

W. MAGILL.

Base-Burning Fire-Place Heaters.

No. 135,278.

Fig. 1.

Patented Jan. 28, 1873.

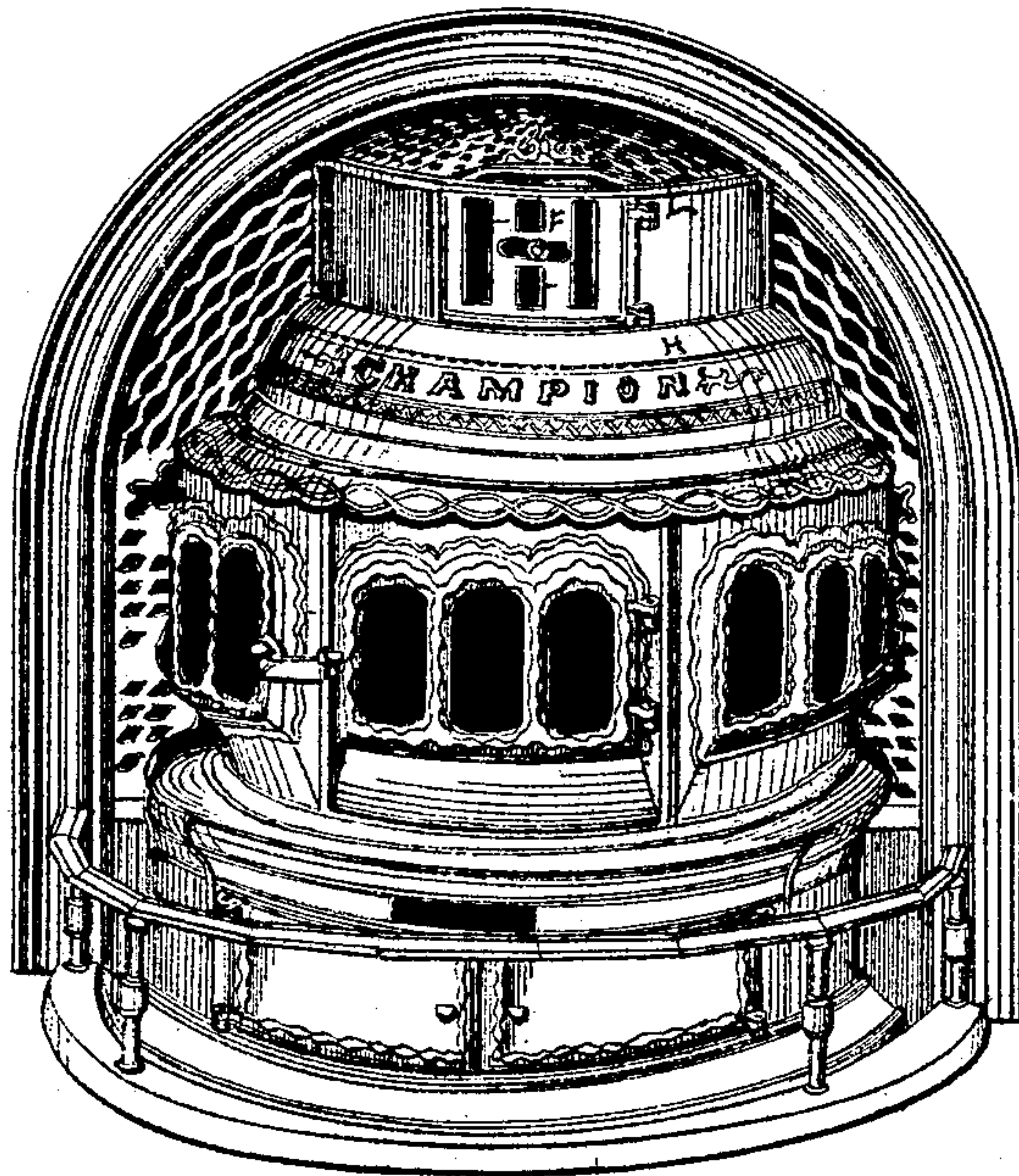


Fig. 2.

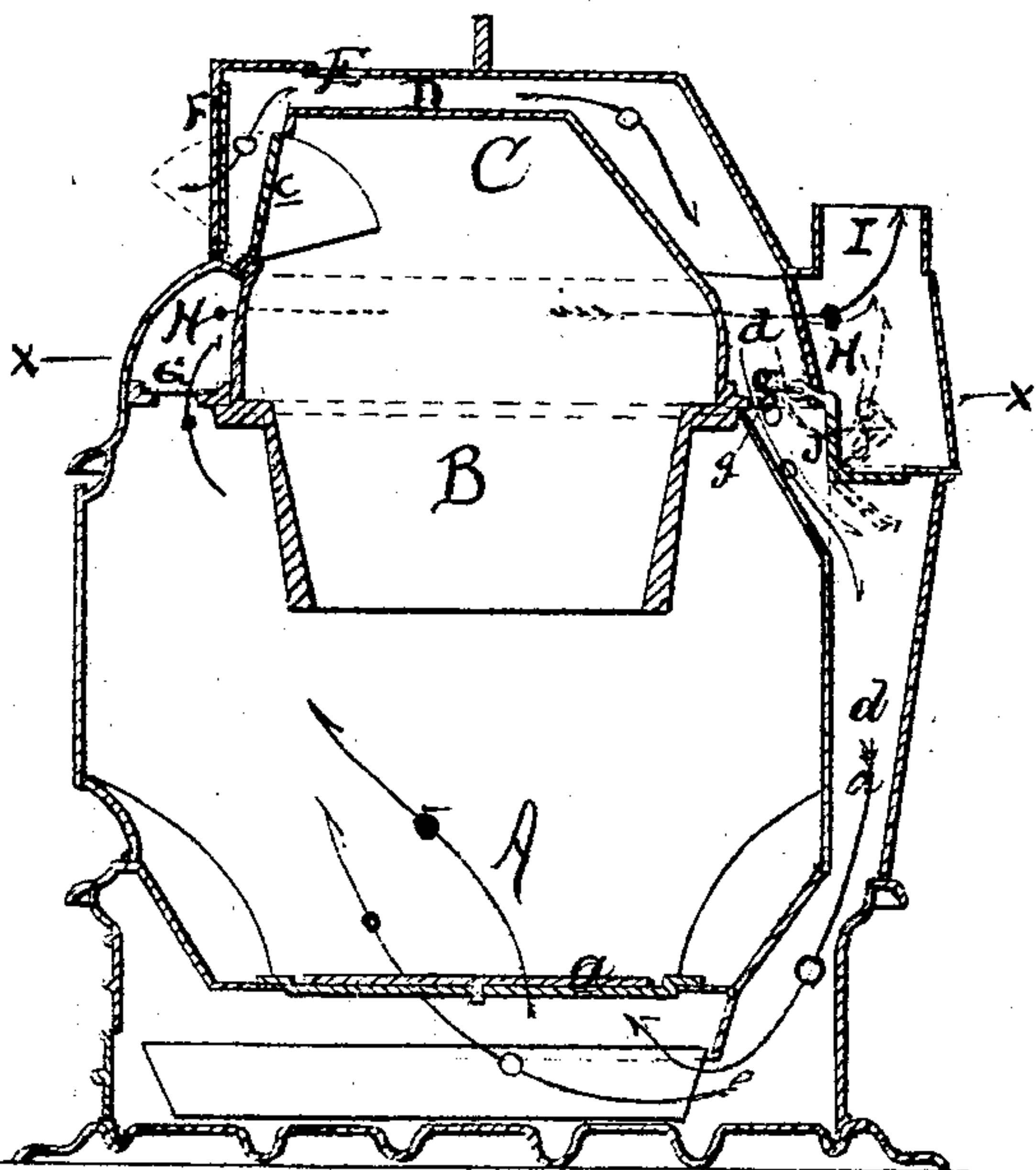
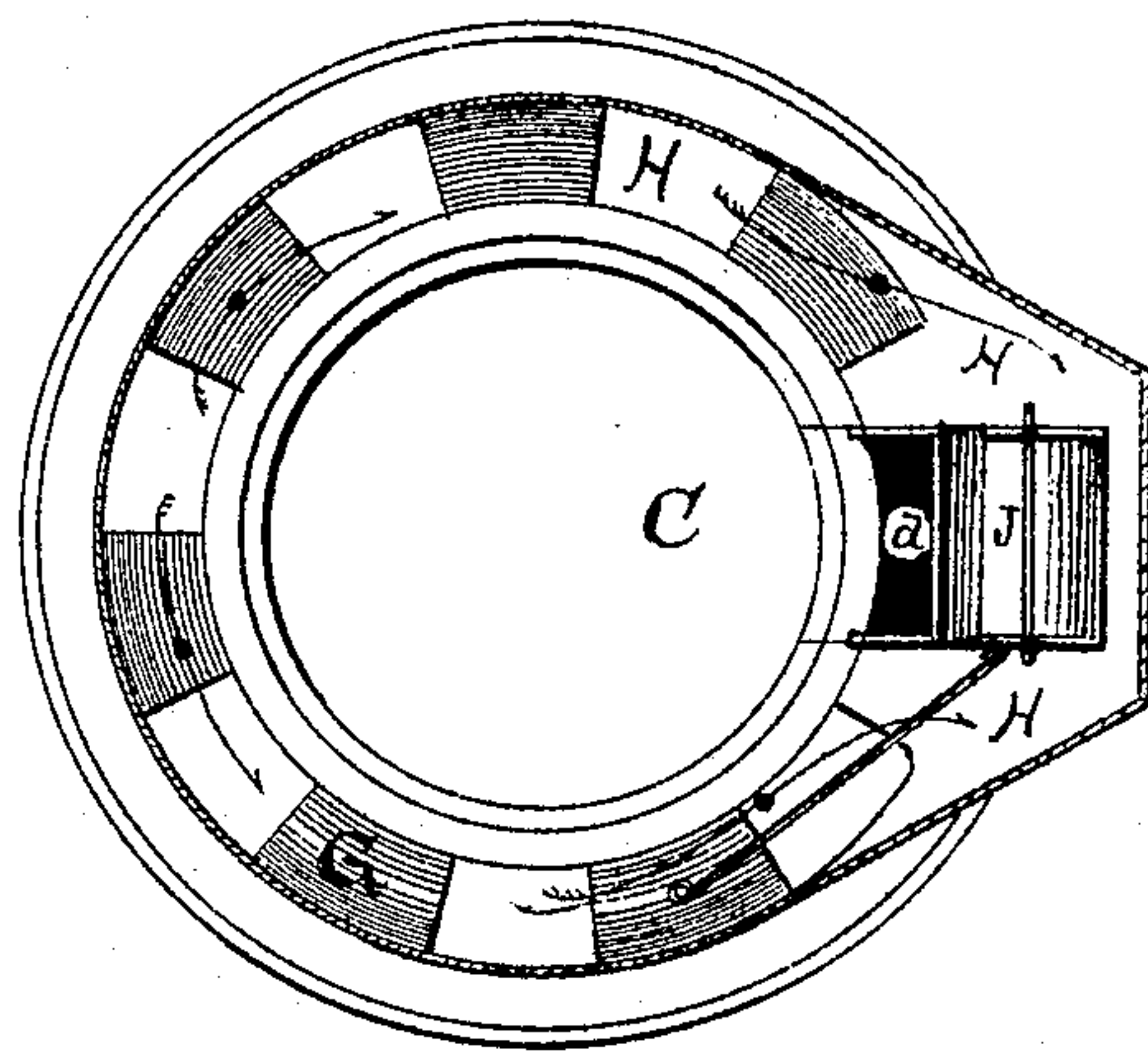


Fig. 3.



Witnesses,
C. H. Poole
Geo. Bartle

Inventor,
W. Magill
By his atty. R. D. Smith

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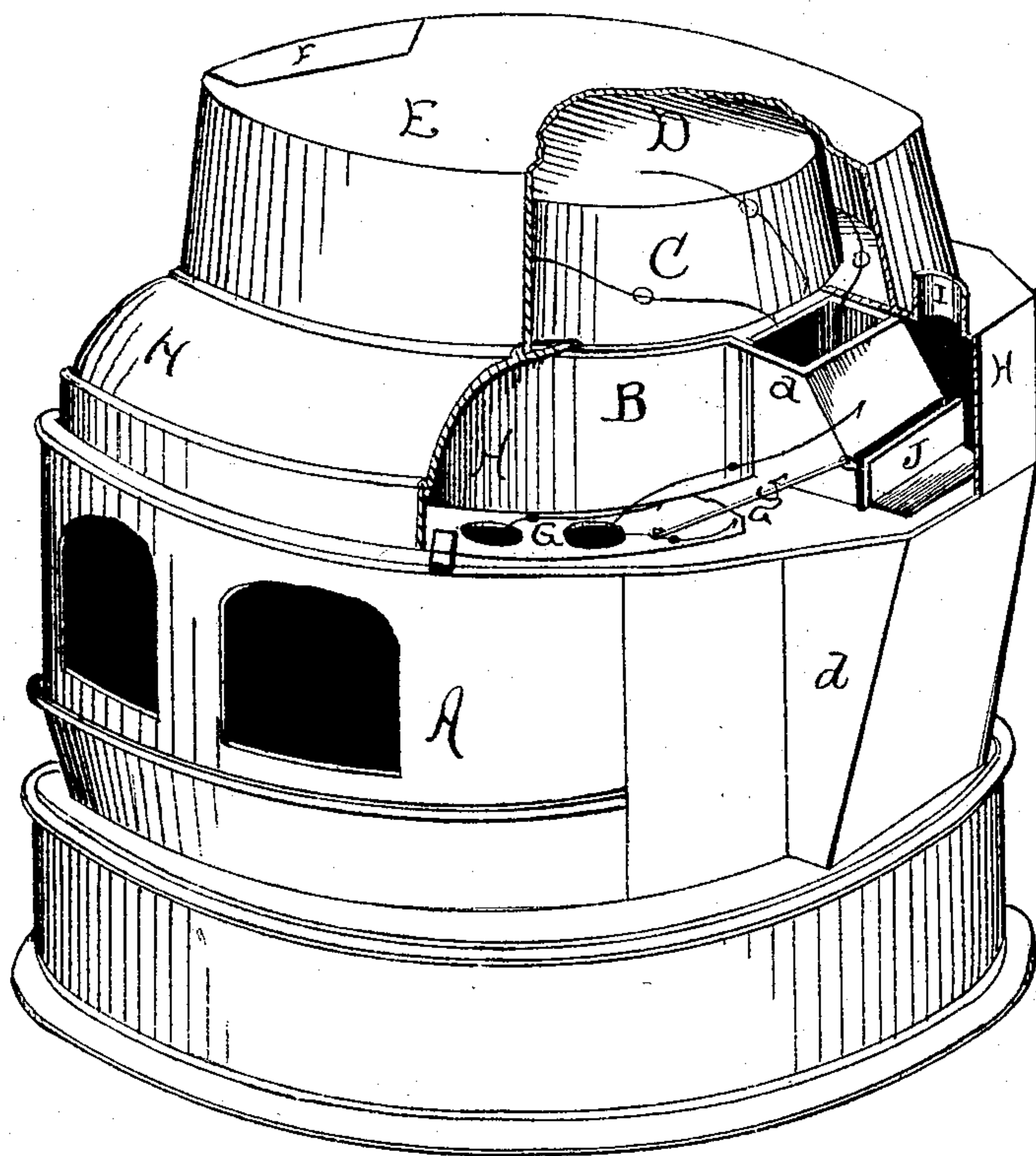


Fig. 4.

Witnesses,

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UNITED STATES PATENT OFFICE.

WILLIAM MAGILL, OF PORT DEPOSIT, MARYLAND.

IMPROVEMENT IN BASE-BURNING FIRE-PLACE HEATERS.

Specification forming part of Letters Patent No. 135,278, dated January 28, 1873.

To all whom it may concern:

Be it known that I, WILLIAM MAGILL, of Port Deposit, in the county of Cecil and State of Maryland, have invented a new and useful Improvement in Stoves; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a front elevation; Fig. 2, a vertical section from front to rear; Fig. 3, a plan section on line *x x*. Fig. 4 is a perspective of the rear of the stove, a portion of the outer casing being broken away.

This invention relates particularly to that class of stoves known as base-burner fire-place heaters, and is an improvement on the invention for which Letters Patent were granted to me March 1, 1870. It consists, first, in an induction-draft flue arranged to cover the top or hood of the magazine, whence the draft-air descends through a flue to the space beneath the grate; second, in an annular smoke-flue around the magazine, with a ring-damper and direct-draft damper, as will be more particularly described.

A is the fire-chamber of my stove, and B is the magazine. The magazine is covered by a close top or hood, C, with a tilting door, *c*, which, when tilted forward, as shown by dotted lines, forms a chute to conduct the fuel into the magazine. The hood C is inclosed within the air-flue D, formed by the top of the stove-casing E. A door, F, is set in the casing E immediately in front of the tilting door *c*, and said door F has a damper-slide through which the induction-draft enters the flue D. At the back of the stove the diving-flue *d* conducts the draft-air to the bottom of the stove beneath the grate *a*, through which it ascends into the burning mass of fuel.

For convenience, I have indicated the direction and character of the air-currents by arrows, those with open circles indicating the pure air of the induction or feed draft, and those with closed circles the burned air of the escaping draft.

From the fire-chamber A the current of smoke and products of combustion ascend and pass through the ring-damper G into the annular flue H, and thence to the escape-flue I at the rear of the stove.

In order to regulate the draft, and thereby

the consumption of fuel, it is necessary to provide for the direct passage of a greater or less portion of the induction-current to the escape-flue without passing into the fire-chamber, and I therefore provide a damper-valve, J, which, when opened, permits the air-current from the diving-flue *d* to escape directly into the escape-flue I; and for convenient and complete control of said currents and the draft through the burning fuel, I couple the valve J to the ring-damper G by means of the rod *g*, so that as the said ring-damper is moved to cut off the currents into the flue H the damper-valve J is opened, and when fully open closes the flue *d* entirely.

The ring-damper is constructed with a portion of its perforations larger than the perforations in the damper-plate immediately beneath it, so that said ring cannot entirely cut off the passage of products of combustion from the fire-chamber to the flue H, and thereby force noxious gas from said fire-chamber through the doors of the stove into the room. No cold air is admitted at the bottom of the stove.

From the above description it will be seen, first, that the top or hood of the magazine is always exposed to a current of fresh and comparatively cool air, entering at the door F and flowing through the space D, and thereby the top of the stove and magazine will be kept cool, and the mantel-piece or other surrounding parts will not be injured by heat; second, that the feed-air will be warmed by passing over the hood of the magazine and down the diving-flue; third, that no currents of cold air will be caused near the floor, and that the base of the stove will therefore radiate more heat than would be the case if cold air were admitted at the base; fourth, the annular hot flue H, passing across the front of the stove, will radiate an unusual amount of heat into the room wherein the stove is placed; fifth, that any gas escaping from the magazine will be caught in the space D, and thence carried beneath and through the grate, where it will be consumed.

Having described my invention, what I claim as new is—

1. In a base-burning stove, an induction flue or space, D, covering and surrounding the top or hood C of the magazine and inclosed between said hood and the top of the stove-case

E, and a diving-flue to carry air from said space D to the bottom of the stove beneath the grate, for the purpose set forth.

2. Combined with the cold-air flue or space D, as described, the annular smoke-flue H, above the fire-chamber and around the front of the stove, as set forth.

3. The combination and arrangement of the ring-damper G in the annular flue H and the angle-damper valve J, substantially as set forth.

4. In combination with the ring-damper G and the flues *d* and H, arranged as set forth, the angle-damper, arranged to close the flue *d* when the orifice is opened, as set forth.

In testimony whereof I hereunto subscribe my name.

WILLIAM MAGILL.

Witnesses:

JAMES ARMSTRONG,
J. B. WOODRUFF.