices in the side and near the bottom of the coal-receiver, thus bringing the two heated currents of air together at the fire-surface, thus perfectly arresting and consuming all the gas from the coal.

It consists in conducting and discharging two currents of air from two opposite directions to a point, space of combustion, or fire-surface.

In the accompanying drawings, Figure 1 is a front elevation. Fig. 2 is a sectional side elevation. Fig. 3 is a top view cut through the line X. Fig. 4 is a top view of the damper-chamber with the cap or top plate removed. Figs. 5 and 6 are inside and outside sectional views of the upper section of the fire-pot, also showing, in part, the lower portion of said fire-pot.

a is the body of the stove. *b* is the door to the ash-box. Said box is equal in width to the diameter of the body of the fire-pot, and extends from the back side of said fire-pot to the door-openings, producing an open space all around the ash-box, except the bottom.

c is the lower section of the fire-pot, of about the same or equal diameter at the upper and lower edges. *d* is the upper section of a two-part fire-pot, an inner pot fitted so as to be easily removed, and an outer pot, into which the inner pot is fitted so as to form air-space between the two parts. These two walls or parts are perforated in or near their upper edge to allow the air to pass through the space between the two parts and discharge itself through said openings in or near the top edge of said pot to the fire-surface.

e are air-conducting tubes, one end of which is secured in the body of the stove, and the other end is secured in the outer wall, *f*, of the fire-pot *d*, thus conducting air from the exterior into the open space between the inner and outer walls, *f f'*, of the fire-pot, the object of which is to more perfectly ignite the surplus gases from the burning coal that would otherwise pass off in the smoke-exit, and also produce a more free and perfect combustion and radiation of heat, and economize in the use of fuel.

g is an illuminating-surface or opening in the body of the stove. *h* is a double or two-plate cap or top to the combustion-chamber, having sectional divisions, which form circulating-spaces *n*, between the said plates, communicating, through openings *n'*, with the openings *o* in the side or end of the gas-burner and coal-holder. *h'* are division-plates, which divide the open space into distinct sections for the introduction, circulation, and conducting air-space. *i* is a gas-burning coal-

holder and distributer, suspended from the under side of the top plate *h* of the combustion-chamber. This holder is composed of two plates of metal, having-air-space between them, and is of an inverted-cone shape, the space between the plates being closed at the upper and lower ends, and the outer surface, near or in the lower ends, is provided with perforations *o*. The air is introduced into the space between the plates of this cone-shaped coal-holder through the space or sections, as clearly shown by darts, and thence through the apertures *o* in the side of and near or in the lower end of the gas-burning coal-holder, directly over the fire-surface, into the combustion-chamber, the object of which is to create and facilitate combustion, and also to prevent the deposit-coal from becoming too intensely heated.

m is a coal-reservoir for holding a supply of coal, located directly above the coal-holder and gas-burner.

Now it will be clearly seen that by the construction and arrangement of the fire-pot and the gas-burning coal-holder I am enabled to introduce two distinct and intensely-heated currents of air coming in contact with each other directly to the fire-surface, thereby arresting and burning every particle of gas, and radiate its heat to the surrounding surface.

I believe I have thus shown the nature, construction, and advantage of this invention, so as to enable others skilled to make and use the same therefrom.

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

1. A fire-pot made in two parts, so that one part—the inner one—can be removed and replaced at pleasure, having air-space between the two, provided with orifices in the upper edge or side of the walls thereof, substantially as and for the purpose described.

2. Perforating the edge or sides of the fire-pot, when said pot is made in two distinct parts, for the purpose of protecting the wall of the pot and facilitating combustion, substantially as described.

3. Air-tubes *e*, in combination with a pot, constructed as described, and for the purpose set forth.

4. Forming the reservoir, below the cover, of two parts, having space between its inner and outer walls, substantially as and for the purpose described.

5. The combination of a two-plate cover and a double or two-plate coal-receiver below said cover, whereby I am enabled to introduce air to the fire-surface, upon the principle of the siphon, substantially as and for the purpose described.

6. The combination of air-conducting spaces *e n*, whereby I am enabled to bring two heated currents of air from opposite directions and discharge them at the fire-surface, substantially as described.

WILLIS S. BRONSON. [L. S.]

Witnesses:
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