

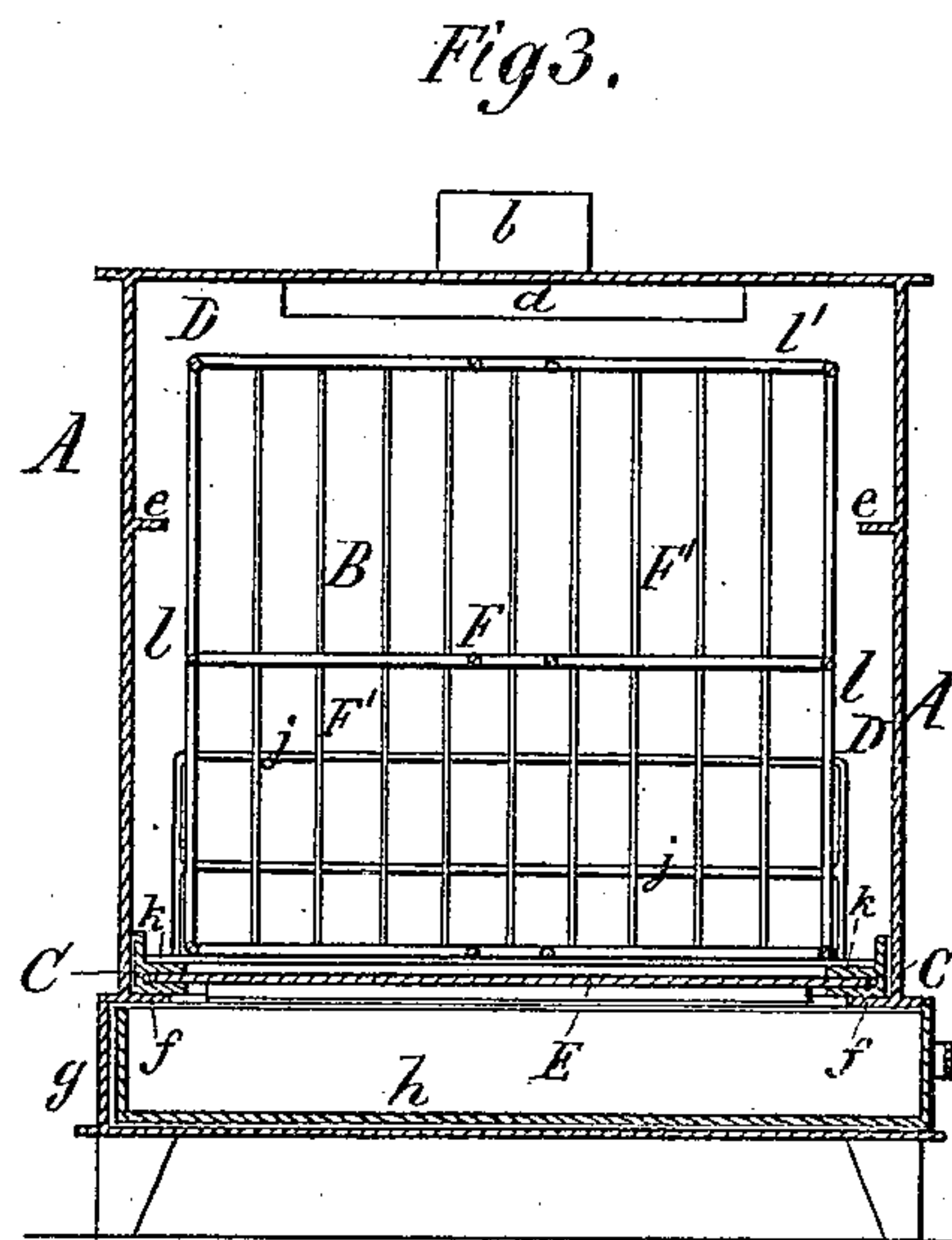
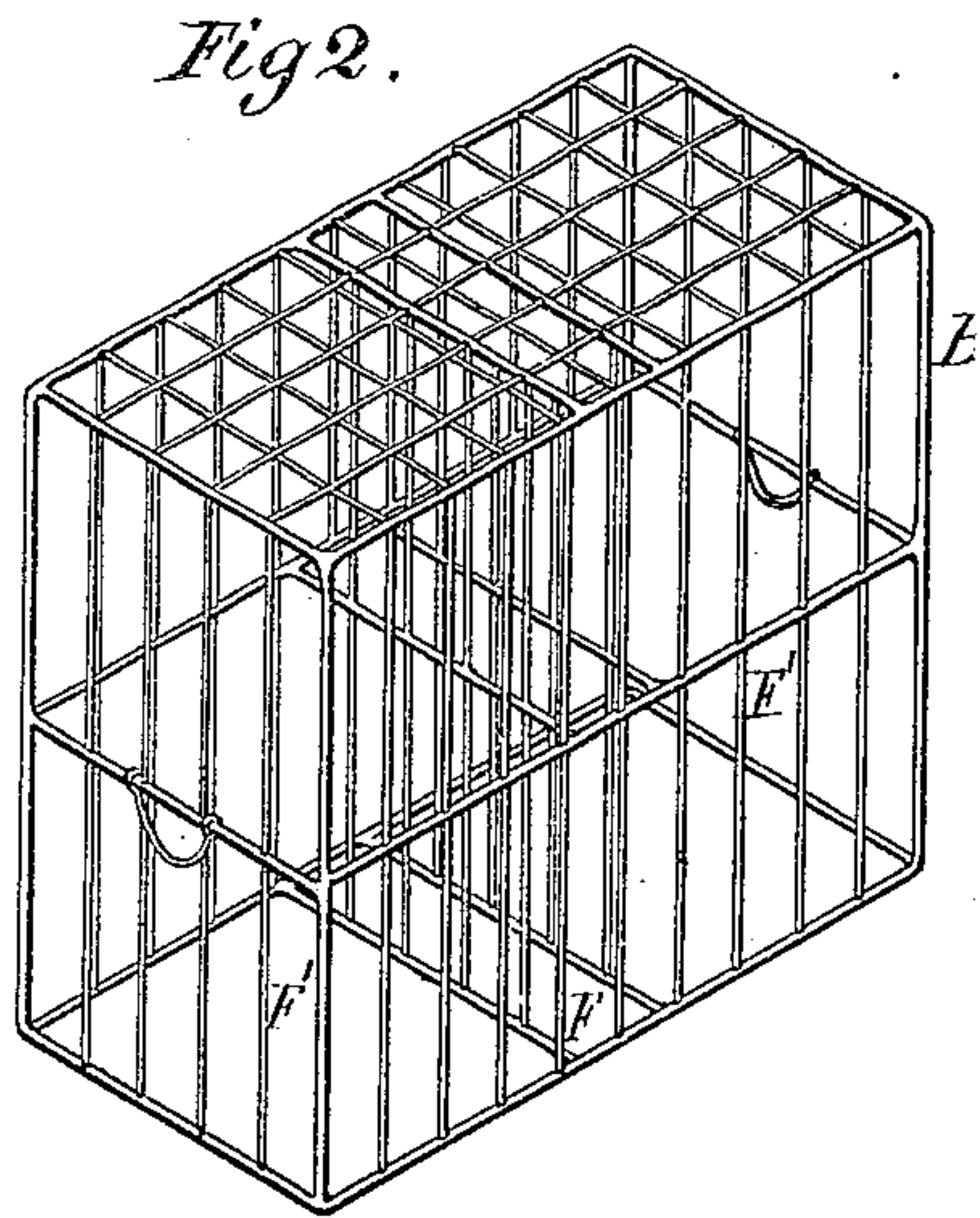
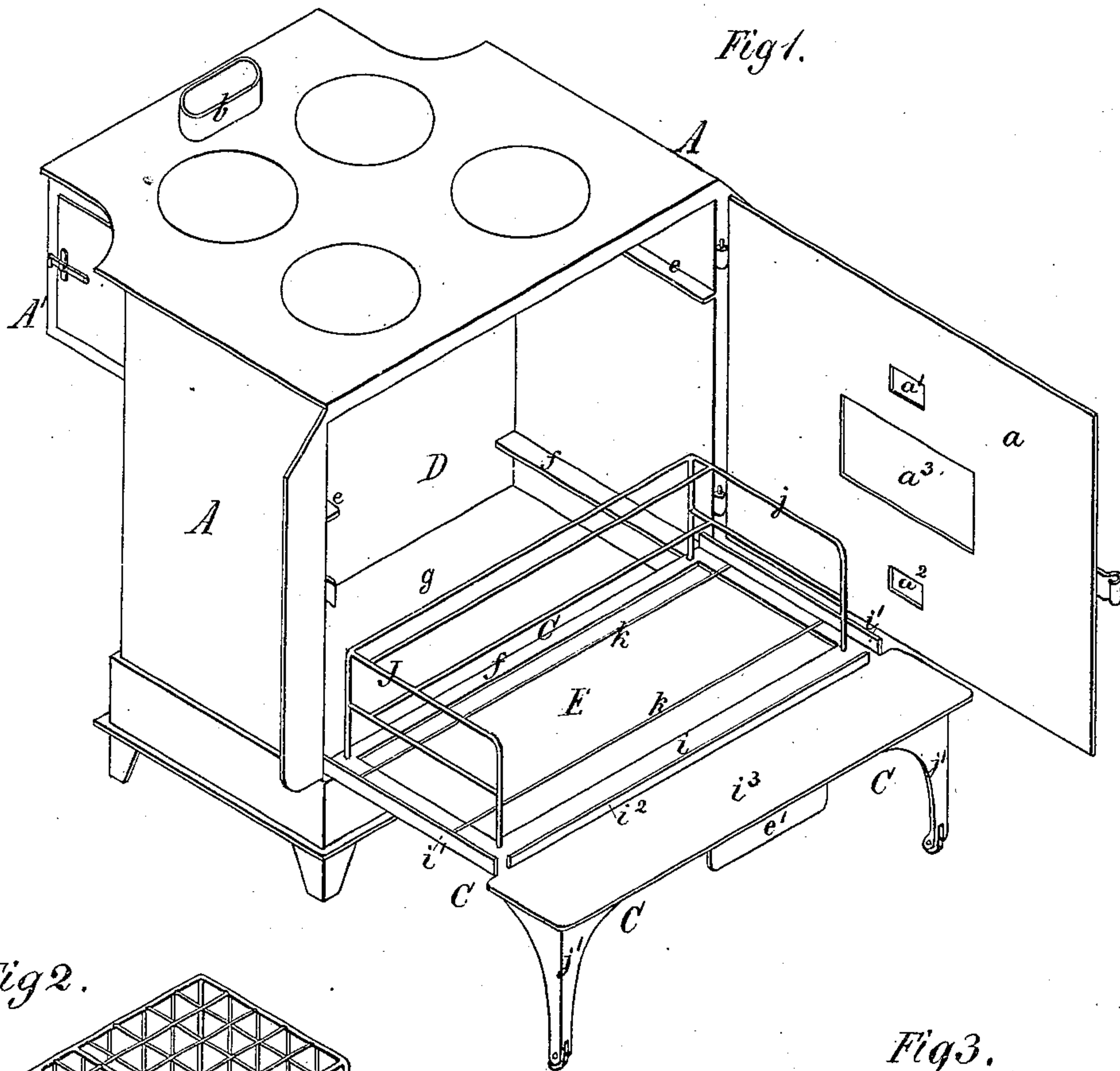
(No Model.)

N. COMPTON.
STOVE.

2 Sheets—Sheet 1.

No. 246,292.

Patented Aug. 30, 1881.



Witnesses:
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H. A. Hall

Inventor:
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by his attys
Marion Fenwick Lawrence

(No Model.)

2 Sheets—Sheet 2.

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Fig 4.

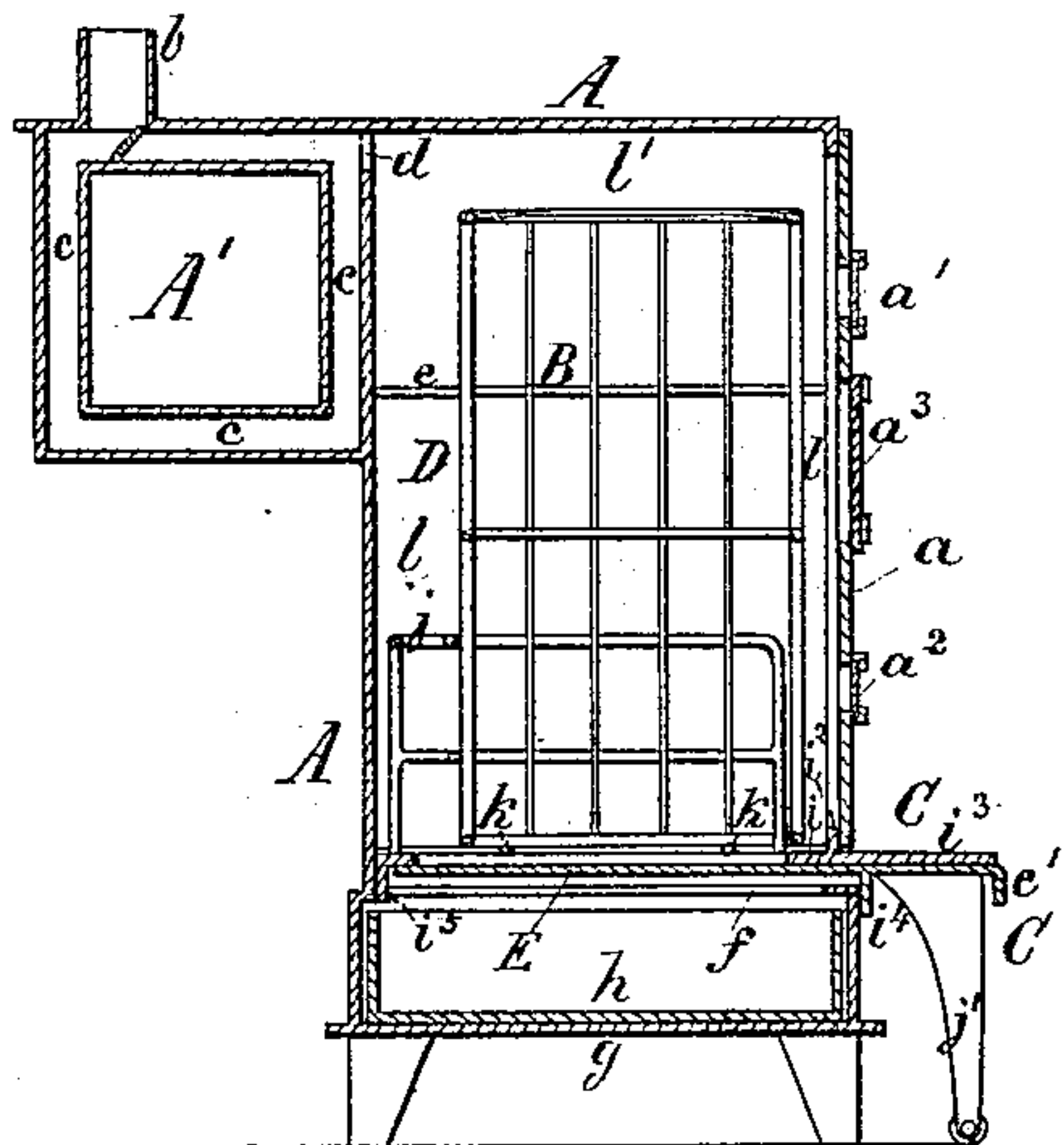


Fig 5.

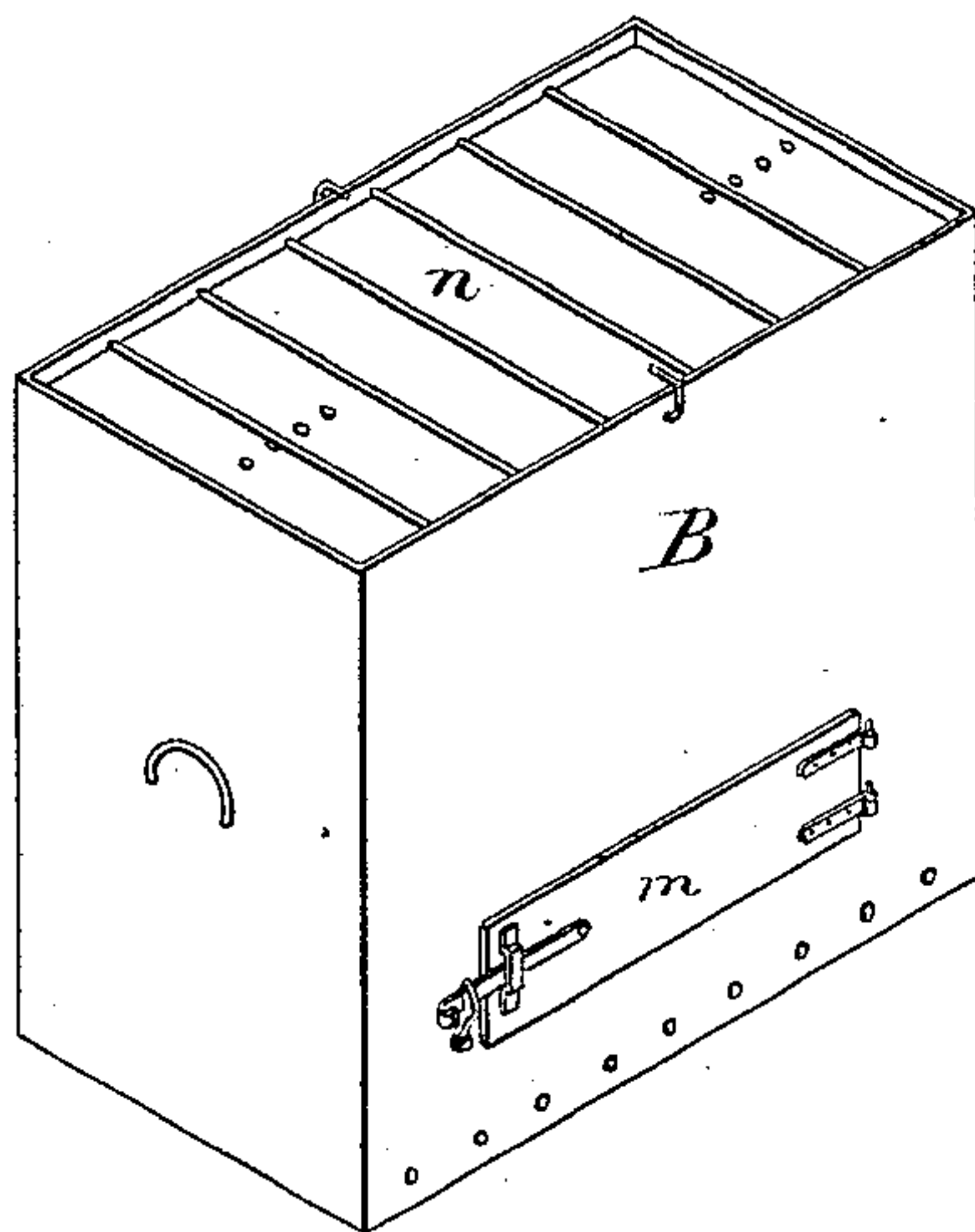


Fig 6.



Fig 7.

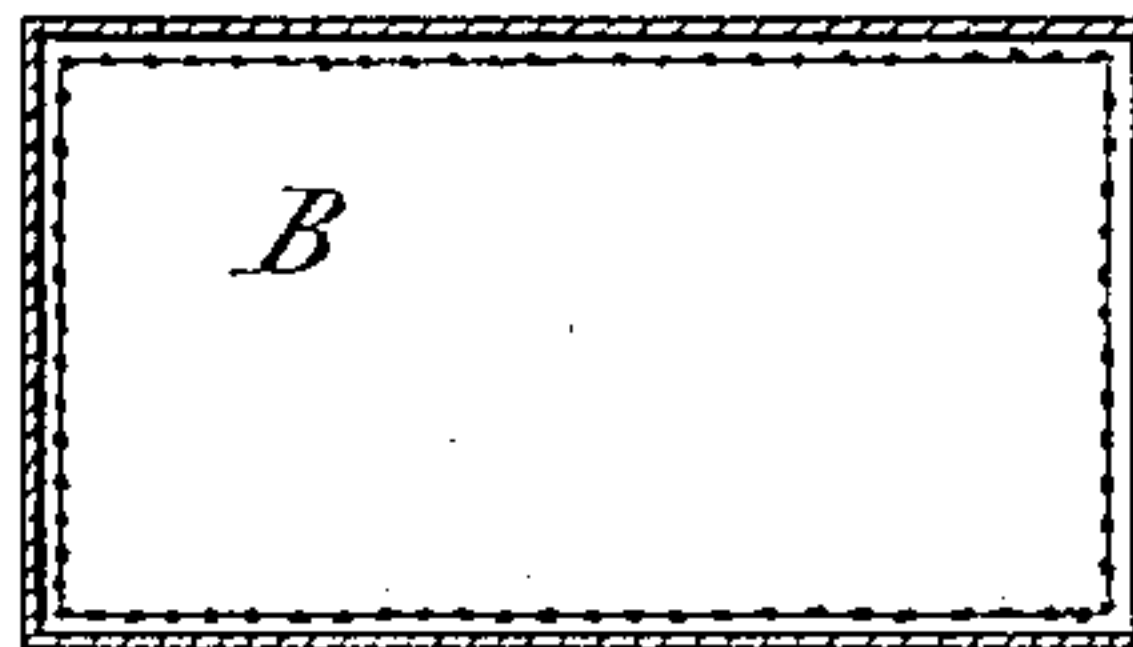
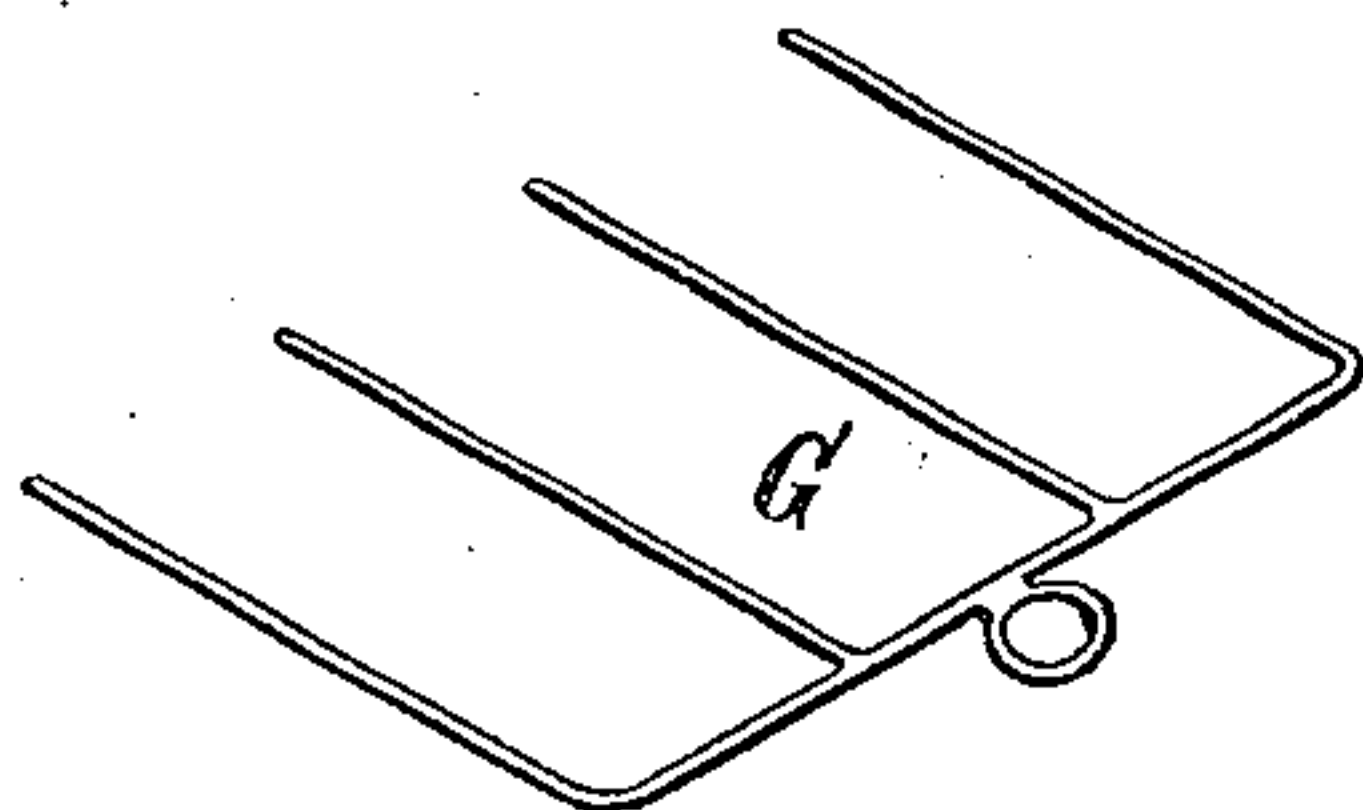


Fig 8.



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UNITED STATES PATENT OFFICE.

NELSON COMPTON, OF MAHERVILLE, KANSAS.

STOVE.

SPECIFICATION forming part of Letters Patent No. 246,292, dated August 30, 1881.

Application filed May 21, 1881. (No model.)

To all whom it may concern:

Be it known that I, NELSON COMPTON, a citizen of the United States, residing at Maherville, in the county of Barton and State of Kansas, have invented an Improved Stove or Furnace for Burning Cornstalks, Hay, Straw, and other similar substances, of which the following is a specification.

My invention consists in the combination, with any suitably-constructed outer wall of a stove, heater, furnace, or range, of a fuel-magazine which is peculiarly constructed, as will be hereinafter described, and is removable for the purpose of being charged with fuel from the said outer wall of the stove; also, in the combination of a car which supports the magazine with the said outer wall, whereby the magazine can be run in and out of the chamber inclosed by the outer wall; also, in a peculiar construction of the magazine with two or more compartments, centrally between which a draft chamber or passage leading from the bottom of the magazine to the draft-pipe of the outer wall is provided; also, in a magazine which is removable and is furnished with a central draft passage or chamber formed of open wire-work or bars in the peculiar manner hereinafter described; also, in a removable magazine provided with a central draft chamber or passage and made of open wire-work or bars, applied within the chamber inclosed by the outer wall of the stove in such a manner that the flame has freedom to circulate between the outer wall and the magazine, as well as in the central draft-chamber; also, in the combination of a tined fuel-supporting device with the removable magazine, whereby the fuel is supported in the magazine while the magazine is being carried from the place of filling or charging to its position upon the platform or car; also, in a movable bottom or slide applied to the car, in combination with the ash-pit, the magazine, and outer wall of the stove; also, in the combination of supports for an ordinary grate with the outer wall and removable magazine, whereby ordinary fuel—such as coal or wood—may be burned in the stove, if desired.

In the accompanying drawings, Figure 1 is a perspective view of the outer wall of a heating and cooking stove provided with a movable car, upon which my fuel-magazine shown in

Fig. 2 is placed. The door of the stove is shown open and the car is shown drawn out of the combustion-chamber ready to receive the fuel-magazine. The stove is also shown provided with supports for an ordinary grate. Fig. 2 is a perspective view of the fuel-magazine, made of open wire-work or bars, and with chambers separated by a wire-work central draft flue or chamber. Fig. 3 is a cross-section of the stove with the magazine and car in their proper positions within the combustion-chamber. Fig. 4 is a longitudinal section of the stove, the parts being as in Fig. 3. Figs. 5, 6, and 7 are views illustrating other modes of constructing a magazine for holding the fuel while being burned, which magazine may be used in connection with the car and outer wall of the stove shown when fuel in a finely-comminuted condition is to be burned. Fig. 8 is a tined support used at the charging end of the magazine, and also midway of its height, as hereinafter described.

The stove represented consists of three principal parts—viz: an outer wall or case, A, with oven A', a frame-magazine, B, for holding fuel, and a car, C, constituting a hearth and device for supporting the magazine within the combustion-chamber D, and carrying it in and out of said chamber.

The case or outer wall, A, may be of any desired form and construction, and it may have the oven A' applied to it in any suitable manner. In fact, this outer case may be, in general construction, similar to any heater or any combined heating and cooking stove in use, or in form of any furnace or range, and the oven or ovens may be applied in any approved manner; but in all instances the outer walls or case and the oven or ovens must be adapted for the use of my improvements herein described and shown. The outer wall or case, A, as shown, may be of either cast or sheet metal, and a large door, *a*, may constitute its front, in which door two slides, *a'* *a*², and a small draft-door, *a*³, may be provided. The door *a* is hinged, and opens as illustrated in Fig. 1, in order to give full access to the chamber D.

The oven A' forms an extension at the top of the outer wall, and at its rear upper portion the collar *b* of the draft-pipe is applied. This oven will have its dampers and division-plates the same as in ordinary ovens, and the

combustion-chamber D communicates with the oven-flue *c* and the draft-flue at *b* by means of a passage, *d*, as shown. The front plate of the oven is a portion of the rear of the stove-wall, and is heated the same as in other stoves, as the fuel in chamber D is in substantially the same relative position thereto.

Just below the passage *d* ribs *e* are provided on the inside of the wall of the stove, to support an ordinary grate, in which coal or wood may be burned when desired. The grate is of a form adapted to be used in this stove; but it is only provided as a convenience when proper fuel is not easily obtained; and when other fuel is being burned this grate is removed. Grooves formed in the side walls may be adopted instead of the ribs *e*, and the grate may be supported by the shoulders of these grooves.

At the bottom of the combustion-chamber D narrow ledges *f* are formed for the support of parts presently described, and beneath these ledges a large ash-pit, *g*, with end opening for an ash-drawer, *h*, is provided. The bottom of the combustion-chamber consists simply of the ledges *f*, being open fully to the ash-pit inside said ledges. The opening to the ash-pit is closed by the car C, which forms a hearth-plate and a support for the fuel-magazine B. This car consists of a horizontal platform, *i*, with side or end flanges, *i'*, a front guard-flange, *i''*, an extension-hearth portion, *i'''*, and stop-flanges *i''''* *i'''''*. It also has an open three-sided wire-work frame, *j*, mounted on its top, which serves as a means for holding the magazine in position upon the platform and bracing the platform. The narrower part of this car just fits within the walls of the combustion-chamber D, and rides upon the ledges *f*, while its wider or hearth portion stands outside of this chamber and is supported by legs *j'*, having rollers in their lower ends, as shown. In the bottom of this car an opening for the discharge of ashes into the ash-pit is provided, and this opening is closed by means of a slide, E, which is provided with an extension, *e'*, by which it is operated beneath the hearth and platform of the car. Above this slide two or more rods, *k*, are placed on the car for supporting the fuel-magazine in relief from the slide, and thus permitting the slide to be easily operated. The car, by being mounted on legs with wheels, will run very steadily and easily and be kept level. When the car is moved out, as shown in Fig. 1, a full opening into the ash-pit is secured without moving the slide, and therefore all ashes and refuse clinging to the side walls of the stove can be jarred down into the ash-pit and the stove kept clean with slight labor.

The magazine B (shown in Figs. 1, 2, 3, and 4 of the drawings) consists of a metal frame formed of round rods or bars. The main wire rods or bars may be larger than the filling-in rods or bars, and these main rods or bars may be perforated with holes a short distance apart,

and through these holes the smaller rods or bars may pass, thus making a very strong but light open-frame magazine, as represented in Fig. 2. The smaller wires or bars are crossed at the top of the frame, and, if desired, may cross at the sides; but this latter has not been found necessary, even when chaff of headed thrashed wheat is used as fuel and burned in this frame. The crossing of the wires or bars at the top is desirable for the purpose of keeping the frame in shape when the fuel is pressed down into it. This frame is divided into two compartments by open partitions, forming a space, F, in the center, say about two and a half inches wide. This space is surrounded by the partition and front and rear wire rods or bars, and also by horizontal wire rods or bars, as shown. The central space, F, forms a draft-flue from top to bottom of the frame between the compartments F' F', and this space is not filled with fuel, but may be supplied with a kindling substance which will serve for igniting the fuel in the compartments on each side of it. The magazine is taken out of the stove and turned bottom upward, and its respective compartments are then filled with either cornstalks, hay, straw, or other like substance, and, being filled, a tined device, G, Fig. 8, is passed through the frame over the top of the fuel, and then the frame is reversed in position and placed upon the car, and by the car run into the combustion-chamber. While the frame filled with fuel is being handled the tined device G prevents the fuel falling out at its bottom. This tined device may be withdrawn when the frame is placed in the combustion-chamber; but if it is desired to have the fuel burn slowly the tined device may be inserted through the fuel at a point midway the height of the compartments of the frame. In operating with the stove the door *a* is closed and one of the draft-slides therein is opened, for the purpose of igniting the kindling substance placed in the draft-flue between the compartments of the open frame. The frame is of less diameter in all directions than the combustion-chamber, and therefore a circulation-space, *l*, is formed all around it. A similar space, *l'*, is formed above the frame, as it is of less height than said chamber. From experiment it has been found that this open frame with central draft-passage will enable the stove to burn almost any of the substances named in any state, except really wet, while with other stoves for burning such fuels it is impossible almost to operate unless the fuel is as dry as powder. This is due in my stove to having the fuel in separate compartments, which have a draft-passage between them, and the difficulty with other stoves results from burning the fuel in one chamber or bulk.

The readiness with which my stove consumes very damp, half-wet fuel with full draft on, by inserting a dry shuck or piece of paper into the draft-space and starting the fire there is astonishing. The stove will consume hay

or straw wet if some dry fuel is applied to finish out the charging of the compartments, and thereby get the wet portions under a burning headway. In burning partially-wet fuel the draft-slide or door a^3 in the door a is opened, but in burning dry fuel all the draft is shut off. The fuel in burning has a free circulation for the flame through the draft-flue, and on all sides and over the top of the frame, and thus the fire can wreath the entire mass of fuel and the most intense heat be secured by opening the draft a^2 at bottom of door a .

In connection with the stove described a magazine, B, with solid sides, grated top, and open bottom may be provided specially for burning stalks; and this magazine may have a door, m , in its side, and it may also have a top plate, n , slightly perforated, for the purpose of checking the burning operation. The door m will permit access for igniting the fuel, and the plate n will retard the ascent of the flame and draft-current. This magazine may have its sides corrugated, as shown in Fig. 6, or it may have a wire or bar frame placed within it, as in Fig. 7, in order to prevent the stalks bearing too closely against its walls, and thereby preventing proper combustion of the fuel and a free circulation of the flame.

The top plate, n , might be used on top of the wire frame, Fig. 2, when fine dry fuel is being used, in order to prevent it burning out too rapidly. Said plate n might be fastened in position temporarily and removed at pleasure.

The removal of either of the magazines described while hot can be easily effected. By a simple poker inserted through the central draft portion of the frame at top it can be lifted up and carried anywhere without burning or soiling the hands; and if the magazine is cold it can be moved by the handles at its ends to and from the car.

To operate the burner the magazine is filled and the packing is proportioned to the condition of the fuel—dry, very tight; wet, not so tight. Thus packed, it is lifted by its handles and placed on the car, the tined device G is withdrawn, and then the magazine is run in with the car into the combustion-chamber. The door a is closed and a match stuck through the slide therein, and the kindling thereby ignited. This done, it will be at a baking heat in from five to eight minutes. The slide is then closed, and with fair fuel the stove will require no attention for one to two hours. For the longest baking a secondary tined rod is thrust through the frame at middle at the time of charging with fuel, and this will prevent the fuel settling down too rapidly in burning.

My invention, as herein described, may be changed in some respects without departing from its principle. For instance, the frame with two or more compartments and central draft flue or passage might be placed horizontally instead of upright, and connect with a draft-flue located at one end of the horizontal flue of the frame.

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

1. In combination with the combustion-chamber and outer wall of a stove, the removable fuel-magazine provided with a central draft-flue, and having its ends open and adapted to be inclosed within the combustion-chamber of the stove or furnace, substantially as and for the purpose described.

2. The combination, with the outer wall of a stove, of a removable fuel-magazine, and the car for supporting and carrying the magazine in and out of the combustion-chamber, substantially as and for the purpose described.

3. The fuel-magazine formed of open wire-work or bars, and provided with two or more compartments, and a central draft chamber or passage, substantially as and for the purpose described.

4. A removable magazine formed with a central draft chamber or passage and of wire-work or bars, substantially as and for the purpose described.

5. The combination of the fuel-magazine formed of open wire-work or bars and provided with a central draft-flue, with the outer wall of the stove, whereby the flame has freedom to circulate between the outer wall and the magazine, as well as in the central draft chamber or passage, substantially as and for the purpose described.

6. A fuel-magazine provided with a central draft-chamber, made open at its ends and provided with a removable tined device, G, in combination with the combustion-chamber and outer wall of a stove or furnace, substantially as and for the purpose described.

7. The combination of a car having a movable bottom or slide with the ash-pit, magazine, and outer wall of the stove, substantially as described.

8. The upper supports for an auxiliary grate, provided on the walls of the combustion-chamber of the magazine-stove, in combination with the removable magazine, substantially as and for the purpose described.

NELSON COMPTON.

Witnesses:

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