United States Patent [19]

Kurek et al.

[11] **3,926,171**

[45] **Dec. 16, 1975**

[54] **BASE FOR A VENTILATED COOKING RANGE**

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[73] Assignee: **Jenn Air Corporation,** Indianapolis, Ind.

[22] Filed: **Mar. 16, 1972**

[21] Appl. No.: **235,277**

[52] **U.S. Cl.** ..... **126/21 A;** 126/39 B; 126/277

[51] **Int. Cl.**[2] **F24C 15/32**

[58] **Field of Search** .... 126/21 R, 21 A, 39 R, 39 B, 126/39 C, 55, 299 R, 299 B, 305, 1, 43, 277, 278, 279

[56] **References Cited**

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2,085,511	6/1937	Ross et al.	126/299 R
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3,587,555	6/1971	Cerola	126/21 A X

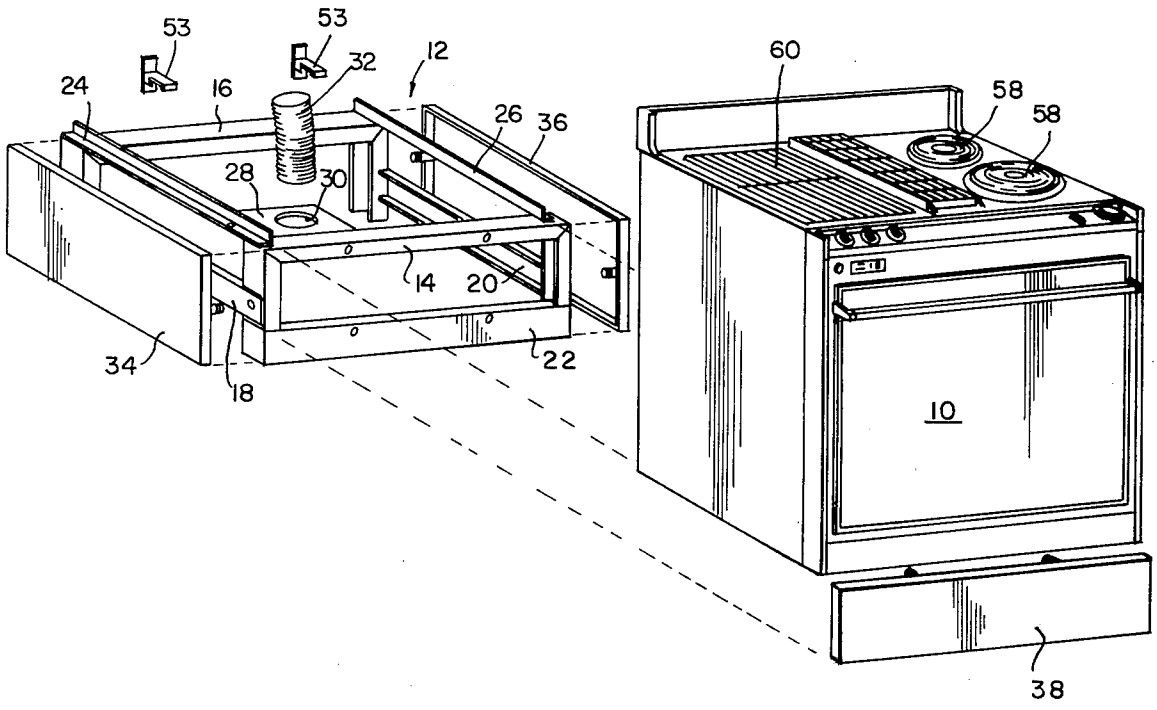
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Assistant Examiner—Ronald C. Capossela
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[57] **ABSTRACT**

A base in the form of an open-box frame for use with a ventilated cooking range, which range includes cooking areas and power driven exhaust fan means for drawing air past adjacency to the cooking areas for entraining cooking smoke, vaporized greases and odor laden gases for exhaustion therefrom, wherein the base houses air exhaust conduit means adaptable for connection to the exhaust fan when the range is received in position on the base for exhausting the cooking smoke, vaporized greases and odor laden gases to exteriorly of the base, for example, through a building wall to the atmosphere.

An alternate arrangement is provided wherein an exhaust plenum and filter devices return the ventilating air back into the room.

2 Claims, 13 Drawing Figures



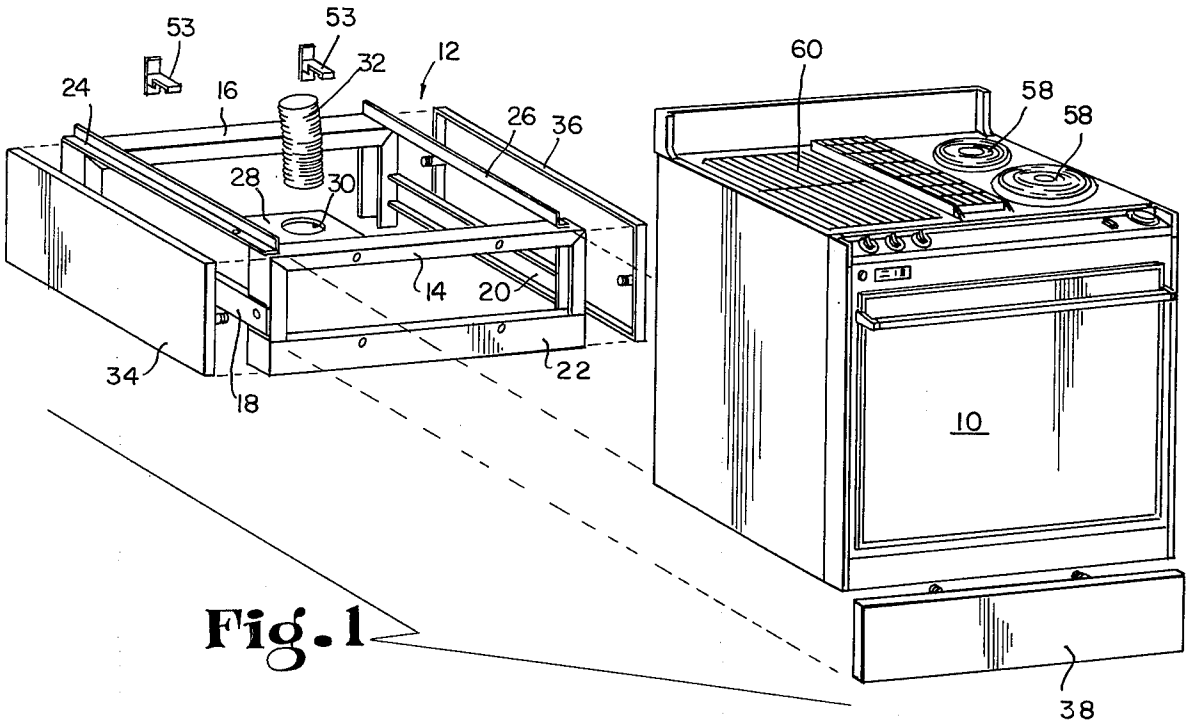

53
53
32
12
24
16
26
36
28
30
14
20
34
18
22
60
58
58
10
38

Fig. 1

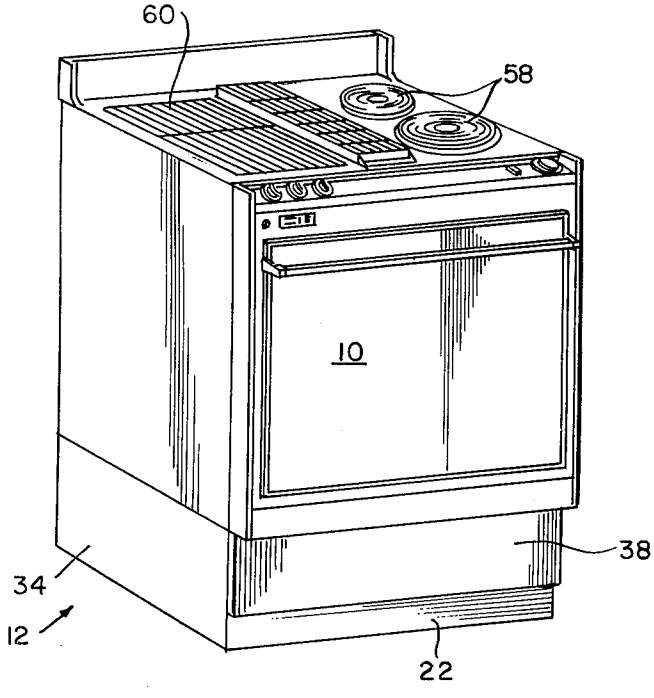

60
58
10
38
34
12
22

Fig. 2

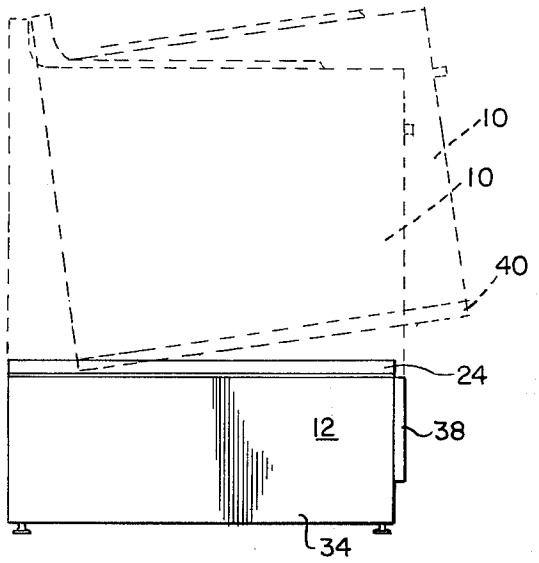


Fig. 3

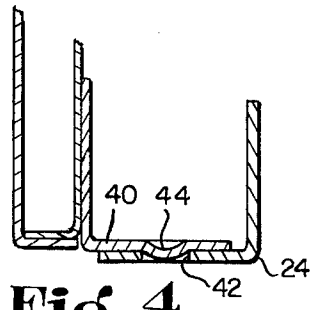


Fig. 4

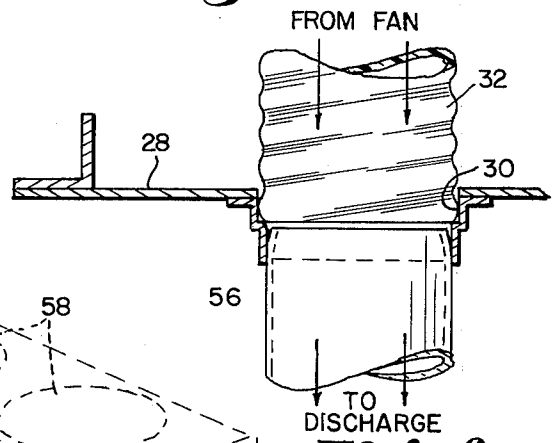


Fig. 6

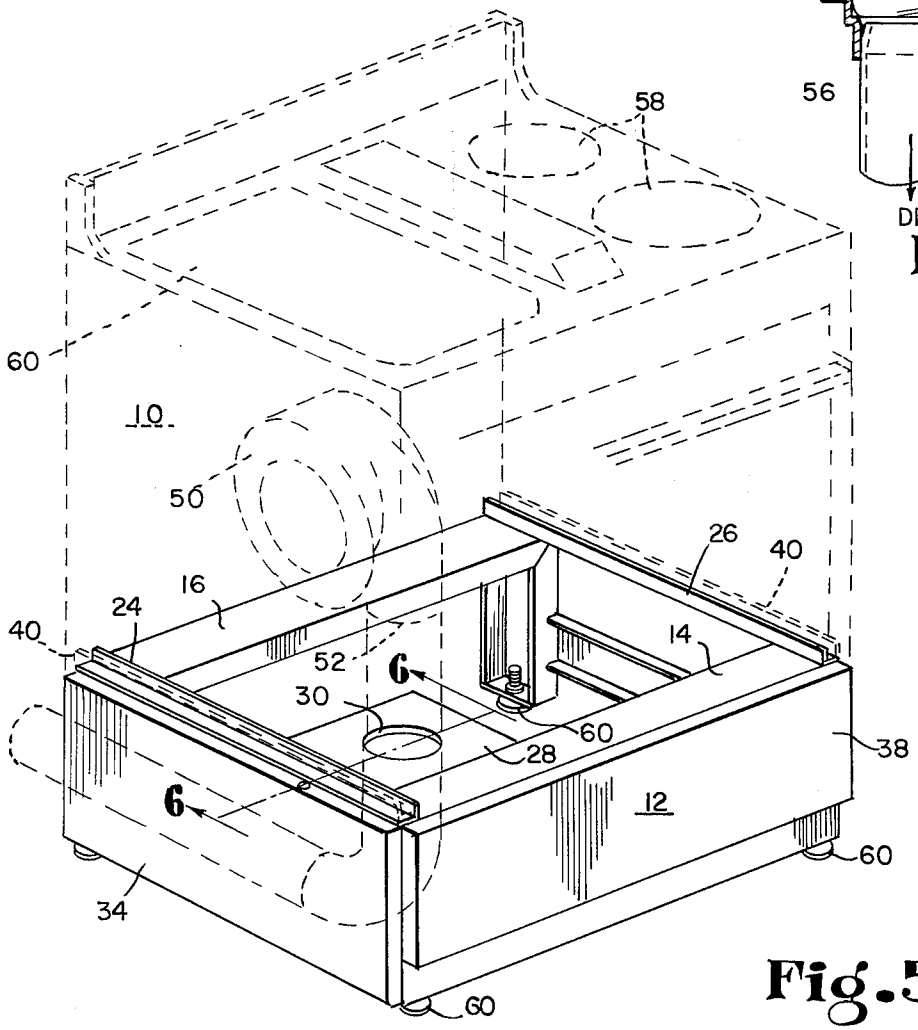


Fig. 5

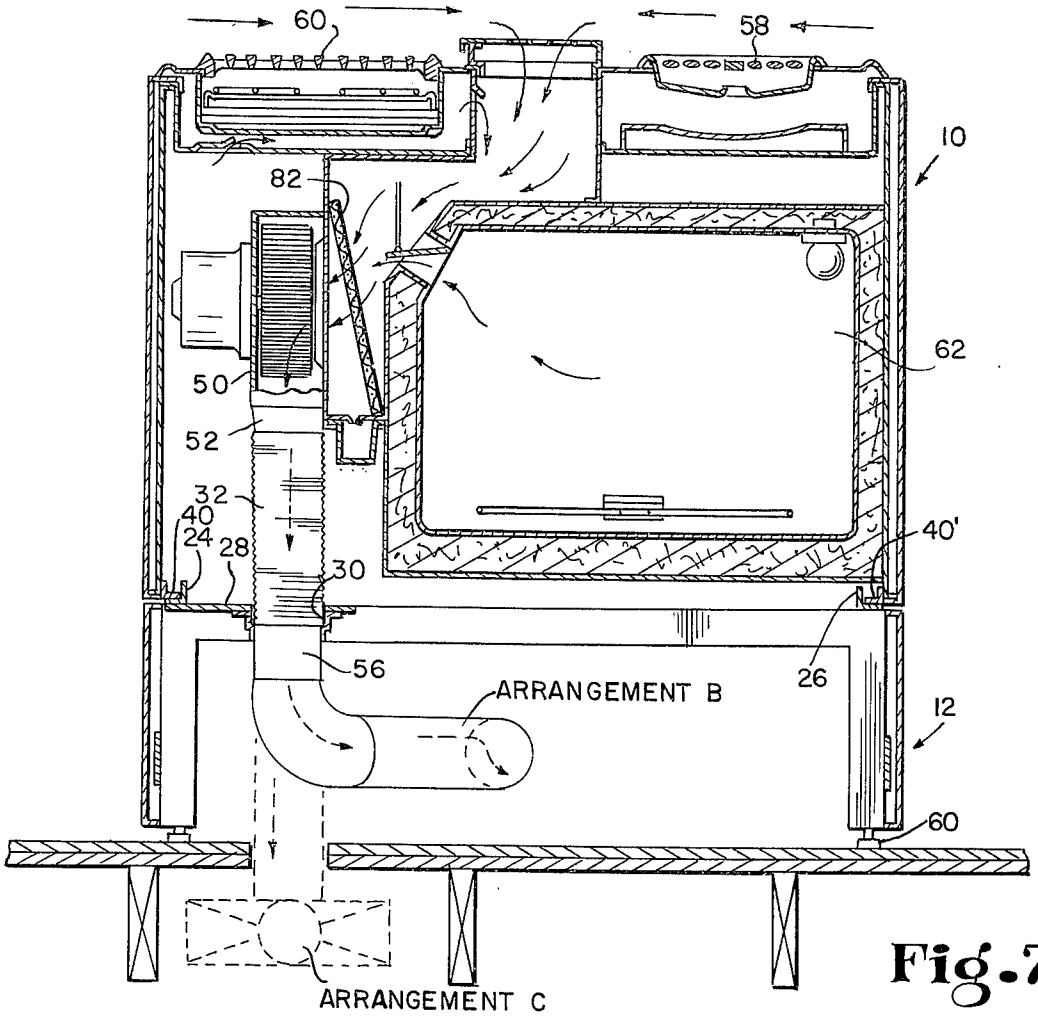

60
58
10
82
62
50
52
32
40
24
28
30
40'
56
ARRANGEMENT B
26
12
60
ARRANGEMENT C

Fig.7

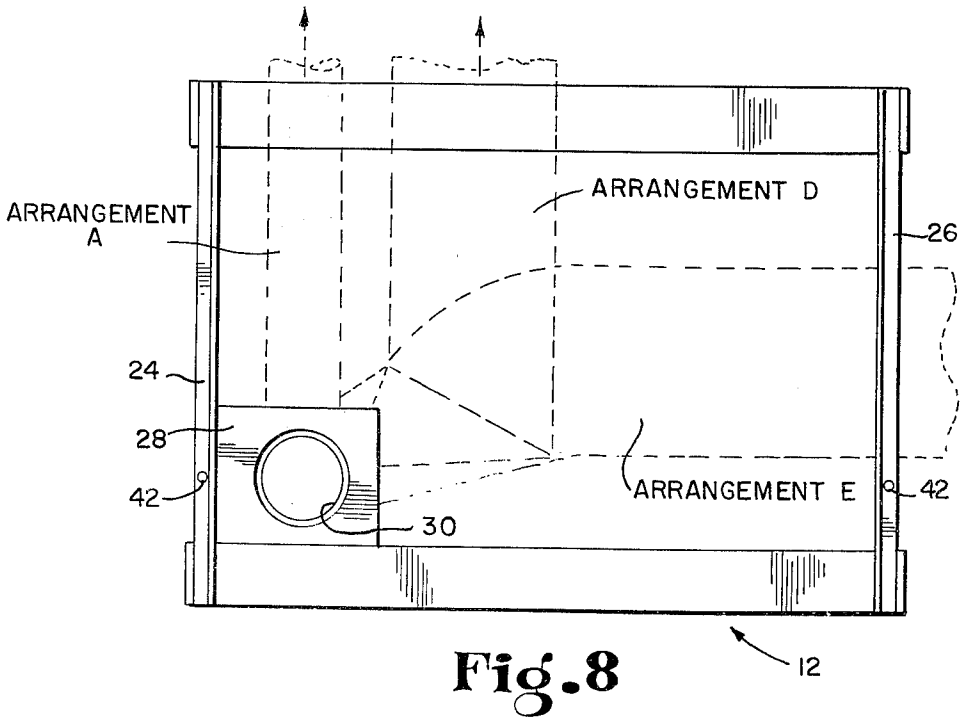

ARRANGEMENT A
ARRANGEMENT D
26
24
28
42
ARRANGEMENT E
42
30
12

Fig.8

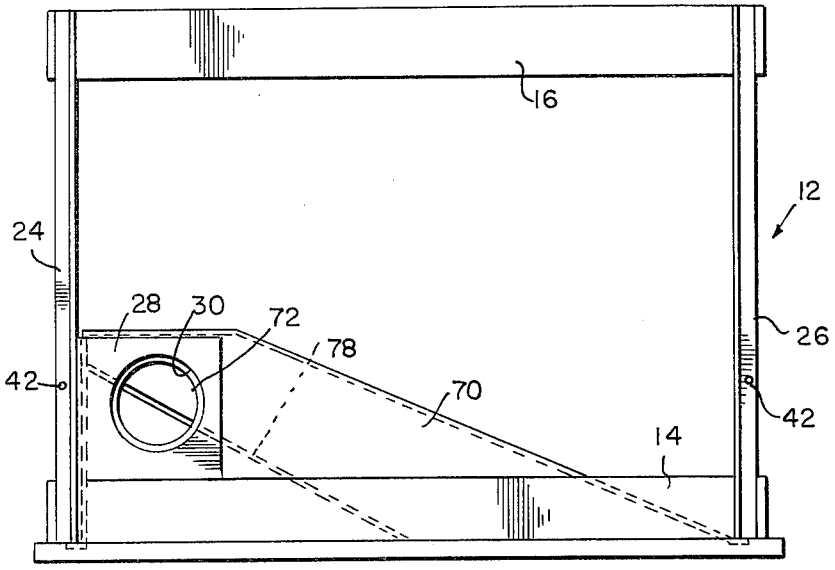


Fig.9

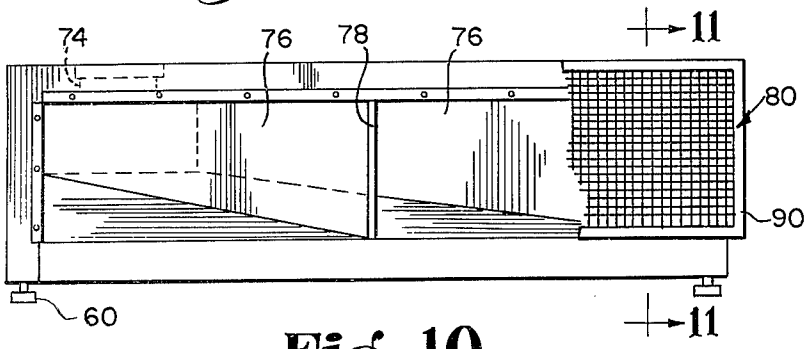


Fig.10

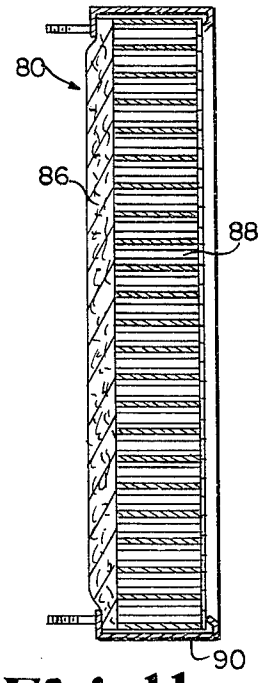


Fig.11

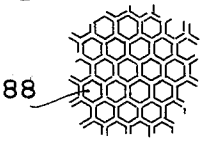


Fig.11a

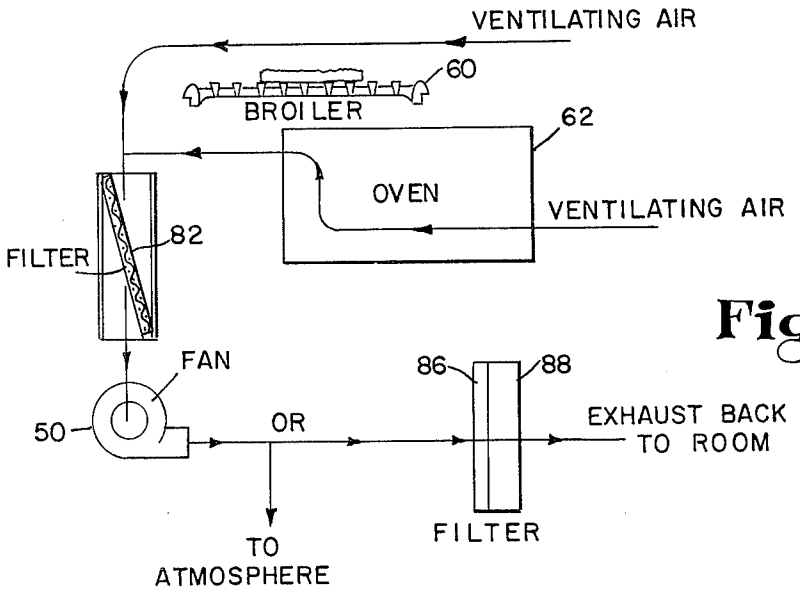


Fig.12

BASE FOR A VENTILATED COOKING RANGE

BACKGROUND OF THE INVENTION

This invention relates to a base in the form of an openbox frame for use with a ventilated cooking range of the type generally disclosed in U.S. Pat. No. 3,587,555 issued June 28, 1971 to Joseph J. Cerola in a manner for converting the range into a free standing range and housing conduit means for discharging cooking smoke, vaporized greases and odor laden gases therefrom.

Track means are disposed across the top of the base for slidably receiving complementary means on bottom of a cooking range of the counter drop-in type for positioning the range on the base at a predetermined location so that the exhaust fan in the range and conduit means within the base are adjacently disposed for easy connection and disconnection.

The base is adapted to house, contain or support the air exhaust conduit means within or thereunder in a plurality of positions for its exit through a building wall to the atmosphere.

BRIEF SUMMARY OF THE INVENTION

It is an object of this invention to provide a base for converting a drop-in counter top type cooking range to a free standing range.

It is another object of this invention to provide a base housing exhaust conduit means and adapted to removably receive thereon a ventilated cooking range in a manner whereby exhaust air (with entrained cooking smoke, vaporized greases and odor laden gases) is directed into the exhaust conduit.

It is still another object of this invention to provide a base adapted to house, contain or support exhaust conduit means, such as ducting, in any one of plural positions for communication to externally of a building wall.

It is a still further object of this invention to provide a base adapted to house, contain and support an exhaust plenum having an entrance for receiving air discharge from a ventilated range for discharging air through filtration back into the room.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will be more fully understood and further objects and advantages thereof will become apparent when reference is made to the following detailed description of the preferred embodiment of the invention and the accompanying drawings in which:

FIG. **1** is a perspective view illustrating a counter drop-in type cooking range adapted to be received on a base which is shown in partially exploded view;

FIG. **2** is a perspective view of the cooking range on the base, thus illustrating a free-standing range, to which it has been converted;

FIG. **3** is a side elevation of the base illustrating a cooking range in phantom lines being slid into position thereon;

FIG. **4** is a fragmentary, sectional view illustrating how the range is supported on the base and how it is removably retained thereon by a detent in a predetermined position;

FIG. **5** is a perspective view of the base with a ventilated range (in phantom) shown in position thereon for illustrating an air duct connection therebetween and one position of an air discharge conduit;

FIG. **6** is an enlarged cross-sectional view taken along line **6—6** of FIG. **5** illustrating a fitting for establishing a connection between the fan discharge duct and exhaust conduit means;

FIG. **7** is a cross-sectional view of a ventilated cooking range and base, with exhaust conduit illustrated in two arrangements;

FIG. **8** is a plan view of the base only, shown in FIG. **7**, with exhaust conduit illustrated in three arrangements;

FIG. **9** is a plan view of a base showing an air discharge plenum disposed therein;

FIG. **10** is a front elevation view of the base and looking into the discharge mouth of the plenum;

FIG. **11** is a cross-sectional view taken along line **11—11** of FIG. **10** for illustrating a filter;

FIG. **11a** is a frontal view illustrating construction of the filter; and,

FIG. **12** illustrates the flow of ventilating air through the range, discharge conduit and filters, or to atmosphere.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

As pointed out in the objects above, the purposes herein are to disclose a base having exhaust conduit housed, contained, or otherwise supported thereby, in a manner for (1) converting a ventilated range into a free-standing range and providing (2) for easy connection and disconnection between the discharge of a fan in the ventilated range and a fitting on the base in communicating with discharge conduit for leading to the atmosphere exteriorly of a building. In the alternative, the base may be provided with a plenum for directing air through filter means for discharging ventilating air back into the room.

In FIG. **1** there is illustrated a ventilated cooking range **10** adapted to be received on a base **12** (shown as partially exploded for illustrating its components). FIG. **2** illustrates the range, as a free-standing range, after it has been assembled on the base.

Range **10** may be of the type known in the trade as a drop-in or slide-in range since by its design it is adapted to fit into a cut out or opening in a kitchen counter, and be supported from the counter top on either side thereof. After such a range is assembled on a base such as shown in FIG. **2**, it becomes what is known as a free-standing range. In the present invention, the base is adapted to receive a range of this type which is provided with air ventilation means according to the disclosure, for example, in U.S. Pat. No. 3,587,555 issued June 28, 1971 to Joseph J. Cerola, and assigned to Jenn-Air Corporation. Base **12**, shown in several figures, is disclosed in partially exploded view in FIG. **1**. The base comprises a pair of formed sheet metal channels **14, 16**, each having horizontal top portions and depending legs, which are adapted to rest on a kitchen floor; side braces **18** and **20** on either side connecting the channels; front brace **22** across the front near floor level for connecting the legs; and, track means in the form of angles **24, 26** across the top of the channels. The base **12** is generally in the form of an open rectangular frame for receiving and supporting therein air discharge conduit or an exhaust plenum. The base **12** includes a plate **28** located near one corner thereof which has a central opening **30** therein to which connection is made with exhaust air conduit housed within the frame and with the exhaust discharge conduit **32** of

a power driven fan located in ventilated range **10**, when the range is in position on the base.

Panels, such as side panels **34, 36** and front panel **38**, are adapted to enclose the base frame and be attached thereto by bolts or other securing means. As will be seen in further embodiments, front panel **38** may be removed and replaced by an open grill for supporting a filter for use with an exhaust plenum arrangement.

FIG. **3**, which is a left hand elevation view, shows base **12** secured to a floor with a range **10** being moved or slid into position thereon. Tracks **24** and **26**, in the form of angles, are secured across the top of the frame in a fore-and-aft position so as to receive thereon complementary means, such as angles **40, 40'** on the bottom of range **10**. Preferably, at the time the ventilated range **10** is being positioned on base **12**, an air exhaust conduit has been assembled within the frame of base **12** and has been extended through a building wall to the atmosphere. Cooperating means such as detents are provided on the facing surfaces of angles **24** and **40**, and angles **26** and **40'**, for securing them in predetermined position. Such are illustrated in the several figures, but particularly FIG. **4** wherein a hole **42** is provided in track **24** (also in track **26**) which receives therein a protrusion **44** on the bottom of angle **40**. Other means, such as a bolt or stud, can be provided for positioning in hole **42**, or the protrusion and recess may be located vice-versa with respect to the mating angles.

Range **10** is adapted to be positioned on base **12** by manually sliding it across tracks **24, 26**, as illustrated in FIG. **3**, followed by lowering the front portion into position so that the detents **42** and **44** are aligned for one to be received within the other. Their cooperation prevents longitudinal displacement between mating angles **24** and **40**, and mating angles **26** and **40'**. When the range is in the position illustrated in FIG. **5**, and exhaust fan **50** has its exhaust port **52** in proximity and substantial alignment with opening **30** in plate **28**, connection is established by flexible conduit **32**. Conduit **32** may be of various construction, but as disclosed herein, comprises a helically wound wire skeleton with an impervious sheet covering. It is adapted to slide over exhaust port **52** at one end and into opening **30** in the other end for establishing communication therebetween. See FIG. **6** for a sectional view illustrating the removable connection of conduit **32** into opening **30** in plate **28** and which opening defining an entrance to air discharge conduit **56**.

FIG. **7** shows a cross-sectional view of the ventilated range **10**, of the type generally disclosed in U.S. Pat. No. 3,587,555, on base **12**. Ventilating air is drawn across cooking units **58** and across upwardly facing open-air broiler **60**, and selectively through oven **62**, as shown, to be expelled through fan **50** exhaust port **52**, flexible conduit **32**, and into air discharge conduit **56** which may communicate through a building wall to the atmosphere. As illustrated in FIGS. **7** and **8**, the numeral **56** generally identifies air discharge conduit which is at least to some extent housed, associated with or supported from the frame of base **12**. Conduit **56**, immediately below its connection with opening **30** may be in many forms or arrangements, such as illustrated in Arrangements A, B, C, D and E. See FIGS. **5, 6** and **7**. Wall and floor joist construction partially determine whether a round conduit of flat duct such as sheet metal, are preferable. Furthermore, the disposition of conduit or ducts as illustrated by the several arrangements depends to a large extent upon the kitchen layout and building construction.

Since the frame of base **12** is open and accessible from practically all directions to workmen (except when panels **34, 36** and **38** are installed), air discharge conduit **56** can be easily installed in the desired arrangement. The base may rest on resilient and leveling footings such as identified by the numerals **60**, or the base may be secured directly to the floor by lag bolts or the like (not shown). Panels **34, 36** and **38** may be attached to enclose the base. After the range is moved onto the base, as illustrated in FIG. **3**, an access door (not shown) in range **10** permits workmen to make the final connection of conduit **32**.

Brackets **53** are shaped to be slidably received over channel **16** of the base, or around the legs thereof, and have nails, or other securing means, driven therethrough into spaced apart building studs or joist. In this manner the base is secured in desired position on the floor.

An alternate arrangement is illustrated in FIGS. **9** through **11a** wherein a sheet metal plenum **70** is housed, or otherwise contained, within the frame of base **12** for the purpose of collecting exhaust air from the ventilated range and conducting it through filtering means back into the same room. The entrance to plenum **70** is in the form of an opening **72** having a surrounding collar **74** which is adapted for connection into opening **30** in plate **28**. The exit from plenum **70** comprises a rectangular mouth opening **76** which extends substantially across the front of the base. Baffle means **78** may be provided in the plenum to attain uniform distribution of exhaust air through mouth opening **76**. A filter, identified generally by the numeral **80**, is provided at the mouth of the plenum across the front of the base, replacing panel **38** which is used when exhaust ducting **56** extends to the outside of a building.

In the cross-sectional view of the ventilated range illustrated in FIG. **7**, it is shown that ventilating air, after having collected cooking smoke, vaporized greases and odor laden gases from the cooking areas, such as from open broiler **60**, may be passed through a mesh-like metal filter **82**. Here a substantial portion of the vaporized greases condense and drain into removable tray **84**. Final filter **80** comprises a first filter **86** of small diamter fibers, such as polyethylene fibers, for extracting additional particles entrained in the air stream, and a second filter **88** of charcoal impregnated porous material such as cardboard for absorbing odors entrapped in the air stream. The fiber and charcoal filters are located at the mouth of the plenum and housed in a removable grill frame **90** so that they can be replaced from time to time, as required from usage.

Installation of a ventilated broiler (FIG. **7**) on a base **12**, which houses a plenum **70**, is substantially identical to that described with reference to the embodiments shown in FIGS. **1** through **8**.

FIG. **12** represents an air flow pattern shown passing through or in proximity to the various components disclosed in this invention and discharged to the atmosphere, or alternately through filter means for discharge back into the room.

A disclosure has been made in this specification with appropriate reference to illustrations in the drawings, along with the invention defined in the claims, in compliance with the patent statutes. Preferred embodiments have been described. It is obvious that variation

can be made thereto without departing from the scope of the invention which is defined in the claims.

What is claimed is:

1. In combination, a support base and a built-in type cooking range assembly incorporating within the range assembly a powered ventilating means for the range which exhausts through a conduit accessible at the underside of the range assembly, said support base comprising a rectangular box-like frame resting on a floor or other supporting surface with its lower face adjacent the supporting surface and its upper face accommodating, in overlying relation, the base portion of the range assembly, horizontal guide rails carried on two opposite upper margins of said support base providing for sliding insertion of the range assembly into overlying relation to said support base, a discharge duct accommodated within said support base frame with its entrance supported by said frame adjacent the upper face thereof and adapted for registering connection to the range ventilating means exhaust conduit when the range assembly is in place on said support base.

2. A support base as claimed in claim **1** in which said discharge duct extends beyond the confines of said support base.

* * * * *