2 Sheets—Sheet 1.

J. S. PERRY.

Base-Burning Stove.

No. 100,322. Patented March 1, 1870.

Fig. 1

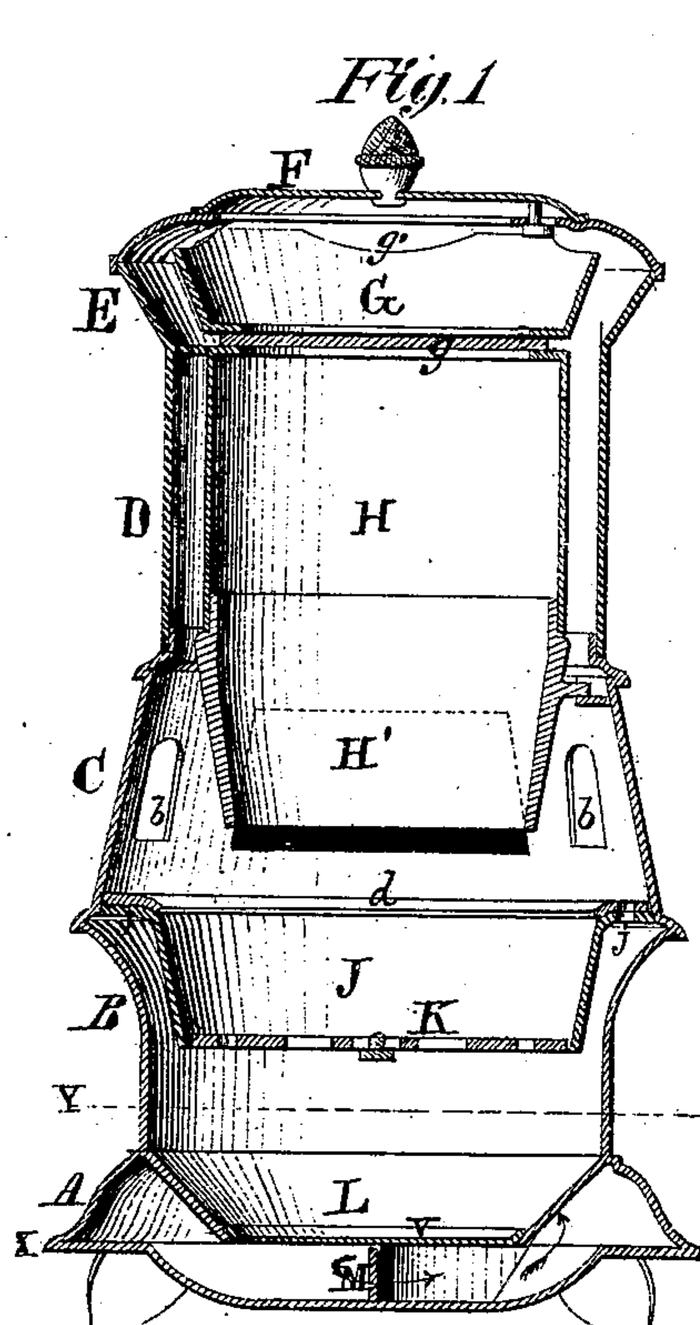


Fig. 2

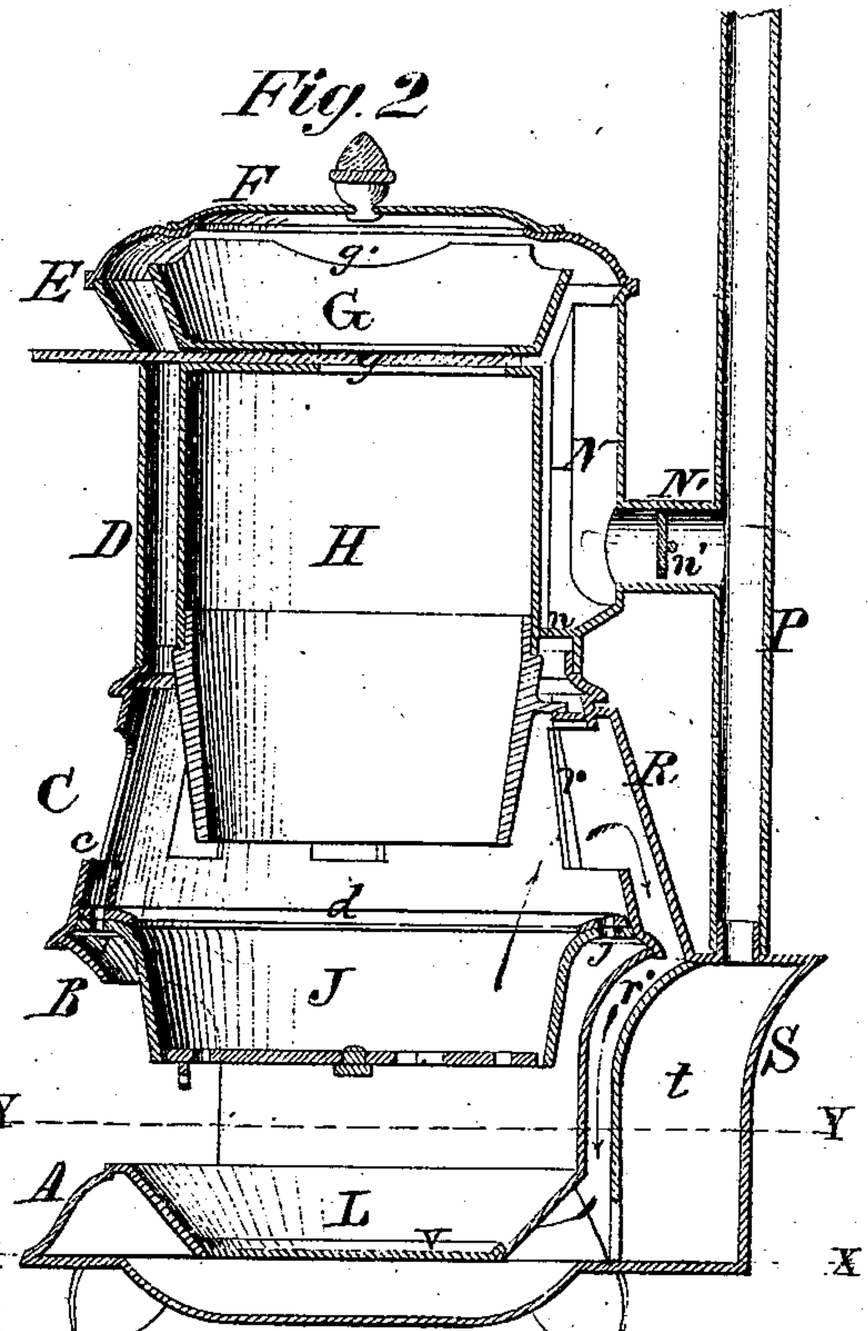


Fig. 3.

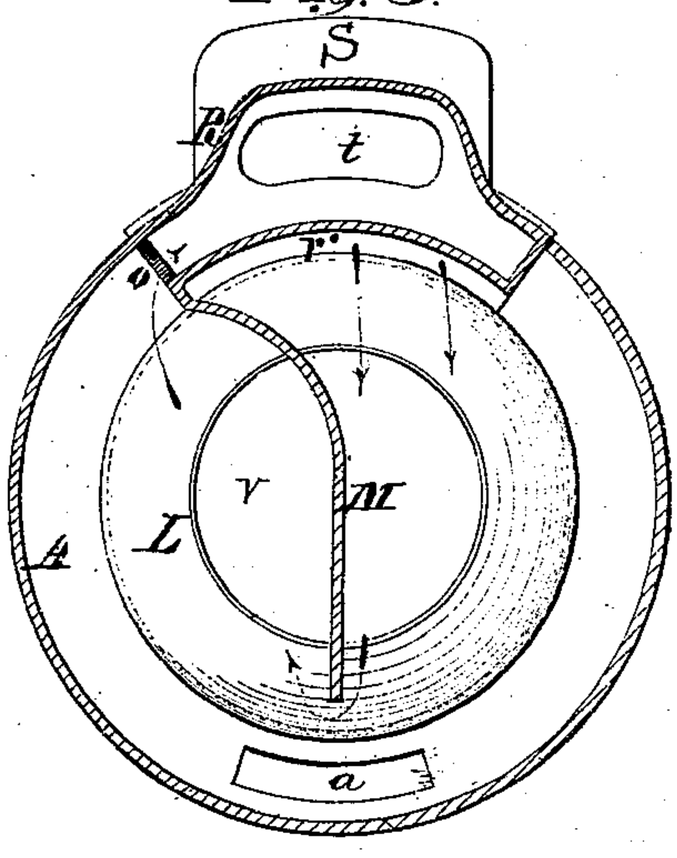
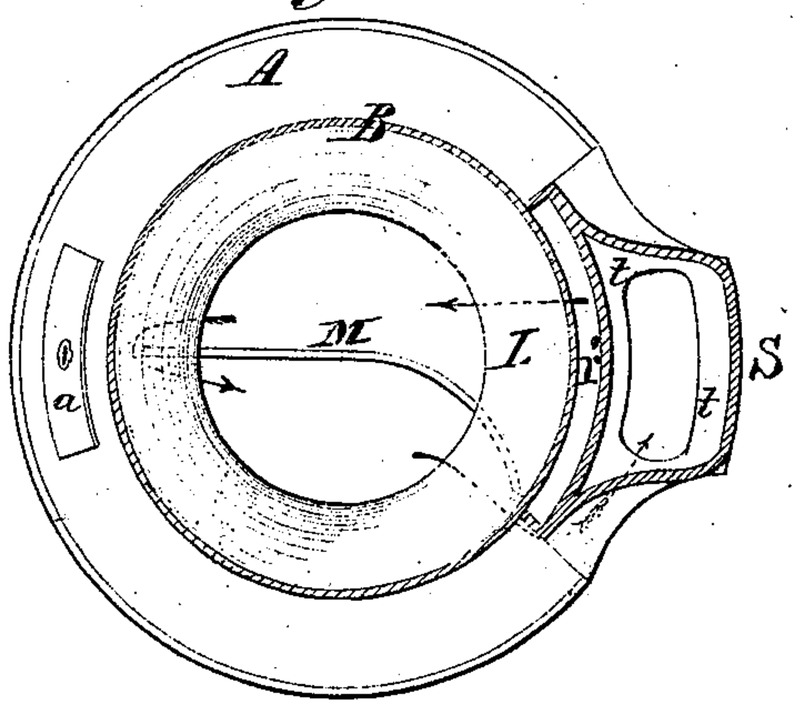


Fig. 4.



Witnesses.

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John S. Perry by Andrew Dickey
By Attys Munson, Fennick & Lawrence

2 Sheets—Sheet 2.

J. S. PERRY.

Base-Burning Stove.

No. 100,322. Patented March 1, 1870

Fig. 5

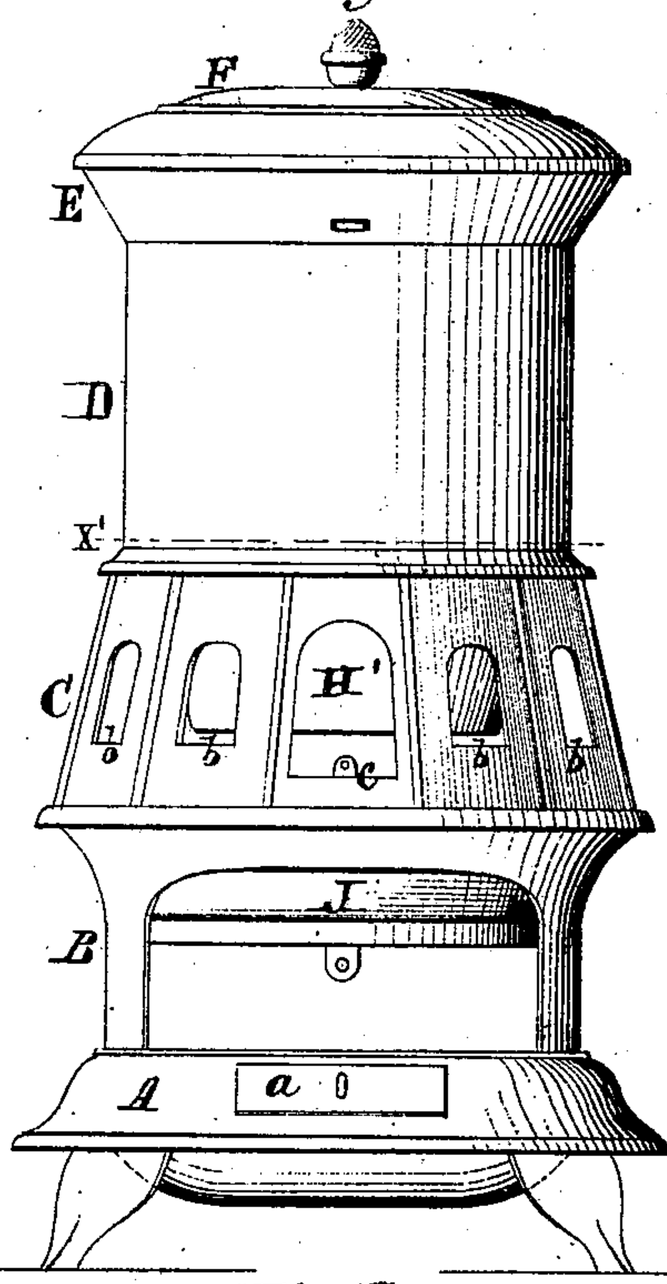


Fig. 6.

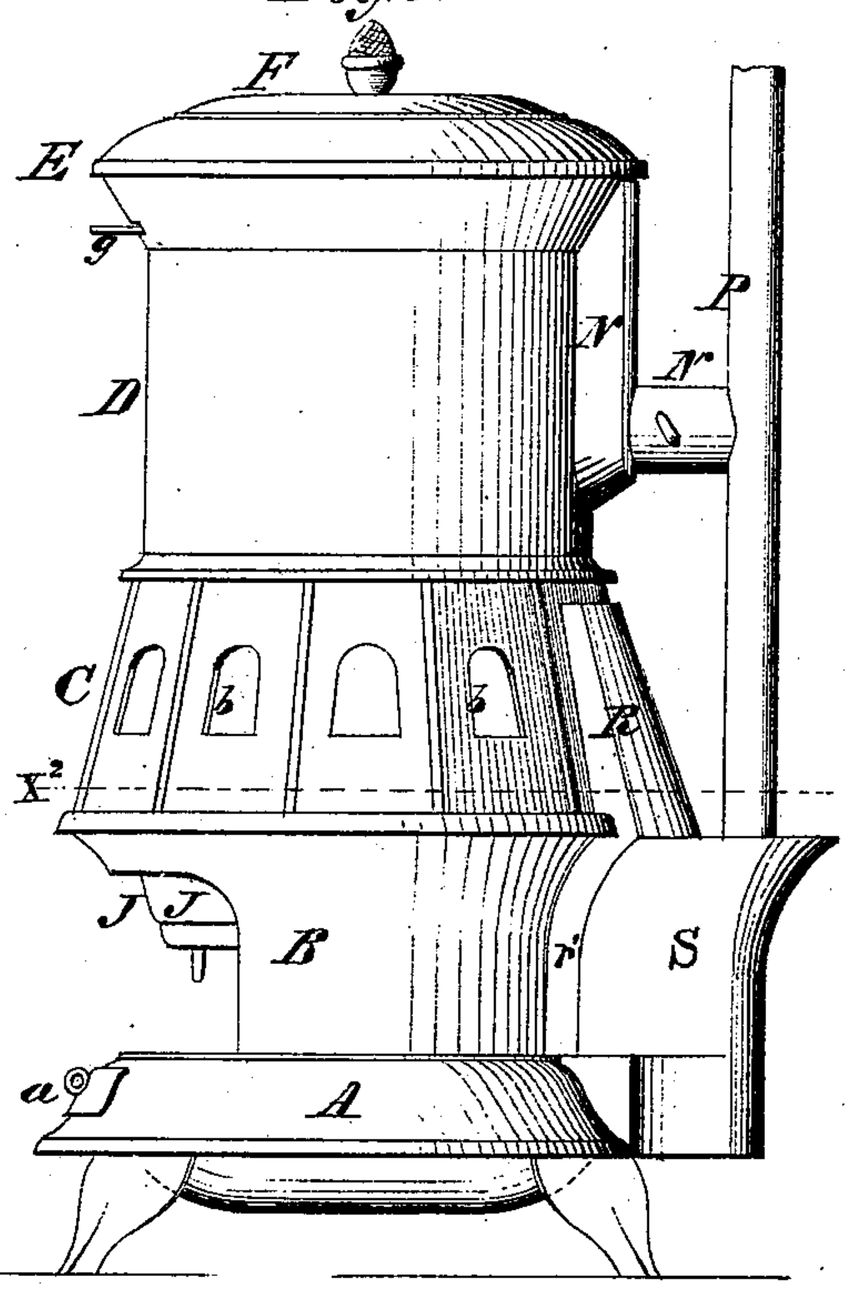


Fig. 7

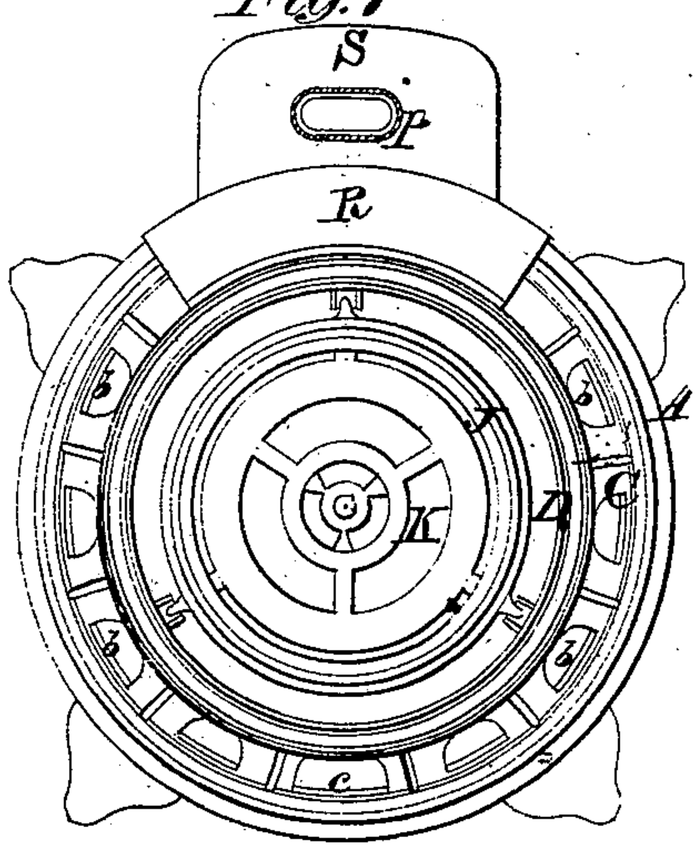
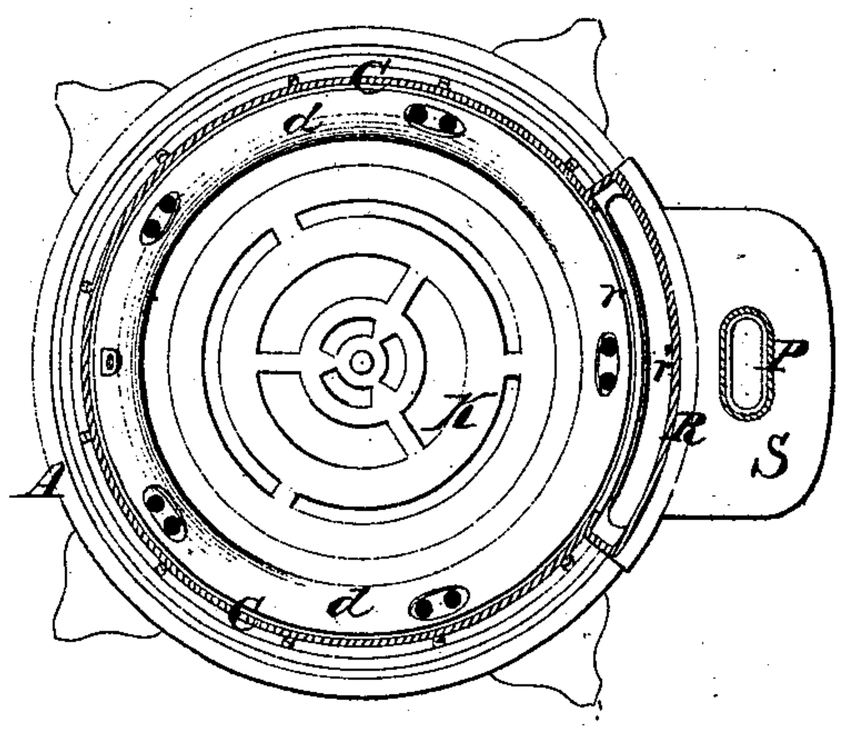


Fig. 8.



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Inventor
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UNITED STATES PATENT OFFICE.

JOHN S. PERRY AND ANDREW DICKEY, OF ALBANY, NEW YORK.

IMPROVEMENT IN BASE-BURNING STOVES.

Specification forming part of Letters Patent No. **100,322**, dated March 1, 1870.

To all whom it may concern:

Be it known that we, JOHN S. PERRY and ANDREW DICKEY, of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements on Magazine Stoves and Furnaces; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, Plate 1, is a section taken laterally and vertically through the center of our improved stove. Fig. 2, Plate 1, is a section, taken in a vertical plane through the center of the stove from front to rear. Fig. 3, Plate 1, is a section, taken in the horizontal plane indicated by dotted lines *x x* in Figs. 1 and 2, looking upward. Fig. 4, Plate 1, is a section, taken in the horizontal plane indicated by dotted lines Y Y in Figs. 1 and 2, looking downward. Figs. 5 and 6, Plate 2, are views of the stove as seen externally. Fig. 7, Plate 2, is a section, taken through the stove in the horizontal plane indicated by dotted line x^1 in Fig. 5. Fig. 8, Plate 2, is a section, in the horizontal plane indicated by dotted line x^2 in Fig. 6.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain novel improvements on magazine stoves and furnaces, which have their fire-chambers inclosed at the sides by a case or wall, provided with doors and mica windows.

The main object of our invention is to employ an external revertible flue in combination with stoves of the class above referred to, and to so construct and arrange the external flues that the products of combustion can be carried out horizontally from the combustion-chamber, thence conducted down into, and caused to circulate through, the base section of the stove, thence backward and upward to the main exit-pipe. Said products, in their descent or on their way to the hollow base, will communicate considerable heat to the ascending-flue, and thus greatly augment the draft, as will be hereinafter explained.

The following description will enable others skilled in the art to understand our invention and a practical mode of carrying it into effect.

In the accompanying drawings, Plates 1 and 2, A represents the base section of the stove. B is the ash-pit section; C, the illuminating or window section; D, the intermediate section between the section C and top section E, and F is the cover to said top section. At the back of the base section A is a rear chamber, *t*, from which rises the escape-pipe P that communicates with the interior of section D when the direct-draft damper *n'* is open. The base section A is hollow and divided into two flue-spaces by a curved plate, M, shown in Figs. 1, 3, and 4. On one side of this plate M, at its rear end, there is a communication between the hollow base A and descending flue *r'*, and on the opposite side of this plate there is a communication between the hollow base A and the chamber *t* of section S through the opening *o*. (See Fig. 3.) The plate M extends forward nearly to the front of the base section A, so that all the heated products which enter this base section through the descending flue r^1 are directed forward to the front of the stove before they can return to the ascending flues or chambers. This is indicated in the two Figs. 3 and 4, Plate 1, by the course of the arrows.

The descending or diving flue *r'* is an oblong flue constructed on the back side of the ash-pit section, outside thereof. It opens above into the combustion-chamber of section C by means of a passage, *r*, which occupies nearly the entire vertical height of said section, and one fourth, more or less, of its circumference. At its lower end the descending flue *r'* opens on one side of the division-plate M, as shown in Figs. 3 and 4. The ascending flue *t* is formed by the section S, which is constructed upon the back side of the flue *r'*, and which communicates superiorly with the flue-pipe P, and inferiorly with hollow base A, on that side of division-plate M which is opposite the descending flue-inlet.

It will be seen that chamber *t* of section S will receive considerable heat from the products descending through flue *r'*, which will rarefy the air in said chambers, and thus produce an artificial outward draft.

Within the ash-pit section B the fire-pot J is suspended so as to leave a space all around it. This pot J is suspended by its perforated flange *j*, upon which flange is arranged a mov-

able perforated ring or register, *d*. By means of this register-ring, which we do not claim as our invention in itself considered, air can be allowed to enter the combustion-chamber from the ash-pit in any desired quantities whether the direct damper *n'* is open or shut. Below the fire-pot J a large opening is made through the top plate of the base section A, which opening is closed by the tightly-fitting cover *v*. This cover can be removed through the front-door opening of the ash-pit when it is desired to clean out the flue-spaces in the base section. *a* is a front cover to an opening leading into the hollow base section. Above the fire-pot, and suspended by lugs at or near its upper end, is the lower section H' of the fuel-magazine, which section is surmounted by the upper section H, that is covered on top by the sliding or lifting cover *g*. On the top of the magazine is a chamber, G, having its sides flaring upward and the upper edges thereof scalloped, as shown in Figs. 1 and 2. This chamber is within the top section E of the stove, and is closed on top by the cover F to said section. It affords a space for boiling water and cooking, and is in communication with the chamber surrounding it and the magazine. A flue, N, is constructed on the back part of the section D, and closed by a bottom wall and two vertical side walls. Its upper end is open, and communicates with the flue-space surrounding the magazine and oven, so that when the damper *n'*, in cross-pipe N', is open a communication for direct draft is established between the combustion-chamber and flue-pipe P.

From the above description it will be seen that when the direct-draft damper *n'* is shut all the products will be caused to circulate through the hollow base A and through the descending and ascending flues, and that when this damper *n'* is open all the products will pass upwardly through the chamber between the magazine and outer wall and oven and top, and thence escape through pipe N' into the pipe P.

Having described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The flue-passage *r'* and *t*, arranged at the back of a suspended fire-pot, J, and communicating with the back of a hollow flue-base, A, directly beneath the ash-pit, substantially as described.

2. The arrangement of flue outlets *r* and *n'*, in combination with flues *r'*, flue-base A. flue *t* and flue P, substantially as described.

3. The direct-draft damper *n'* and its pipe N', in communication with escape-pipe P, and in combination with the indirect-draft descending flue *r*, flue-base A', and ascending flue *t*, substantially as described.

4. The descending and ascending flues and hollow base, constructed as described, in combination with the register-ring on fire-pot J, substantially as described.

5. The combination of the following elements, to wit, a suspended fire-pot, a flue-base, A, and flues leading into and out of this base, substantially as described.

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ANDREW DICKEY.

Witnesses:
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JOHN A. ZWEERES.