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[11] 3,538,839

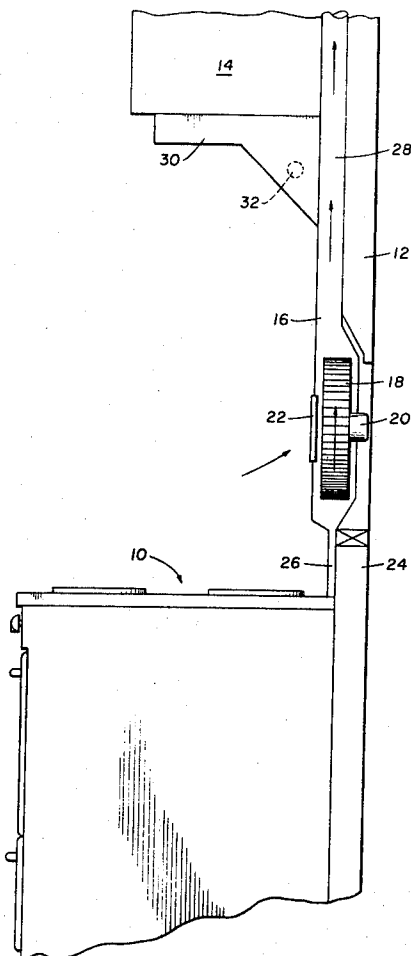
[72] Inventor **James E. Stalker**
Richardson, Texas
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 [73] Assignee **Home Metal Products Company**
Plano, Texas
a corporation of Texas

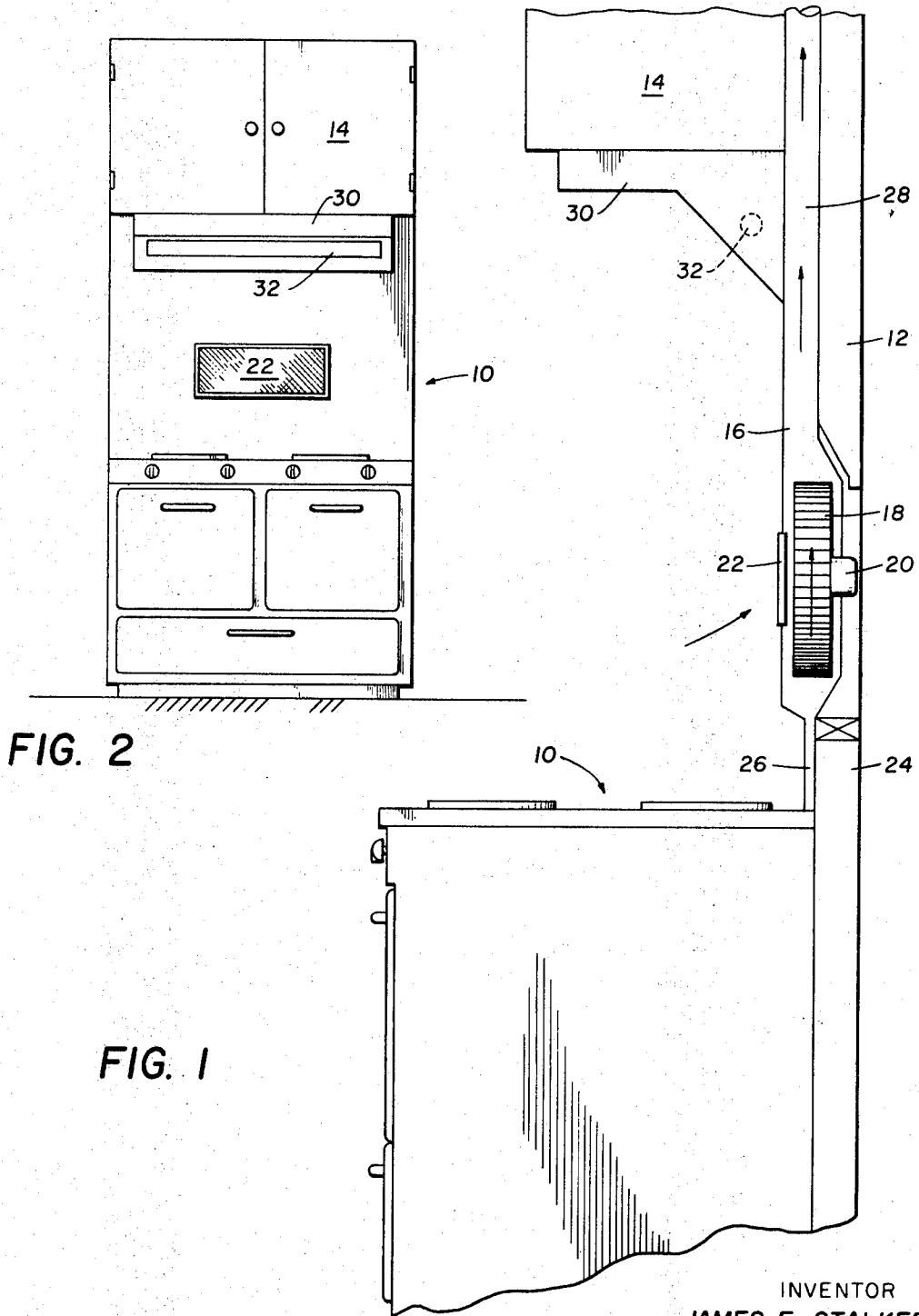
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Primary Examiner—Meyer Perlin
Attorney—Richards, Harris & Hubbard

[54] STOVE EXHAUST ASSEMBLY 3 Claims, 4 Drawing Figs.

[52] U.S. Cl..... **98/115,**
126/299
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 [50] Field of Search..... **146/299,**
299/(A), 300: 98/115, 115/(K)

ABSTRACT: A fan is mounted for rotation about a horizontal axis within a narrow enclosure which is mounted on the wall above and behind a kitchen stove. An aperture is defined in the front of the narrow enclosure for drawing warm air from the region over the stove into the narrow enclosure when the fan is operated. The warm air is exhausted away from the stove by a vent conduit leading from the narrow enclosure upwardly along the wall.

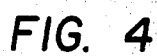
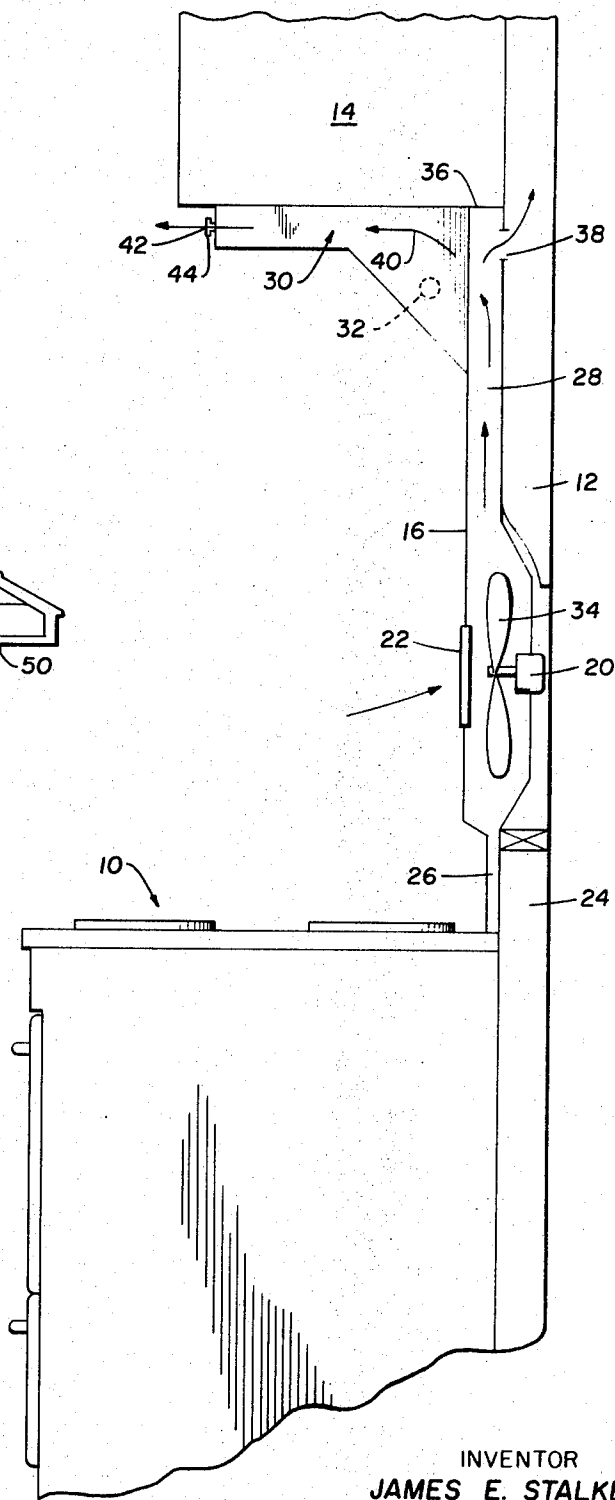




INVENTOR
JAMES E. STALKER

Richard Harris & Hubbard

ATTORNEY



ATTORNEY

STOVE EXHAUST ASSEMBLY

FIELD OF THE INVENTION

This invention relates to stove exhaust systems, and more particularly to a kitchen stove exhaust assembly which may be mounted generally flush on the wall behind the kitchen stove.

DESCRIPTION OF THE PRIOR ART

Numerous systems have been heretofore devised for treating or removing the fumes from a cooking area in a kitchen. These devices have generally comprised kitchen range hoods which are disposed directly over the kitchen range and which contain fans and filters for drawing air upwardly from the kitchen range and exhausting or treating the same. Examples of such kitchen range hoods are disclosed in U.S. Pat. No. 2,886,124, issued May 12, 1959; U.S. Pat. No. 3,064,551, issued Nov. 20, 1962; and U.S. Pat. No. 3,249,037, issued May 3, 1966.

Although such prior kitchen hoods have been found to provide certain advantages by removing cooking odors from the kitchen, such hoods have sometimes interfered with cooking activities due to the fact that they take up a considerable amount of space over the stove. Also due to the extension of prior hoods well over the kitchen range, these hoods have reduced the ease of access to cabinets located above the hood. Further, some hoods have not been able to completely exhaust all impure air from all regions above the stove. Many hoods have also not been completely satisfactory with respect to presenting a pleasing appearance.

SUMMARY OF THE INVENTION

In accordance with the present invention, a kitchen range exhaust assembly is provided which may be mounted generally flush against the wall behind and above a kitchen range to provide excellent ventilation therefor while also presenting an inconspicuous, yet pleasing appearance. A fan is supported within a narrow enclosure which may be vertically mounted upon the wall above and behind the kitchen range. An aperture is defined in the exterior vertical face of the narrow enclosure for drawing impure air from the region over the kitchen range into the narrow enclosure when the fan is suitably operated. A vent extends upwardly from the narrow enclosure in order to exhaust the impure air away from the stove.

THE DRAWINGS

For a more complete understanding of the present invention and for further objects and advantages thereof, reference is now made to the following description taken in conjunction with the accompanying drawings, in which:

FIG. 1 illustrates a partially sectioned side view of one embodiment of the invention;

FIG. 2 is a front view of the embodiment shown in FIG. 1;

FIG. 3 illustrates a partially sectioned side view of another embodiment of the invention; and

FIG. 4 is a somewhat diagrammatic illustration of various venting arrangements for the present invention.

DESCRIPTION OF PREFERRED EMBODIMENTS

Referring to FIGS. 1 and 2, a kitchen range designated generally by the numeral 10 is shown in the conventional position against a kitchen wall 12. Typical kitchen cabinet space 14 is located above the kitchen range 10. The present exhaust system comprises an enclosure or housing 16 made from a suitable sheet metal which has a relatively narrow width sufficient to enclose a fan 18 and has a length extending along the wall 12 in the direction of the length of the range 10. In this embodiment, a squirrel cage fan 18 is shown, although it will be understood that a blade fan could also be utilized. Fan 18 is driven by a motor 20 in order to draw hot and impure air from the area of the range 10 through a filter and grill unit 22. Filter unit 22 may comprise any suitable type of filter for removing impurities from the air.

The housing 16 is rigidly mounted within a hole in the wall 12 and is supported by a suitable support strut 24. A panel 26 is of a pleasing color and texture and is disposed between the bottom of the housing 16 and the top of the kitchen range 10.

The narrow width of the housing 16 enables the present system to set into the wall 12 in the space between the wall and the supporting wall studs so as to project only slightly outwardly from the exterior surface of the wall 12. Relief for the size of the motor 20 configuration is cut into the wall cavity. The fan 18 has a narrow width configuration so the present unit fits relatively flush with the kitchen wall to provide a pleasing appearance without attendant inconvenience due to obstruction of the cabinet space 14. As the filter unit 22 is disposed very close to the region above the kitchen range 10 in an aperture formed in the panel 26, the present system provides very efficient removal of impure air from the area above the kitchen range 10.

As previously mentioned, the rotation of the fan 18 causes impure air to be drawn through the filter 22. The air is then forced through the fan 18 upwardly through a conduit 28 where it is exhausted through a suitable roof discharge. A small hood member 30 is mounted underneath the cabinet space 14 to provide a support for suitable lighting, such as the fluorescent lamp 32. Because of the novel arrangement of the fan 18 within the wall cavity as previously described, the hood member 30 may be made with a reduced size, as it is not required to carry bulky fan or filter devices. In some instances, hood member 30 will not be required.

FIG. 3 illustrates another embodiment of the invention similar to that shown in FIGS. 1 and 2, with the exception that a fan 34 having radial blades is provided within the housing 16. Fan 34 has a narrow width in order that the width of the housing 16 is sufficiently narrow so as to provide a relatively flush fit with the exterior of the wall 12. When the fan 34 is rotated by the motor 20, air from the region of the kitchen range 10 is drawn through the filter 22 and is passed upwardly via the conduit 28.

Suitable knockout portions 36 and 38 are provided on the conduit 28 to allow selective connections to various venting systems according to the particular construction of the house. In the embodiment shown in FIG. 3, the filtered air is passed from the conduit 28 through a suitable exhaust passage shown by the arrow 40 within the hood member 30. Filtered air is passed outwardly through a vent opening 42. A control knob 44 may be adjusted by the housewife in order to adjust the passage of air therethrough. In some instances, additional vents may be provided by removing one of the knockout portions 36 or 38 to provide a passage for the air to the outside atmosphere.

FIG. 4 illustrates several of the possible venting configurations of the invention. A horizontal discharge vent 46 may pass filtered air outwardly through the side of the house. Alternatively, a vent conduit 48 may carry filtered air upwardly through the wall and provide a discharge to the outer atmosphere from either under the house eave via a cap 50 or upwardly through the roof via an outlet 52.

It may be seen that the present invention provides a very compact kitchen range exhaust system which does not require the use of a large overhanging kitchen hood, but yet which provides very efficient removal of impure air from the area above the kitchen range. The present device provides structure to allow selective exhaust connections according to the particular construction and requirements of a kitchen and house.

Whereas the present invention has been described with respect to specific embodiments thereof, it is to be understood that modifications and changes may be suggested to one skilled in the art.

I claim:

1. An exhaust assembly for a cooking unit disposed adjacent a wall, the combination comprising:

a. an enclosure having a relatively narrow width dimension and a length to extend along the said wall and in the direction of the length of said cooking unit, with a fan

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housing portion of said enclosure protruding from the plane of the back thereof and extending beyond the plane of said wall when mounted on said wall above and behind said cooking unit;

- b. an aperture in a front vertical face of said enclosure in the region of said portion for admitting air into said enclosure;
- c. filter means disposed across said aperture for filtering out particles from the air admitted into said enclosure through said aperture;
- d. a fan supported in said enclosure behind said aperture and in said portion for drawing impure air through said filter means from the region over said cooking unit

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directly into said enclosure; and

e. vent means extending from said enclosure for exhausting said impure air to an area outside the adjacent wall area away from said cooking unit.

2. The combination of claim 1 and further comprising a hood which overhangs said stove, and conduit means leading from the top of said narrow enclosure to said hood for exhausting said air from said hood.

3. The combination of claim 1 further including a control knob on said hood for adjusting the passage of air therethrough.

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