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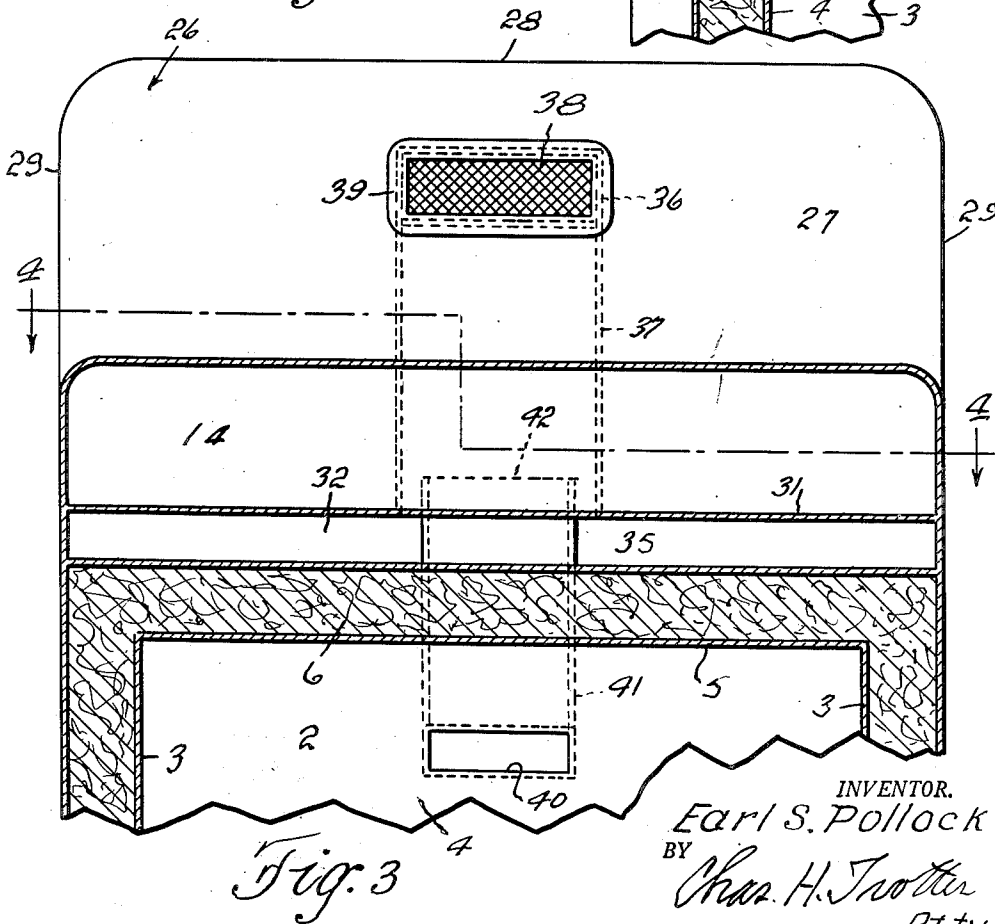
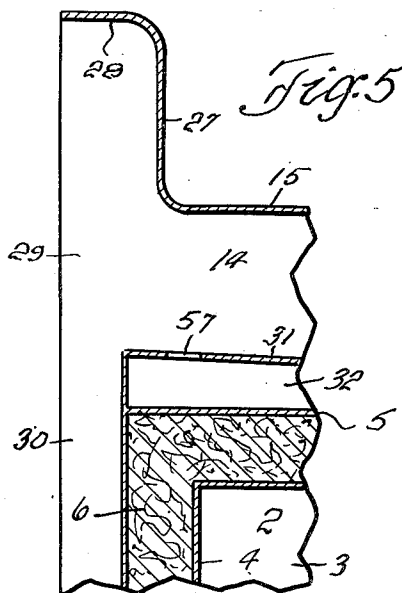
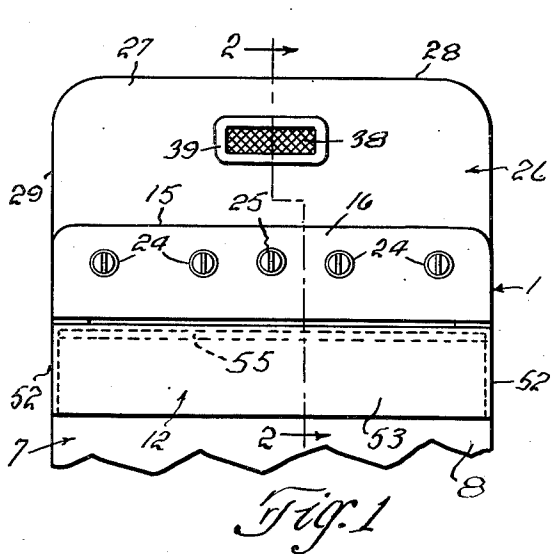
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2,622,583

VENTILATING AND COOLING MEANS FOR COOKING RANGES

Filed Dec. 11, 1950

2 SHEETS—SHEET 1



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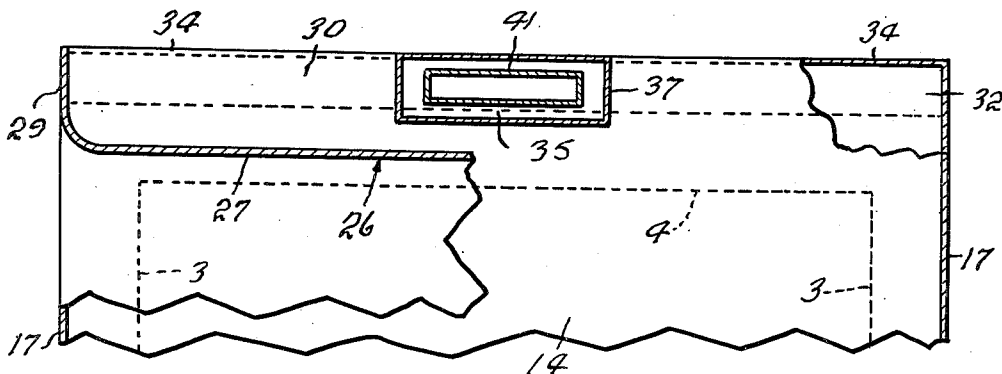
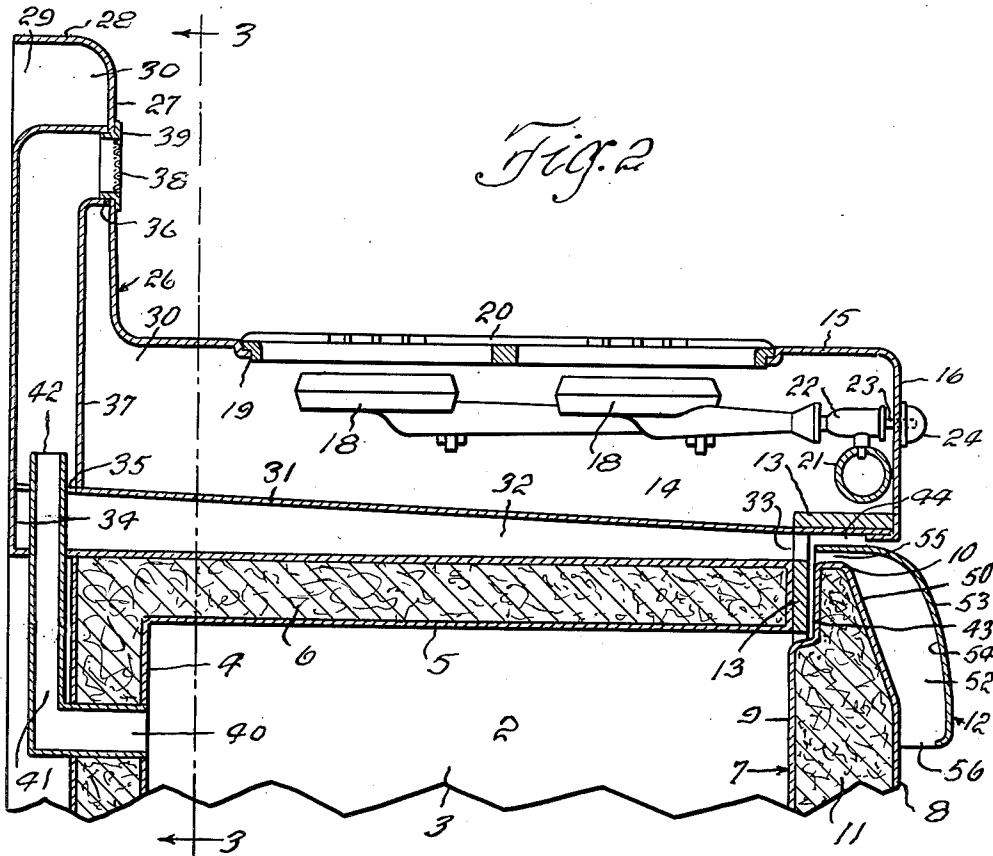
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VENTILATING AND COOLING MEANS FOR COOKING RANGES

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2 SHEETS—SHEET 2



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UNITED STATES PATENT OFFICE

2,622,583

VENTILATING AND COOLING MEANS FOR
COOKING RANGESEarl S. Pollock, Lexington, Ohio, assignor to The
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7 Claims. (Cl. 126—21)

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This invention relates to a ventilating and cooling means for cooking ranges. It is especially adapted for small utility ranges such as are extensively used today in small apartment kitchenettes and in-a-door cooking cupboards provided in many hotel one-room and two-room suites.

These utility ranges usually comprise an oven which extends from side to side and from the front to the rear of the range, and a plurality of top burners which are disposed in a chamber between the top of the oven and the top of the stove. The control valves for the burners are disposed within the top burner compartment and the valve stems thereof extend through a front panel which constitutes the front wall of the top burner compartment and extends across the front of the range directly above the oven door. An operating handle is secured to the projecting end of each of the valve stems.

It has been found by experience that no matter how well a range is constructed a certain amount of heat will escape from the oven around the edges of the oven door. Most of this heat leaks out over the top of the door and flows up along the front panel and around the valve operating handles. This escaping heat is sufficient to eventually heat the operating handles to such a degree that they cannot be grasped by the bare hand without danger of burning. Also this escaping heat is very objectionable to a person standing close to the stove while tending to something cooking on the top burners of the stove.

This application is a continuation-in-part of my co-pending application, Serial No. 36,943, filed April 12, 1949.

It is the principal object of my invention to eliminate this flow of heat escaping upwardly along the front panel and around the valve operating handles. Since it is impracticable, if not impossible, to make the oven door fit so tightly when closed that heat cannot leak out over the top thereof, I provide means to direct the escaping heat away from the front panel of the stove and discharge it elsewhere, preferably through the oven venting means.

Another object of the invention is to provide a very simple and effective means for accomplishing the aforesaid object, which can be incorporated in a range without materially altering the construction thereof.

Other and more specific objects of the invention will be apparent from the following specification and the accompanying drawing forming a part thereof wherein:

Fig. 1 is a front elevation of the upper part of a

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small utility type cooking range having my invention incorporated therein;

Fig. 2 is an enlarged vertical sectional view taken from the front to the rear of the range, the plane of the section being indicated by the line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view taken from side to side of the range, the plane of the section being indicated by the line 3—3 of Fig. 2;

Fig. 4 is a fragmentary horizontal sectional view taken on the line 4—4 of Fig. 3;

Fig. 5 is a fragmentary view similar to Fig. 2 showing a slightly modified form of my invention.

Referring now to the drawings by reference characters, the numeral 1 indicates generally a utility type cooking range having an oven 2 which extends from the front to the rear of the range and from side to side thereof. The side walls 3, the rear wall 4 and the top wall 5 of the oven are all insulated and each comprises spaced inner and outer metal sheets with the space therebetween filled with suitable insulating material 6. The front of the oven is normally closed by a door 7 which is swingingly connected to the frame of the range by hinges (not shown) disposed at the bottom of the door so that the door when open will swing downwardly. The door 7 comprises spaced front and rear walls 8 and 9 and a peripheral wall 10, all formed from sheet metal. The enclosed space is also filled with suitable insulating material 11. The door is adapted to be opened and closed through the medium of a handle 12. The top and side walls of the oven are secured to and extend rearwardly from the frame 13 of the range.

A top burner chamber 14 is provided between the top wall 5 of the oven 2, and the top 15 of the stove. The chamber 14 is open at the rear thereof and is closed at the front by the panel 16 and at the sides by the walls 17. A plurality of burners 18, preferably four in number, are suitably mounted in the chamber 14 beneath openings 19 in the top of the range. Suitable grates 20 are arranged over the openings 19. An oven burner (not shown) is mounted beneath the oven 2. Gas is supplied to all burners from a manifold 21 which extends across the chamber 14, just behind the front panel 16. The supply of gas to all burners is regulated by valves 22 which are disposed within the chamber 14, there being a separate valve for each burner. Each of the valves 22 has a valve stem 23 which extends out through the front panel 16. An operating handle is secured to the projecting end of each of the valve stems 23. The handles for the top burner

control valves are indicated by 24, and the handle for the oven burner control valve is indicated by 25. A splash back 26 is formed integral with and extends upwardly from the top 15 of the range at the rear thereof across the range from side to side thereof. The splash back 26 consists of the front wall 27, the top wall 28, and the side walls 29. The front wall 27 is disposed a short distance forwardly of the rear of the range, thus providing a closed chamber 30 when the rear of the range is flush against a room wall.

Within the chamber 14 spaced from the top of the oven wall 5, I provide a partition 31 which extends from the front panel 16 to the rear plane of the range, and from side wall 17 to side wall 17. This partition slopes upwardly, as shown in Fig. 2, from the front to the rear of the range and provides a chamber 32 which is open across the front thereof as indicated at 33. The rear end of the chamber 32 is closed by a plate 34 which extends across the back of the range from side wall 17 to side wall 17. Adjacent the rear end of the partition 31 I provide an opening 35 therethrough. The opening 35 communicates with a discharge opening 36 through the front wall 27 of the splash back through a conduit 37 which extends upwardly from the opening 35 within the chamber 30 into register with the opening 36. If desired the discharge opening 36 may be covered by a screen 38 secured to a suitable frame 39.

In order to vent the oven 2, I provide an opening 40 through the rear wall 4 thereof. A conduit 41, open at its upper end, extends from the opening 40 up through the chamber 32 and opening 35 and into the conduit 37, the upper open end of the conduit 41 terminating a short distance above the partition 31 within the conduit 37, as shown at 42 in Figs. 2 and 3. The conduit 41 is made slightly smaller than the opening 35 and conduit 37 in order to provide a peripheral space between the outer walls of the conduit 41 and the inner walls of the conduit 37. Gases from the oven are discharged through the opening 40 and up through the conduit 41 into the conduit 37 and thence out through the discharge opening 36.

As previously stated, it has been found by experience that in the manufacture of cooking ranges it is not practicable to try to fit the oven door so tightly that heat cannot escape around the edges thereof. Even if an oven door were original fitted this accurately, it would soon loosen up during use. Most of the heat escaping from the oven of a range as heretofore constructed, passes up through a small space 43 between the inner face of the oven door and the frame 13. Then it flows out through the space 44 above the oven door and up along the front of the panel 16 and around the operating handles 24 and 25. This escape of heat over the top of the oven door is very objectionable for the reasons previously stated, in that it eventually heats the operating handles 24 and 25 until they are too hot to grasp the naked hand, and renders it uncomfortable for a person standing close to the front of the range while tending to something cooking on the top of the range.

With my construction any hot gases escaping from the oven through the space 43 will pass into the chamber 32 through the open end 33 thereof. After entering the chamber 32 the gases flow rearwardly and out through the opening 35 into the conduit 37 from which they are discharged to the atmosphere through the screen 38 dis-

posed in the discharge opening 36 in the splash back 26. The flow of gases from the front to the rear of the chamber 32 is due to the upward slope of the top 31 of the chamber 32 as it extends rearwardly. This rearward flow of the hot gases is greatly facilitated by the flow of gases being vented from the oven 2 through the conduit 41 into the conduit 37. The conduit 41 being smaller than the opening 35 and conduit 37 and being so disposed with relation thereto that a peripheral space, as shown in Fig. 4, is provided between the conduit 41 and the conduit 37, gases passing from the conduit 41 into the conduit 37 will produce an injector action and draw gases from the chamber 32 through the opening 35 into the conduit 37, from which they are discharged through the screen 38.

In order to further facilitate the flow of gases rearwardly through the chamber 32 and better protect the valve handles from escaping oven heat, I utilize the specially constructed door handle 12 which is secured to and extends from side to side of the oven door 7 over the beveled upper end 50 thereof. The oven door handle 12 comprises the end walls 52 and an arcuate front and top wall 53. The wall 53 extends between the end walls 52 and is spaced from the front and top walls of the oven door to provide an open ended passageway 54 therebetween. The upper end of the passageway 54 terminates closely adjacent the opening 33, when the oven door is closed, as indicated at 55. Air is drawn into the passageway 54 through the open lower end 56 thereof and is discharged into the chamber 32 at 55. With this construction a large volume of air is drawn through the passageway 54 into the chamber 32, and it carries with it all hot gases escaping from the oven 2 through the space 43.

If desired, the rear end of the chamber 32 may be vented directly into the top burner compartment 14, as shown at 57 in Fig. 5.

From the foregoing it will be apparent to those skilled in this art that I have provided a very simple and efficient construction for accomplishing the objects of my invention.

It is to be understood that I am not limited to the specific construction shown and described herein as various modifications may be made thereto within the scope of the appended claims.

What is claimed is:

1. In a cooking range having a top burner compartment, an oven and a door normally closing said oven, the combination of a chamber open at the forward end thereof disposed between said oven and said top burner compartment with the open end thereof disposed adjacent the upper end of the oven door, an oven door handle secured to and extending across the upper end of said door and defining an open ended passageway communicating at the upper end thereof with said chamber through the open end thereof, means venting the rear end of said chamber to the atmosphere, and means operative to induce a flow of air through said passageway into said chamber and out through said venting means.

2. In a cooking range having a top and a splash back extending upwardly from said top and an oven disposed below said top and normally closed by a door, the combination of a chamber open at the forward end thereof disposed above said oven with the open end thereof disposed adjacent the upper end of said oven door, an oven door handle secured to and extending across the upper end of said door and defining an open ended

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passageway communicating at the upper end thereof with said chamber through the open end thereof, a vent opening from said chamber adjacent the rear end of said chamber, and a discharge conduit extending upwardly from said vent opening behind said splash back and into register with a discharge opening through said splash back.

3. In a cooking range having a top and a splash back extending upwardly from said top and an oven disposed below said top and normally closed by a door, the combination of a chamber open at the forward end thereof disposed above said oven with the open end thereof disposed adjacent the upper end of said oven door, an oven door handle secured to and extending across the upper end of said door and defining an open ended passageway communicating at the upper end thereof with said chamber through the open end thereof, a vent opening from said chamber adjacent the rear end of said chamber, a discharge conduit extending upwardly from said vent opening behind said splash back and into register with a discharge opening through said splash back, an oven vent opening, and a conduit extending upwardly from said oven vent opening through said vent opening and into said discharge conduit, the cross sectional area of said conduit being less than the cross sectional area of said discharge conduit.

4. In a cooking range having an oven and a door normally closing said oven, the combination of a chamber open at the forward end thereof disposed above said oven with the open end thereof disposed adjacent the upper end of said oven door; an oven door handle comprising a pair of spaced side walls secured to said oven door and front and top walls secured to said side walls, said top wall extending across the top of said oven door in spaced relation thereto and between said side walls, and said front wall extending across the upper portion of the front of said oven door in spaced relation thereto between said side walls, said walls defining an open ended passageway communicating at the upper end thereof with said chamber through the open end thereof; and means venting the rear end of said chamber to the atmosphere.

5. In a cooking range having an oven and a door normally closing said oven, the combination of a chamber open at the forward end thereof disposed above said oven with the open end thereof disposed adjacent the upper end of said oven door; an oven door handle comprising a pair of spaced side walls secured to said oven door and front and top walls secured to said side walls, said top wall extending across the top of said oven door in spaced relation thereto and between said side walls, and said front wall extend-

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ing across the upper portion of the front of said oven door in spaced relation thereto between said side walls, said walls defining an open ended passageway communicating at the upper end thereof with said chamber through the open end thereof; means venting the rear end of said chamber to the atmosphere, and means operative to induce a flow of air through said passageway into said chamber and out through said venting means.

6. A cooking range comprising an oven, a door normally closing said oven, a chamber in said range above said oven, an opening into said chamber adjacent the upper end of said door, and an oven door handle secured to said door and extending from side to side of said door adjacent the upper end thereof, said handle defining an open ended passageway communicating at the upper end thereof with said chamber through said opening.

7. A cooking range comprising an oven, a door normally closing said oven, a chamber in said range above said oven, an opening into said chamber adjacent the upper end of said door, and an oven door handle secured to said door and extending from side to side of said door adjacent the upper end thereof, said handle comprising a pair of spaced side walls secured to said oven door and front and top walls secured to said side walls, said top wall extending across the upper edge of said door in spaced relation thereto between said side walls, and said front wall extending across the upper portion of the front of said door in spaced relation thereto between said side walls, said walls defining an open ended passageway communicating at the upper end thereof with said chamber through said opening.

EARL S. POLLOCK.

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