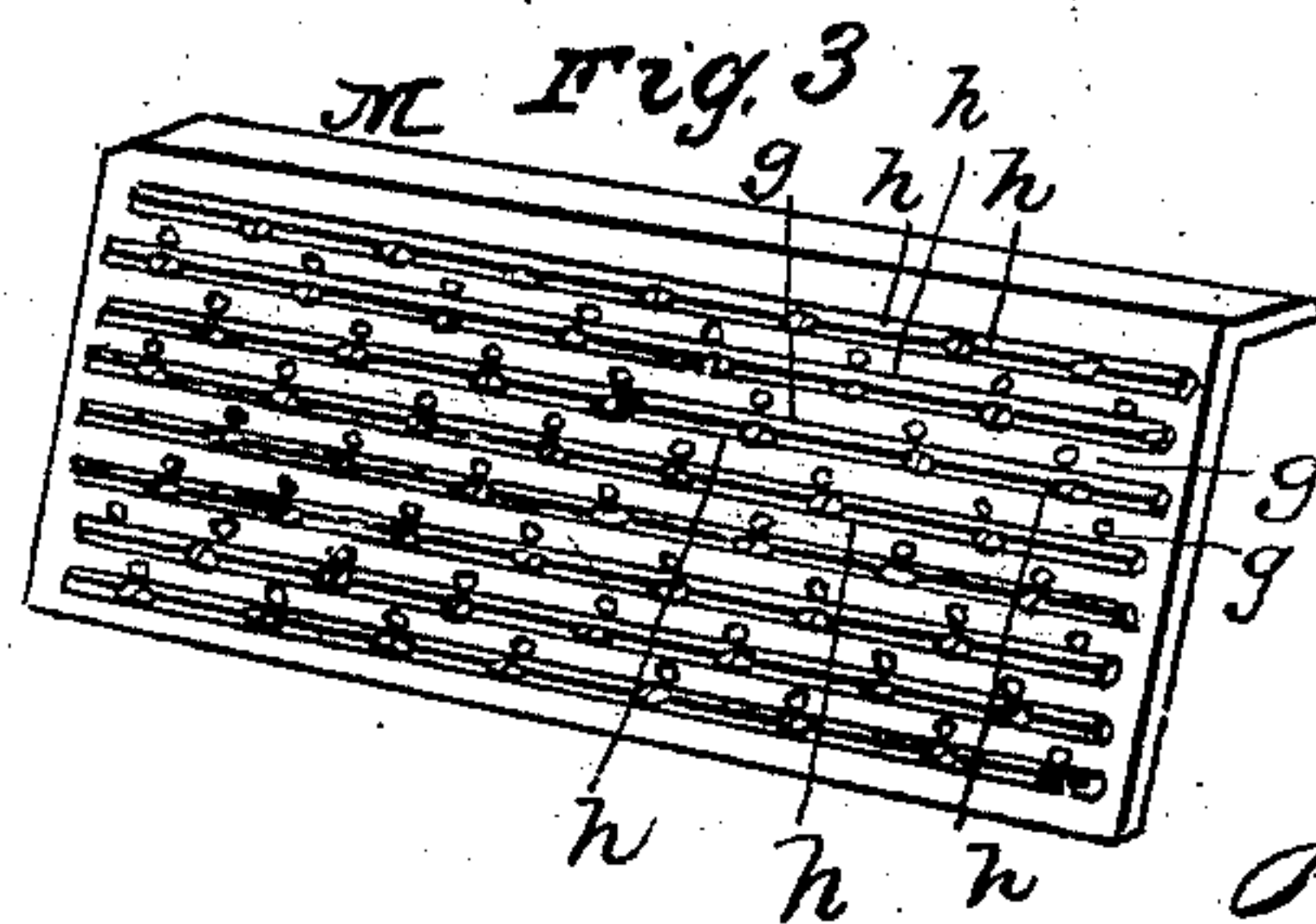
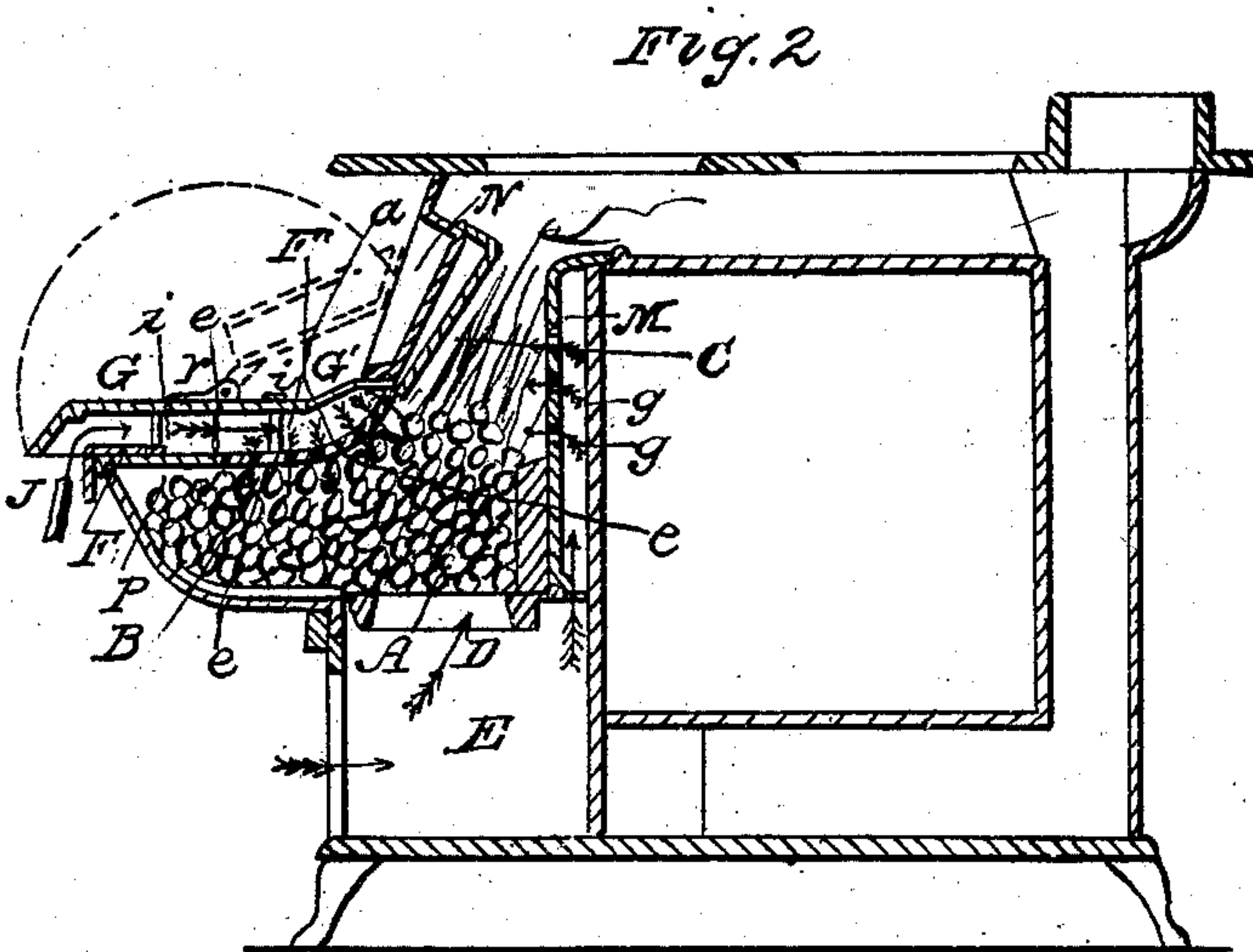
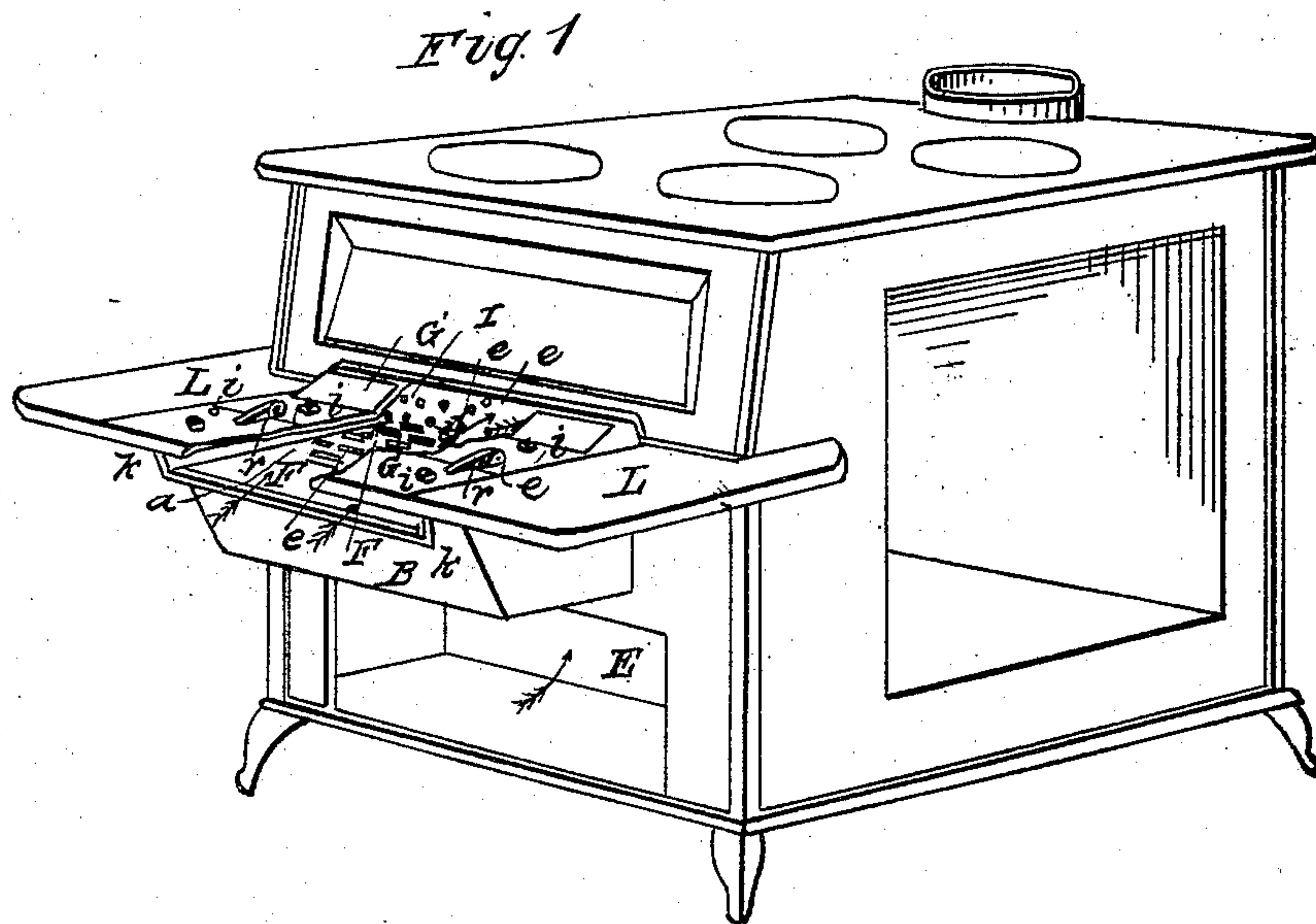


J. J. SAVAGE.
Cooking Stove.

2 Sheets—Sheet 1.

No. 91,875.

Patented June 29, 1869.



Witnesses
Richd Prescott
Austin L Park

Inventor
J J Savage

J. J. SAVAGE.
Cooking Stove.

2 Sheets—Sheet 2.

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Fig. 4.

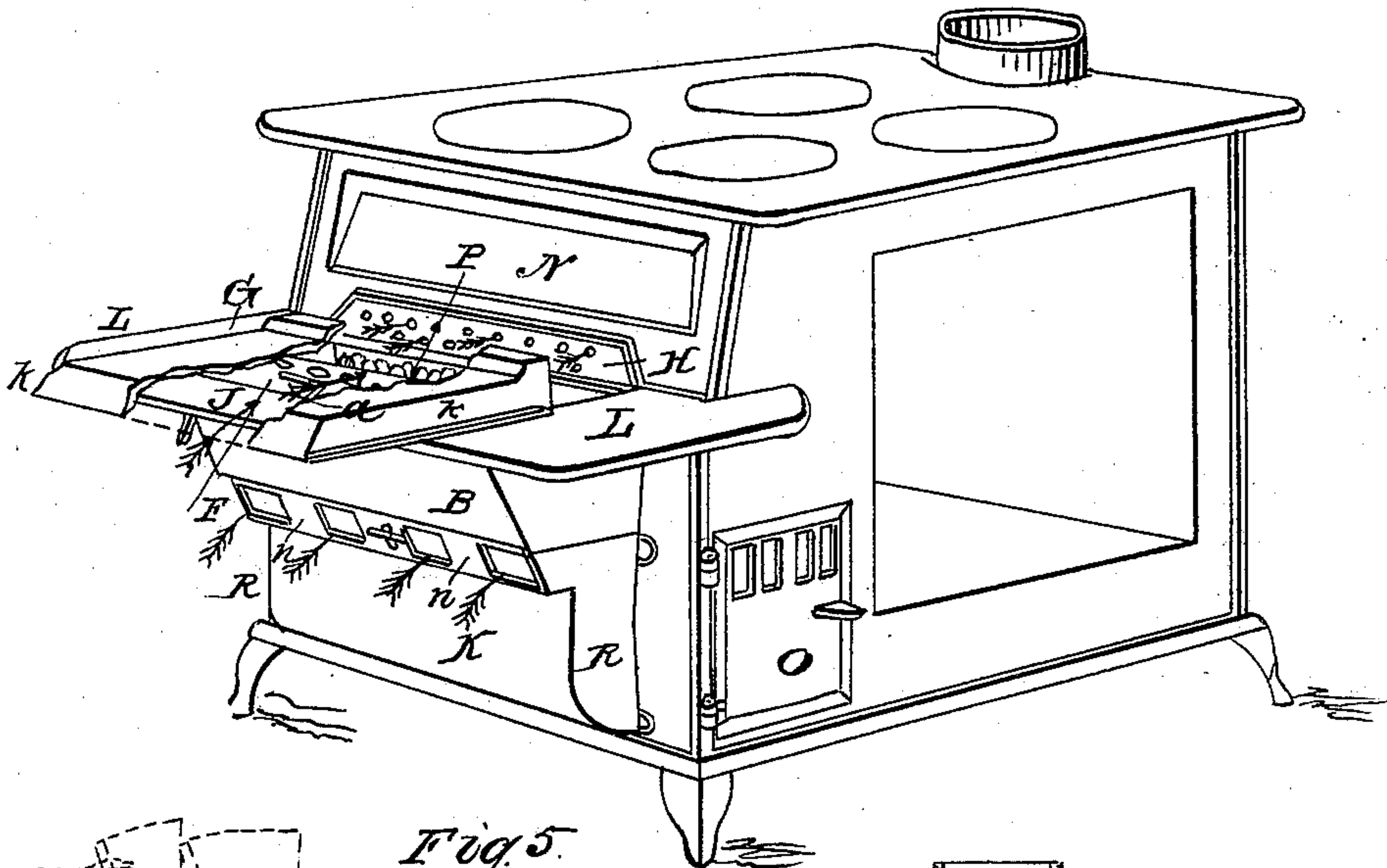


Fig. 5.

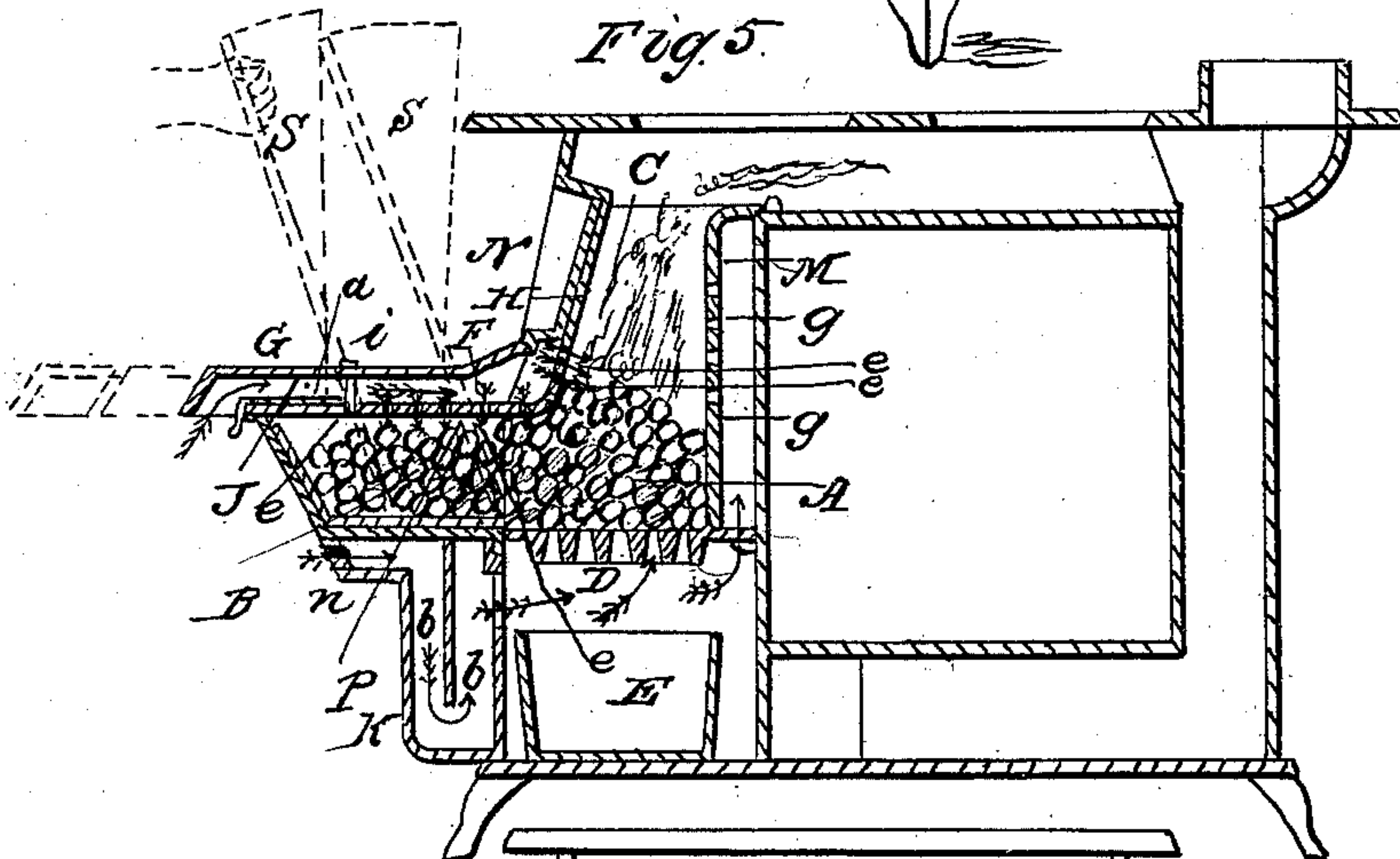
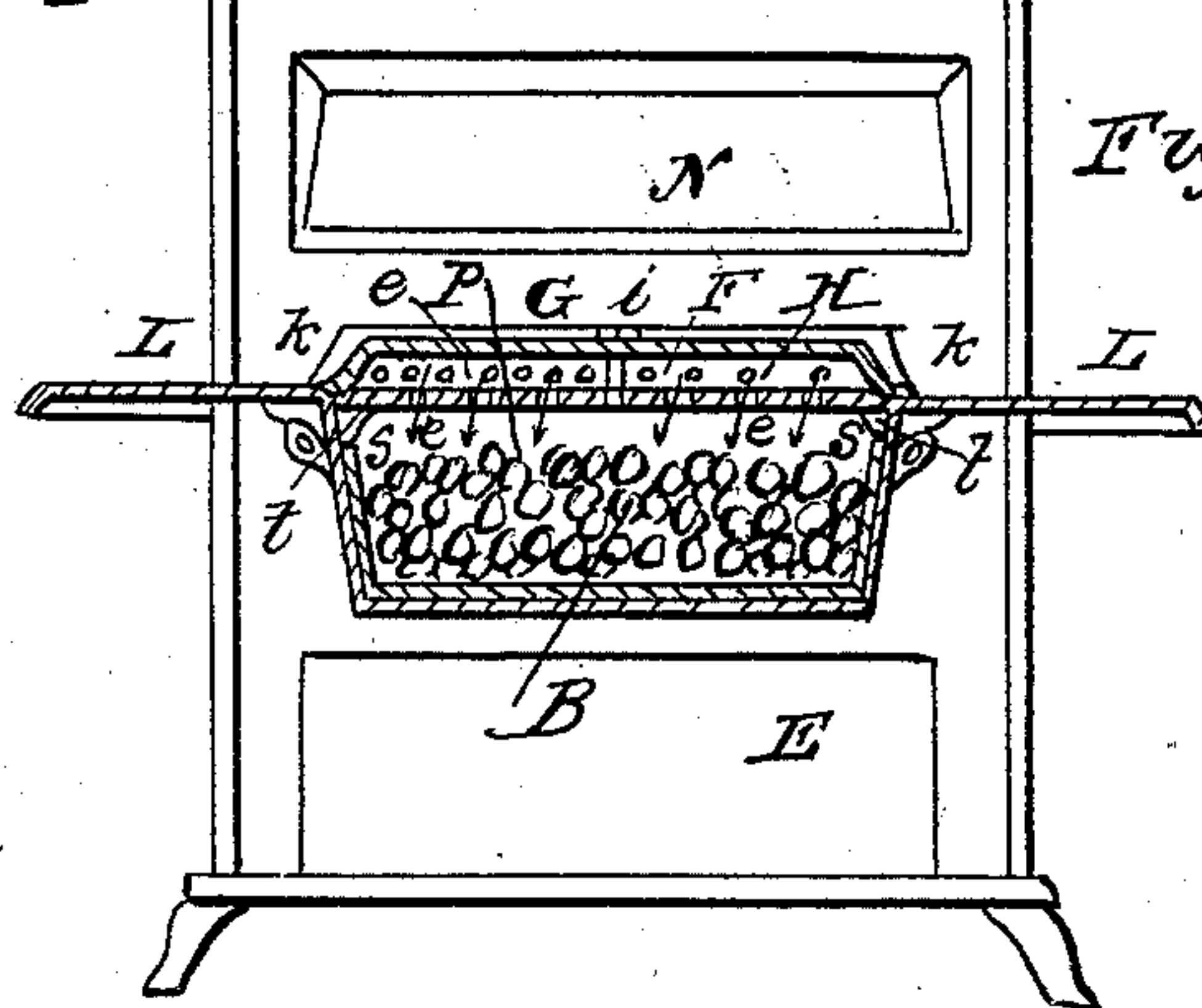


Fig. 6.



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J. J. SAVAGE, OF TROY, NEW YORK.

Letters Patent No. 91,875, dated June 29, 1869.

IMPROVEMENT IN COOKING-STOVES.

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, J. J. SAVAGE, of Troy, in the county of Rensselaer, and State of New York, have invented certain new and useful Improvements in Cooking-Stoves; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying sheets of drawings, marked, respectively, A and B, and letters of reference marked thereon, making part of this specification, in which—

Figure 1 is a perspective view of said improved stove;

Figure 2 is a longitudinal vertical section thereof;

Figure 3 is a perspective view of one of the lining-plates of fire-box;

Figure 4 is a modification in construction of the fuel-door or cover;

Figure 5 is a longitudinal vertical section of fig. 4; and

Figure 6 is a vertical cross-section through the extended fire-box of said stove.

The same letters refer to like parts in each of the said figures.

My invention is an improvement in the cooking-stove for which Letters Patent were granted me, dated the 12th day of February, 1867, and it is intended to furnish a more perfect supply of air to the burning fuel and combustible gases evolved therefrom, and also to otherwise make said stove more perfect and convenient in its operation; and

The said invention consists in the construction, combination, and arrangement of certain devices with said cooking-stove, by means of which a hot-air draught is so supplied as to quickly mix with the combustible gases evolved from the burning fuel in the fire-box thereof, and the air-draught thereinto, through the fire-grate, is heated, regulated, and equalized, and the feeding of fuel thereinto is made more perfect and convenient, all in manner substantially as hereinafter fully described and shown.

That others skilled in the art may make and use my said improved cooking-stove, I now proceed to fully describe its construction and operation, which is as follows:

The fire-box A, over the fire-grate D, is extended outward therefrom, below and forward of the flame-chamber C, thus forming a coking and feeding-box thereof, which has its fuel-door-way P located below and forward of the flame-chamber C, substantially as shown in the annexed drawings.

The bottom part of said extension B is ungrated, and slopes toward the fire-grate D, to facilitate feeding of fuel thereon, and is provided with lining-plates, as shown.

The fuel-door-way P is closed by a combined sliding and lifting-cover or door, constructed as follows:

The under, or fire-side thereof is made in two pieces,

F and F', which have sides, *k k*, substantially as shown in fig. 1, or their equivalents may be formed in the cover-plate G, as shown in figs. 4 and 6.

The part F' of said under plate has a series of air-draught perforations, *e e*, and also lugs or hooks *s s*, which hook under flanges *t t*, substantially as shown in fig. 6, to thereby hold it in proper position when drawn out.

The top side of said door is made in two pieces, G and G'.

The part G projects over the front of part F, in manner about as shown, so as to leave an air-entrance opening thereunder.

The top and bottom plates G and F, and G' and F', are now bolted together by bolts *i*, and hinged together by the hinges *r r*, thus forming a door or cover for said door-way P, and also forming the air-draught passage-way *a*, between said cover-plates, in manner substantially as shown in figs. 1 and 2 of the drawings.

This cover is now put in its place for use, by sliding it over said door-way P, with the lug or hooks *s s* hooking under the flanges *t t*, aforesaid, until its rear part is under the edge of said door-way, or so as to make a close joint with the front plate N, as shown.

When a fire is to be started, or the condition of the fire on the grate D ascertained, said door or cover may then be drawn back, thus giving easy access thereto; and when the fire needs replenishing, the lifting-part G F, hinged to the sliding part G' and F' of said door, is lifted up and back, in manner as shown by the dotted lines in fig. 2, and the coked fuel in the extended fire-box B is then shoved back on to the fire-grate D. A fresh supply of fuel being placed therein, the lifting-door is closed, as before.

Air now enters said passage-way *a*, is heated, and passes through the apertures *e e*, downward, in impinging jets or sheets, among, and quickly mixes with the combustible gases evolved from the igniting fuel in said cooking-box B, in manner substantially as shown by the arrows in fig. 2, so producing thereby more perfect combustion of said gases; the admission of air thereto being controlled by a damper, J, so operated as to diminish or close said air-passage *a*.

A modification in the construction of the aforesaid door is shown in figs. 4 and 5, wherein the door is made only to slide, having no hinged lifting-part, and the upper plate, G, is provided with sides *k k*.

The under plate F has perforations *e e*, as before; and when said door is closed, the under plate F makes a close joint with the perforated plate H, affixed to the front plate N, so that the air-draught, entering air-passage *a*, is heated, and passes through the apertures *e e* in jets or sheets, quickly mixes with the combustible gases, and promotes combustion thereof, in manner as shown before in fig. 2.

The manner of feeding fuel into the fire-box A,

when the coking-box B has only a sliding cover or door, is shown in fig. 5 of the annexed drawings.

When the fuel on the fire-grate D needs replenishing, the fuel-door F is slid open far enough to admit the pronged feeding-lever S into the coking-box B, to first loosen the coked fuel next the fire-box A. The lever S is then rested on the edge of the door F G, while its upper end is pulled forward or downward, thereby causing its feeding-end to move fresh fuel into the fire-box A, the said door's edge forming a shifting-fulcrum, over the coking-box B, for said feed-lever, while feeding fuel into the fire-box, in manner as shown by the dotted lines in fig. 5.

The coking-box B is then filled with fresh fuel, and the door closed.

In figs. 4 and 5, a device is shown, combined with the stove, for supplying a hot-air draught to the solid fuel lying on the grate-bars of the fire-box; and the said device consists in an outer plate or casing, K, provided with end-pieces R R, and air-entrance apertures *n n*, and is divided by a vertical plate, *c*, which extends from the upper edge of the box down to near its bottom, so as to form thereby a downward and upward air-draught passage-way, *b b'*, when said casing K is arranged and secured, by bolts or their equivalents, in its position under the coking-box B, and in front of the ash-space E, so that the bottom side of said coking-box forms the top, and the front plate of the ash-space forms the rear part or side of said air-draught passage-way *b b'*, substantially as shown in said figs. 4 and 5, whereby the air-draught is heated in its passage there-through, and better distributed at the under side of the fire-grate, thus producing equal combustion of the fuel thereon.

The shelf-plates L L are arranged above and forward of the fire-grate D and fire-box A, at the top and sides or ends of the said extended fire-box B, and at each side of the fuel-door-way P, so as to be level, or nearly so, with the fuel-door F G thereof, so that when closed, it then forms, together with the parts L L, aforesaid, a convenient shelf over the top and at the sides of the extended fire or coking-box B; and when said fuel-door is opened, to feed fuel into the fire-box B, then the door and plates L L, together, form a shelf about the door-way P, so that any fuel spilled in feeding, and caught thereon, can be brushed into the fire-box B.

An improved manner of constructing the fire-box lining-plates is shown in fig. 3 of the annexed drawings, wherein *h h h* are a series of short ribs or flanges, arranged in parallel rows or lines, about an inch, more or less, apart, and each rib of the respective rows placed in such relative positions to each of the ribs of its opposite row, as to have its joints or ends come opposite to the central part of the ribs of its opposite row, or to "break joints" therewith; and, combined with said series of ribs, there is an interposed series of air-draught apertures or slots, *g g*, made through the plate. The said respective series of ribs and apertures are arranged in alternating succession over the fire-side of the fire-plate, in manner substantially as shown in said fig. 3, thereby increasing the strength and durability of the fire-plates and fire-box.

The extended fire-box B is constructed with a close or ungrated bottom, while the fire-box A has a grated bottom, D, substantially as shown in the drawings.

By this particular construction of said fire-box B,

fuel placed therein ignites and burns or cokes from the rear, next the fire-box A, and top, downward, gradually or slowly, to the close bottom of said fire-box B, so that the evolved combustible gases, in the process of coking the fresh supply of fuel, pass up through the igniting fuel, and thus are highly heated when they come in contact with the jets or sheets of hot-draught air, through the perforations of the aforesaid air-draught plate F, which is so arranged over said fire-box B, that the air-supply impinges inward and downward thereinto, nearly at right angles, or crosswise to the escaping currents of combustible gases, and thus is made to mix quickly and intimately therewith, thereby perfecting their combustion.

The coked fuel in the fire-box A is supplied with air through the fire-grate D, and burns from the fire-grate upward, in the usual manner, while the fresh fuel in the fire-box B is coking, wherewith to renew the fire in the fire-box A.

Having thus described my invention,

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

1. The air-draught passage-way *a*, in combination with the movable door or cover G F of the fuel-aperture or door-way P, of extended fire-box B, located substantially as described, for the purpose set forth.

2. The arrangement of the air-draught passage-way *a*, directly over the extended fire-box B, substantially as described.

3. In combination with the extended fire-box B, located as described, the front plate N and fire-box A, the combined sliding and lifting-doors G F and G' F' thereof, substantially as, and operating for the purpose set forth.

4. In combination with the extended fire-box B, the air-draught passage-way *a*, thereover, and cover-plate G, the perforated air-draught plate F, arranged to operate at or over the top of said fire-box, substantially as described.

5. The arrangement of the hot-air-draught passage-way K *b b'*, under the extended fire-box B, in combination therewith, and with the fire-grate D, and ash-space E, substantially as and for the purpose described.

6. The combination with each other of the extended fire-box B, the hot-air-draught passage-way *a* thereover, and the hot-air-draught passage-way K *b b'* thereunder, when respectively and relatively arranged with the fire-grate D, ash-space E, fire-box A, and flame-chamber C, substantially as and for the purpose described.

7. The combination of the series of herein-described break-joint-arranged ribs or flanges *h h h*, with the series of apertures or slots *g g*, arranged in alternate succession, and combined with the fire-box lining-plates of stoves, substantially as described.

8. The arrangement of the shelf-plates L L, above and forward of the fire-grate D, in combination with the fuel-door-way P, its door or cover F, and thereunder-extended fire-box B, substantially as described.

9. The combination of the close ungrated-bottom fire-box B, and air-draught chamber *a* thereover, or its equivalent, with the grated-bottom fire-box A, substantially as and operating for the purpose described.

J. J. SAVAGE.

Witnesses:

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AUSTIN F. PARK.