

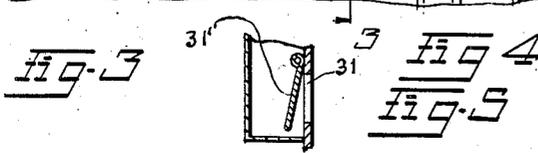
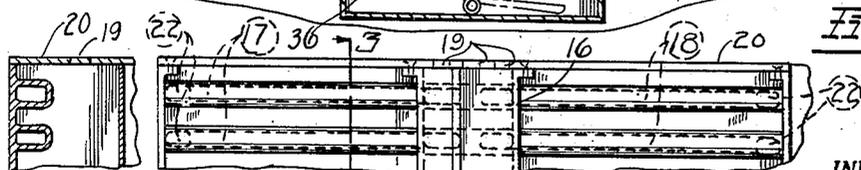
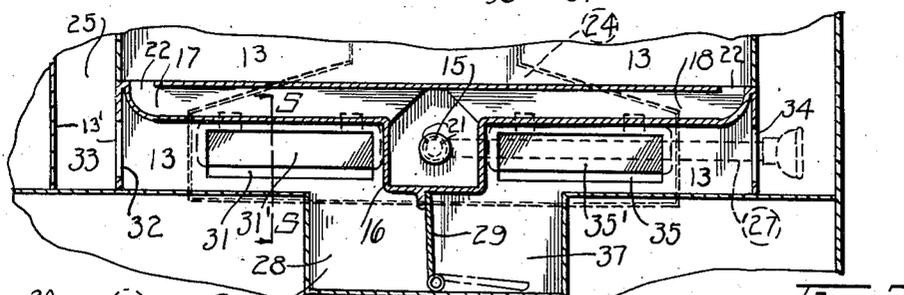
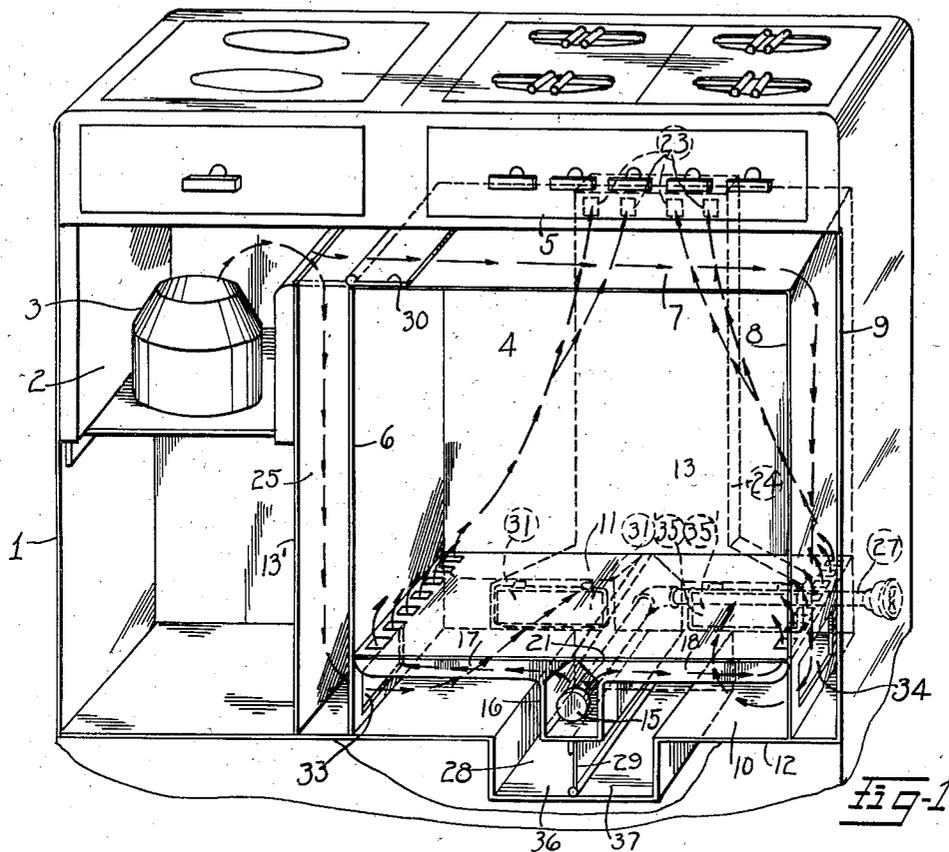
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STOVE OR RANGE

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STOVE OR RANGE

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2 Claims. (Cl. 126—36)

Our invention pertains to cooking stoves or ranges adapted for the use of coal or oil alone, gas alone or a combination of gas and coal or oil fuel.

The principal object of the invention is to provide an improved circulation of heat whereby the hot gases from the fire box and/or gas burner will heat the oven with a maximum degree of efficiency.

Other objects and advantages of the invention will be understood as the description is considered in connection with the accompanying drawing, wherein a typical embodiment of the invention is illustrated, it being understood that such changes in the precise embodiment of the herein disclosed invention may be made as come within the scope of the claims.

Figure 1 is a front perspective of a range embodying our invention;

Figure 2 is a fragmentary sectional view showing the construction of the oven heating tubes;

Figure 3 is a section on the line 3—3 of Figure 4;

Figure 4 is a fragmentary bottom plan view showing the inlet openings in the beveled adjacent ends of the tubes; and

Figure 5 is a section taken on the line 5—5 of Figure 2.

Referring more particularly to the drawing the numeral 1 denotes a range having a fire box 2 in which a conventional oil burner 3 is suitably mounted. Where desired, the oil burner can be removed and grate bars, not shown, substituted, thus adapting the range for coal or wood fuel. The range is provided with a baking and broiling oven 4, having a bottom wall 11, and directly above the oven is a top gas burner compartment or chamber 5, in which the usual gas burners, not shown, are housed.

The fire box or combustion chamber 2, arranged at the left side of the range, viewing the drawing, and adjacent one side wall 6 of the oven 4, communicates with a top flue or space 7 which extends between the top gas burner compartment 5 and the top of the oven. This top flue also continues down the other side wall 8, between that wall and the right side wall 9 of the range, and communicates at its lower end with a bottom flue 10. This flue 10 extends between the bottom 11 of the oven and a range bottom wall 12 and is coextensive with both. The back wall 13 of the range also serves as the back wall of the oven 4, while the left hand side oven wall 6 is spaced from the inner side wall 13' of the fire box to provide an open ended space

or flue 25, the purpose of which will be presently described.

An oven gas burner 15, in the present embodiment, of elongated shape is mounted within a burner housing 16, centrally positioned beneath the oven bottom 11 and extending from front to rear thereof. This casing, together with a damper 29, hereinafter referred to, in effect divides the flue into two separate right and left hand flues or parts 36 and 37 respectively. Integrally cast on the under face of the oven bottom are two oppositely disposed groups or series of tubes 17 and 18, preferably of substantially rectangular cross section, extending transversely from opposite sides of the oven toward the medium line thereof. The gas burner 15, gets its primary air from a mixing tube 27, connected in any suitable manner with a gas manifold, not shown, while secondary air is introduced to the housing 16 in any desired manner as through openings 19, in a front plate 20. Gas is jetted from gas orifices 21, toward the opposed beveled open inner ends of the tubes 17 and 18 which ends are in communication with the interior of the burner housing. When the jets are lighted the hot gases from the housing enter the beveled ends of the tubes and pass laterally to and out through the upwardly bent ends 22 into the oven and thence out through flue openings 23, in the upper central portion of the rear oven wall 13, which communicate with the smoke box or main discharge flue 24. The purpose of beveling the inner ends of the tubes 17 and 18 is to facilitate entrance of the hot gases generated by the gas burner and also to insure proper heating of the oven bottom and/or tubes at this point by the hot gases from the fire box.

The bottom wall 12 of the range, which may in practice be a false bottom for the oven, is formed with a centrally disposed depression or chamber 28 the purpose of which is to provide ample space beneath the housing 16 for the circulation of hot gases and for the accommodation of a damper 29, which extends from front to rear of the range and together with the housing 16 is adapted to subdivide the bottom flue 10. This well also places the subdivisions 36 and 37 of the bottom flue 10 in free communication with each other.

The upper end of diving flue 25 will be open or closed to the fire box according to whether a hinged cover member or damper 30 is in open or closed position. When member 30 and damper 29 are in open position the hot gases from the fire box pass downwardly through the flue 25, and

out through an opening 32 in the bottom wall 33 of this flue, into bottom flue 10 where it heats the tubes 17 and/or oven bottom on the left side of the oven before passing rearwardly to and through a preferably damper controlled opening 31 in the rear wall 13 leading to the smoke box 24. The fire box gases from the diving flue thus contact the tubes 17 while these gases retain a maximum of heat. A portion of the fire box gases also pass through sheet flue 7 across the top of the oven and thence down the right side thereof to and through an opening 34 in the front part of the bottom flue and from there are drawn into well or chamber 28, beneath the housing 16, and finally out through damper controlled opening 31 previously mentioned, to the smoke box 24. This portion of the fire box gases heats the tubes 18 at the right side of the oven. A second normally open damper controlled opening 35, is provided in the rear wall 13, for placing the right side or half of the bottom flue 10 in direct communication with the main discharge flue or smoke box 24, when the damper 35' of this opening 35 is in open position. When damper 30 is closed all the hot gases from the fire box will pass through top flue 7, down the right side of the oven and thence through opening 34 to and across the bottom flue 10 to main discharge flue opening 31, assuming of course that damper 35' is closed.

The damper or cap 30 may be left open when it is desired to heat the left side and bottom portion of the oven to a greater extent than the other side and bottom portion thereof. The operator can also control the amount of heat to be delivered to either side of the oven bottom by regulating the dampers 31' and 35', which are provided with manual control means, not shown. The damper 29 merely subdivides the oven bottom flue 10 into two parts and will be kept closed or in vertical position only when the diving flue 25 is being used, that is, when damper 30 is open.

In the case the fire box gases which do not pass down the diving flue 25 and out through opening 31, will flow across the top and down one side of the oven and finally escape through flue opening 35. However the diving flue can be used to advantage with the damper 29 and damper 35' in either open or closed position.

Having thus described our invention, what we claim is:

1. A range comprising a fire box having a source of heat therefor, an oven, separate bottom flues beneath opposite sides of the oven, a main discharge flue communicating with the interior of the oven and with said bottom flues, separate means for passing heated gases from the fire box to said oven bottom flues, a centrally disposed elongated burner positioned beneath said oven and between said bottom oven flues, means for passing the products of combustion from said burner to the interior of the oven and means for placing said separate bottom flues in communication with each other.

2. A range comprising a fire box having a source of heat therefor, an oven having a bottom wall and an oven flue extending beneath said bottom wall, a discharge flue communicating with the interior of the oven and with said bottom flue, flue means for passing hot gases from said fire box to said oven bottom flue, a burner casing positioned directly below said oven bottom and dividing said bottom flue into sections, a well beneath said burner casing, a damper in said well adapted to place said flue sections in communication with each other, a burner in said casing, and a second flue means below said oven bottom communicating with the interior of the oven for passing hot gases from said burner to the interior of the oven.

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