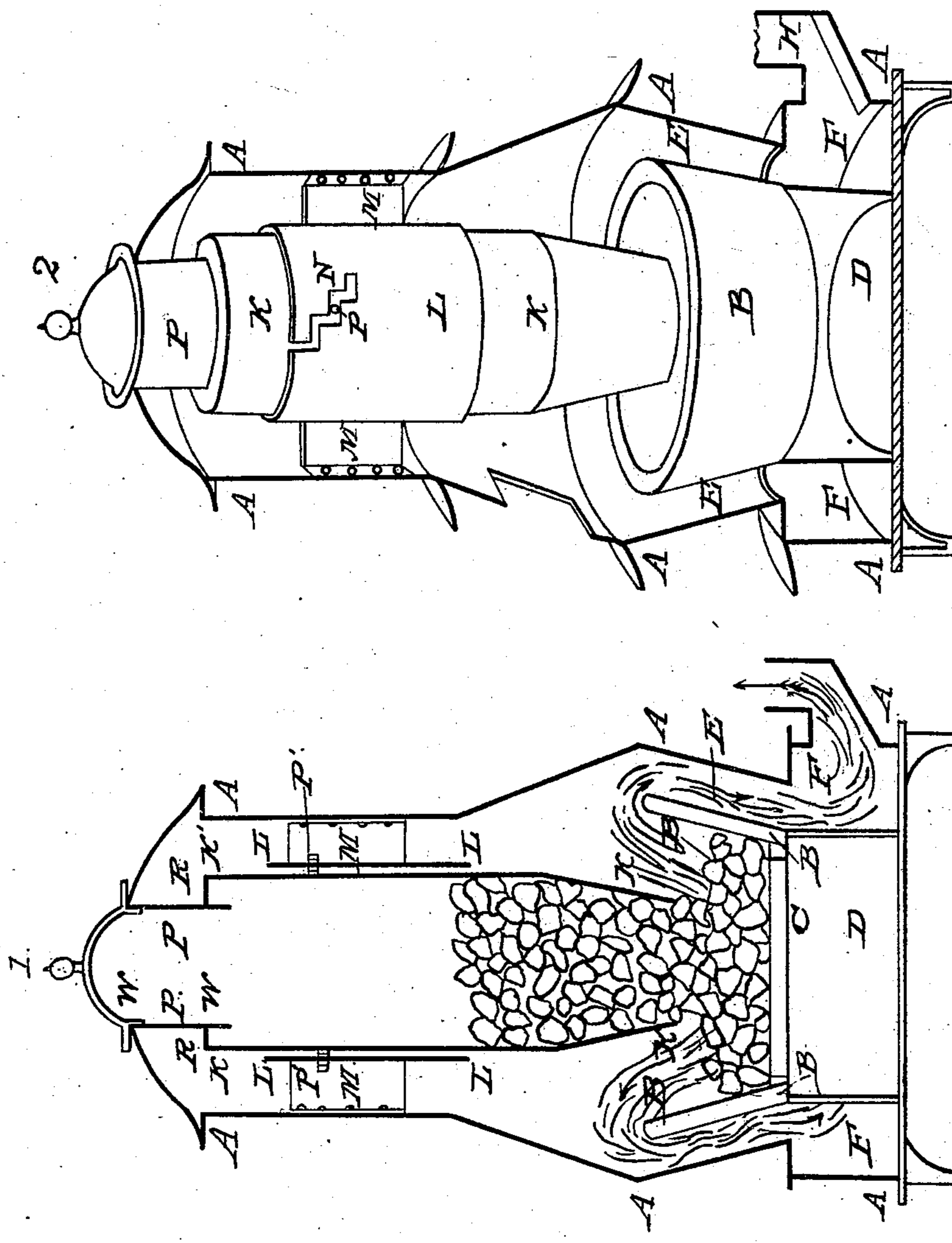


VAN WORMER & MCGARVEY.

Base Burning Stove.

No. 54,447.

Patented May 1, 1866.



WITNESSES

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JASPER VAN WORMER AND MICHAEL MCGARVEY, OF ALBANY, NEW YORK.

IMPROVEMENT IN BASE-BURNING STOVES.

Specification forming part of Letters Patent No. 54,447, dated May 1, 1866.

To all whom it may concern:

Be it known that we, JASPER VAN WORMER and MICHAEL MCGARVEY, of the city of Albany, State of New York, have invented certain new and useful Improvements in the Construction of Magazine or Self-Feeding Coal-Stoves; and we declare the following specification, with the drawings forming part thereof, to be a full and complete description of our invention.

Figure 1 represents a hall-stove in central vertical section, showing the interior construction and operation of the stove; Fig. 2, the stove in perspective, with the hither half of the outer shell removed, but the magazine or fire-pot shown entire.

Similar letters denote the same parts of the apparatus.

A is the outer shell; B, the fire-pot; C, the ash-pit; E, the downward-draft flue; F, the base-flue; G, the grate; H, the nozzle for the smoke-pipe; J, the door; K, the magazine; W, the opening at the top for the passage of coal to the magazine.

The first improvement regards the magazine or feeder for the coal, intended to regulate the supply of fuel to the grate in larger or smaller quantities, and is effected by so arranging the magazine that it can be lowered or raised so as to bring its open bottom to or from the body of coal burning on the grate. This may be done by various devices, the method of doing it not being essential. The arrangement we employ is thus: The magazine K is a cylinder of sheet-iron, open at both ends, the lower end being slightly contracted, as shown. L is a second cylinder of sheet-iron surrounding the magazine K, and just so much larger than it as to permit K to move freely within it. Cylinder L is secured to the shell A by braces, (two of them, M, being shown,) so as to support the weight of the magazine with its load of coal. From the opposite sides of K project two pins, *p*, intended for its support upon cylinder L. For the reception of these pins there is in the upper part of L, extending downward, grooves or channels N, cut vertically and horizontally in alternate steps, as shown in Fig. 1, so that when the pins *p* rest in the horizontal grooves, by turning the magazine slightly to the right or left hand it can be raised or lowered through a vertical groove and the pins

placed within other horizontal grooves. To provide for the supplying of coal to the magazine through the opening P at the top of the stove without allowing the escape of fumes from the smoke-flues around the magazine, this device is employed. There extends downward from W a cylinder, P, open at top and bottom, of less diameter than K, and P passes down into K through an opening in its top sheet, R, which fits snugly around it, so that the movement of the magazine upward or downward will uncover no opening at its top into the body of the stove. The magazine itself might be carried through the top plate of the stove, but that would be an unsightly arrangement.

It will be seen that there may be variations in the proportions of this arrangement. The cylinder P might be continued downward a considerable distance, thus becoming the magazine, and the sliding part K be proportionately reduced, so that only the lower section of the magazine would be movable; or, if it be not deemed worth while to retain the radiating-chamber between the magazine and the outer shell of stove, the whole upper part of the stove might be used for a magazine with a movable lower section or mouth-piece.

The second improvement is in the combination, with the above-described self-feeding apparatus, of the arrangement of the fire-pot B, as shown, so that the flame and gases shall have an uninterrupted passage over the entire upper edge of the pot downward into the flues E, being the entire space between the pot and the outer shell, B, of the stove, and thence down into a base-flue, F, being the entire base-chamber not occupied by the ash-pit D, and thence out through the nozzle H.

The advantages of the above construction of stove are as follows:

First, the adjustable feeder affords the means of regulating the size of the fire to meet the changes of temperature in the weather or any exigency requiring a varying amount of heat from the stove. It also permits the use of coals of various sizes by regulating the quantity of the supply in proportion to the size of the coal, whereas a fixed feeder being adjusted for the use of some one-sized coal makes the employment of a larger or lesser size an uneconomical as well as an inconvenient matter.

Second, the continuous-flue arrangement instead of that of separate flues at intervals around the stove, as now used in self-feeding stoves, secures a more equable and perfect combustion of all the coal in the fire-pot and consequent uniform distribution of heat to the radiating-surface of the stove, for wherever separate-flues are used the masses of coal lying in the intervals between the flues and out of the range of the lines of draft from the grate to the flues remain unburnt, occupying much room without contributing to the heating of the stove.

Third, the mode of attaching the feeder, as shown, in combination with the free downward draft of the continuous-flue arrangement, not only prevents the escape of gas and smoke when the feeder is being supplied with coal, but produces a constant downward draft through the feeder and in the chamber around it, preventing any accumulation of gas in the chamber, which constantly occurs with the ordinary

flue arrangement of self-feeding stoves, and, unless great caution be exercised in the process of supplying fuel, results in disastrous explosions upon the union of the atmospheric air with the gas.

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

1. An adjustable feeder whereby the supply of coal may be increased or diminished by raising or lowering the mouth of the feeder from or toward the grate of a stove, substantially as described, and for the purposes set forth.

2. The combination of an open flue, extending entirely around the fire-pot and the outer shell of the stove, with a magazine-feeder, as described, and for the purposes set forth.

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Witnesses:

RICHD. VARICK DE WITT,
ROBT. HASTINGS.