

June 17, 1924.

T. J. MIGCHELBRINK

1,497,867

COMBINATION RANGE

Filed June 24, 1920

2 Sheets-Sheet 1

Fig. 1.

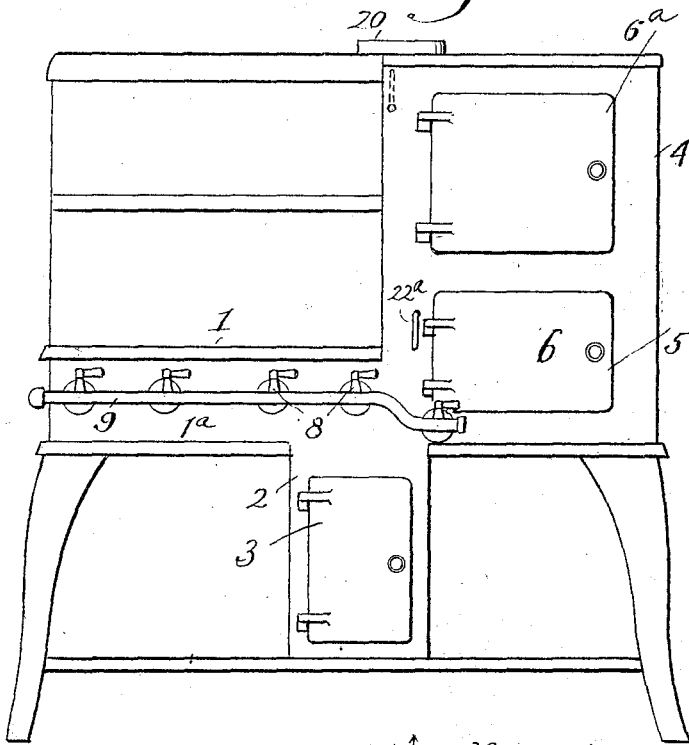


Fig. 4.

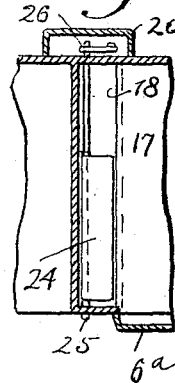


Fig. 3.

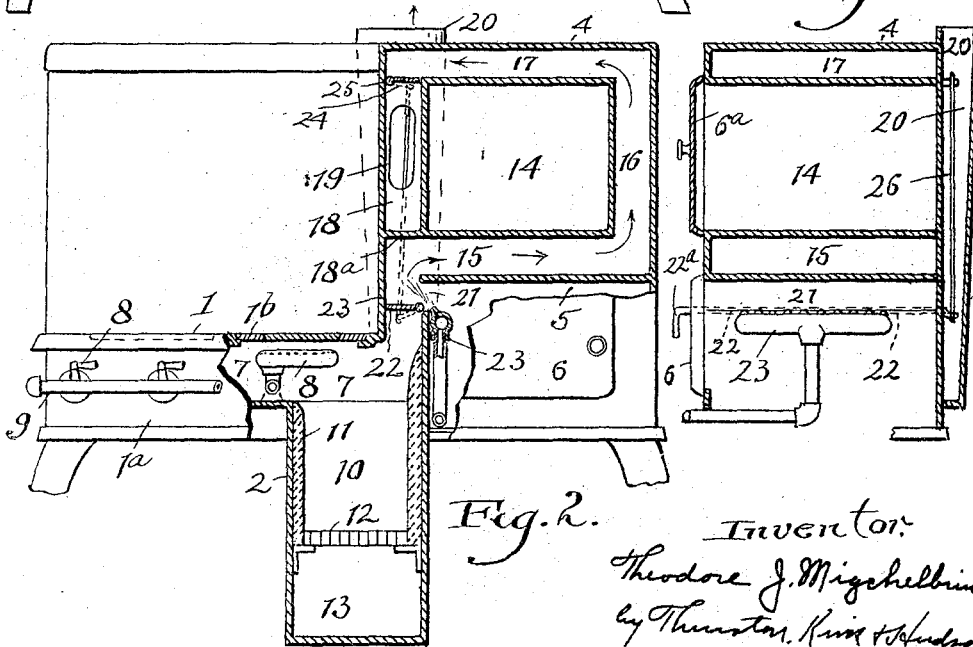


Fig. 2.

Inventor:
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by Thornton, Kirk & Anderson

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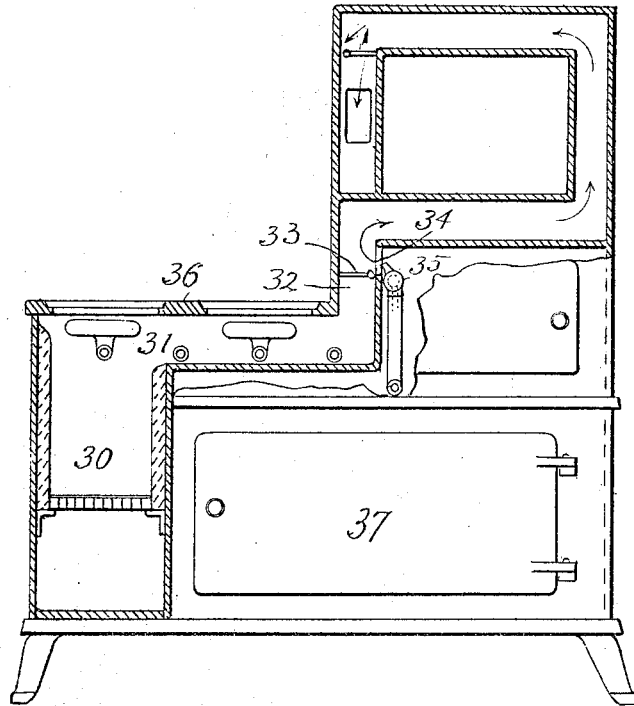


Fig. 5.

Inventor:
Theodore J. Migchelbrink
by Thurston, Kinn & Hudson
attys.

UNITED STATES PATENT OFFICE.

THEODORE J. MIGCHELBRINK, OF CLEVELAND, OHIO, ASSIGNOR TO THE CO-OPERATIVE STOVE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

COMBINATION RANGE.

Application filed June 24, 1920. Serial No. 391,276.

To all whom it may concern:

Be it known that I, THEODORE J. MIGCHELBRINK, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Combination Ranges, of which the following is a full, clear, and exact description.

This invention relates to a combination coal and gas range.

One of the objects sought by the present invention is to provide a range of the character described, in which what is known as an elevated oven may be heated either by means of a gas burner or by the heated gases from a coal fire.

A further object of the invention is to provide a structure for the purpose in which the flue passage around the oven is controlled by a damper which opens the flue to the products of combustion from the burner and closes the flue with respect to the coal fire box or vice versa.

Reference should be had to the accompanying drawings forming a part of this specification, in which Fig. 1 is a front elevation of a range embodying the present invention; Fig. 2 is an elevation with portions in section; Fig. 3 is a transverse section and Fig. 4, is a top plan view of a portion of the range; Fig. 5 is a front elevation of a modified construction.

Referring to the drawings, 1 indicates the top or anchor plate of the stove, 2 indicates the fire box and ash pit, which is closed by a door 3. At 4 is indicated the oven portion which is closed by a suitable door 6^a and beneath the oven 4 is a broiler compartment which is closed by a suitable door 6.

The portion beneath the top 1 of the stove is an open space which is indicated at 7, this open space being entirely enclosed and is adapted to contain gas burners such as indicated at 8, the connecting pipes for which extend through the front wall 1^a and communicate with usual valve structures such as indicated at 8 which in turn communicate with a gas header pipe 9. The space 7 is in open communication with the fire box 10, which fire box is provided with the usual

lining 11 and a grate 12 at the bottom portion thereof. Beneath the grate 12 is the ash pit indicated at 13.

The oven proper is indicated at 14 and is supported by the front and rear walls of the stove structure, following usual construction.

Beneath the oven 14 is a flue 15 which communicates with an end flue 16 and this flue in turn communicates with a top flue 17. The flue 17 communicates with a flue space 18 which flue space at its lower end is closed by a wall such as indicated at 18^a. The back wall which bounds the flue space 18 is provided with an opening 19 which communicates with the flue pipe 20 carried upon the back of the range.

The walls which enclose the broiler space 5 are provided with an opening such as indicated at 21 which is at the end of the flue 15.

Pivoted adjacent one edge of this opening is a damper 22 which is so pivoted that it may be moved to cover the opening 21 or moved downwardly as shown in Fig. 2 for uncovering the opening 21. The construction is such that the damper 22 when moved into its down or horizontal position extends across and engages the wall 23 thereby closing the communication which the fire box 10 normally has with the flue 15.

Within the broiler compartment 5 there is a gas burner 23^a. This gas burner extends adjacent the edge of the opening 21 and is so positioned that the flame from the burner is directed through the opening 21 when the same is uncovered. This burner 23 is connected by suitable pipes with the gas header 9.

At the end of the flue 17 there is a damper as indicated at 24. This damper is pivotally mounted along one of its edges as indicated at 25 and is adapted to extend across the flue 18 where it joins the flue 17, when the damper is in closed position. The damper does not extend through the entire length of the flue 18 as is seen from Fig. 4, but leaves a portion of this flue open even when the damper is in closed position.

This damper 24 is in closed position when

the damper 22 is in open position or in other words, when the opening 21 is uncovered and gas is being used. The damper 24 thus partially reduces the flue space when gas is used, which is a desirable feature as in the use of gas the same area of flue is not required as when burning coal.

For the purpose of easy operation the damper 22 is connected with the damper 24 by means of a rod 26 which extends through the flue pipe 20 on the back of the range. The connection is such that when the damper 22 is operated, the damper 24 is also operated. The damper 22 may be turned by means of a handle 22^a, which extends upon the outside of the front plate of the stove.

As will be seen by reference to Fig. 2, the hot gases either from the gas burner or from the fire box when a coal fire is used, pass substantially entirely around the oven 14 so that it is heated on all four sides thereof. This results in producing a very uniform temperature in the oven and creating a desired oven temperature very rapidly after the application of heat is started.

The anchor plate 1 of the range is provided with the usual openings, but these are closed by means of covers such as indicated at 1^b when the range is used as a coal range thus enclosing the space 7 and the anchor plate 1 becomes heated by the products of combustion from the fire box in the same manner as in the usual types of coal ranges. During the use of the range as a coal range, the burners remain in place.

When the range is being used as a gas range the covers 1^b may be replaced by the usual form of grids which permits the flame from the gas burners to be utilized in heating receptacles placed on the grids, in the usual fashion.

As will be noted, the fire box is located centrally of the range rather than at one end as is the usual custom. This arrangement is purposeful in that it permits the passage of the hot gases from the fire box directly through the flue surrounding the oven so that there is practically a direct application of heat to the oven.

This construction may be varied, as indicated in Fig. 5. In this figure the fire box 30 is located at one end of the range and communicates with a chambered portion indicated at 31 and this chamber in turn communicates with a vertical flue 32 which is controlled by damper 33 which also controls the opening 34 in the wall and adjacent the opening 34 is the oven heating burner 36.

The flue construction and arrangement, with respect to the oven is precisely the same as previously described.

The anchor plate 36 with its openings and

covers, as well as the burners located in chamber 31 are precisely the same as before described.

At one side of the fire box and beneath the broiler compartment, is a hot closet which is closed by a suitable door as indicated at 37.

When a coal fire is used, the heated gases pass through the chamber 31 and thence to the flues around the oven.

Having described my invention, I claim—

1. In a range, an anchor plate for said range, an oven located above said anchor plate, a casing surrounding the said oven thereby providing a flue for the passage of heated gases, means providing a compartment beneath the said oven, a gas burner located at one side of said compartment, the said broiler compartment being provided with an opening into the flue adjacent the oven whereby the products of combustion from the gas burner may pass to the flue surrounding the oven, said gas burner being adjacent the opening and adapted to direct a flame into the opening.

2. In a range, a fire box, an oven located entirely above the fire box, a casing surrounding the oven and providing a flue for the passage of gases around the oven, means forming a connecting passageway between said flue and the fire box, a gas burner located adjacent one end of the said flue, there being an opening in the wall of said connecting passageway adjacent the burner into which the burner is adapted to project a flame and through which products of combustion may pass from the burner to the flue, a movable damper in the connecting passageway which controls said opening.

3. In a range, a fire box, an oven located entirely above the fire box, a casing surrounding the oven and providing a flue for the passage of gases around the oven, means forming a connecting passageway between said flue and the fire box, a gas burner located adjacent one end of the said flue, there being an opening in the wall of said connecting passageway through which products of combustion may pass from the burner to the flue, a damper located in said connecting passageway and movable to one position to close the said opening adjacent the gas burner and movable to another position to uncover said opening and close the connecting passageway with respect to the fire box.

4. In a range, a fire box, an oven located entirely above the fire box, a casing surrounding the oven and providing a flue for the passage of gases around the oven, means forming a connecting passageway between one end of the flue and the fire box, means forming a compartment beneath the oven, there being an opening in the wall of said

compartment which communicates with the connecting passageway before mentioned, a burner mounted in said compartment adjacent said opening, a damper member mounted within the said connecting passageway and movable in one position to close the opening adjacent the gas burner and movable to another position to uncover said opening and to close the said connecting passageway with respect to the fire box. 10

In testimony whereof, I hereunto affix my signature.

THEODORE J. MICHELBRINK.