United States Patent [19]

Seidel

[11] **3,858,568**

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[54] **OVEN VENT HOOD**

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[73] Assignee: **Raytheon Company,** Lexington, Mass.

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[52] **U.S. Cl.** ..... **126/299 R,** 98/115 R, 126/21 R

[51] **Int. Cl.** **F24c 15/20**

[58] **Field of Search**.... 126/21, 21 A, 273 A, 299 R, 126/299 B; 98/115 LH, 15 K, 115 R

[56] **References Cited**

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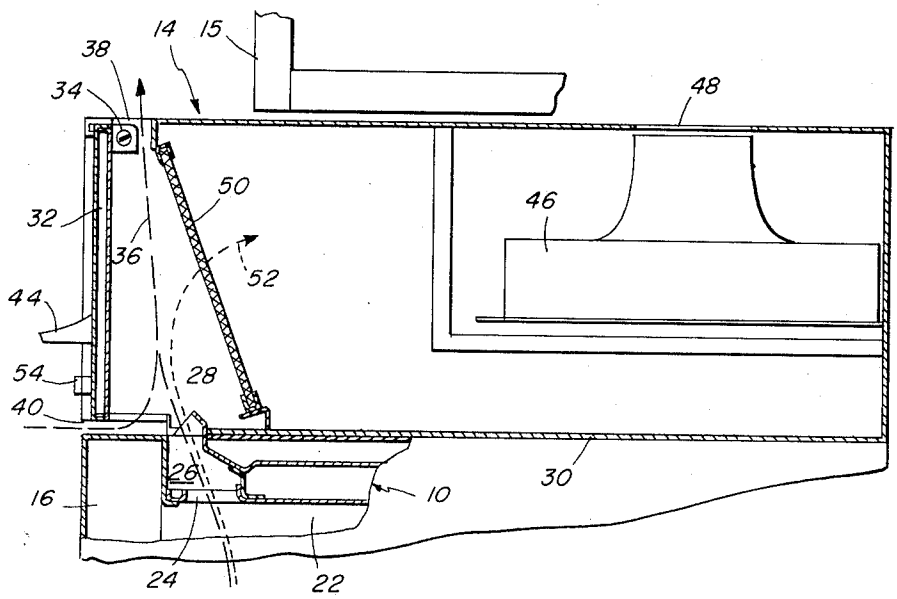
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Attorney, Agent, or Firm—Harold A. Murphy; Joseph D. Pannone; John T. Meaney

[57] **ABSTRACT**

A hood for use with a baking oven or the like having an exhaust vent in its upper surface which communicates with an interior of the hood, the hood having a faceplate, an upper vent above the faceplate and a lower vent below the faceplate, the oven flue products being enabled to enter the hood and mix with cool air which is drawn into the hood through the lower vent before passing out through the upper vent or through an exhaust fan.

2 Claims, 4 Drawing Figures



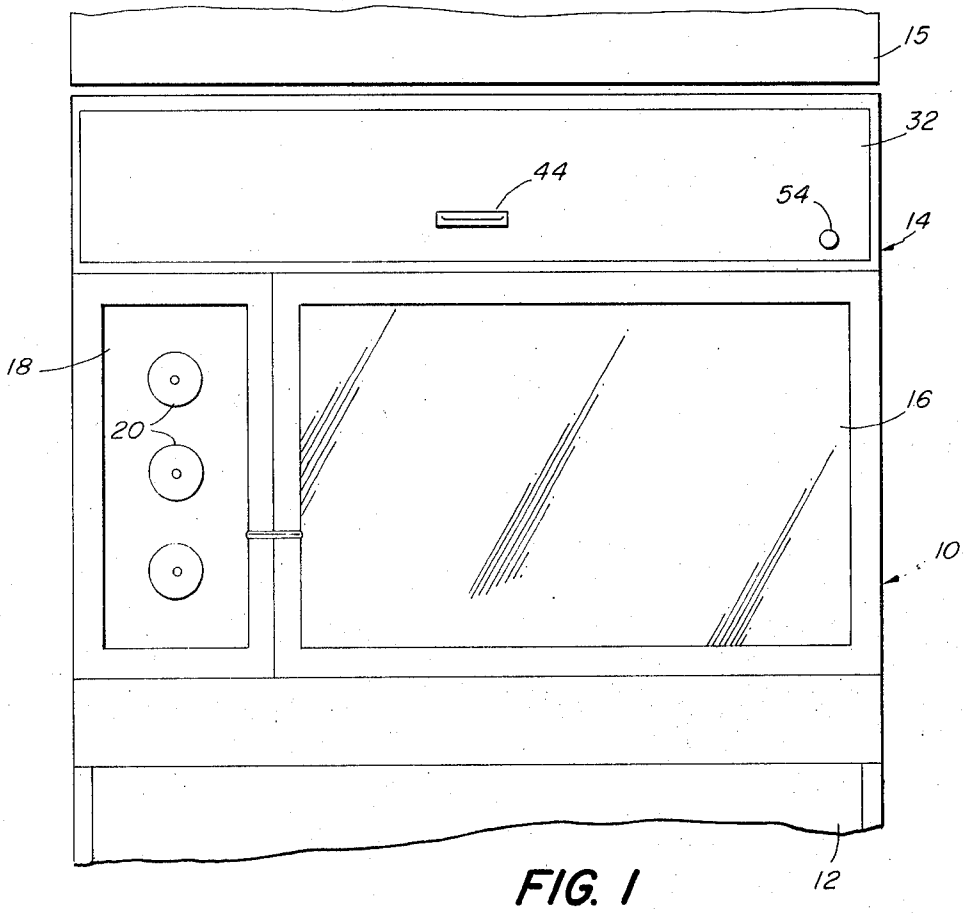


FIG. 1

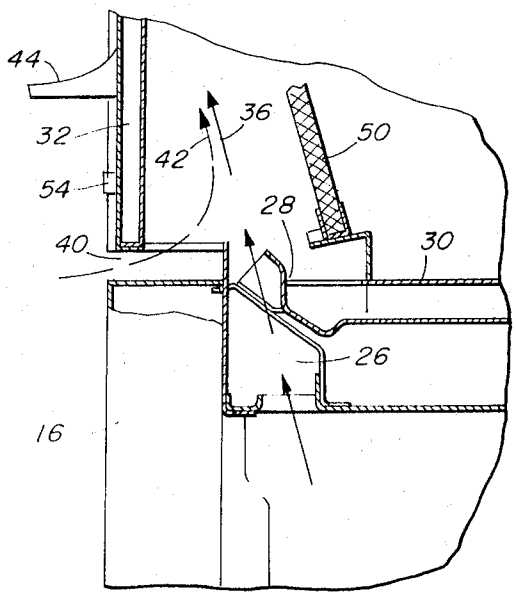


FIG. 4

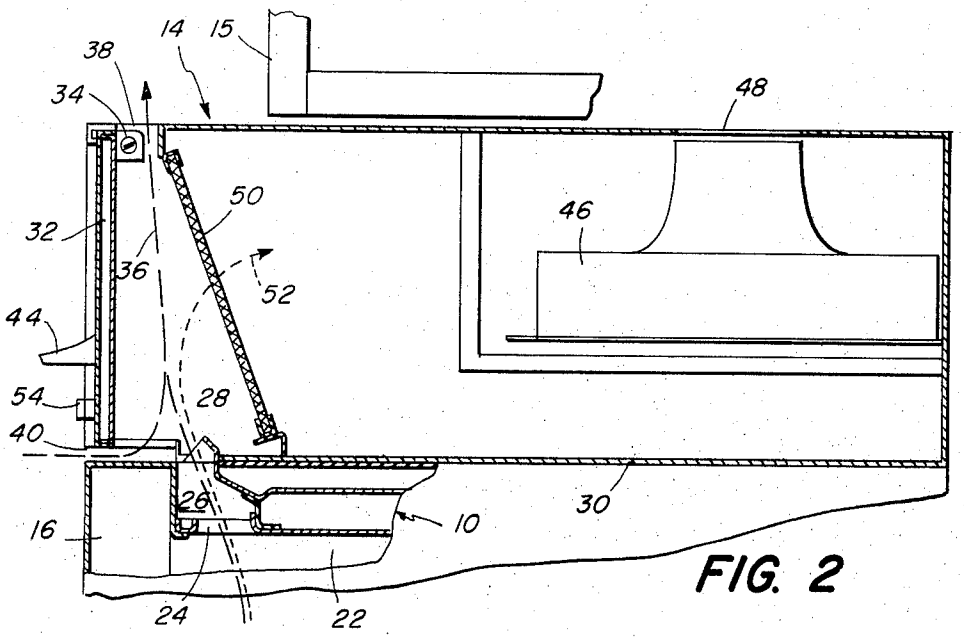

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FIG. 2

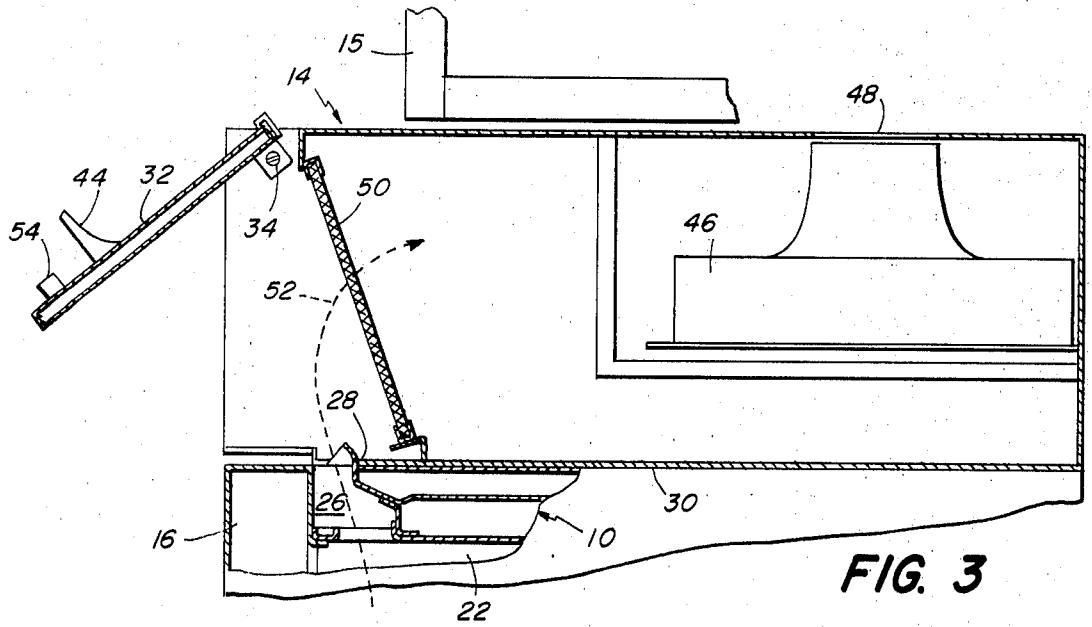

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FIG. 3

OVEN VENT HOOD

BACKGROUND OF THE INVENTION

Kitchen ranges and other appliances are often provided with oven exhaust hoods located on their upper ends for exhausting flue products which flow from the ovens into the hoods. In some known hood structures there is provided a vent or gap located below the faceplate for the purpose of permitting exhaust of oven flue products when the exhaust fan in the hood is not operating. In such cases it will be apparent that the flue products passing out through the gap will be directed onto the outer surface of the faceplate and the handle thereon. Such heating of the exposed surfaces of the hood is extremely undersirable since it presents a hazard to the manual manipulation of the faceplate and the appurtenances thereon.

A switch is usually provided on the faceplate whereby the exhaust fan may be switched on to draw the oven flue products through the filter into the interior of the rear chamber of the hood from which the hot air will eventually be expelled through the fan.

SUMMARY OF THE INVENTION

The above and other disadvantages of the prior art are overcome in the present invention by the incorporation of a novel hot air circulation system including a vent in the upper surface of the hood behind the faceplate. Thus, when the fan is off and oven flu products pass upwardly from the oven into the hood, the products will continue upwardly and will pass out through the hood through the upper vent, remaining behind the faceplate at all times. When the oven flue products flow upwardly as described, this creates a negative pressure which pulls cool air into the hood through the lower vent by stack action. This substantially lowers the temperature of the oven flue products so that the rear or inner surfaces of the faceplate will not be unduly heated. Consequently, the exposed surfaces of the faceplate will always remain cool to the touch.

When an exhaust fan in the rear interior of the hood is operated, this will draw the hot flue products through a filter and will eventually force the filtered air out through a rear port or aperture.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a front elevational view of an oven-hood combination of a type to which the invention is applicable;

FIG. **2** is a sectional view front-to-rear of a hood embodying the invention;

FIG. **3** is a view similar to FIG. **2** showing the hood faceplate in open position; and

FIG. **4** is an enlarged sectional view of adjacent portions of the hood and oven showing cooperating vent structures.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring more particularly to the drawings wherein like characters of reference designate like parts throughout the several views, there is shown in FIG. **1** an oven **10** which is of the type known as a "top" oven located at the upper end of an upright background **12** and overlying the maintop of a conventional range (not shown) in a well known manner. Disposed immediately

above the oven **10** is a hood **14**, and above the hood may be found cabinets **15** or the like.

The oven **10** may be of known structure, electric or gas fueled, with a front-opening door **16** which provides access to the interior. Within the oven **16** are one or more heating units (not shown) which may be activated for heating food products to be placed in the oven.

A control panel **18** is located on the front of the oven at one side of door **16** and carries the control knobs **20** by which the heating elements in the oven may be activated in the known manner.

It will be understood that when food is being prepared in the oven **10** combustion products will be produced. Such products may be generated from the items being cooked or may arise from the heating element as in the case of gas burners, for example. These products, from whatever source, will be referred to hereinafter as flue products.

In the normal operation of an appliance of this character, flue products will rise within the oven chamber **22** (FIG. **2**) and will exit through a vent **24** which communicates by a passageway **26** with an opening **28** in the bottom wall **30** of the hood **14.**

The front of the hood **14** is closed by a door **32** which is hinged at **34** to pivot about an axis located slightly rearwardly of its top edge as shown in FIGS. **2** and **3.** When the door **32** is closed as shown in FIG. **2,** the flue products will rise upwardly as shown by the dashed line **36** and will pass out of the top of the hood through a vent **38** therein.

The bottom wall **30** of the hood is raised slightly above the oven door **16** to form a gap **40** therebetween and the vent **28** extends sufficiently forwardly to communicate with the gap **40.** Thus, when hot air and flue products rise as described, resulting negative pressures cause stack action which will draw cool air into the hood through gap **40** and vent **28** to mix with and cool the rising air. This is also indicated in FIG. **2** by a dashed line **42** which connects with dashed line **36.**

It will be understood that this mixture of cool air with the flue products, by decreasing the temperature of the products also lowers the temperature of the inner wall of the door **32.** Thus, the handle **44** and outer surface of the door will remain cool to the touch.

An exhaust fan **46** is mounted rearwardly within the hood housing and may be activated to exhaust the flue products through a rear or top exhaust vent **48** or through a charcoal vented unit. The exhaust fan **46** is conventional in structure and operation and, therefore, is not described in detail herein. A filter **50** also is located in the hood between the vent **28** and the fan **46** to filter the flue products as they are drawn out by the fan. The flow of flue products with the fan on is shown by dotted line **52** in FIG. **2.**

During the foregoing described cycle the faceplate **32** is closed as shown in FIG. **2** and an excessive heat situation occurs only when the faceplate **32** is closed and the exhaust fan **46** is off. Should an operator decide to operate the fan **46** he will operate a switch **54** which may be mounted on the faceplate **54.** Switch **54** connects the fan **46** to an external power source by conventional electrical circuitry (not shown).

If the operator decides to capture flue products from the bottom portion of the range by opening the faceplate to the position shown in FIG. **3,** no hazard will be presented since the faceplate **32** and, more important,

the handle **44** have not been unduly heated even if the fan was not operated.

Therefore, since the faceplate and its attachments and appurtenances do not become undesirably heated, they may be handled and manipulated without fear of being burned. Accordingly, the objectives of this invention have been achieved by the circulation system shown and described.

It will be apparent, however, that various changes and modifications may be made by those skilled in the art without departing from the spirit of the invention as expressed in the accompanying claims. Therefore, all matter shown and described is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. The combination of an oven, an exhaust hood positioned on top of said oven, and including a housing having parallel transversely extending top and bottom walls and a movable faceplate spanning the space between adjacent ends of said top and bottom walls, a vent in the top of the oven, a lower vent in the bottom wall of the hood behind said faceplate communicating with said oven vent, and an exhaust vent in the top wall of said hood behind and adjacent the faceplate whereby hot air from the oven will rise through the hood behind the faceplate and will exit through said exhaust vent, when said faceplate is closed, without contacting the outer surface of the faceplate.

2. An exhaust hood comprising a housing having top and bottom walls, side walls and back wall, a movable faceplate in the front of the housing, a lower vent in the bottom wall rearwardly of the faceplate, and an exhaust vent in said top wall behind and adjacent said faceplate whereby hot air entering the housing through the lower vent will rise through the housing behind the faceplate and flow out through said exhaust vent, when the faceplate is closed, without contacting the outer surface of the faceplate.

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