J. EBERT & E. R. WEHRLE.

MAGAZINE-STOVE.

No. 179,541. Patented July 4, 1876.

Fig. 1.

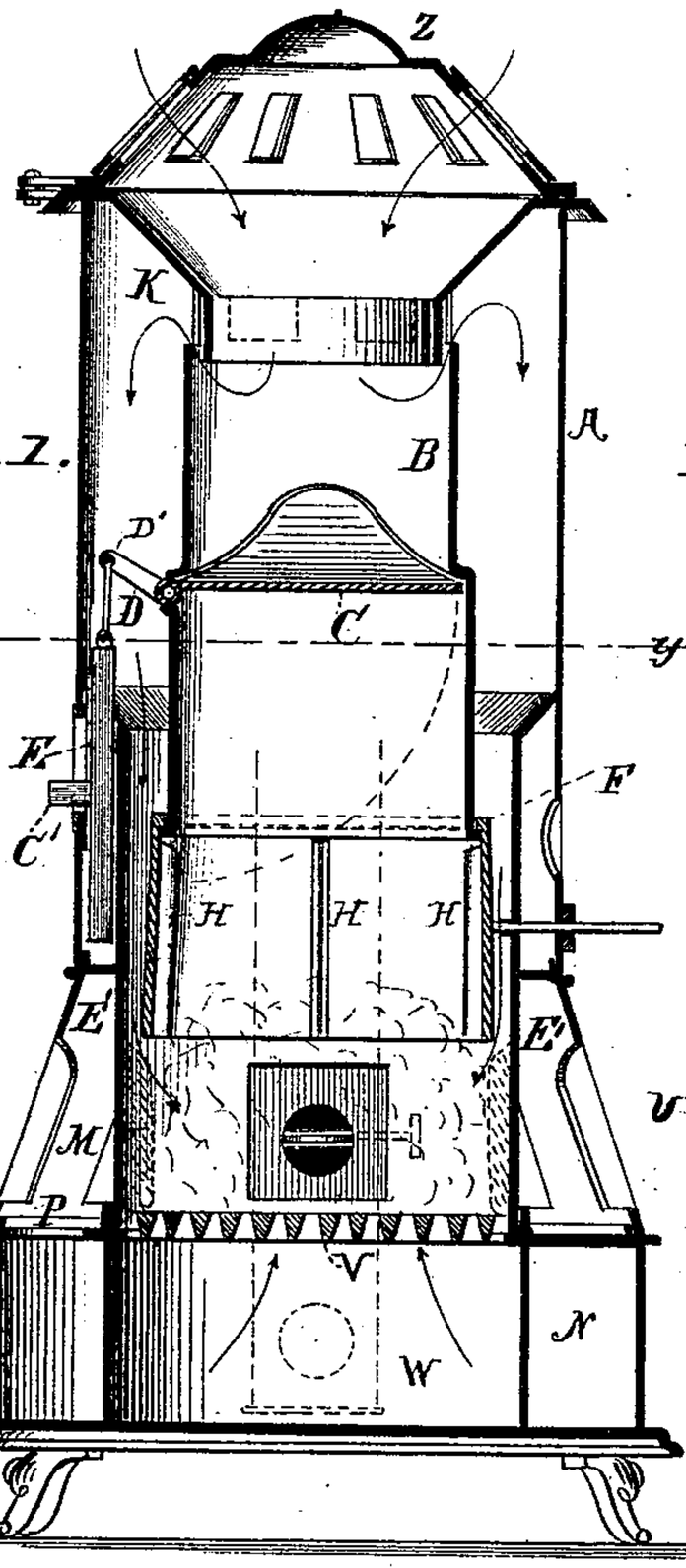


Fig. 2.

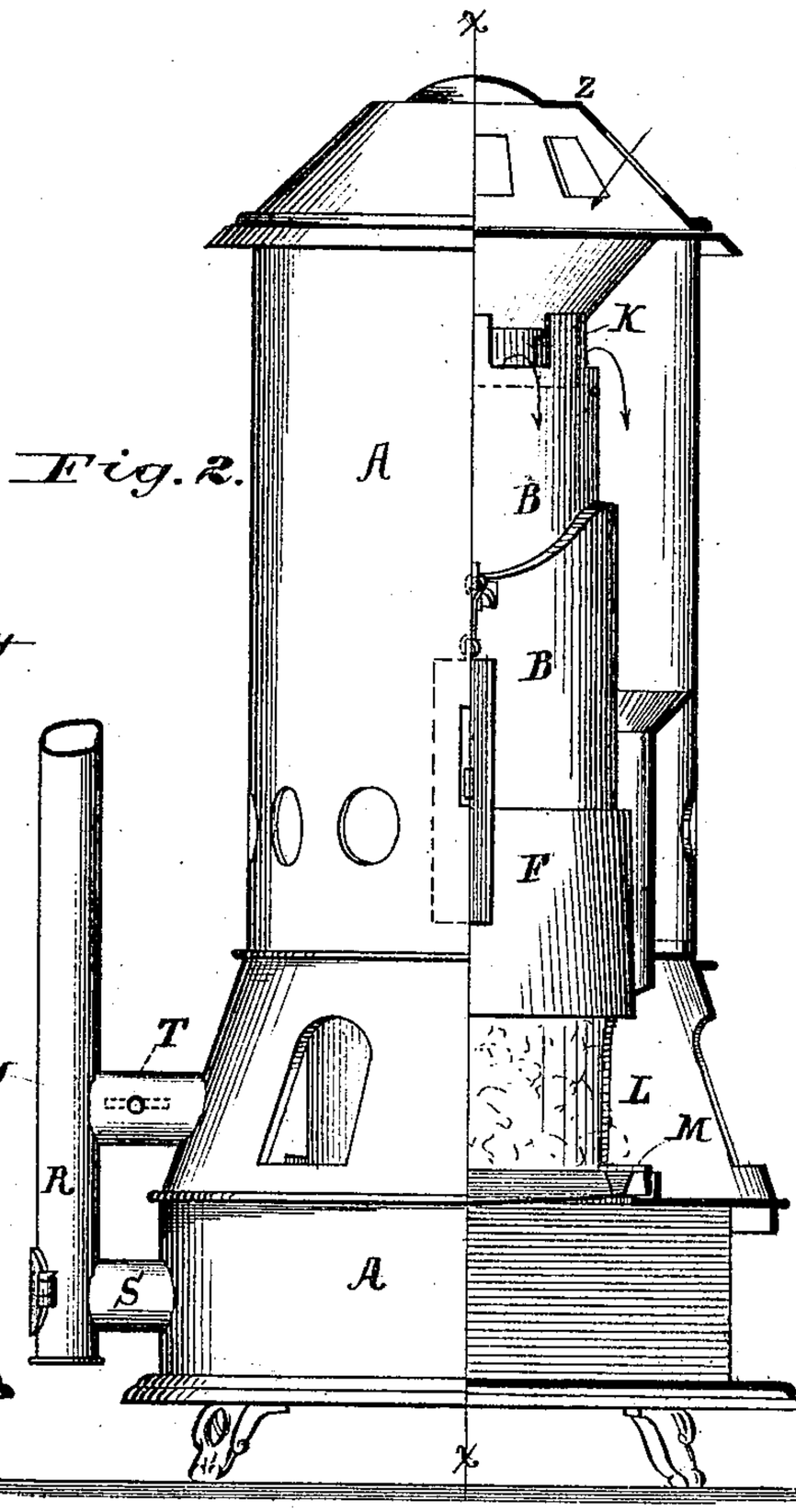
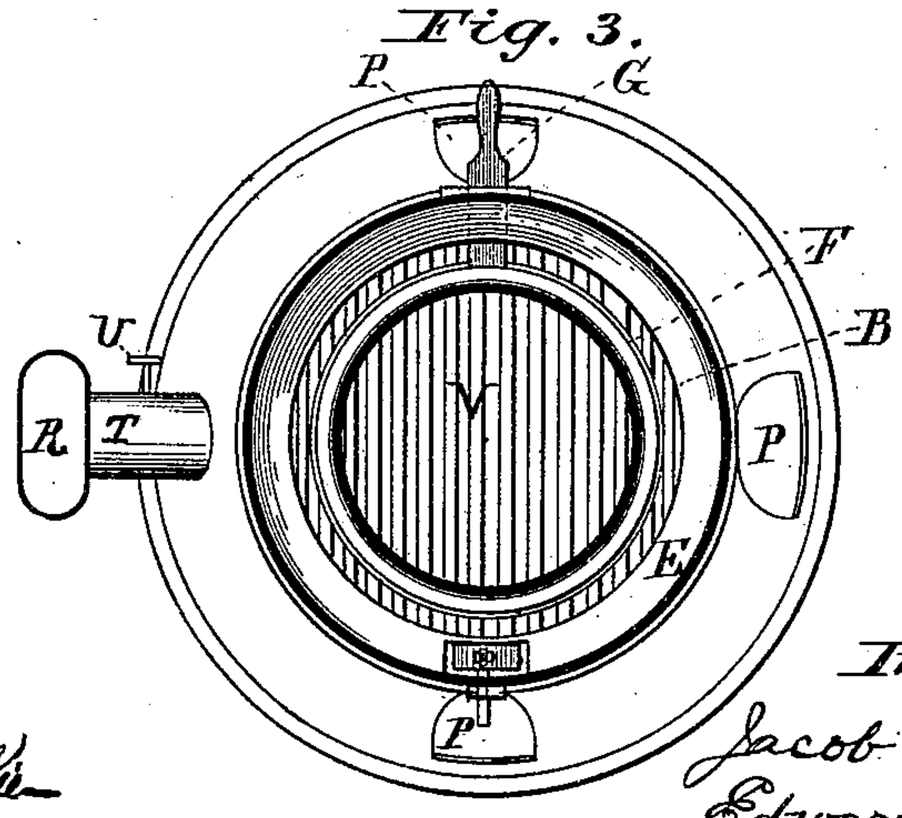


Fig. 3.



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UNITED STATES PATENT OFFICE.

JACOB EBERT AND EDWARD R. WEHRLE, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN MAGAZINE-STOVES.

Specification forming part of Letters Patent No. **179,541**, dated July 4, 1876; application filed March 20, 1876.

To all whom it may concern:

Be it known that we, JACOB EBERT and EDWARD R. WEHRLE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Magazine-Stoves, of which the following is a specification:

This invention relates to certain improvements in magazine or self-feeding stoves, and is particularly designed for burning soft or bituminous coal, although it is equally well adapted to burning other varieties of fuel, its object being to provide for a downward draft through the fire-pot, and by this means insure a more perfect and complete combustion of the fuel, and produce a more economical stove than others of this class as heretofore constructed.

This invention consists in the combination, in a stove, of a magazine provided with a damper constructed to automatically close when the magazine becomes empty, for the purpose of shutting off the direct draft through the magazine, as will be hereinafter specifically described.

The invention also consists of a further construction and combination of parts, which will be fully hereinafter described, and specifically pointed out in the claims.

Figure 1 represents a vertical section of the stove on the line *x x* of Fig. 2. Fig. 2 represents an elevation of the stove with a portion of the outer casing removed, and Fig. 3 represents a horizontal section in the line *y y* of Fig. 1.

The letter A represents the outer shell of the stove, made in any shape or design; and B, the magazine, located, as usual, in the upper part of the shell. The magazine is divided into two sections or compartments, the lower section being slightly larger in diameter than the upper one, and between the two is located a damper, C, by means of which communication may be cut off or established between the upper and lower sections. Said damper is formed of an elliptical disk of metal bent upward at the ends at right angles to its greatest diameter, and hinged at one side to the upper part of the lower section, the lower edge of the upper section being shaped to conform to the shape of the damper, forming a seat therefor. D represents a link, pivoted at one end to lever D′, secured to one side of the damper, and at the other to a weighted slide, E, located between the lower section of the magazine and the outer shell of the stove, by which the damper will be automatically closed when the coal has burned so as to leave the upper section empty. The said slide may be provided with a projection or pointer, C′, extending through the sides of the stove; and on the outside of the stove, at one side of the pointer, a scale may be marked, by which the quantity of the coal in the magazine will be automatically indicated as the damper rises.

The letter E′ represents the fire-pot, which is sufficiently larger in diameter than the said lower section to admit of the shaker F being located between the two, the lower end of said section sitting within the upper end of the shaker. Said shaker is set loosely within the fire-pot, and is capable of a slight oscillating rotary movement therein, being provided with a handle, G, by means of which it can be oscillated, in order to shake or work the coal down from the magazine to the fire-pot and prevent clogging; and to assist in this operation the interior of said shaker is provided with a series of vertical flanges, H, which carry the coal with the shaker in its movement. The fire-pot is enlarged at its upper end, and secured to the outer shell of the stove at a point just above the end of the lower section of the magazine, leaving a space between the said magazine and upper edge of the fire-pot for the admission of air from the space between the magazine and outer shell, a series of openings, K, being formed around the upper edge of the magazine to admit the air into the annular passage surrounding the same. In that portion of the fire-pot below the shaker and on opposite sides, or at various points around said fire-pot, are formed openings L, by means of which communication between said fire-pot and an annular flue, M, is established. Below said annular flue is located a flue, N, extending partially around the stove, said flue communicating, by means of apertures P, with the annular flue above. The lower flue P communicates with the exit-pipe R by means of a pipe, S, and the upper flue communicates with said pipe by means of a

similar pipe, T, provided with a damper, U. The letter V represents the grate situated at the bottom of the fire-pot, above the ash-pit W, as usual. The stove is provided with a swinging or removable cover, Z, provided with apertures for the admission of air to the magazine.

The operation of our improved stove is as follows: The flue M is thrown into communication with the exit-flue by opening the damper in the pipe T, in order to establish a direct draft into said exit-pipe. The fire is then kindled in the fire-pot and the magazine filled with coal, the damper being automatically thrown down by the weight of the coal. The top of the stove is then set in place, and when the coal has become properly ignited the damper U is closed, throwing the draft down through the lower flue N on its passage to the chimney. The air to support combustion enters through the apertures in the top of the stove, and passes through the aperture at the upper end of the magazine into the space between said magazine and the outer wall of the stove, and from thence down into the fire-pot, entering at its upper edge, and passing down between the shaker and the walls of the fire-pot to the burning coal in the lower part of the fire-pot. The hot products of combustion from the burning coal then pass out of the fire-pot through the openings in its sides into the flue M, and from thence into the flue N and out into the exit-flue. The flue M, which surrounds the fire-pot, may be provided with openings or windows covered with mica, when desired. When the coal in the magazine is entirely consumed, or burned sufficiently to clear the lower end of the damper, the weighted slide automatically closes the damper, thus preventing a direct draft down through the magazine to the fire-box, or the escape of gases from the burning fuel up through the magazine, and, by means of the pointer on the weighted slide and the scale at the side thereof, indicates when the stove needs filling.

As thus constructed, it will be perceived that the magazine will always be kept cool by the downward draft of air, and will never become sufficiently heated to soften the coal and extract the tar from the same, while the hot products of combustion will be compelled to traverse around the base of the stove on their way out of the same, thoroughly heating the lower part of the stove—the most effective part for heating purposes.

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

1. The combination, in a stove, of a magazine, provided with a damper adapted to automatically close when the magazine becomes empty, for shutting off the direct draft through the magazine, substantially as described.

2. In combination with the damper and lever to which it is pivoted, the weighted slide D, for operating the damper, substantially as described.

3. In combination with the magazine and fire-pot, the shaker located within the fire-pot, and the annular draft-passage between the two, forming a continuation of the annular draft-passage surrounding the magazine, substantially as described.

In testimony that we claim the foregoing we have hereunto set our hands in the presence of the subscribing witnesses.

JACOB EBERT.
EDWARD R. WEHRLE.

Witnesses:
L. BREUNINGER,
HENRY KNOEBEL.