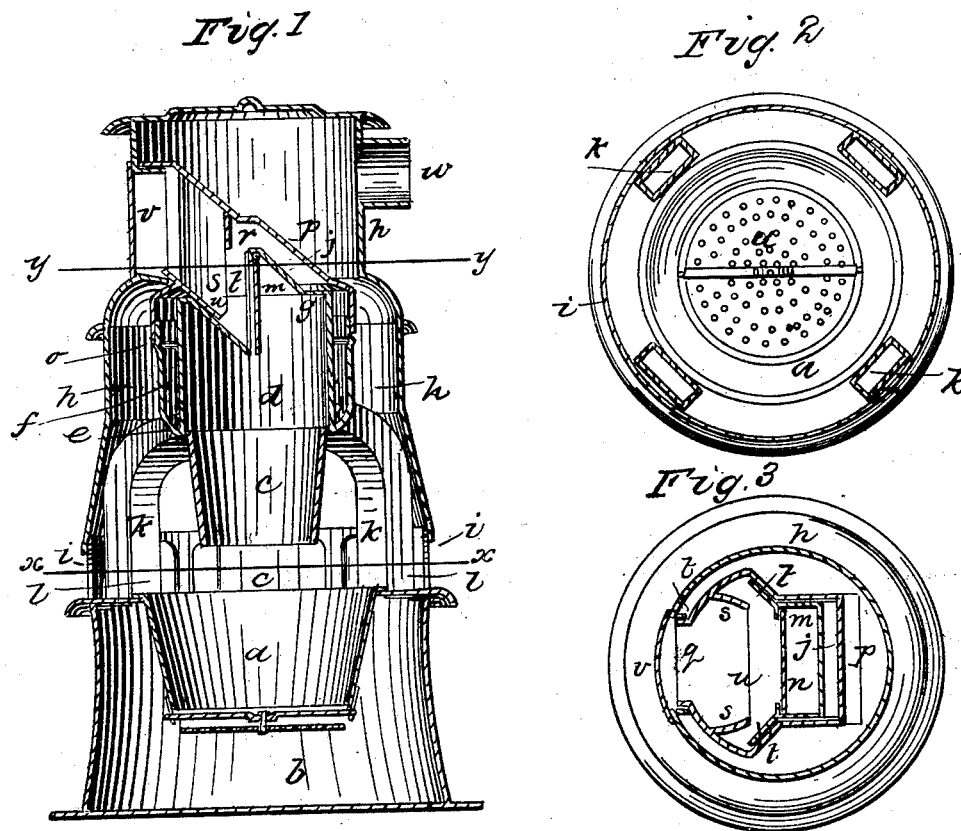


W. MAGILL.
Magazine Stove.

No. 108,163.

Patented Oct. 11, 1870.



witnesses

H. J. Hunt
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WILLIAM MAGILL, OF PORT DEPOSIT, MARYLAND.

Letters Patent No. 108,163, dated October 11, 1870.

IMPROVEMENT IN HEATING-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, WILLIAM MAGILL, of Port Deposit, in the county of Cecil and State of Maryland, have invented a new and improved Smoke-consuming Heater; 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 making a part of this specification, in which—

Figure 1 is a sectional elevation;

Figure 2 is a horizontal section in the line *x x*, fig. 1; and

Figure 3 is a horizontal section in the line *y y*, fig. 1.

This invention has for its object the burning of fuel, and all the smoke that arises therefrom within the stove, in order that the greatest possible amount of heat may be generated, and turned to account in warming apartments, with the least possible waste, this end being accomplished by causing the smoke that rises through the magazine to meet a current of cold air, and be thereby turned backward and carried again through the fire-chamber, undergoing therein a second combustion.

In the drawing—

a is the fire-chamber of a base-burning stove; *b*, the ash-chamber beneath; and *c*, the magazine above the fire-chamber, said magazine being of the usual funnel-shape, and hung by a flange at its upper end upon a flange projecting inwardly from the lower end of a cylinder, *d*, that rests in a funnel-shaped flange, *e*, which projects downward and inward from the lower end of a cylinder, *f*, that is placed within the outer shell *h*, which is supported upon the ring *i* that contains the mica-windows, the cylinders *d* and *f* being sustained by legs *k*, which rest on the ledge *l* of the pedestal of the stove.

A covered cylinder, *g*, provided with internal vertical ribs, is supported upon the cylinder *d*, standing off between the latter and the cylinder *f*; the bottom of the cylinder *g* not being in contact with the inside of the tapering flange *e*, and the cover of the cylinder *g* not being in contact with the top of the inside cylinder *d*, but spaces being provided whereby smoke, rising through said inside cylinder, may pass over the top of the latter, pass downward between it and the intermediate cylinder *g*, and escape past the bottom of the latter into the space between it and the outer cylinder *f*.

In the cover of the cylinder *g* is a hood, *j*, in front of which is a chute, *m*, through which coal passes to the magazine.

A vertical door, *n*, is hung within the hood *j*, so as to close the space between it and the chute, for the purpose of preventing the escape of smoke, which door is self-closing.

A ring, *o*, surrounds the upper part of the cylinder *f*.

On the ring *o* is constructed a cap, *p*, having a front opening, *q*, for the passage of coal, a horizon-

tal guard, *r*, and vertical converging guards, *s*, at the sides, overlapping similar guards *t* that extend from the sides of the hood *j*, the function of all which guards is to prevent coal from lodging on the cover of the cylinder *g*.

The cap *p* is also provided with an inclined plate, *u*, that slants toward the chute *m*.

In the inclosing shell *h* is a charging-door, *v*, directly opposite the opening *q*, and, in the opposite side of the shell from the charging-door, is the flue *w*, by which gases escape into the chimney.

When a fire is building in the chamber *a*, the door *v* and its register should be closed, and the sliding doors of the ash-chamber *b*, beneath the fire-chamber, opened. This creates a draught directly from the ash-doors, through the fire-chamber and magazine, and up between the inclosing shell *h* and cylinder *f* to the flue *w*.

The fire having been built, the ash-doors should be closed, and the register in the charging-door *v* opened.

Cold air thereupon enters through the register, and passes through the opening *q* in the cap *p* under the guard *r* and inclined plate *u*, over the guards *t* and hood *j*, and down into the space *x*, between the cylinders *f* and *g*.

The legs *k*, on which the cylinder *f* is supported, are hollow, and open at their upper ends into said space, and at their lower ends they communicate with orifices in the ledge *l*.

The cold air, whose course has been traced as far as the space *x*, flows downward through the flues *k*, and passes beneath the fire-chamber *a*.

As this is the only air with which the stove is now supplied, it creates a draught within the space *x*, which draws the smoke from the fire-chamber up through the magazine and cylinder *d*, over the top of the latter, and downward between it and the cylinder *g*, into the space *x*.

Here, meeting the cold current of air above mentioned, the smoke is drawn by the latter downward through the flues *k*, and, in company with such current, it passes upward through the grate at the bottom of the fire-chamber, and is subject to a combustion while rising through the latter, which nearly or quite consumes it.

Having thus described my invention,

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

1. The hanging, self-closing door *n*, hood *j*, chute *m*, and cylinder *g*, all arranged as specified.

2. The cap *p*, provided with the opening *q* and guards *r* and *s*, and the cylinder *g*, provided with the hood *j* and guards *t*, arranged together as described.

3. The cylinders *d f g*, flues *k*, magazine *c*, and fire-chamber *a*, arranged together as set forth.

WILLIAM MAGILL.

Witnesses:

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