

July 7, 1959

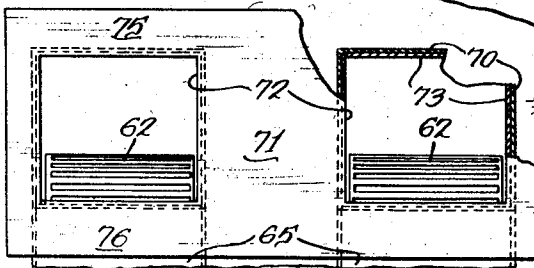
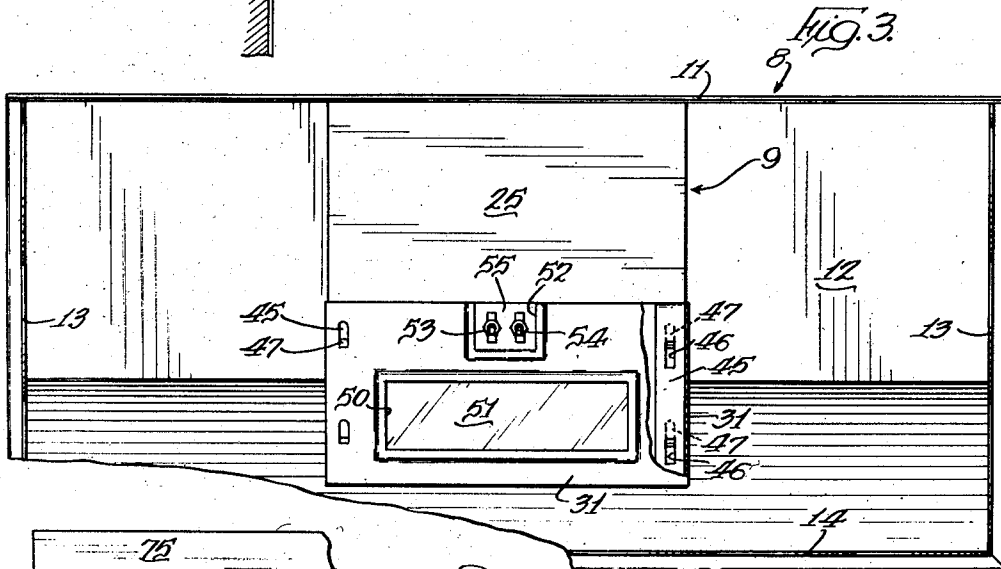
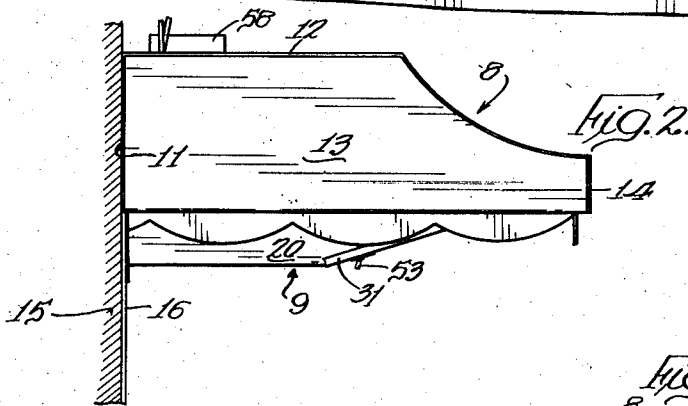
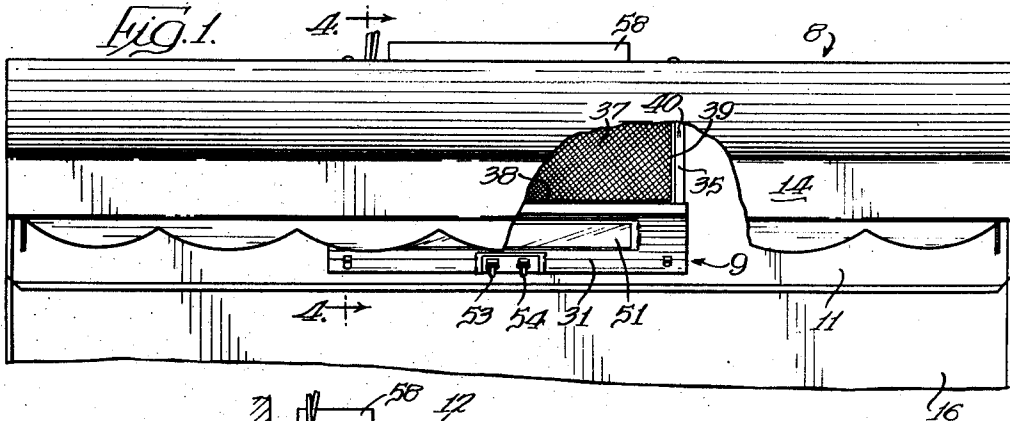
K. S. JENSON ET AL

2,893,305

VENTILATING HOOD

Filed May 23, 1956

2 Sheets-Sheet 1



INVENTORS.
Kenneth S. Jenson
Mathias Roth
By: Schneider, Hoffgren,
Grady & Wagner
Attys.

July 7, 1959

K. S. JENSON ET AL

2,893,305

VENTILATING HOOD

Filed May 23, 1956

2 Sheets-Sheet 2

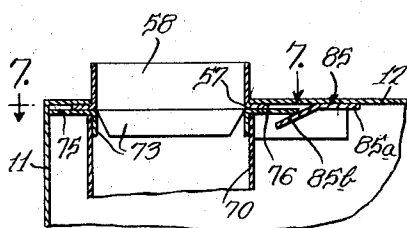
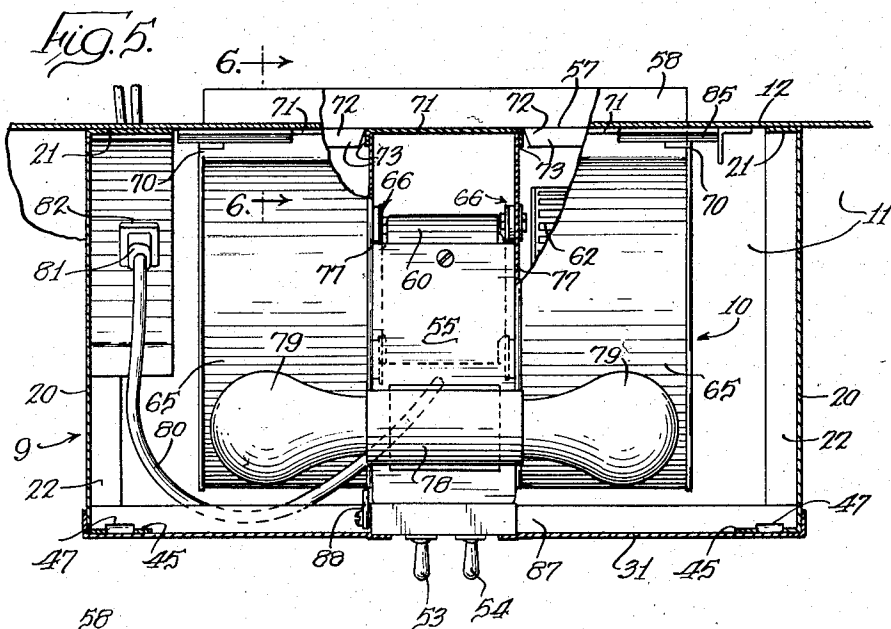
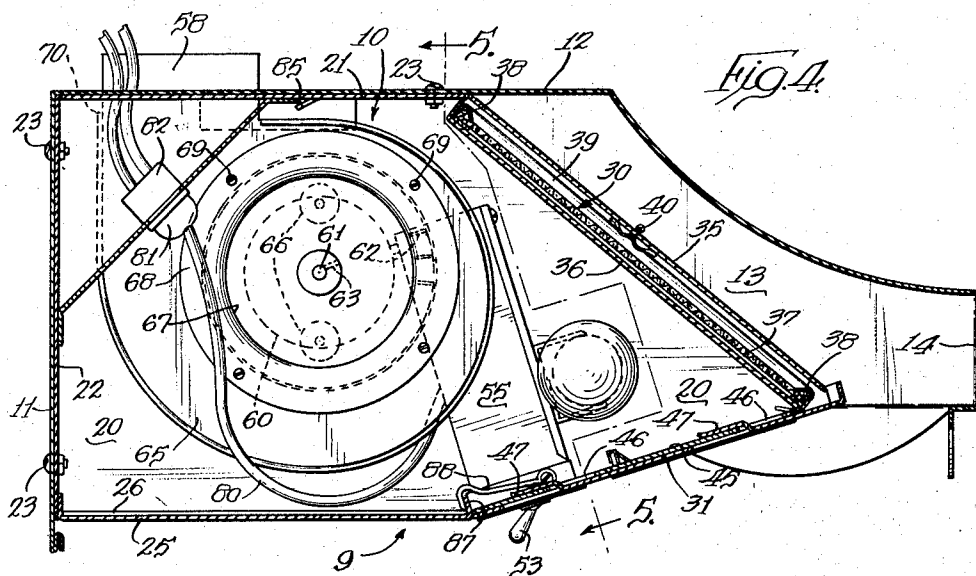


Fig. 6.

INVENTORS.
Kenneth S. Jenson
Mathias Roth
By: Schaefer, Koppert,
Brady & Wagner
Attys.

1

2,893,305

VENTILATING HOOD

Kenneth S. Jensen and Mathias Roth, Wisconsin Rapids, Wis., assignors to Preway, Inc., a corporation of Wisconsin

Application May 23, 1956, Serial No. 586,763

9 Claims. (Cl. 98—115)

This invention relates to ventilating hoods and blowers for installation in kitchens or the like, particularly over cook stoves, for exhausting smoke, cooking gases, and the like from the kitchen.

It is a general object of the invention to provide new and improved apparatus of the character described.

A more specific object is to provide a new and improved ventilating hood for installation over a cook stove, constructed for housing an exhaust blower unit, and provided with novel means for use in mounting the blower unit therein.

Another object is to provide a new and improved blower unit constructed for installation in a ventilating hood and provided with novel means which readily adapt the unit for mounting and dismounting relative to the hood.

It is also an object of the invention to provide a new and improved ventilating hood and blower unit of the character described wherein the hood and blower unit are constructed so that the blower unit is readily mountable and dismountable relative to the hood without the aid of either conventional or special tools, but solely by means of cooperating parts on the ventilating hood and blower unit.

Other objects and advantages will become readily apparent from the following detailed description taken in connection with the accompanying drawings, in which:

Figure 1 is a front elevational view, partly broken away, of a combination ventilating hood and exhaust blower unit embodying the principles of the present invention;

Figure 2 is an end elevational view illustrating the structure of Figure 1 installed on a kitchen wall or the like;

Figure 3 is a bottom plan view, partly broken away, of the structure illustrated in Figures 1 and 2;

Figure 4 is an enlarged vertical sectional view taken at about the line of 4—4 of Figure 1;

Figure 5 is a fragmentary sectional view, with parts broken away, taken at about the line 5—5 of Figure 4;

Figure 6 is a fragmentary sectional view taken at about the line 6—6 of Figure 5; and

Figure 7 is a fragmentary plan view, partly broken away, of the blower unit, taken at about the line 7—7 of Figure 6.

While an illustrative embodiment of the invention is shown in the drawings and will be described in detail herein, the invention is susceptible of embodiment in many different forms and it should be understood that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment illustrated. The scope of the invention will be pointed out in the appended claims.

Referring now to the drawings, as illustrated, the invention is embodied in a ventilating hood including a canopy, generally designated 8, a filter box 9 under the canopy, and a blower unit 10 (Figs. 4 and 5) adapted for installation in the filter box. The canopy is formed by means of a rear wall 11, a top wall 12 extending forwardly from the rear wall, end walls or side walls 13 ex-

2

tending forwardly from the rear wall and downwardly from the top wall, and a front wall 14 extending downwardly from the top wall between the end walls 13. The walls of the canopy 8 may be connected to form a unitary structure by any suitable means, such as by spot welding overlapping flanges of the walls; and the rear wall 11 may be provided with suitable holes for receiving screws, toggle bolts, or the like (not shown), for use in attaching the canopy to a supporting structure, such as a kitchen wall or the like illustrated at 15 (Fig. 2), in position over a cook stove, for example, for collecting gases and smoke rising from the stove. If desired, a splash plate such as that illustrated at 16 may be mounted on the supporting structure 15 in a position extending downwardly from the rear wall 11 of the canopy to collect spattering greases from the stove.

The blower unit 10 (Figs. 4 and 5) functions to exhaust gases collected under the canopy 8 to a suitable exhaust flue, and filter box 9, in which the blower unit is housed, functions to filter the grease laden gases to avoid excessive collection of grease in the exhaust fan or fans and the fan motor. The filter box 9 is centrally located under the canopy 8 and defines an exhaust chamber including a rear wall and a top wall formed respectively by portions of the rear and top walls 11 and 12 of the canopy 8. The filter box 9 includes side walls 20 positioned in spaced relationship to the end walls 13 of the canopy and extending forwardly from the rear wall 11 and downwardly from the top wall 12. Top horizontal edges of the side walls 20 are formed with inwardly turned flanges 21 and the vertical rear edges of the side walls 20 (Fig. 4) are provided with inwardly turned flanges 22 which may be utilized in securing the side walls 20 to the rear and top walls 11 and 12 by means such as the bolts and nuts illustrated at 23. The filter box 9 includes a bottom wall 25 which may be secured as by welding to inwardly turned flanges 26 on the side walls 20. The construction of the filter box described thus far leaves a relatively large area of opening at the front of the filter box through which the blower unit 10 may be inserted and retracted for mounting and dismounting in the filter box. The open front area referred to is adapted to be closed after installation of the blower unit by means of a rectangularly shaped filter element 30 and a removably attachable filter box cover 31.

As seen in Figure 4, the horizontal top edges of the side walls 20 terminate at a midportion of the canopy top wall 12 and thereafter extend in a forwardly and downwardly inclined direction toward the front of the canopy. The bottom horizontal edges of the side walls 20 also terminate short of the front of the canopy and thereafter extend in a forwardly and upwardly inclined direction toward the front of the canopy to a meeting point with the forwardly and downwardly inclined edges. As seen in Figures 1 and 4, the forwardly and downwardly inclined edges of the side walls 20 are provided with inwardly directed channels having an upper flange 35 and a lower flange 36 defining tracks at opposite sides of the filter box for receiving the filter element 30. The filter element 30 comprises a rectangularly shaped screen or mesh 37 supported at its perimeter by means of longitudinally extending frame elements 38 and connected transversely extending frame elements 39. The filter element is installed in and removed from the filter box by slidable movement of the transversely extending frame elements 39 in the channels defined by flanges 35 and 36. The filter element 30 may be suitably retained in position in the channels by spring slips 40, one carried by each of the flanges 35 in a manner to bear against the frame elements 39 so as to retain the filter element but permit its removal slidably.

3

The filter box 9 is adapted to be closed at the open front by means of a filter box cover 31 so that all gases entering the filter box must pass through the filter element 30. According to the invention, the side walls 20 of the filter box and the filter box cover 31 are provided with interengageable locking parts which retain the filter box cover in mounted position as illustrated and permit its removal manually without the need of external means such as tools, either special or conventional, or retaining means such as screws. Accordingly, to this end, the bottom upwardly and forwardly inclined edges of the side walls 20 are each provided with an inwardly turned flange 45 (Figs. 3 and 4). Each of the flanges 45 is provided with a pair of longitudinally spaced, rectangularly shaped, elongated openings or recesses 46 therethrough. For cooperation with the flanges 45 and recesses 46, the cover member 31 is provided with integral spring-like clip members 47 adapted to fit through the recesses 46 when the cover member 31 is placed against the flanges 45, and adapted to latch over portions of the flanges 45 to releasably retain the cover member when the cover member is slidably moved in a direction rearwardly and downwardly relative to the front of the canopy. As seen in Figure 3, the cover member may be provided with a centrally located, elongated opening 50 closed by suitable transparent material 51 for transmitting light downwardly from bulbs 79 associated with the blower unit. Also, at the rear edge, the cover member 31 is provided with a centrally located rectangular cut out portion 52 adapted to leave exposed for access switches 53 and 54 projecting from the end of a wiring box 55 associated with the blower unit installed in the filter box. The switches 53 and 54 may be connected in circuit for controlling the blower motor and the light fixture. It should be noted that when the cover member 31 is properly mounted as illustrated, its forward edge portion functions to assist in retaining the filter element 30 against inadvertent removal from its proper position.

Air drawn into the filter box through the filter element 30 is exhausted from the filter box through a rectangularly shaped exhaust outlet opening 57 in the top wall 12 and having at its perimeter an upstanding flange 58 adapted for connection to a suitable exhaust flue (not shown) leading from the room in which the installation is made.

As best seen in Figures 4, 5, and 7, the blower unit 10 adapted for installation in the filter box 9 includes a fan motor having a housing 60 and a motor shaft 61 projecting from opposite ends of the housing. Opposite end portions of the motor shaft 61 have mounted thereon respectively squirrel cage fan wheels 62 secured to the motor shaft as by set screws such as that illustrated at 63. The fan wheels 62 are encased respectively in scroll shaped fan wheel housings 65 each secured to the motor housing 60 by means such as that illustrated at 66 which may include bolt, nut, and washer means. Each of the scroll shaped fan wheel housings 65 is provided at the side opposite the motor housing 60 with a centrally located axial air inlet opening 67 through which air is drawn into the fan wheel housing from the exhaust chamber formed by the filter box 9 and to the center of the fan wheel. The inlet opening 67 is provided by an annular closure member 68 secured to the scroll shaped fan wheel housing by screws illustrated at 69, and the annular closure member 68 may be removed to provide access into the housing for removing the fan wheel from the motor shaft 61. Each of the scroll shaped fan wheel housings includes a terminal portion 70 forming a tangentially directed outlet duct adapted to register with the outlet opening 57 in the top wall 12 of the filter box. The fan wheel housings 65 are arranged in parallel relationship and the ends of the ducts 70 are rigidly connected by a trans-

4

versely extending plate 71 formed with openings 72 therethrough in register with the ends of the outlet ducts 70. The plate 71 may be connected to the outlet ducts 70 by means of downwardly extending flanges 73 telescoped inside the outlet ducts 70 and welded thereto, for example. The plate 71 includes portions about the perimeter of the ducts 70 which form flanges 75 and 76 extending respectively rearwardly and forwardly from the ducts 70 (Figure 6) for a purpose that will be described in detail presently.

The wiring box 55 previously referred to is an elongated box of rectangular cross section rigidly connected at opposite sides of its upper end to the fan wheel housing 65 respectively as by means of welds indicated at 77. The wiring box 55 thus mounted between the fan wheel housing 65 extends downwardly and somewhat rearwardly from between the housings 65 in a direction substantially opposite the direction of the ducts 70. The wiring box 55 includes wiring connected with the fan motor and with switch 53 for controlling energization of the fan motor. The wiring box 55 is provided with a lighting fixture 78 which as illustrated is adapted to receive a pair of light bulbs 79. The fixture 78 is connected in circuit with the switch 54 for controlling energization of the bulbs 79. The switches 53 and 54 are connected in circuit with an extension cord 80 leading from the wiring box and having at its free end a plug 81 adapted to fit a receptacle 82 provided in the upper rear corner of the filter box for connection with a source of power available at the installation.

According to the invention, the blower unit 10 is adapted to be removably mounted and retained in the filter box solely by means of interengageable parts on the blower unit and the filter box so that the unit may be installed and removed entirely manually without the necessity of external means such as tools, either special or conventional, or retaining means such as screws and the like. Accordingly, to this end, the top wall 12 of the filter box is provided with a downwardly projecting locking part in the filter box in the form of an elongated metal strip 85 which includes a portion 85a (Fig. 6) welded or otherwise secured to the top wall 12 and an angularly bent portion 85b engageable by the flange 76 on the plate 71 for use in retaining the blower unit in position in the filter box. To describe the function of the parts 85b and 76, when the filter box cover 31 and the filter element 30 are to be removed from the filter box, the blower unit 10 may be grasped manually at the forward portion of the housings 65, for example, and pivoted in a counterclockwise direction, as viewed in Figures 4 and 6, so as to move the blower unit in a direction forwardly and away from the top wall 12 to dislodge the flange 76 from its engagement with the locking part 85b, after which the unit may be moved forwardly out of the filter box. Similarly, in installing the blower unit, it is first moved rearwardly into the filter box and upwardly to engage the flange 76 with the part 85b after which the unit may be pivoted in a clockwise direction until the plate 71 engages the top wall 12 of the filter box, whereupon the plate 71, including the flanges 75 and 76, is confined between the locking part 85b, the top wall 12, and the rear wall 11.

To assist in maintaining the blower unit in proper position in the filter box, the forward edge of the bottom wall 25 of the filter box is formed with an upwardly turned flange 87 (Figure 4) which presents forwardly facing and rearwardly facing surfaces engageable by parts carried on the blower unit. The forwardly facing surface on the flange 87 is abutted by the rearwardly facing surface of the wiring box 55 at its lower end so as to limit movement of the lower end of the blower unit rearwardly in the filter box. A hook 88 pivotally mounted on the wiring box 55 is positioned so as to be latched over the flange 87, engaging the rearwardly facing surface thereof, to maintain the wiring box 55 in engagement

5

with the flange 87. It will be appreciated that when the hook 88 is latched over the flange 87, there can be no pivotal movement of the blower unit about the point of contact between the flange 76 and the part 85b, and since the part 85b prevents movement of the flange 76 downwardly, the blower unit is consequently securely held in the proper position.

We claim:

1. In a ventilating apparatus of the character described, an exhaust chamber formed of a rear wall, a top wall, depending side walls, and a bottom wall, and having a front entrance opening permitting installation of a blower unit and for admitting gases to be exhausted by the blower unit, the top wall of said chamber being formed with an outlet opening for exhausting gases from the chamber, a blower unit adapted for installation in the exhaust chamber through said entrance opening including a motor driven fan for drawing gases into the exhaust chamber and an exhaust duct having a terminal portion adapted to register with said outlet opening for exhausting gases from the chamber, and means for releasably retaining the blower unit in position in said exhaust chamber comprising interengageable parts one on the blower unit duct and one on said top wall of the exhaust chamber forming a disengageable pivotal connection pivotally hanging and supporting the blower unit for pivotal movement thereof on said top wall in a forward direction for removal of the unit, and cooperating parts on the blower unit and at least one wall of the exhaust chamber other than said top wall forming a disengageable latch means releasably retaining the blower unit against the aforementioned pivotal movement including a latch part on one of the blower unit and said other wall and a pivotable latch member on the other of the blower unit and other wall.

2. In a ventilating apparatus of the character described, an exhaust chamber formed of a rear wall, a top wall, depending side walls, and a bottom wall, and having an opening at the front for admitting gases to the chamber and for permitting installation of a blower unit in the chamber, the top wall of said chamber being formed with an outlet opening for exhausting gases from the chamber, a blower unit adapted for installation in the exhaust chamber through said front opening including a motor driven fan for drawing gases into the exhaust chamber and an exhaust duct having an upper, terminal portion adapted to register with said outlet opening for exhausting gases from the chamber, and means for releasably retaining the blower unit in position in said exhaust chamber comprising a locking part extending downwardly from the top wall of the exhaust chamber and having an upwardly and rearwardly facing surface defining with the top and rear walls of the chamber a confining space for use in mounting the blower unit in the exhaust chamber, a forwardly extending flange on the terminal portion of said outlet duct engageable with said surface for retaining the end of the exhaust duct in position between said surface, said top wall and said rear wall but permitting pivotal movement of the blower unit about the point of engagement between said flange and said surface in a direction forwardly and away from said top wall for removal of the unit, a locking part on the forward edge of the bottom wall of the exhaust chamber having engageable forwardly facing and rearwardly facing abutment surfaces for use in mounting said blower unit in the exhaust chamber, an abutment part on the blower unit engageable with said forwardly facing abutment surface, and a hook on the blower unit engageable with said rearwardly facing abutment surface for maintaining said abutment part in engagement with the forwardly facing abutment surface.

3. In a ventilating apparatus of the character described, an exhaust chamber formed of a rear wall, a top wall, depending side walls, and a bottom wall, and having an opening at the front for admitting gases to be exhausted,

6

the top wall of said chamber being formed with an outlet opening for exhausting gases from the chamber; a blower unit for installation in said exhaust chamber through said front opening including a fan motor having a housing and a motor shaft with opposite shaft ends projecting from the housing, a pair of fan wheels mounted respectively on the opposite ends of said motor shaft to be driven thereby, a pair of scroll shaped fan wheel housings secured to the motor housing and encasing respectively the fan wheels, said fan wheel housings each having an axial air inlet opening and a tangentially directed terminal portion forming an outlet duct adapted to register with said outlet opening, and a plate rigidly connecting said outlet ducts; means for releasably retaining said blower unit in position in said exhaust chamber comprising interengageable parts one on said plate and one on said top wall forming a disengageable pivotal connection pivotally hanging and supporting the blower unit for pivotal movement thereof in a forward direction for removal, and cooperating parts on said blower unit and said bottom wall forming disengageable latch means releasably retaining said blower unit against said pivotal movement including a latch part on said bottom wall and a pivoted latch member on the blower unit.

4. A ventilating hood, comprising: a canopy including a rear wall and a top wall and open at the bottom for collecting rising gases; a filter box under the canopy for exhausting gases from the canopy including a rear wall and a top wall formed respectively by portions of the rear and top walls of said canopy, depending side walls, and a bottom wall, and open at the front, said side walls each having top and bottom horizontal edges terminating short of the front of the canopy and inclined edges one extending downwardly and forwardly from the front of the top horizontal edge and one extending upwardly and forwardly from the front of the bottom horizontal edge; a blower unit adapted for installation in said filter box through said open front for drawing gases into the box and for exhausting gases therefrom, a filter element extending between and removably mounted on the downwardly and forwardly inclined edges of the filter box side walls, a filter box cover extending between and removably mounted on the upwardly and forwardly inclined edges of the filter box side walls to substantially close the filter box so that all gases entering the box pass through the filter element, the top wall of the filter box being provided with an outlet opening for exhausting gases from the filter box, interlocking means provided solely on the filter element and the filter box side walls for releasably retaining the filter element in position, interlocking means provided solely on the filter box cover and filter box side walls for retaining the cover in position and permitting removal of the cover for access into the filter box, and means for mounting and releasably retaining the blower unit in the filter box comprising interlocking parts provided solely on the blower unit and the filter box, so that the cover is removable and attachable and the blower unit is mountable and dismountable without the aid of external means.

5. In a ventilating apparatus of the character described: an exhaust chamber formed of a rear wall, a top wall, depending side walls, and a bottom wall and having an entrance opening for admitting gases to be exhausted, one wall of said chamber being formed with an outlet opening for exhausting gases from the chamber, a locking part extending downwardly from the top wall of the exhaust chamber and having an upwardly and rearwardly facing surface defining with the top and rear walls of the chamber a confining space for use in mounting and retaining a blower unit in the exhaust chamber, and a locking part on the forward edge of the bottom wall of the exhaust chamber having engageable forwardly facing and rearwardly facing abutment surfaces for use in mounting and retaining said blower unit in the exhaust chamber; and a blower unit having a part receivable in

said confining space and having parts engageable with said abutment surfaces to releasably retain the blower unit in the exhaust chamber.

6. A ventilating hood, comprising: a canopy including a rear wall and a top wall and open at the bottom for collecting rising gases; a filter box under the canopy for exhausting gases from the canopy including a rear wall and a top wall formed respectively by portions of the rear and top walls of said canopy, depending side walls, and a bottom wall, said side walls each having top and bottom horizontal edges terminating short of the front of the canopy and inclined edges one extending downwardly and forwardly from the front of the top horizontal edge and one extending upwardly and forwardly from the front of the bottom horizontal edge; a removable filter element extending between the downwardly and forwardly inclined edges of the filter box side walls, a removable filter box cover mountable on and extending between the upwardly and forwardly inclined edges of the filter box side walls to substantially close the filter box so that all gases entering the box pass through the filter element, the top wall of the filter box being provided with an outlet opening for exhausting gases from the filter box, interlocking means on the filter box cover and filter box side walls for retaining the cover in position and permitting removal of the cover for access to the filter box, a locking part extending downwardly from the top wall of the filter box and having an upwardly and rearwardly facing surface defining with the top and rear walls of the filter box a confining space for use in mounting a blower unit in the filter box, and a locking part extending upwardly from the bottom wall of the filter box adjacent its forward edge and having engageable forwardly facing and rearwardly facing abutment surfaces for use in mounting a blower unit in the filter box; and a blower unit having a part receivable in said confining space and having parts engageable with said abutment surfaces to releasably retain the blower unit in the filter box.

7. In a ventilating apparatus of the character described, an exhaust chamber formed of a rear wall, a top wall, depending side walls, and a bottom wall, and having an opening at the front for admitting gases to the chamber and for permitting installation of a blower unit in the chamber, the top wall of said chamber being formed with an outlet opening for exhausting gases from the chamber, a blower unit adapted for installation in the exhaust chamber through said front opening including a motor driven fan for drawing gases into the exhaust chamber and an exhaust duct having an upper, terminal portion adapted to register with said outlet opening for exhausting gases from the chamber, and means for releasably retaining the blower unit in position in said chamber, comprising, a locking part extending downwardly from the top wall of the exhaust chamber and having an upwardly and rearwardly facing surface defining with the top and rear walls of the chamber a confining space for use in mounting the blower unit in the exhaust chamber, a forwardly extending flange on the terminal portion of said outlet duct engageable with said surface for retaining the end of the exhaust duct in position between said surface, said top wall and said rear wall but permitting pivotal movement of the blower unit about the point of engagement between said flange and said surface in a direction forwardly and away from said top wall for removal of the unit, and cooperating parts on the blower unit and the bottom wall of said chamber forming a disengageable latch means for retaining the blower unit against the aforementioned pivotal movement.

8. In a ventilating apparatus of the character described, an exhaust chamber formed of a rear wall, a top wall, depending side walls, and a bottom wall, and having an opening at the front for admitting gases to the chamber and for permitting installation of a blower unit in

the chamber, the top wall of said chamber being formed with an outlet opening for exhausting gases from the chamber, a blower unit adapted for installation in the exhaust chamber through said front opening including a motor driven fan for drawing gases into the exhaust chamber and an exhaust duct having an upper, terminal portion adapted to register with said outlet opening for exhausting gases from the chamber, and means for releasably retaining the blower unit in position in said exhaust chamber, comprising, interengageable parts on the blower unit and the top wall of said exhaust chamber forming a disengageable pivotal connection permitting pivotal movement of the blower unit on said top wall in one direction for removal of the unit, and a locking part on the forward edge of the bottom wall of the exhaust chamber having engageable forwardly facing and rearwardly facing abutment surfaces for use in mounting said blower unit in the exhaust chamber, an abutment part on the blower unit engageable with said forwardly facing abutment surface, and a hook on the blower unit engageable with said rearwardly facing abutment surface for maintaining said abutment part in engagement with the forwardly facing abutment surface.

9. In a ventilating apparatus of the character described, an exhaust chamber formed of a rear wall, a top wall, depending side walls, and a bottom wall, and having an opening at the front for admitting gases to the chamber and for permitting installation of a blower unit in the chamber, the top wall of said chamber being formed with an outlet opening for exhausting gases from the chamber, a blower unit adapted for installation in the exhaust chamber through said front opening including a fan motor, a fan wheel mounted on the motor shaft to be driven thereby, a scroll shaped fan housing secured to the motor housing and encasing the fan wheel, said scroll shaped fan wheel housing having an axial inlet opening at one side through which gases are drawn into the housing and a tangentially directed upwardly extending terminal portion forming an outlet duct adapted to register with said outlet opening for exhausting gases from the chamber, and means for releasably retaining the blower unit in position in said exhaust chamber, comprising, interengageable parts on the blower unit and the top wall of said exhaust chamber forming a disengageable pivotal connection permitting pivotal movement of the blower unit on said top wall in one direction for removal of the unit, a locking part on the forward edge of the bottom wall of the exhaust chamber having engageable forwardly facing and rearwardly facing abutment surfaces, a wiring box secured to the exterior of the fan wheel housing and having a switch connected in circuit with said motor for controlling the latter, said wiring box extending from the fan wheel housing in a direction substantially opposite from said outlet duct and having a rearwardly directed engageable abutment surface parallel to the fan wheel axis for use in mounting the blower unit in said ventilating hood engageable with said forwardly facing abutment surface on said locking part, and a hook pivotally mounted on the wiring box for latching engagement with said rearwardly facing surface on said locking part for maintaining said wiring box in abutting relationship with said locking part.

References Cited in the file of this patent

UNITED STATES PATENTS

1,825,245	Nitka	Sept. 29, 1931
2,077,496	Sonntag	Apr. 20, 1937
2,226,641	Sonntag	Dec. 31, 1940
2,487,607	Sonntag	Nov. 8, 1949
2,596,874	Sonntag	May 13, 1952
2,621,755	Gray	Dec. 16, 1952
2,710,573	Marker	June 14, 1955
2,780,981	Miller	Feb. 12, 1957
2,800,849	Spears	July 30, 1957