J. A. BUCKWALTER.

Magazine-Stove.

No. 167,218. Patented Aug. 31, 1875.

Fig. 1.

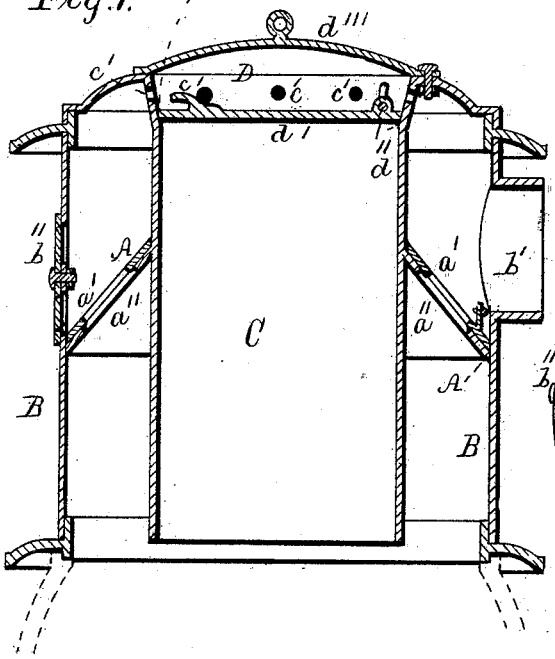


Fig. 2.

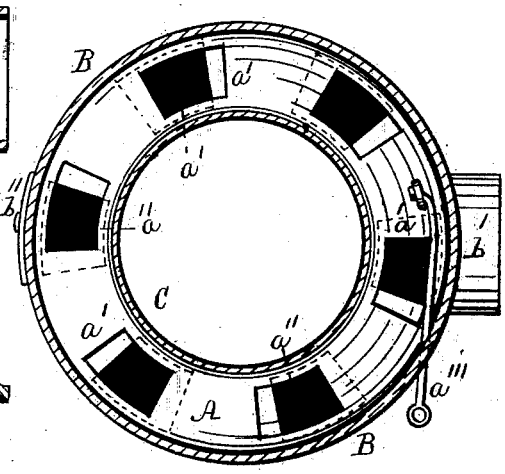
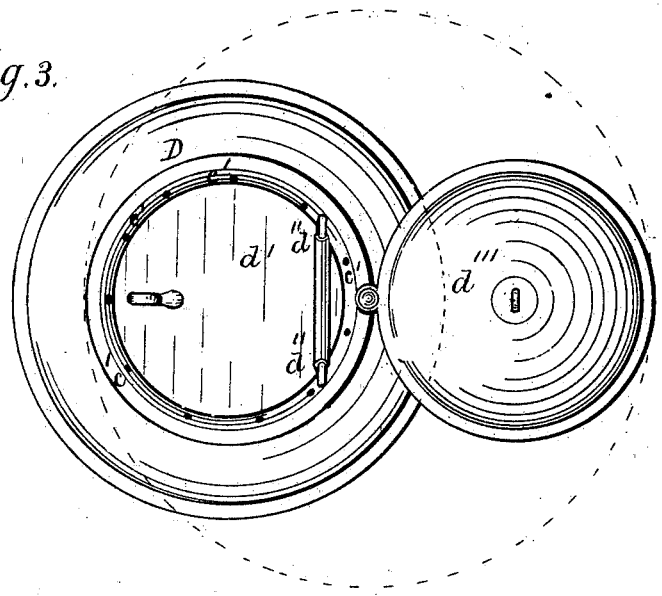


Fig. 3.



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JOSEPH A. BUCKWALTER, OF ROYER'S FORD, PENNSYLVANIA.

IMPROVEMENT IN MAGAZINE-STOVES.

Specification forming part of Letters Patent No. **167,218**, dated August 31, 1875; application filed July 22, 1875.

To all whom it may concern:

Be it known that I, JOSEPH A. BUCKWALTER, of Royer's Ford, in the county of Montgomery and State of Pennsylvania, have invented an Improvement in Magazine-Stoves, of which the following is a specification:

The object of my invention is twofold: first, to provide for and control, in a more reliable manner, the draft from the fire-chamber to the chimney-flue; and, second, to prevent, in a more perfect manner, the escape of any of the gaseous products of combustion into the room in which the stove may be located.

The first part of my invention consists of an inclined annular damper provided with a series of adjustable openings, and secured below the mouth of the chimney-flue, and also below a fresh-air valve in the side of the body of the stove, at a point diametrically opposite to the mouth of the chimney-flue; and the second part of my invention consists of a gas-receiving chamber of peculiar construction and arrangement in the upper end of the magazine, whereby gas, which usually rises up into the magazine, will be caused to enter said chamber and pass down therefrom into the annular space which surrounds that portion of the magazine which is above the inclined annular damper, as will hereinafter be more fully and clearly described with reference to the accompanying drawing, in which—

Figure 1 is a central vertical section of that part of a cylindrical magazine-stove, which is above the usual fire-pot, embodying my invention; Fig. 2, a horizontal section of Fig. 1 below the dotted line *x y* thereon, and Fig. 3 is a plan view of the gas-receiving chamber above the magazine, the top cover of said chamber being swung aside in order to show the interior of the same.

The inclined annular damper A is substantially in the form of the hollow frustum of a cone, and consists of two frusta of thin metal, each provided with a corresponding series of openings, *a' a''*, and the lower frustum having its lower edge fixed to the inner sides of the body B, horizontally around just below the lower sides of the mouths of the chimney-flue *b'* and of the fresh-air valve *b''*, while the upper edge of said lower frustum is fixed to the outer sides of the magazine C, and upon this lower frustum the upper one rests loosely, or so that it can be readily oscillated upon the lower frustum by means of a bar, *a'''*, (see Fig. 2,) which is pivoted to the former and projects through a corresponding hole in the body of the stove, so as to afford a ready handle for operating the damper A, to either open, close, or adjust the openings in the lower frustum, as occasion may from time to time require. The fresh-air valve *b''* is of the ordinary vertically-oscillating form, and enables the attendant to either admit, shut off, or adjust the draft of air into the annular space which is above the valve A, as occasion may at any time require. (See Fig. 1.) The gas-receiving chamber D is a space produced in the upper end of the magazine C, and the bottom of the said chamber is a hinged lid, *d'*, which fits accurately, (though not air-tightly,) and rests securely, when closed, in the upper end of the magazine at a short distance below the extreme upper edge of said magazine, the sides of the latter being flared outward at the part, so as to afford a seat for the said hinged lid when closed down, substantially as shown in Figs. 1 and 3. The lid *d'* is secured in place and turns upon two journals, *d'' d''*, which project through the flaring sides of the magazine which form the sides of the chamber D, and the said sides are perforated by a series of small holes, *c'*, which give open communication between the said chamber D and the annular space which is above the valve A. The chamber D is opened and closed at top by a swing-lid, *d'''*, which, as well as the lid *d'* or bottom of the chamber D, requires to be opened for pouring coal into the magazine C.

The operation of my said invention is as follows, viz: The magazine C being filled with coal, resting upon the incandescent coal in the fire-pot, (not shown,) the lids *d'''* and *d'* of the gas-receiving chamber D closed, and also the fresh-air valve *b''* closed, and the annular valve A fully opened, all as shown in Fig. 1, a powerful draft will pass upward through the open damper A and through the mouth of the chimney-flue *b'* into the usual chimney, and this draft can be readily diminished by partially closing the damper A, as indicated by Fig. 2, to any required contraction. In the meantime any gas that may pass upward through the

magazine C, will, on passing through the not air-tight joint between the magazine C and the lid d', enter the chamber D and be immediately withdrawn through the series of holes c' c' of the chamber by the draft coming up through A, and carried by the said draft into the mouth b' of the chimney-flue.

If it be desired to arrest the rapid combustion in the fire-pot of the stove, as in leaving over night, the valve A should be nearly closed and the fresh-air valve b'' partially or wholly opened, and thus the strength of the draft to the mouth of the flue b' sufficiently diminished without destroying the exhausting effect of the same upon the chamber D in drawing the gas from the latter.

The utility of my invention will be seen and appreciated without any further explanations.

I claim as my invention—

In a magazine-stove, the combination of the inclined annular damper A, constructed and arranged to operate below the mouth of the flue b', as described, with the annular space which is between the magazine C and the body B, substantially as and for the purposes hereinbefore described.

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