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CONVERTIBLE GAS AND COAL RANGE

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2 Sheets-Sheet 1

Fig. 1.

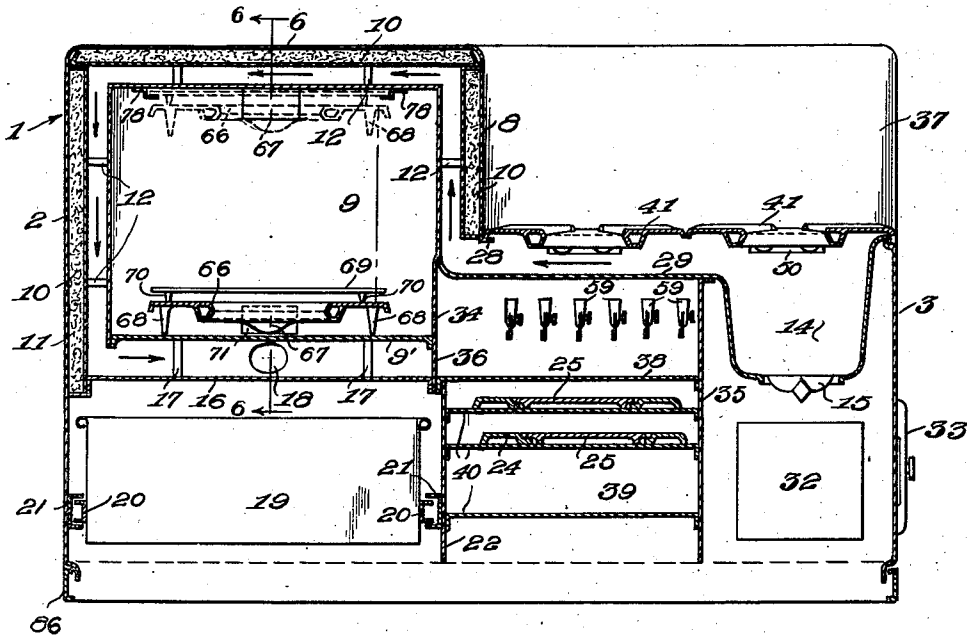
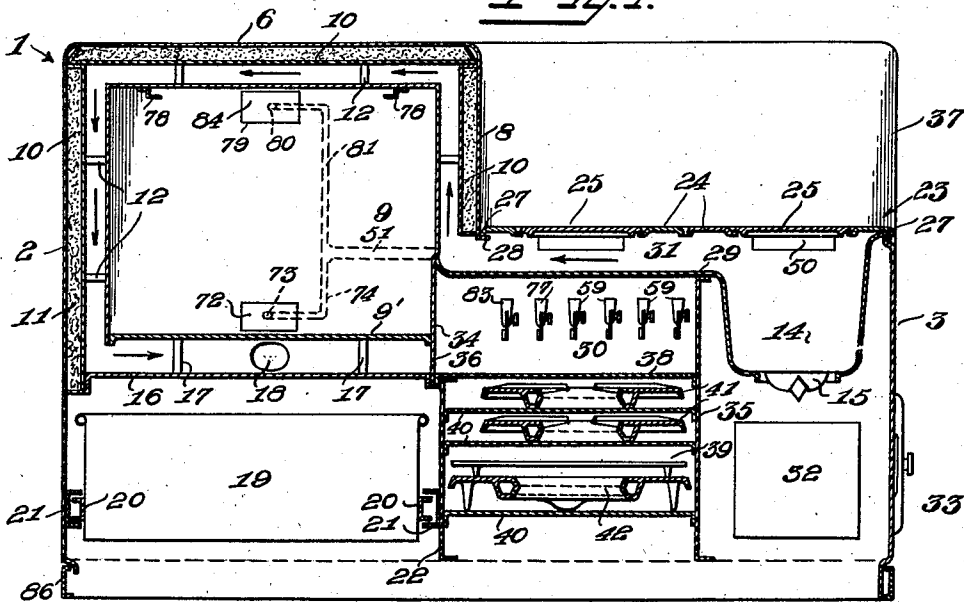


Fig. 2.

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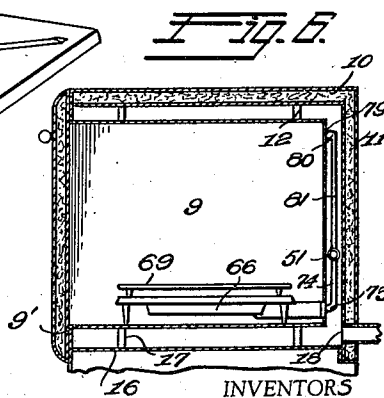
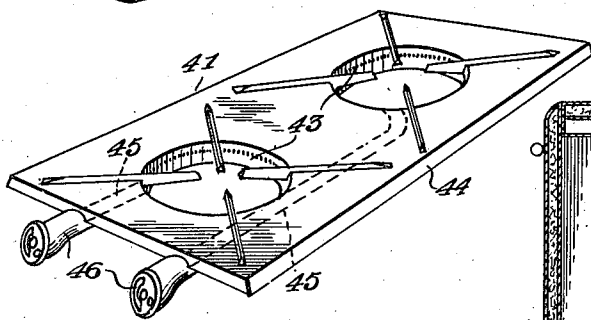
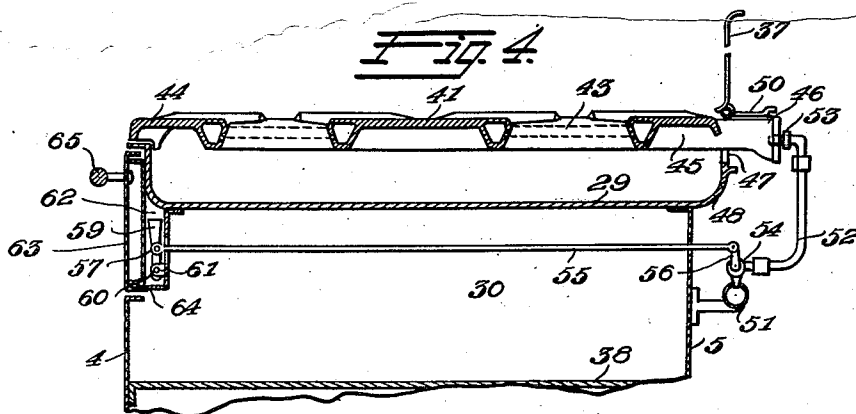
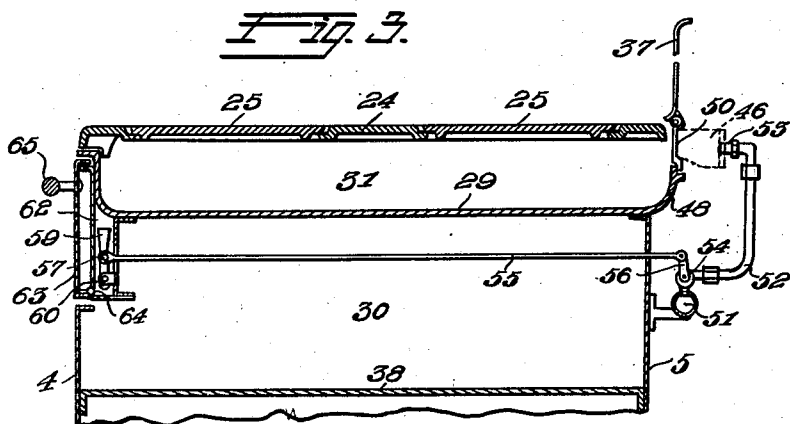
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CONVERTIBLE GAS AND COAL RANGE

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2 Sheets-Sheet 2



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CONVERTIBLE GAS AND COAL RANGE

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Application February 7, 1938, Serial No. 189,214

1 Claim. (Cl. 126—39)

This invention relates to a convertible coal and gas range.

A primary object of the invention is the provision of a range which is readily convertible for the use of solid fuel or gas as the heating medium.

A further object of the invention is the provision of a range which embodies in its construction a cooking top and an oven, a burner for solid fuel disposed below the cooking top and a flue extending from the burner and in surrounding relation to the oven whereby both the cooking top and oven may be heated by burning solid fuel in the fuel box, the range further embodying in its construction a gas manifold having valve controlled nozzles disposed adjacent closable openings adjacent the cooking top and over whereby plate supported lids used in the cooking top when burning solid fuel may readily be replaced by gas burners having mixing heads for extension through the openings and into alignment with the nozzles.

A further object of the invention is the provision of a convertible range construction having a compartment for accessible storage of the plate supported lids or gas burners when not in use.

A further object of the invention is the provision of a range construction having a gas manifold secured to the rear wall thereof, the manifold having valve controlled nozzles for operative alignment with mixer heads in gas burners, and the valves controlling the nozzles being operable by rods extending through the range and operatively connected to lever handles disposed in a recess in the front of the range, the recess being fully closable by a door only when the lever handles are in a position to close the valves thereby assuring that none of the valves are inadvertently left open.

A still further object of the invention is the provision of a convertible coal and gas range which is relatively simple in construction and which embodies relatively few removable and interchangeable parts for adapting the range for use with solid or gaseous fuel.

For a fuller understanding of the nature and objects of the invention, reference should be had to the following detailed description taken in connection with the accompanying drawings, wherein—

Fig. 1 is a vertical longitudinal section of the range construction showing same equipped for use with solid fuel.

Fig. 2 is a similar view showing the range equipped for use with gaseous fuel.

Fig. 3 is a transverse vertical sectional view disclosing in particular the gas nozzle valve controlling means and the closable openings for receiving the mixing heads for gas burners, the view showing the cooking top provided by plate supported lids for use with solid fuel.

Fig. 4 is a similar view but shows the cooking top provided by gas burners having their mixing heads extending through the closable openings into operative association with the valve controlled nozzles.

Fig. 5 is a perspective view of one of the cooking top gas burners.

Fig. 6 is a vertical transverse section taken in planes substantially as represented by the broken line 6—6 in Fig. 2.

Referring now more particularly to the drawings by numerals of reference 1 designates generally the combination range embodying the features of the invention, said range including side walls 2 and 3 respectively, and front and rear walls 4 and 5, the top being shown at 6. The wall 2, top 6 and intermediate wall 8, which constitute the housing for an oven 9, are formed of spaced plates providing dead air chambers 10, each of which may be packed with suitable insulating material 11.

The oven 9 is supported within the housing formed by the walls 2, 6 and 8, and in spaced relation thereto, through the medium of spacer blocks 12, to provide a continuous and surrounding flue through which travel the products of combustion as shown by the arrows, from the firebox 14 of the coal or other solid fuel burner, the grate for which is shown at 15. The bottom of the housing is indicated at 16, the floor 9' of the oven 9 being maintained in spaced relation thereto through the spacer blocks 17. The waste products of combustion, after passing around the oven 9, enter the space beneath it and discharge through an opening 18 in the rear wall of the range into a stovepipe, not shown.

Arranged beneath the oven housing, is a utility drawer 19 having guide flanges 20 slidable within angle iron trackways 21, mounted respectively upon the inner faces of the side wall 2 and a partition wall 22.

Adjacent the oven 9, and above the coal burner firebox 14, is the cooking top generally indicated at 23, and referring at this point to Fig. 1, said cooking top is formed of the lid supporting plates 24 having the regular lid openings covered by the removable lids 25, which are of such form

that the plates and lids may be handled as a unit. It is to be noted, however, that the lateral edges of the plates are flanged as at 27, one marginal flange resting over a portion of the upper edge of the stove at one end thereof, while the other rests upon a shoulder 28 formed along the lower edge of the intermediate wall 8.

Between the surface formed by these top plates 24 and the top wall 29 of a compartment 30, which houses certain elements of valve mechanism to be later described, is the flue 31, which carries the hot products of combustion from the firebox 14, under the cooking top 23 and thence to the flue spaces surrounding the oven 9. Below the firebox 14 is the usual ash pit 32 and clean out door 33.

The compartment 30 just referred to, is formed in addition to its top wall 29, by lateral walls 34 and 35, the former being in fact, a lower continuation of one of the side walls of the oven 9, in addition to which, it functions as partial support for the oven bottom 9' as indicated at 36. The cooking top section of the range is provided with a splasher back 37.

Below the compartment 30 previously referred to, the lower wall of which is indicated at 38, is a storage compartment 39, having a plurality of shelves 40 to receive the coal burner cooking top plate and lid members 24 and 25 as shown in Fig. 2, or the gas cooking top burner and plate members 41, and the gas oven burners 42, as shown in Fig. 1, when not in use.

When in use as a coal or solid fuel burning range, the top plate and lid structure described are disposed over the firebox 14 and flue 31 as is shown in Fig. 1, and the range functions in the usual manner. However, when in use as a gas burning range, the following constructions are employed to convert it from a coal to a gas cooking apparatus as illustrated in Figures 2 and 4: The lids and plates 24 and 25 are removed and may be placed in the storage compartment 39, the burners 41, shown in enlarged perspective in Fig. 5, being substituted therefor, and the details of which form the subject matter of a copending application.

In general, these burners and plate members 41 include the gas burner 43 formed integrally with the supporting plate 44, the latter having cast therein, gas conduits 45 which lead to said burners 43, air and gas mixer tubes 46, also cast with the plate extending from the rear end thereof. When arranged for use upon the top of the range frame as clearly shown in Fig. 4, the mixer tubes 46 extend rearwardly of the stove through openings 47 formed in the rear vertical continuation 48 of the flue wall 29, said openings being closed when the burners are removed by hinged doors 50.

Arranged at the rear of the range and extending longitudinally thereof is a gas manifold 51, from which lead a plurality of gas pipes 52, the upper ends of which terminate in nozzles 53, which, respectively enter the several mixer tubes 46, as shown in Figure 4. Each of the gas pipes 52 is provided with a rotary valve 54, controlled through the medium of a reciprocatory valve rod 55 which extends transversely of the range within the chamber 30, the rear end of each rod being connected to the valve lever 56, while the forward end is pivoted to an intermediate portion 57 of a forwardly swinging lever handle 59 hinged at its lower portion at 60, to a vertical plate 61 which is disposed below the flue plate 29.

It will be observed that the plate 61 is set back

from the front plane of the stove, to provide a recess 62 of a depth less than the length of the valve lever handles 59, so that, when any one of the handles is swung forwardly and downwardly to open its respective valve 54, the free end thereof will project beyond the front plane of the stove, and into the path of movement of a door 63 which is hinged at its lower edge at 64 to a portion of the stove body, whereby it may be swung outwardly and downwardly to permit access to the several valve rod operating lever handles 59. The arrangement just described functions as a safety measure, since all the valves 54 must be shut off before the door 63 can be closed, it being understood that when the handles 59 are in vertical position, the valves are turned to interrupt the flow of gas from the manifold 51 to the mixer tubes 46, and when in horizontal position said valves are open. The door 63 is provided with a handle 65.

When functioning as a gas range, a removable burner 66 is employed for use as the heater for the oven 9, and, as shown in Fig. 2, it may assume the position shown in full lines, where it acts to heat the oven for baking purposes, or as shown in dotted lines, be supported adjacent the top of the oven for broiling purposes.

In general, the burner 66 is substantially similar to the burners 41, however, with these modifications: It need have only a single mixer tube 67 at the rear, and, to permit it to rest upon the oven bottom 9', it is provided with cast legs 68 and a hot plate 69 supported upon and in spaced relation to the upper face of the burner by spacer studs 70, the several elements just described being formed as a unitary casting. The mixer tube 67 is adapted to project through an opening 71 in the rear wall of the oven, which opening is adapted to be closed when the range is functioning as a solid fuel heater, by a sliding or otherwise movable door 72. When the burner 66 is in position, the nozzle 73 of the gas tube 74 enters the mixer tube in the usual manner, and gas is supplied to said burner by a valve similar to valves 54 connected with the manifold 51, through operation of the valve handle 77.

When the oven 9 is functioning in the capacity of a broiling compartment, the burner 66 acts as a broiler, and is supported within and near the top thereof, being, as shown in dotted lines in Fig. 2, mounted upon brackets 78 secured to the top wall of the oven, the lateral edges of the hot plate 69, resting on the flanges thereof as is clear. In such position, the mixer tube extends through an opening 79 in the upper portion of the rear wall of the oven, and cooperates with the nozzle 80 of the gas supply pipe 81, which in turn connects with the manifold 51 having a valve similar to valves 54 controlled through the manipulation of the valve handle 83. A door 84 similar to door 72 is also employed to close the opening 79 when the burner 66 is removed from the oven. The entire range structure is mounted upon a supporting base 86.

While we have disclosed but a single specific embodiment of our invention, same is to be considered as illustrative only and not restrictive, the scope of the invention being defined in the subjoined claim.

What we claim and desire to secure by United States Letters Patent is:

In a cooking range, a body having front and rear walls, a splasher back forming an upward continuation of the rear wall and having an opening at its lower edge, a door hinged to the top of

said opening and selectively opening and closing the opening, a manifold fixedly supported from the said back wall, a pipe leading from said manifold and having a forwardly directed terminal nozzle alined with said opening, a removable range top member supported at its front edge from said front wall and extending rearwardly to

the rear wall, a gas burner carried by the range top member, and a fuel conduit carried by the range top member and communicating with the burner, said conduit having an opening at its rear end adapted to fit removably on said nozzle.

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