(No Model.)

2 Sheets—Sheet 1.

L. L. ROWE.

HEATING STOVE-OR FURNACE.

No. 378,019. Patented Feb. 14, 1888.

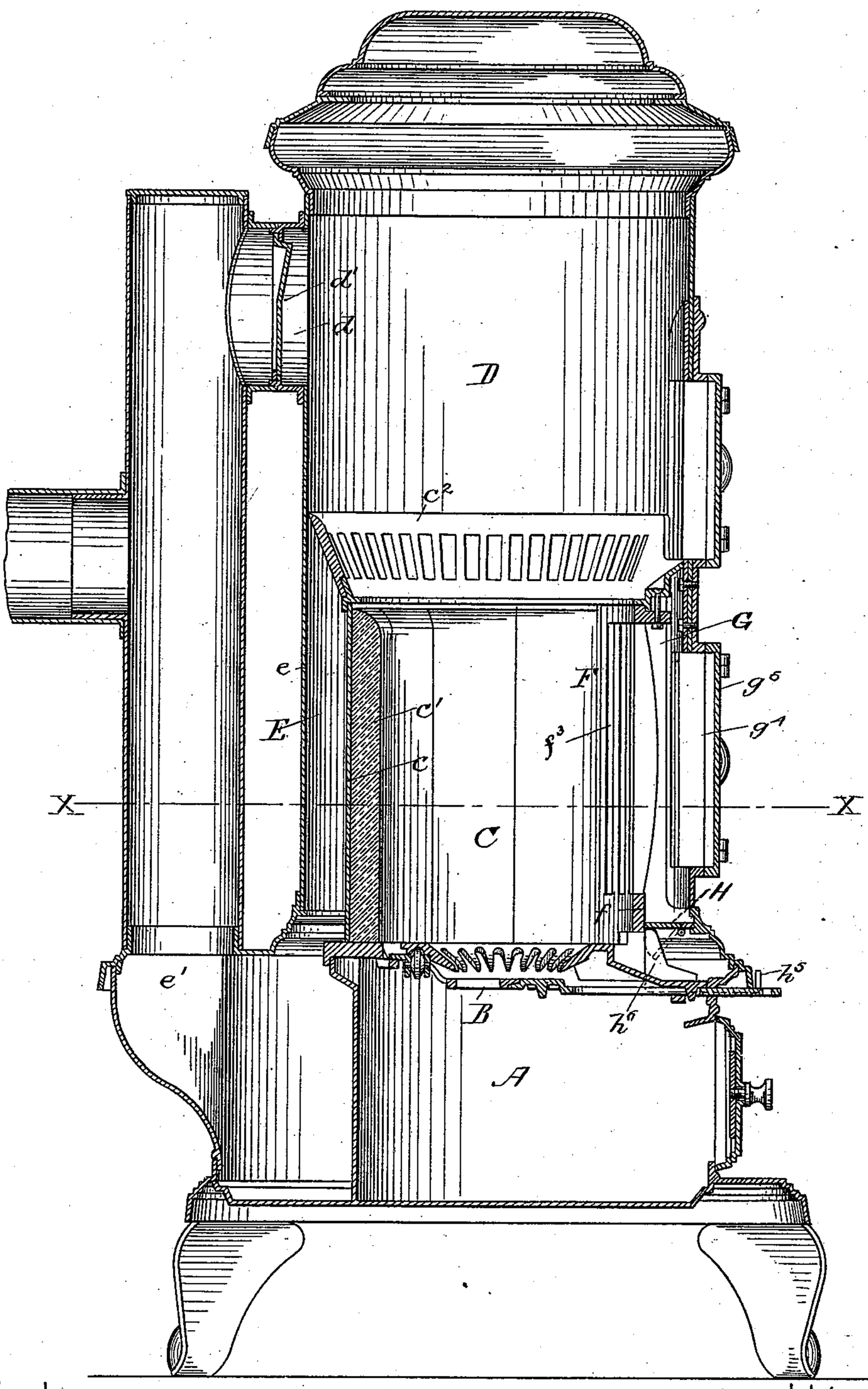

Fig. 1.

WITNESSES.

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INVENTOR.

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(No Model.) 2 Sheets—Sheet 2.

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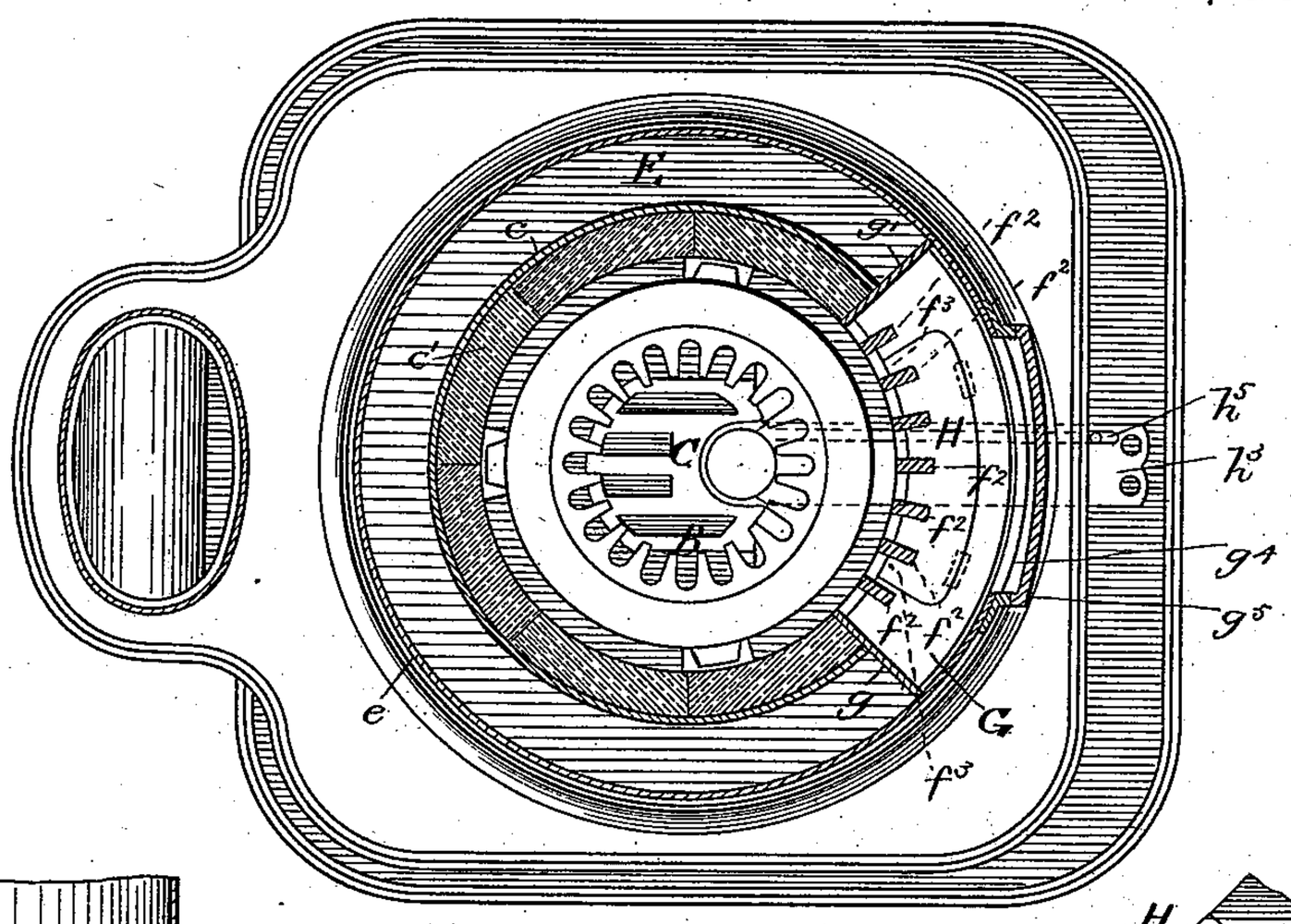

Fig. 3.

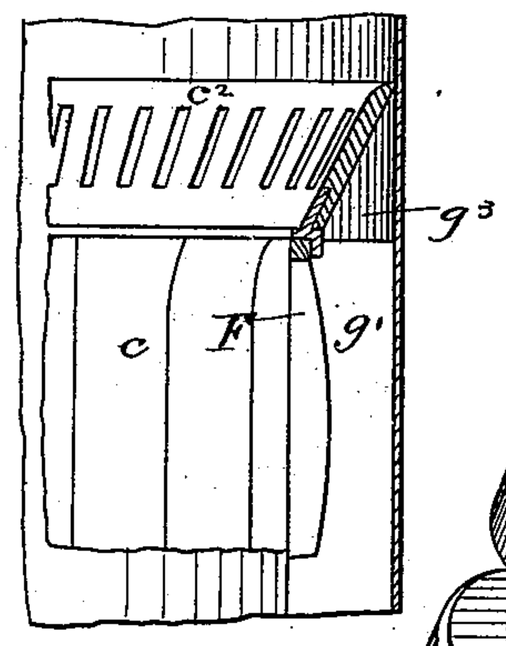

Fig. 5.

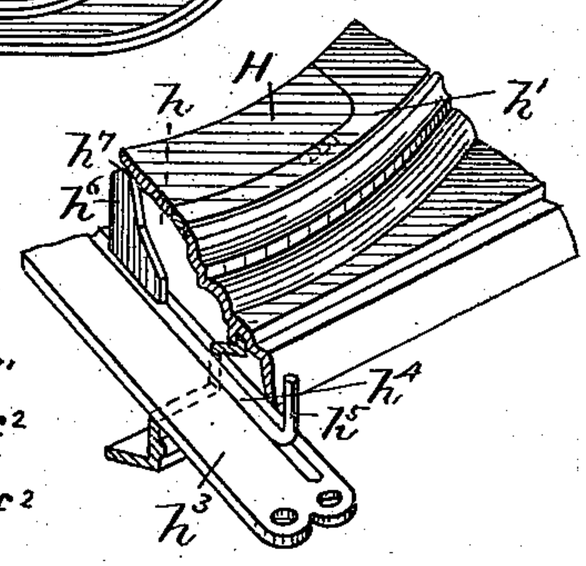

Fig. 4.

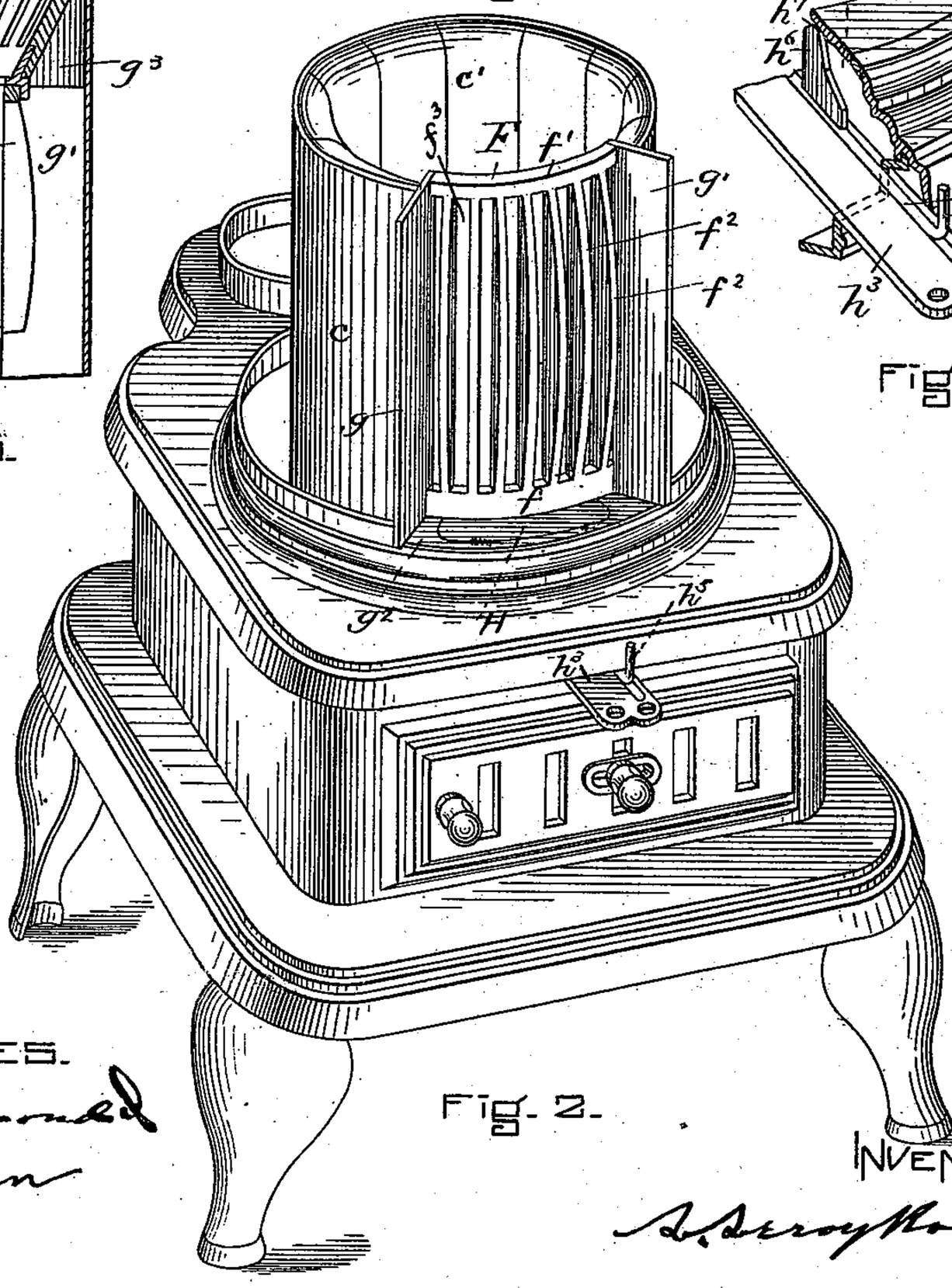

Fig. 2.

WITNESSES.

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UNITED STATES PATENT OFFICE.

L. LEROY ROWE, OF BOSTON, MASSACHUSETTS.

HEATING STOVE OR FURNACE.

SPECIFICATION forming part of Letters Patent No. 378,019, dated February 14, 1888.

Application filed April 26, 1886. Serial No. 200,163. (No model.)

To all whom it may concern:

Be it known that I, L. LEROY ROWE, of Boston, in the county of Suffolk and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Heating Stoves or Furnaces, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates especially to furnaces or stoves having a fire-pot provided with a section having vertical recesses or openings connecting the fire-pot with a chamber in the front of the stove or furnace, connected with the combustion-chamber and downflues of the furnace or stove by means of suitable openings or spaces.

It further relates to a hole through which ashes escape from the said chamber to the ash-pit, which hole is adapted to be automatically opened upon the movement of the grate in shaking the stove, so that the ashes are automatically dumped or let fall into the ash-pit.

In the drawings I have represented the invention as applied to a heating-stove.

Figure 1 represents a vertical section of a stove of this character containing the features of my invention. Fig. 2 is a view in perspective of the fire-pot wall, vertical flue-plates, and base of the stove, to further illustrate the construction of the invention. Fig. 3 is a view in horizontal section upon the line *x x* of Fig. 1. Fig. 4 is a view in detail to illustrate the construction of mechanism for operating the cover to the opening of the ash-pit, hereinafter referred to; and Fig. 5 is a detail view to illustrate the connection between the chamber *a* to the front of the stove, hereinafter referred to, and the down takes or flues of the stove.

A is the ash-pit; B, the grate; C, the fire-pot; *c*, the casing about it; *c'*, the lining; c^2, the coal-guard; D, the combustion-chamber; *d*, the direct escape-port controlled by the damper *d'*.

E E are the flues or takes, which are arranged between the casing *c* and the outer casing, *e*, of the stove, and which open at the back of the base into the uptake *e'*. The casing *c* of the fire-pot and the lining *c'* extend about three-quarters around the fire-pot wall, (although I do not confine myself to the proportion.) The other part of section is made up or composed of the section F, which preferably is a casting having the lower bar, *f*, the upper bar, *f'*, and the vertical bars f^2 separated from each other to provide vertical spaces f^3. These recesses or spaces connect the fire-pot with the chamber G, and this chamber is formed by means of the plates *g* *g'*, which extend from each edge of the casing *c*, or from each edge of the fire-brick, to the outer casing of the stove. The lower wall of this chamber is formed by the section g^2 of the upper base-plate, and the upper wall by the coal-guard c^2, which may or may not be provided with apertures. This chamber is connected with the combustion-chamber and with the down flues or takes E E by means of the openings g^3 above the plates *g* *g'*, formed by not extending the plates *g* *g'* to the coal-guard c^2. There is an opening, g^4, through the front casing of the furnace to this chamber G, which is closed by a door, g^5, which may carry mica or other lights.

The section g^2 of the base-plate has an opening, *h*, which is closed by a cover or plate, H. This opening connects the chamber G with the ash-pit, and as it is desirable that the air for supporting combustion should pass from the ash-pit through the grate and not through this opening, it is necessary that the cover or plate H be moved to expose or open the aperture or opening only when the grate is shaken, or when it is desired to remove or dump ashes which have fallen thereon or into the lower part of the chamber G. To accomplish this purpose I have hinged the plate or cover H at its outer edge, *h'*, to the section g^2 of the base-plate, and so as to swing downwardly into the ash-pit; and I have secured or attached to the slide h^3, for oscillating the grate B, and also for moving a section thereof outwardly to dump it, a rod, h^4, having an upwardly-bent outer end, h^5, and carrying at its inner end an arm or projection, h^6, which acts as a support for the cover or plate H. The rod h^4 is movable upon the slide h^3, and is movable with the slide h^3. The outward movement of the slide h^3, however, does not withdraw the support or arm h^6 from beneath the cover or plate H, so that the grate can be moved in dumping the

contents of the fire-pot without moving the cover or plate H; but when the slide is oscillated to shake the grate the arm or support h^6 turns with the rod and falls and the cover or plate H swings downward automatically. To close the opening, it is necessary to turn the rod to bring the arm or support h^6 into a vertical position beneath the plate.

Of course the support or arm h^6 may be turned to permit the falling of the cover or plate at any other time by simply turning the rod h^4; and I would state that I do not confine myself to the especial construction herein described for connecting the grate or grate-operating slide, bar, or rod with the cover or plate H, but may use any mechanical equivalent for the device herein described for automatically releasing or causing the opening of the cover or plate upon oscillating said grate bar or slide.

In use a portion of the products of combustion and heat pass from the fire-pot into this chamber, and from thence directly to the downflues, or through the combustion-chamber to the downflues; and by providing the chamber with a door access is had at all times to the side of the fire and to the fire-pot exposed by the openings or spaces f^3.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination, in a heating stove or furnace, of the continuous fire-pot casing or shell c, the outer casing, e, and the vertical partition-plates $g\,g'$, forming the downflues E E, the combustion-chamber D, the section g^2 of the upper base-plate, forming, with the partition-plates $g\,g'$, the chamber G, which is closed at its bottom and sides and which opens into the downflues E E, and the section F of the fire-pot wall, having the openings f^3 extending from the fire-pot into the chamber G, as and for the purposes described.

2. In a heating stove or furnace, in combination with the fire-pot C and the combustion-chamber D, the chamber G, formed by the plates g, g', and g^2 and opening into the downflues E E, the section F of the fire-pot wall, having the openings f^3 connecting the fire-pot with the said chamber G, the casing e^2, having an opening, g^4, to the said chamber G, and the door g^5, for closing said opening, substantially as described.

3. The combination of the chamber G, the base-plate g^2, the opening h in the base-plate from the chamber G, the cover or plate H, hinged to the base-plate to swing downwardly into the ash-pit, and the closing arm or device h^6, substantially as described.

4. The combination, in a heating stove or furnace, of the chamber G, having an opening, h, to the ash-pit chamber, which is normally closed by a hinged cover or plate, H, the said cover or plate H, the grate slide or bar h^3, and a device connecting the slide or bar with the cover or plate H, adapted to be operated by the movement of the slide or bar h^3 in oscillating the grate to automatically release the cover H to expose or uncover the opening h, substantially as described.

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Witnesses:
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