

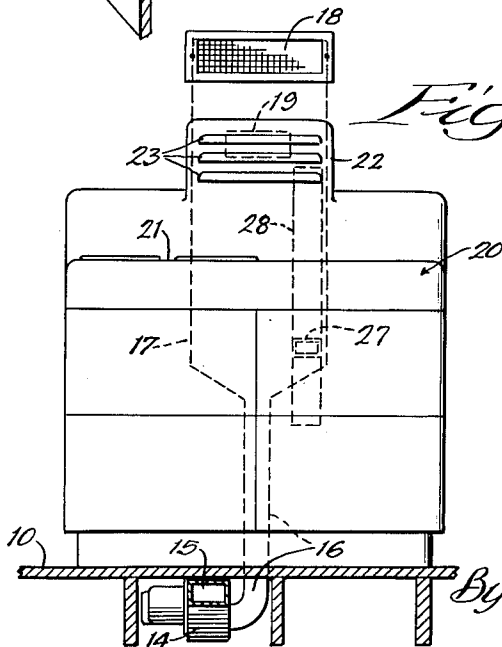
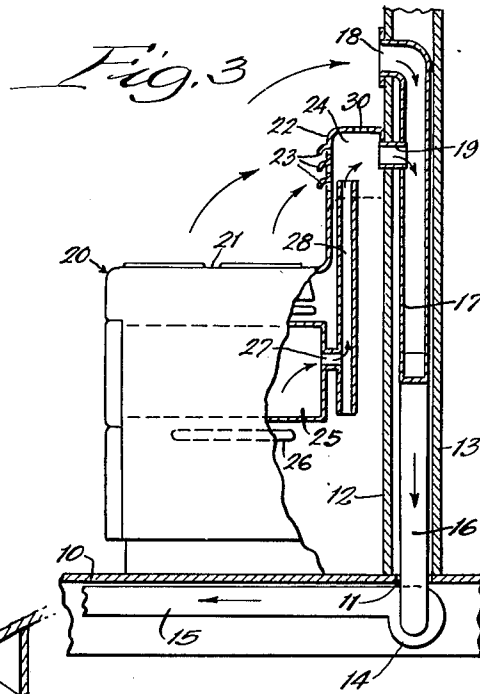
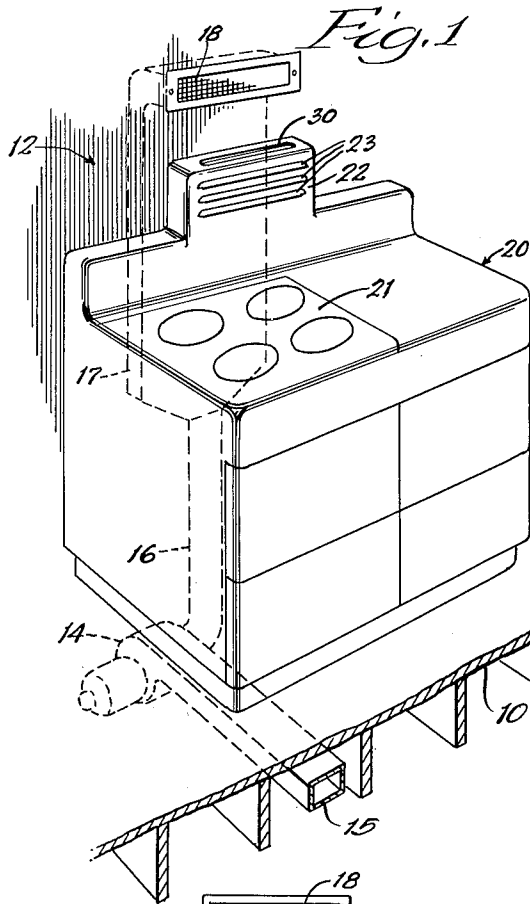
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VENTILATED RANGE

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VENTILATED RANGE

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This invention relates to a ventilated range. The invention is particularly useful in connection with a fuel-burning range, such as a gas range, etc., and also in connection with ranges employing electric and other heating elements.

In present day cooking appliances utilizing gas, liquid or solid fuels, electric heating elements, etc., the exhaust products of water vapor, food vapors, and odors, products of fuel combustion, etc., are discharged directly into the kitchen. Sometimes special structures are set up for drawing off vapors, air, and fumes from the room, but such structures are expensive and the excessive dilution of the withdrawn material with air is undesired. In ordinary practice, the gases, vapors, and odors released from the cooking appliance contribute to condensation on window surfaces, walls, and furniture, grease deposition requiring excessive cleaning and decorating, and the pollution of atmosphere in the entire house by food odors. Even when means for withdrawing vapors, etc. are located close to the range, the withdrawn vapors have an opportunity to cool and condense, and further there is extensive dilution of the withdrawn vapors by air.

An object of the present invention is to provide means whereby vapors, fumes and combustion products, etc. may be rapidly exhausted from a range, while at the same time preventing the condensation of the vapors prior to such removal. Yet, another object is to provide means for removing vapors and the like from an oven or other compartment in which a burner is located, or cooking carried on, while supplying to such withdrawn medium, air drawn from other sources and for diluting the same. A further object is to provide a range provided with means for introducing secondary relief air into a withdrawal passage for balancing pressure and for diluting vapor-laden air from the oven in combination with suction means and with means for withdrawing air from the room at a point above the range. Other specific objects and advantages will appear as the specification proceeds.

The invention is illustrated, in a single embodiment, by the accompanying drawing, in which—

Figure 1 is a broken perspective view, showing a range and ventilating equipment associated therewith and embodying my invention; Fig. 2, a front view in elevation, the floor being shown in section; and Fig. 3, a broken vertical sectional view.

In the illustration given, 10 designates a floor,

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which is provided with an opening 11. The opening 11 extends through the floor at a point between the walls 12 and 13 of the room. Below the floor 10 is a blower 14 connected to a discharge pipe 15, leading to a point, preferably, outside of the building. Connected to the intake of the blower 14 is an inlet pipe 16, which extends upwardly through opening 11 and is connected to the tapering bottom walls of an exhaust or collecting box 17. The box 17 extends upwardly and is provided with an air-inlet grill 18 at its top. Below the grill 18, a conduit 19 extends through wall 12 and connects the collecting box 17 with a space at the rear of the range 20.

The range 20 may be of any suitable type or construction. In the illustration given, the range is provided with a burner-equipped top 21 and with an upwardly extended back-splasher 22, provided with inlet ports 23. To the rear of the ports 23 is an exhaust chamber 24 communicating with the conduit 19.

The range 20 is provided with an inner casing forming an oven compartment 25, below which is shown a burner 26. In the usual gas range, the burner 26 is located in the top of the broiler compartment and products of combustion pass upwardly and through perforations in the oven walls so as to be retained by the oven. In the illustration given, the oven 25 is provided with an outlet passage 27, and the passage 27 communicates with the flue box 28. The upper end of the flue box 28 terminates adjacent the inlet openings 23.

Operation

In the operation of the structure, the blower 14 is set into operation when the range is to be used or ventilated, and a current of air is drawn through pipe 16 and the collecting box 17. Products of combustion, vapors, etc. from the oven 25 are drawn upwardly through the flue box 28 into the zone of reduced pressure at 24. Here, secondary air for relief is drawn through the apertures 23 and the blended air passes through conduit 19 into collecting box 17. At the same time, vapors and products of combustion arising from the burners on the range top 21 are drawn inwardly through the apertures 23 and through the grill 18. Thus, a balanced or standardized pressure is obtained, which removes the vapors, etc. from the oven 25 and brings in air from above the range to standardize or balance the pressure and to remove the vapors without permitting their condensation. Since the box 17

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has tapered lower walls leading to a narrow pipe 16, the velocity of the vapor-laden air is increased and discharged effectively through the discharge pipe 15. By introducing secondary air adjacent the outlet from the flue box 28, I am able to obtain a nice balance in the withdrawn air, while maintaining a desired low pressure within the flue box 28.

The back-splasher 22 is provided with an outlet opening 30 in the top portion thereof, which provides a primary relief opening for the flow of the oven-flue products when the blower is not in operation. It will be understood that the outlet opening 30 may be of any desired shape.

The apparatus is simple, compact, and is highly effective in the removal of fumes, vapors, products of combustion, etc. arising from the entire range.

While in the foregoing specification, I have set forth a single range structure in considerable detail for the purpose of illustrating one embodiment of the invention, it will be understood that the details of the structure may be varied widely by those skilled in the art without departing from the spirit of my invention.

I claim:

1. A range and blower structure, comprising a range having a burner-equipped top and a hollow back-splasher extending thereabove, an oven within said range having a port at the rear end thereof, a flue box adjacent the rear of said range extending from a point within said back-splasher to a point below said oven port, said flue box having an open lower end and an open top end and communicating with said port at a point between said ends, said back-splasher having inlet port means in the front wall thereof above the upper end of said flue box, a collector box providing a substantially closed chamber behind said back-splasher and said flue box and extending above said back-splasher, said collector box having intake means in the front wall thereof above said back-splasher of considerably larger capacity than said back-splasher inlet means and a port communicating with the top portion of said back-splasher, and a suction exhaust means communicating with the bottom of said collector box chamber, whereby said exhaust means can induce a high velocity flow of relatively cool air through said collector box while maintaining a balanced suction within said back-splasher to produce a low velocity flow of relatively warm air from said burner-equipped top and from said oven into said collector box chamber.

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2. In combination, a range resting upon the floor of a room and having its rear portion abutting a wall of the room, said range having a burner-equipped top and an oven within said range having a port at the rear end thereof, a hollow back-splasher extending above said burner-equipped top and having inlet ports in the front wall thereof, a flue box between the rear of said range and said wall extending from a point within said back-splasher below said back-splasher ports to a point below said oven port, said flue box having an open lower end and an open top end and communicating with said oven port at a point between said ends, a collecting box supported within said wall and having at its top an intake opening communicating with the room above said back-splasher inlet ports and a port below said intake opening communicating with said back-splasher in alignment with said back-splasher ports and above the open top end of said flue box, said collector box intake opening having a considerably greater capacity than said back-splasher inlet ports and a suction exhaust means communicating with the bottom of said collector box, whereby said exhaust means can induce a high velocity flow of air through said collector box while maintaining a balanced suction within said back-splasher to maintain a low velocity flow of air from said burner-equipped top and from said oven into said collector box.

3. The structure of claim 1 in which said back-splasher has an opening in the top thereof in alignment with the open top end of said flue box to provide a primary relief opening for the flow of the oven-flue products when the blower is not in operation.

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