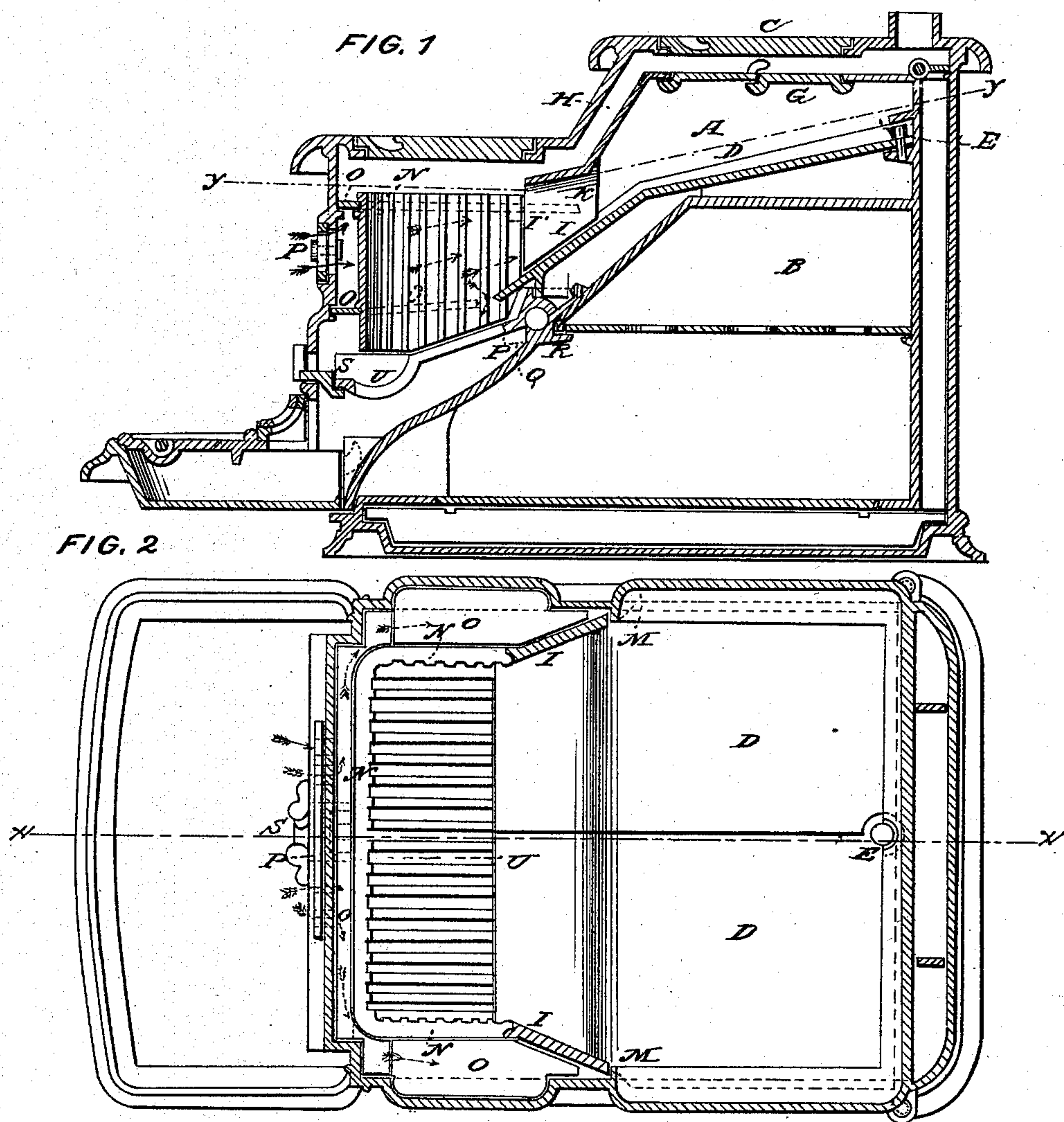


B. F. WARREN.
Cooking Stove.

No. 105,746.

Patented July 26, 1870.



WITNESSES:

Isaac Dutovich
Wm. H. Briggs

INVENTOR:

B. F. Warren
PER *Munnell*

United States Patent Office.

BENJAMIN F. WARREN, OF FISHKILL, NEW YORK.

Letters Patent No. 105,746, dated July 26, 1870.

COOKING-STOVE.

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, BENJAMIN F. WARREN, of Fishkill, on the Hudson, in the county of Dutchess and State of New York, have invented a new and useful Improvement in Cooking-Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

This invention relates to improvements in cooking-stoves, and consists in the application thereto, under an elevated rear plate, and over the oven, in a way not to take up any of the space of the stove available for other purposes, of a magazine for holding fuel, the bottom of which is hinged or pivoted at the back part, and shelving downward, and resting, at the front, on a rear elevation of the grate, and extending the whole length of the same, whereby the fire may be continuously fed at the back from the magazine, and the latter may have a shaking motion imparted to it by the shaking of the grate.

The opening for the supply of the magazine is arranged to coincide with the opening through the top for the stove-ware, and the doors for closing it are arranged to form, when opened, chutes for conducting the coal thereto, and preventing it from being scattered over the top.

The invention also comprises a cast-metal fire-plate for the front and ends, in substitution of the fire-brick, which is made possible by the arrangement of a cold-air space between the shell of the stove and the said plate, which leads thence to the bottom of the grate, so that the air which protects the plate, and thereby becomes heated, is used to facilitate combustion, which plate opens at the back toward the chute from the magazine, and rests on projections of the side walls of the chute, arranged to admit of the shaking motion of the bottom of the chute; and

The invention also comprises an arrangement of the rear of the grate to rest and work on friction-rollers, and the front with a trough, for the better discharge of clinkers, all as hereinafter more fully specified.

Figure 1 is a sectional elevation of my improved stove taken on the line *z z* of fig. 2, and

Figure 2 is a horizontal section of the same taken on the line *y y* of fig. 1.

Similar letters of reference indicate corresponding parts.

A is the magazine or reservoir, placed in the back part of the stove, which is sufficiently elevated to provide room for it above the oven B, and below the removable part C of the top for the stove-ware, and furnish sufficient descent for the bottom D to insure the

sliding of the coal into the fire over the back part of the grate.

The rear end of the bottom of the magazine is pivoted at E to a bracket, so as to vibrate thereon slightly, the said vibration being imparted by the shaking of the grate on the rear elevated part F, of which the front end of the bottom D rests.

The opening through the top of the magazine for the supply of coal coincides with the opening through the top of the stove for the ware, so that access may be had to it by the removal of the parts C, and by opening the double doors G of the said top, which are so arranged that, when opened, they will rest against the walls of the opening in the top, and thereby form chutes for insuring the passage of the coal into the magazine.

This magazine is inclosed on all sides, except the mouth, which opens to the fire, so that the draught cannot pass through it, the same being arranged to pass over it through the space H, and then down under and above the oven, in the usual way.

The bottom is fitted into grooves in the sides I, which admits of its vibration.

These sides, which are connected to the top plate K, form the side walls of the neck of the magazine to the ends L of the fire-plate from the points M, where the side walls of the shell of the stove become the sides of the magazine, and they support the ends of the fire-plate by the projections I' taking under projections in the back of the fire-plate.

N is the cast-metal fire-plate, arranged to extend along the front and the two ends of the fire-space. It is made thick and strong, and ribbed on the side next the fire, the better to withstand the action of the heat.

It is arranged to rest above the grate and front, and end horizontal plates, O, are arranged between it and the shell at the top and bottom, to cause the air, which is admitted at P, to flow along against the back to both the ends, where it is caused to pass down under the grate and enter the fire below, so that the heat imparted to it, while cooling the plate, will be restored to the fire, and facilitate the combustion in the same measure that it is heated above the temperature of the air that would be admitted directly to the fire.

The rear part of the grate is arranged to rest on the friction-balls Q, seated in a groove, R, in the oven-plate, and the front projects under and beyond the bottom of the fire-plate N, and rests on the movable support S, which may be taken out to let the front down for cleaning out.

This arrangement makes it more easy to shake the grate. The front of the latter is carried downward at U, where it passes under the plate forming a kind

of trough, into which the clinkers and other light foul matter may be raked from time to time, or caused to fall by the shaking of the grate from the fire for removal or for escape, by the action of the grate, through the passage between the grate and the fire-wall.

This arrangement of the grate for discharging the clinkers and other foul matter through a trough, dipping down under the fire-wall, and rising upward beyond, so as to prevent the escape of coal, except when shaken, is applicable to other stoves, and may be applied to base-burning heating-stoves by elevating the center of the grate, so as to shed the refuse matter toward and over the edges when shaken, or it may be a plane or horizontal projection of the grate without the trough, or the outer upward projection.

Having thus described my invention,

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

1. The combination with a cooking-stove, of a coal-magazine, arranged between the rear top and the oven, and to feed into the fire the whole length of the grate, all substantially as specified.

2. The combination, with a cooking-stove, having the top of the rear elevated, as described, of the magazine, having the bottom inclined into the fire-box, all substantially as specified.

3. The arrangement of the double doors G, opening into the magazine, to rest, when open, against the walls of the opening in the top of the stove, and form

chutes to conduct the coal, all substantially as specified.

4. The inclined movable bottom of the magazine, pivoted at B, and arranged to rest on the rear elevation F of the grate, substantially as specified.

5. The plates I K, joining on the reservoir, forming a chute for guiding the coal into the fire-box, and a support for the fire-plate, all substantially as specified.

6. The cast-iron fire-plate N, arranged to form three sides of the fire-box, and joining on the chute from the magazine, substantially as specified.

7. The arrangement of the air-passage behind the fire-plate, to conduct the air from the register around both ends and down past the terminus of the lower end plates O to the grate, all substantially as specified.

8. Supporting the grate at the rear on the friction-rollers or balls Q, and at the front on the movable holder S, all substantially as specified.

9. The arrangement, in the front of the grate, of the trough U, substantially as specified.

10. The projection of the stove-grate under and beyond the fire-wall, when arranged to provide a space for the discharge of the debris of the fire, substantially in the manner specified.

The above specification of my invention signed by me this 11th day of January, 1870.

Witnesses: BENJAMIN F. WARREN.

GEO. W. MABEE,

ALEX. F. ROBERTS.