(No Model.) 5 Sheets—Sheet 1.

G. & F. BLENDINGER & J. B. GEYSER.

BAKER'S OVEN.

No. 546,755. Patented Sept. 24, 1895.

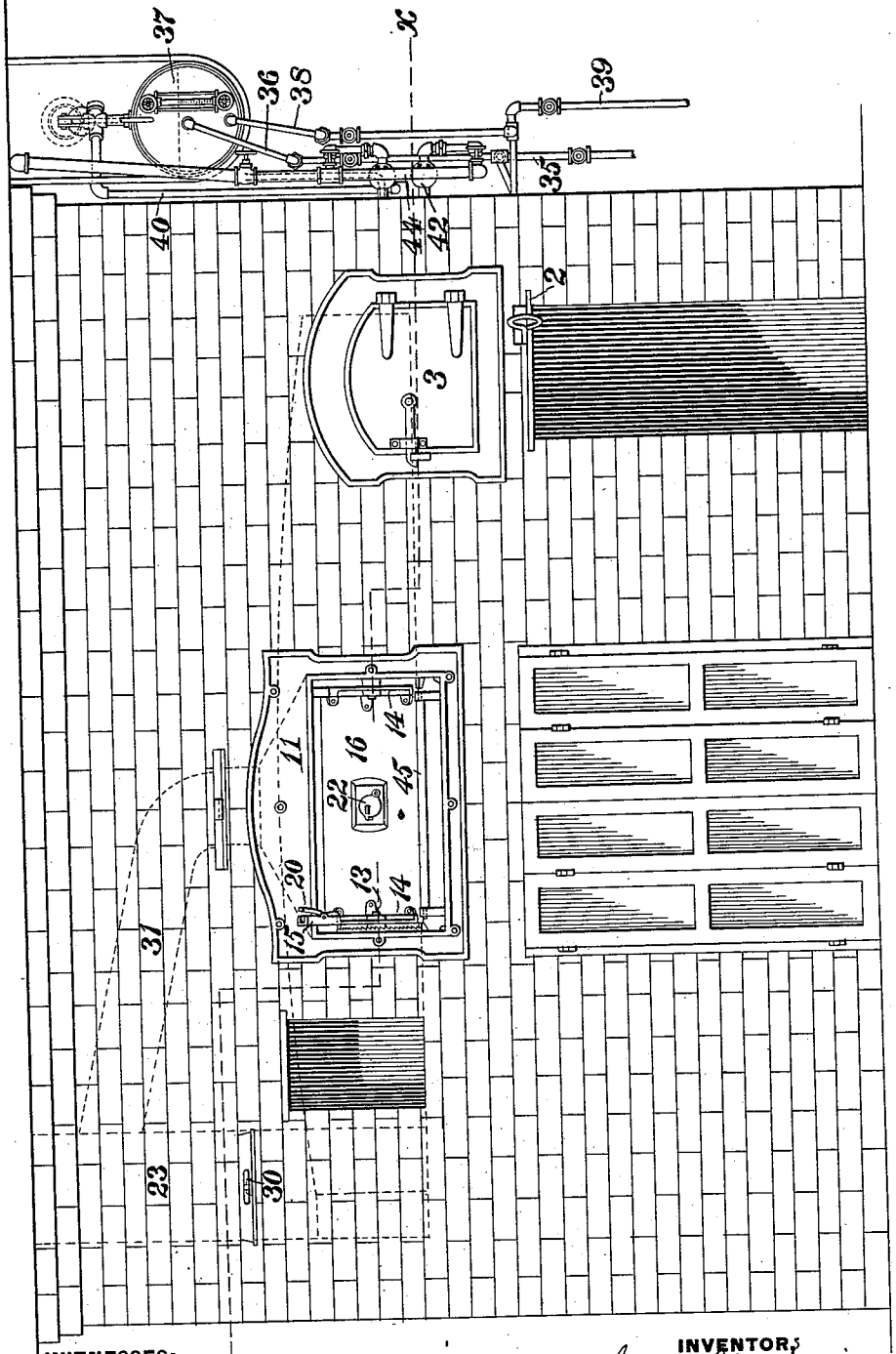

FIG. 1.

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(No Model.) 5 Sheets—Sheet 2.

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BAKER'S OVEN.

No. 546,755. Patented Sept. 24, 1895.

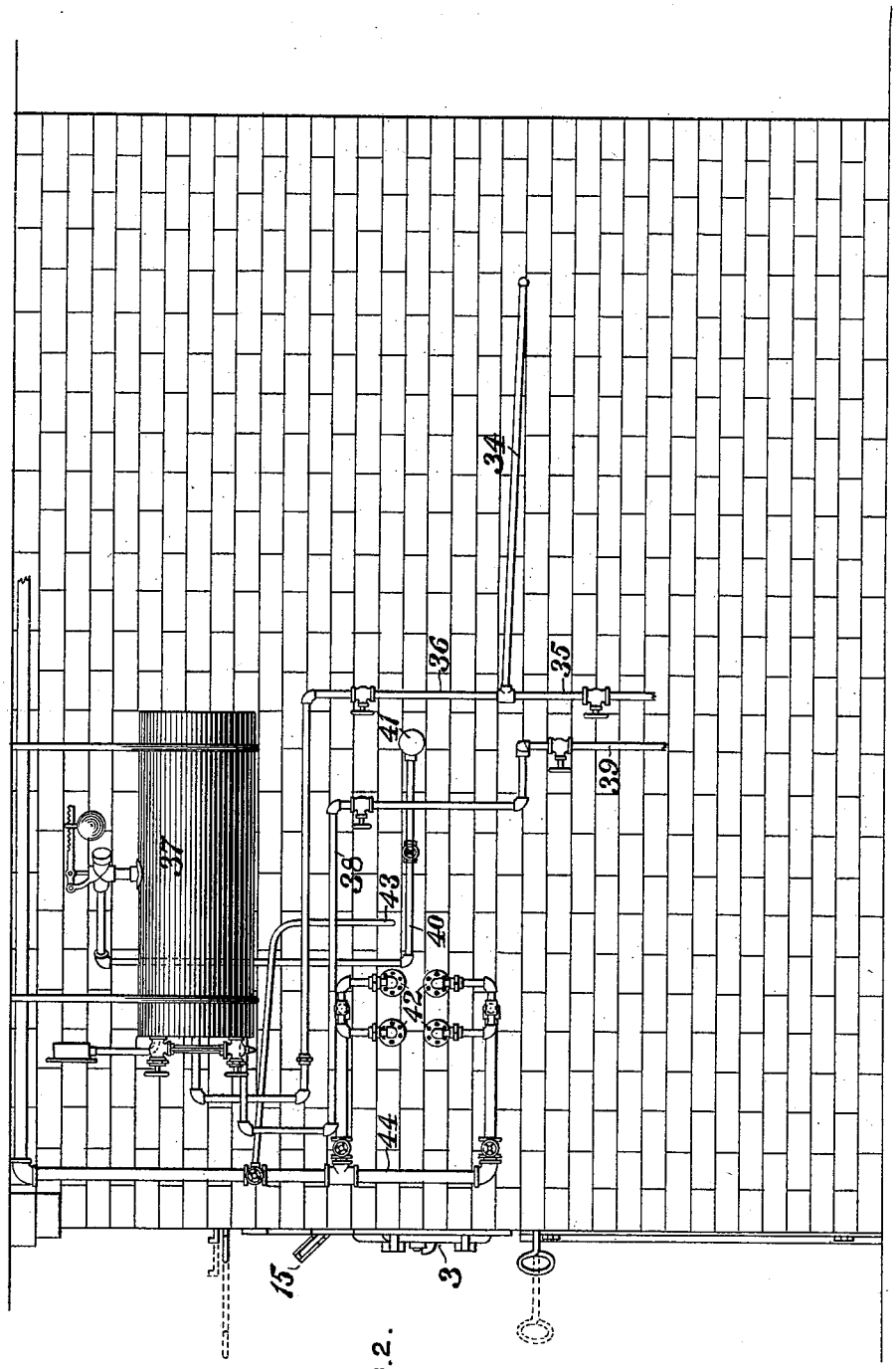

FIG. 2.

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(No Model.) 5 Sheets—Sheet 3.

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BAKER'S OVEN.

No. 546,755. Patented Sept. 24, 1895.

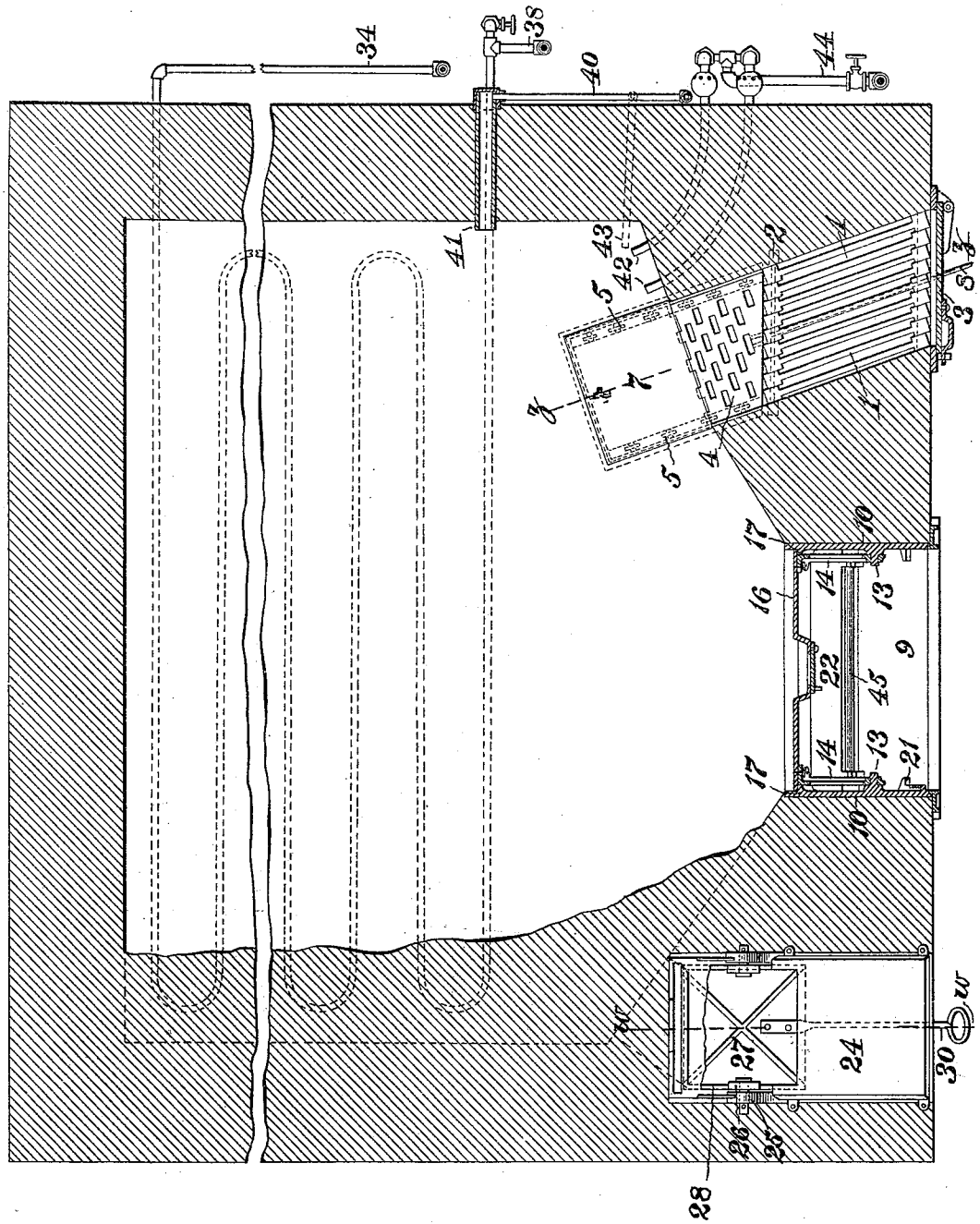

FIG. 3.

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BAKER'S OVEN.

No. 546,755. Patented Sept. 24, 1895.

FIG. 5.

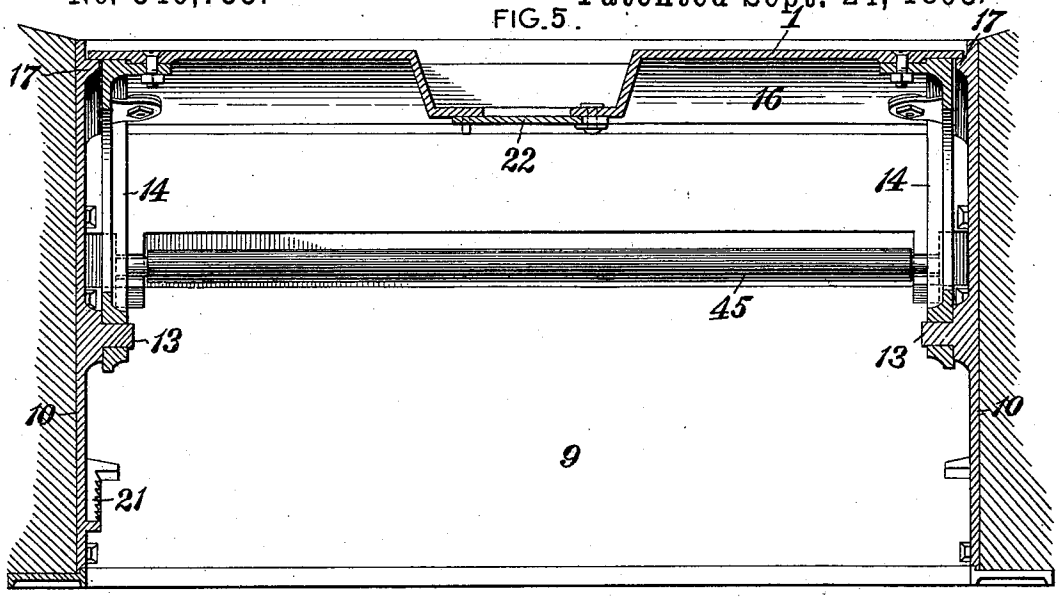


FIG. 6.

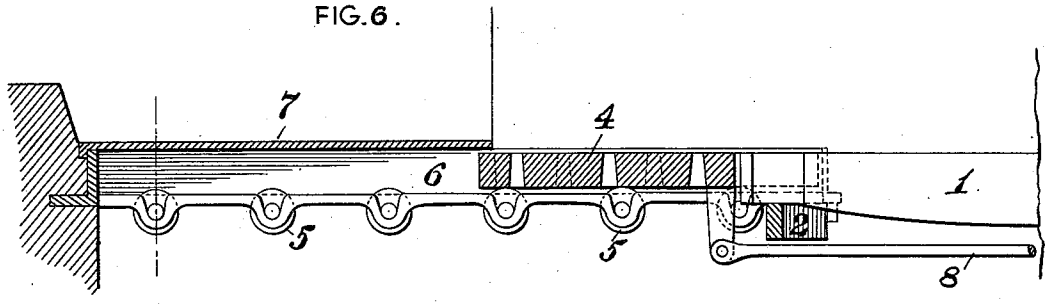


FIG. 8.

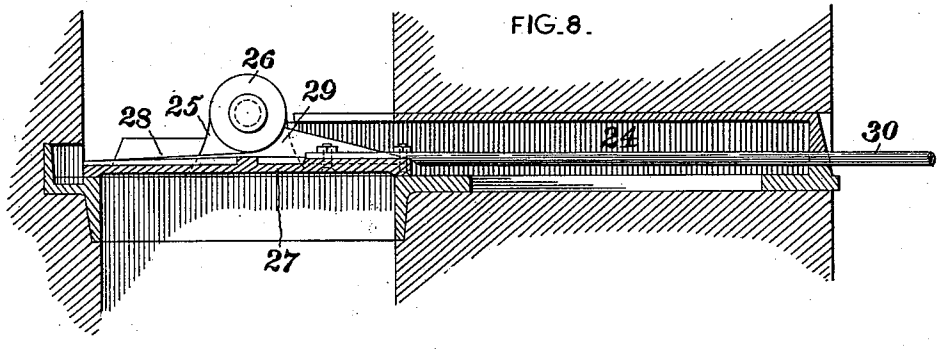
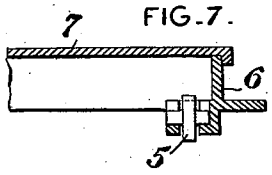


FIG. 7.



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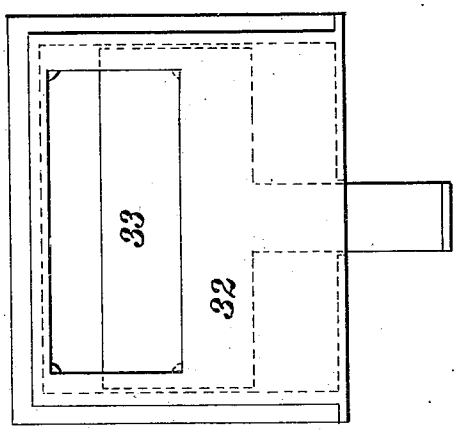
(No Model.) 5 Sheets—Sheet 5.

G. & F. BLENDINGER & J. B. GEYSER.

BAKER'S OVEN.

No. 546,755. Patented Sept. 24, 1895.

FIG. 9.



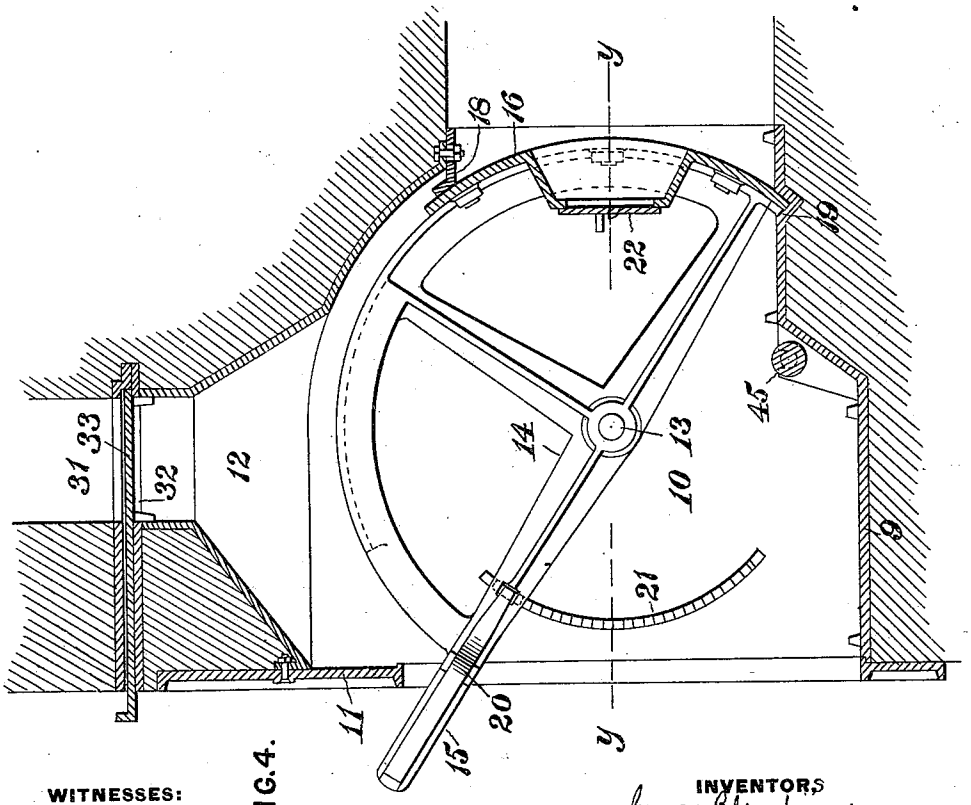


FIG. 4.

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UNITED STATES PATENT OFFICE.

GEORGE BLENDINGER, FREDERICK BLENDINGER, AND JOHN B. GEYSER, OF ALLEGHENY, PENNSYLVANIA; SAID GEYSER ASSIGNOR TO SAID GEORGE BLENDINGER AND FREDERICK BLENDINGER.

BAKER'S OVEN.

SPECIFICATION forming part of Letters Patent No. 546,755, dated September 24, 1895.

Application filed August 4, 1894. Serial No. 519,427. (No model.)

To all whom it may concern:

Be it known that we, GEORGE BLENDINGER, FREDERICK BLENDINGER, and JOHN B. GEYSER, citizens of the United States, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Bakers' Ovens, of which improvements the following is a specification.

The invention described herein relates to certain improvements in baker's ovens, whereby the operations thereof and connected therewith are greatly facilitated, and, in general terms, the invention consists in the construction and combination, substantially as hereinafter more fully described and particularly claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a front elevation of our improved oven. Fig. 2 is a side elevation of the same. Fig. 3 is a sectional plan view, the planes of section being indicated by the line *x x*, Fig. 1. Fig. 4 is a transverse section, on an enlarged scale, of the charging-door and the heat-flue leading therefrom. Fig. 5 is a horizontal section on the line *y y*, Fig. 4. Fig. 6 is a vertical section of the grate of the heating-furnace, the plane of section being indicated by the line *z z*, Fig. 3. Fig. 7 is a sectional detail view of the grate. Fig. 8 is a vertical section of the damper in the escape-flue, the plane of section being indicated by the line *w w*, Fig. 3; and Fig. 9 is a plan view of the damper in the flue leading from the charging-door.

The oven proper is constructed as regards its hearth in the usual or any suitable manner, and is provided with the usual openings in its front wall for the heating or combustion furnace and for charging the articles to be baked. As shown in Fig. 3, the opening or recess for the heating-furnace is arranged as is customary at one side of the oven and at such an angle thereto that the heat and products of combustion are discharged toward the middle of the back side of the oven, as that has been found to be the most advantageous arrangement for a proper heating of the oven. The bars 1 for supporting the front and rear ends of the grate-bars 2 are arranged parallel, or approximately so, with the front wall of the oven, so that the door 3 may be attached to the front wall in lieu of being set in at an angle to the front wall, as has heretofore been the practice. The grate-bars 2 do not extend the full length of the furnace, the rear portion of the grate area being formed by a movable perforated plate 4, which, as shown in Figs. 6 and 7, is supported at its sides by rollers 5, loosely mounted on side bars 6 of a frame set into the walls of the furnace-chamber. The frame extends into the oven and is covered by a plate 7, which forms a part of the hearth of the oven. After the oven has been properly heated the perforated plate 4 is pushed back by the rod 8 into the pocket formed by the frame and plate 7 and the fuel on the grate-bars 2 is pushed back and drops into the ash-pit, through the opening formed by shifting the plate 4. This manner of discharging the fuel prevents the blowing of ashes and dust about the bake-room.

In the charging-opening in the front wall is placed a metal frame consisting of the bottom plate 9, side plates 10, front plate 11, and hood 12, as clearly shown in Figs. 3, 4, and 5. On the side plates are formed trunnions 13, on which are mounted segmental frames 14, one of which is provided with a handle 15. A curved plate 16, of a width somewhat greater of the height of the charging-opening into the oven and of a length equal to the width of such opening, is secured by rivets or bolts onto the frames 14, as shown in Figs. 3 and 5. This plate bears at its ends upon curved ribs 17 formed on the side plates 10, so as to prevent the escape of heat at such points. The opening between the plate 16 and the lower edge of the hood 12 is closed by a metal strip 18 adjustably secured to the hood, as shown in Fig. 4. The lower edge of the plate 16 projects, when in a closed position, into a groove 19 formed in the bottom plate 9. The handle 15 is made of sufficient weight to nearly counterbalance the weight of the plate 16, so as to facilitate the raising and lowering of the plate. In order to hold this closing plate at any desired elevation, a spring-catch 20 is so attached to the handle 15 that

when free to act it will engage a toothed rack 21 on one of the side plates, as shown in Fig. 4.

In order to prevent warping of the plate 16 its middle portion is dished, as shown in Fig. 4, and through this dished portion is formed a peep-hole, which can be closed by a slide 22, as shown in Figs. 1, 4, and 5.

The stack or main flue 23 (indicated by dotted lines in Figs. 1 and 3) is connected to the front end of the oven at the side opposite the combustion-chamber. In this flue is arranged a damper, (shown in Fig. 8,) controlling the draft therethrough. This damper consists of a metal frame having a closed portion or pocket 24 at one end and an opening at the opposite end corresponding approximately in size and shape to the flue. On the sides of the opening are formed lugs 25, on which rollers 26 are so mounted as to project over the slide 27 arranged in the frame. On the upper side of the slide are formed ribs 28, having a slight inclination from the middle of the slide, so as to wedge under the rollers 26 when the slide is shifted over the flue-opening and thereby hold the slide tightly on its seat. The roller will prevent the slide from becoming immovably wedged in a closed position by expansion of the slide. At the ends of the inclines are formed shoulders 29, which, by abutting against the rollers, will prevent too great inward movement of the slide. The slide is operated by a rod 30, having one end attached to the slide, while the opposite end projects through the front wall of the furnace.

Considerable annoyance and discomfort are caused to bakers by the heat rushing out into their faces when the charging-door is opened. In order to prevent this the hood 12 is connected by a flue 31 (shown in Figs. 1 and 4) to the main hood at a point above the damper therein, so that when the charging-door is opened the draft of the main flue will draw the heat up through the hood and flue 31. By reference to Fig. 4 it will be seen that the front plate 11 projects down a short distance below the edge of the hood. This curtain prevents to a considerable extent an outflow of heat into the face of the operator and assists the action of the draft in flue 31. It is preferred to keep this flue closed, except when the door is opened, so as not to injure the draft of the main flue. The damper of the flue 31 consists of a frame 32, having a pocket at one end and an opening at the opposite, and a slide 33 adapted to be shifted from the pocket over the opening and back.

In baking Vienna bread it is necessary to admit steam into the oven at a certain stage during the baking to prevent the formation of a hard thick crust. It has heretofore been customary to employ a boiler entirely independent of the oven as regards the generation of steam for this purpose. In order to avoid the trouble and expense incident to such an arrangement a coil of pipe (shown in dotted lines) is arranged immediately below the tile forming the hearth of the oven. One end of this coil is connected by a pipe 34 to a supply-pipe 35 and also to a pipe 36, leading to a boiler 37, preferably attached to the furnace or arranged in suitable proximity thereto. The opposite end of the coil is also connected to the boiler by a pipe 38 and to a drain-pipe 39. The coil becomes highly heated by conduction through the tiles and steam is quickly generated in the boiler, which is connected by a pipe 40 to a nozzle 41 projecting into the oven, as shown in Figs. 2 and 3.

In order to provide for the use of gas, either as main or auxiliary means of heating the oven, burners 42 are inserted through the wall of the oven in such manner that the flame therefrom will flow into and through the oven in the same general direction as flame and products of combustion from the furnace. To ignite the gas from the burners a small pipe 43 is inserted through the wall, so that its inner end is in close proximity to the main burners. This small pipe is connected to the main pipe 44 leading to the main burners. The valve in the small pipe is first opened and the gas flowing therefrom ignited by a torch inserted through the furnace-chamber. This flame from this pipe will ignite the gas from the main burners before a dangerous quantity can enter the oven.

It will be readily understood by those skilled in the art that the vertically-moving door will permit access to the oven without a full opening of the door, as the latter need be raised only high enough to clear the articles to be placed in the oven, whereas the swinging-doors, hinged at one side of the oven, must be swung clear back, no matter the size of the articles to be charged.

The insertion of the articles which are placed on a "peel" is facilitated by a friction-roller 45 arranged just in front of the door, and designed to facilitate the shifting of the peel.

The arrangement of the charging-door a distance from the front wall of the furnace affords a shelf or support on which the peel rests while articles are being placed thereon. In order that the handle end of the peel may be depressed so as to raise the front end clear of the hearth while charging articles, the front portion of the bottom plate 9 is made on a lower level, as shown in Fig. 4. The friction-roller 45 is arranged at the angle between the raised and depressed portions of the bottom plate and serves as a fulcrum on which the peel is pivoted during the charging operation.

We claim herein as our invention—

1. A baker's oven provided with a combustion chamber in combination with grate bars arranged in the front portion of the chamber, a frame provided with a pocket at one end, friction-rollers mounted in the frame and a plate or grate supported by said rollers and movable into and out of the pocket, substantially as set forth.

2. A baker's oven provided with a charging opening in combination with segmental frames pivotally mounted on the sides of said opening and a plate, having dimensions corresponding approximately to the transverse dimensions of the opening, secured to said frames, substantially as set forth.

3. A baker's oven provided with a charging opening in combination with segmental frames pivotally mounted on the sides of said opening, curved ribs on the sides of the opening in line with the perimeters of the segmental frames and a plate attached to the frames, the ends of the plate overlapping the ribs, substantially as set forth.

4. A baker's oven having a charging opening in combination with segmental frames pivotally mounted on the sides of the opening, a plate, adapted to close said opening attached to the frames, an adjustable strip bearing against the plate, and a groove in the bottom of the opening for the reception of the lower edge of the plate, substantially as set forth.

5. A baker's oven provided with a charging opening in combination with segmental frames pivotally mounted on the sides of the opening, a handle attached to one of the frames, a spring latch mounted on the handle, and a tooth bar on one side of the opening for engagement by the latch, substantially as set forth.

6. A damper for a baker's oven having in combination with a frame provided with a pocket at one end and a transverse opening at the opposite end, a movable slide mounted in said frame and provided on its back with inclined or wedge-like ribs and rollers mounted on the sides of the frame and adapted to bear upon the ribs when the slide is moved across the opening in the frame, substantially as set forth.

In testimony whereof we have hereunto set our hands.

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FREDERICK BLENDINGER.
JOHN B. GEYSER.

Witnesses:
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