United States Patent

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[54] **OVEN EXHAUST DEFLECTOR**
2 Claims, 2 Drawing Figs.

[52] **U.S. Cl.** **126/299,** 98/115
[51] **Int. Cl.** **F23j 11/00**
[50] **Field of Search** 160/23, 238; 98/115, 115LH, 115KH, 115SB; 126/299, 300

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ABSTRACT: An oven exhaust deflector deflects smoke, gases and fumes issuing from an oven when the oven door is left ajar during broiling to an exhaust hood above the oven. The deflector includes a sheet of flexible, heat-resistant material wound up on a spring-loaded roll affixed inside the front edge of the hood. During broiling, the sheet is unrolled and attached to the handle on the open oven door so that smoke and gases issuing from the oven are guided upwardly into the exhaust hood by the unrolled sheet. When the oven is not being so used, the deflecting sheet is wound up on the roll inside the hood.

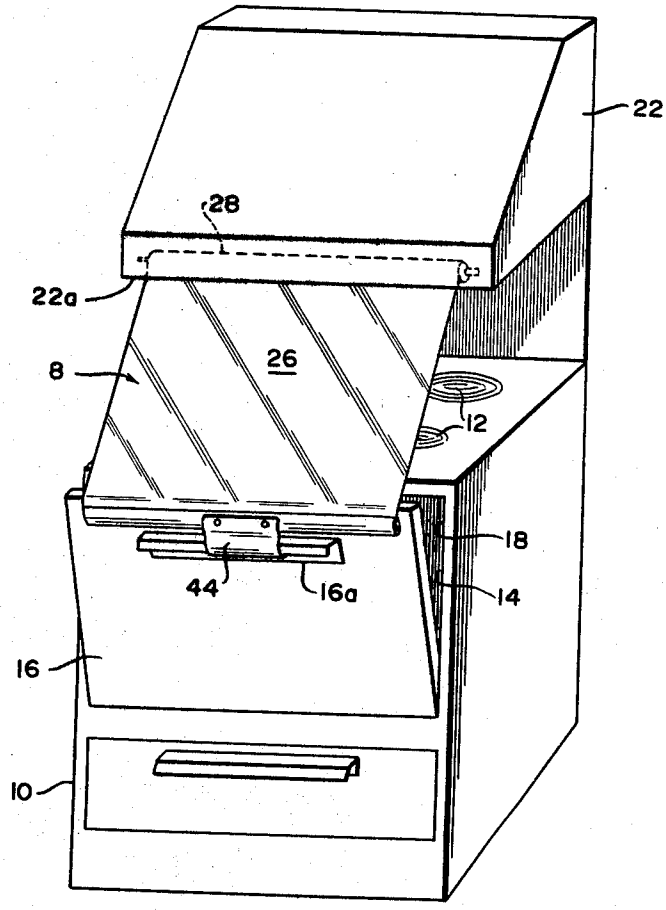


FIG. 1

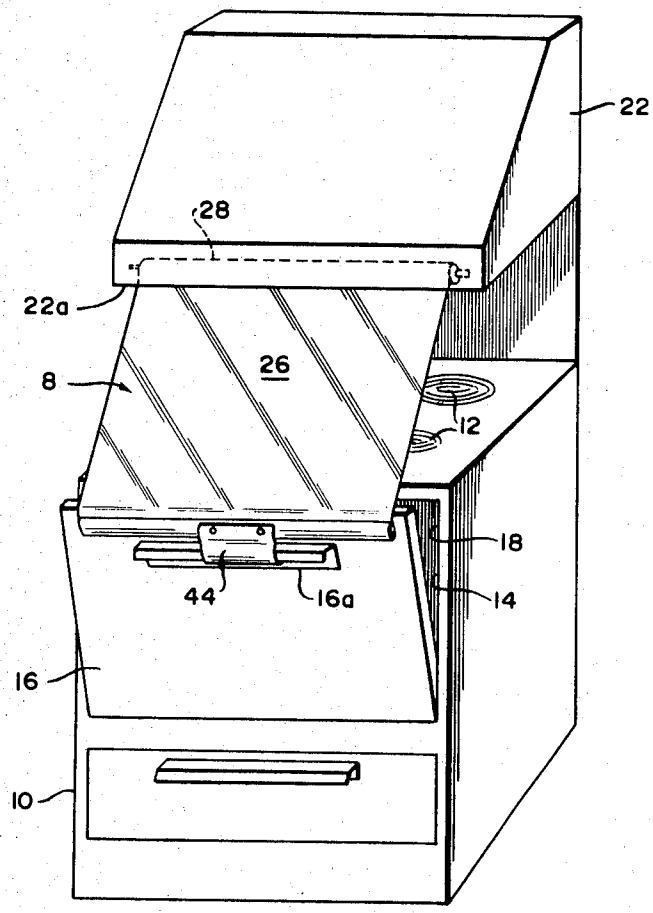
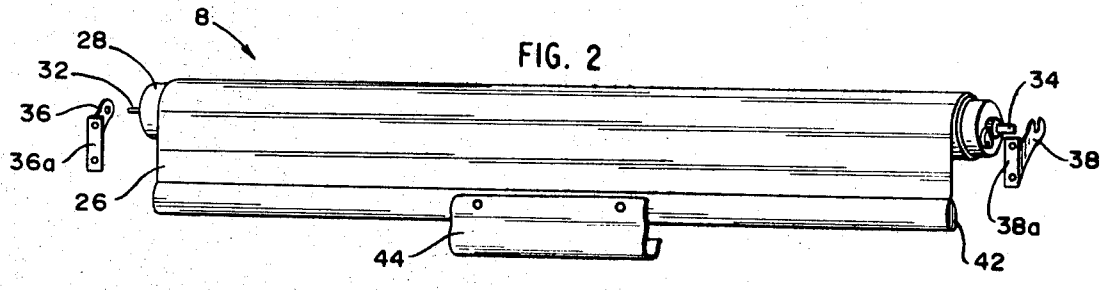


FIG. 2



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OVEN EXHAUST DEFLECTOR

BACKGROUND OF THE INVENTION

The present invention relates to a system for minimizing smoke, gases and odors caused by cooking in the kitchen It relates more particularly to a stove attachment for use especially on electric stoves which helps to keep oven exhaust smoke, gas and fumes out of the kitchen.

One conventional type of household stove is a rectangular unit having a horizontal top surface containing a plurality of ranges. On the front of the stove is an oven with a swing-down door, and inside the oven is a pullout broiler. In order to minimize the presence in the kitchen of heat, cooking fumes and the like, an exhaust hood is commonly spaced above the stove The hood is vented to the outside and is fitted with an exhaust fan so that smoke, gas and fumes issuing from the stove are drawn up into the hood and expelled from the house.

The exhaust hood is able to handle the heat and fumes originating with the surface ranges directly below it. Also, where the oven is vented into the exhaust hood the fumes originating from this source are also expelled by the hood as long as the oven door is closed.

A problem arises, however, when the housewife is broiling meats or other food. This is because during broiling, the oven door is usually left ajar to minimize the buildup of heat in the oven. In fact, in most present-day ovens, the oven doors are constructed so that they have a partially open broil position wherein they are about three or four inches ajar.

When the oven door is partially open in this fashion, some oven fumes and smoke tend to issue from the front of the oven into the kitchen instead of passing out of the oven vent into the exhaust hood. Much of the smoke, gas and fumes which do issue from the crack made by the open oven door are not captured by the exhaust hood. This is because the hood is positioned well above the oven door and usually also well back from the front edge of the stove so that access may be had to the surface ranges. As a result, the hood "draw" does not extend down to the open oven door. Thus, during broiling, an appreciable amount of heat, smoke, gas and fumes are expelled directly into the kitchen where they tend to discolor the walls and ceiling and cause discomfort to those present.

This problem is particularly noisome in the case of electric stoves which are apparently less efficient than gas stoves in burning residual combustibles. Consequently, these stoves seem to generate an especially large amount of smoke and fumes much of which is expelled from the open oven door during broiling.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a stove attachment for minimizing the presence in the kitchen of oven exhaust, smoke, gas and fumes.

Another object of the invention is to provide an attachment for a stove having an overhead exhaust hood which increases the effectiveness of the oven hood in capturing oven fumes.

A still further object of the invention is to provide a relatively inexpensive deflector for directing oven smoke and fumes into an overhead exhaust hood.

A still further object of the invention is to provide an oven smoke and gas deflector which can be installed by the homeowner himself on many exhaust hoods of conventional manufacture.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combination of elements and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the invention will be indicated in the claims.

Briefly, my oven smoke and gas deflector is for use particularly with an electric stove having a overhead exhaust hood. Generally, these stoves have a horizontal range area directly below the hood. Also, an oven with a swing-down door is located in the front of the stove and inside the oven is a pullout broiler

The subject deflector comprises a sheet of flexible, heat-resistant material wound up on a spring-loaded roll much like a window curtain. The roll is mounted just inside the front edge of the hood so that its longitudinal axis is generally parallel to the front edge of the stove.

When the housewife wishes to broil, she opens the oven door to its partially open broil position. Then she pulls down the deflecting sheet and attaches the end of the sheet to the handle on the oven door. The sheet now forms a continuous upwardly-angled deflector which gently guides the upwardly-rising warm oven gases and smoke into the exhaust hood where they are expelled from the room.

When the oven is not used for broiling, the sheet is disengaged from the door and it automatically winds up on the roll so that it is out of the way under the hood.

My oven smoke and gas deflector is a relatively simple device which can be attached by the homeowner himself to his existing stove. However, the deflector is relatively inexpensive to make and may be distributed directly to the consumer so that its cost can be kept to a minimum.

BRIEF DESCRIPTION OF THE DRAWING

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 drawing, in which:

FIG. 1 is a perspective view of a stove fitted with an oven smoke and gas deflector made in accordance with this invention; and

FIG. 2 is exploded perspective view on a large scale showing the oven smoke and gas deflector in greater detail.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIG. 1 of the drawing, the deflector, indicated generally at **8**, is installed on a conventional stove **10**. Stove **10** has a plurality of surface range units **12** and a front oven **14** fitted with a swing-down door **16** having a handle **16***a*. A pullout broiler **18** is located inside oven **14**.

A conventional exhaust hood **22** is spaced directly above stove **10**. Hood **22** extends over the stove so that its front lip **22***a* overlies the range units **12** at the front of the stove. Hood **22** is vented to the outside and it is fitted with a conventional exhaust fan (not shown). In practice, hood **22** must be spaced appreciably above stove **10** so that the range units **12** are readily accessible. For this reason also, usually the hood does not extend all the way out to the front of the stove.

Still referring to FIG. **1**, deflector **8** comprises a sheet **26** of flexible, heat-resistant material such as aluminum and the sheet may be either woven or be a single film as desired. Sheet **26** is adapted to be rolled up on a spring-loaded roll **28** very similar to a window shade roll. As best seen in FIG. **2**, roll **28** has the usual axially-projecting pins **32** and **34** which are removably secured in brackets **36** and **38**, respectively. Brackets **36** and **38** have laterally projecting flanges **36***a* and **38***a* arranged to be secured to the underside of hood **22** near its lip **22***a*. When properly positioned, roll **28** is arranged generally parallel to lip **22***a* and, therefore, parallel to the edge of oven door **16** as shown in FIG. **1**.

The free end of sheet **26** is looped around a relatively rigid stiffening member **42** and a hooklike pull and fastener **44** is secured to the middle of stiffening member **42**.

When oven **10** is to be used for broiling, the housewife opens oven door **16** to its partially open broil position shown in FIG. **1**. Then she grasps the pull **44** and pulls sheet **26** from roll **28** until she is able to fasten the pull **44** on the handle **16***a* as shown in FIG. **1**. The spring in roll **28** should not be so strong as to override the mechanism in the oven door which maintains it in its partially open position.

It is apparent now that the deflecting sheet **26** forms a continuous canopy extending from the top edge of the oven door

16 to hood 22. Thus, the sheet gently guides the upwardly-rising warm smoke and gas issuing from oven 14 into hood 22 where they may be expelled from the kitchen in the usual way

As best seen in FIG 1, the deflecting sheet 26 is rather steeply inclined so that it is able to gently guide the oven gas into hood 22 with the result that a minimum amount of smoke and gas escapes through the openings at the sides of door 16 or around the edges of sheet 26 Also, when pull 44 is attached to door handle 16*a* as shown, the end of sheet 26 engages around the edge of the door so that there is no crack there through which the oven smoke and gas can escape.

When the oven is not being used for broiling, the housewife simply disengages pull 44 from handle 16*a*. Thereupon, sheet 26 automatically winds up on roll 28 so that the entire deflector is up out of the way within hood 22 and is scarcely visible.

It will be appreciated, therefore, that my deflector is relatively simple to make and can be installed by the homeowner himself using a few simple hand tools. Consequently, the cost to the consumer is kept low. The deflector performs its allotted function relatively efficiently and yet is unobtrusive when it is not being used.

It will thus be seen that the objects set forth above, among

those made apparent from the preceding description are efficiently attained and, since certain changes may be made in the above construction without department from the scope of the invention, it is intended that all matter contained in the above description, or shown in the accompanying drawing, shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. A stove comprising:
   A. an oven, said oven having a swing-down door;
   B. an exhaust hood spaced above said oven;
   C. a spring-loaded roll affixed to said exhaust hood;
   D. a sheet of relatively flexible, heat-resistant material rolled up on said roll; and
   E. a combination pull and fastener secured to the free end of said sheet for pulling said sheet down from said roll and attaching it to said oven door, so that said sheet gently guides exhaust fumes issuing through said oven door when open into said exhaust hood.

2. An oven exhaust deflector as defined in claim 1 wherein said sheet is made of replaceable aluminum.