

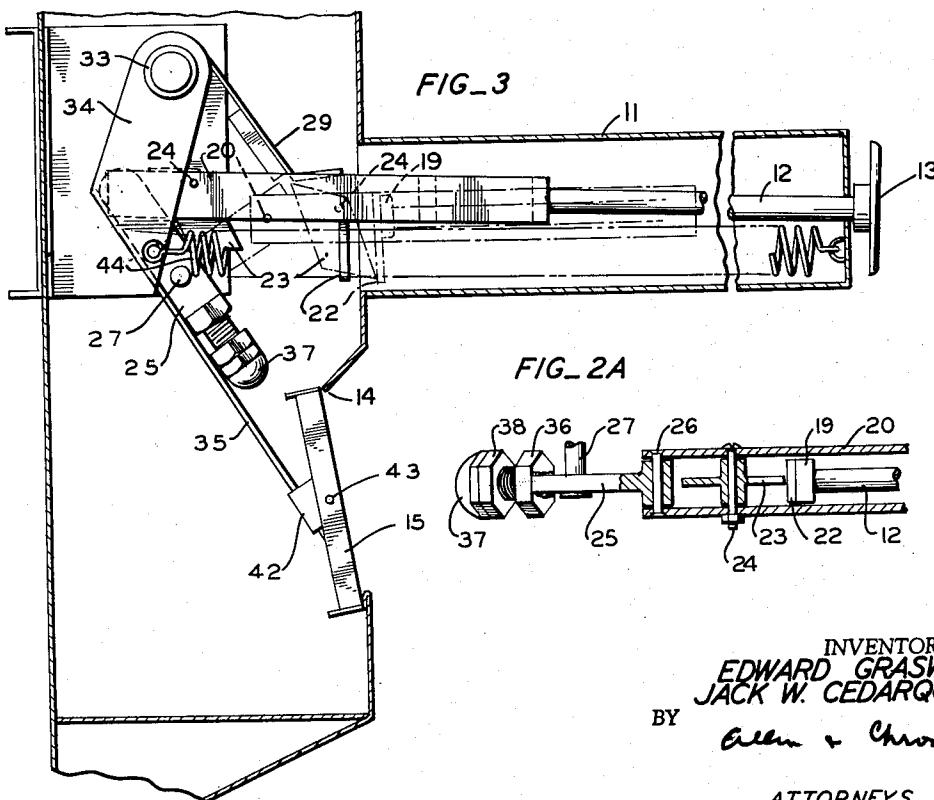
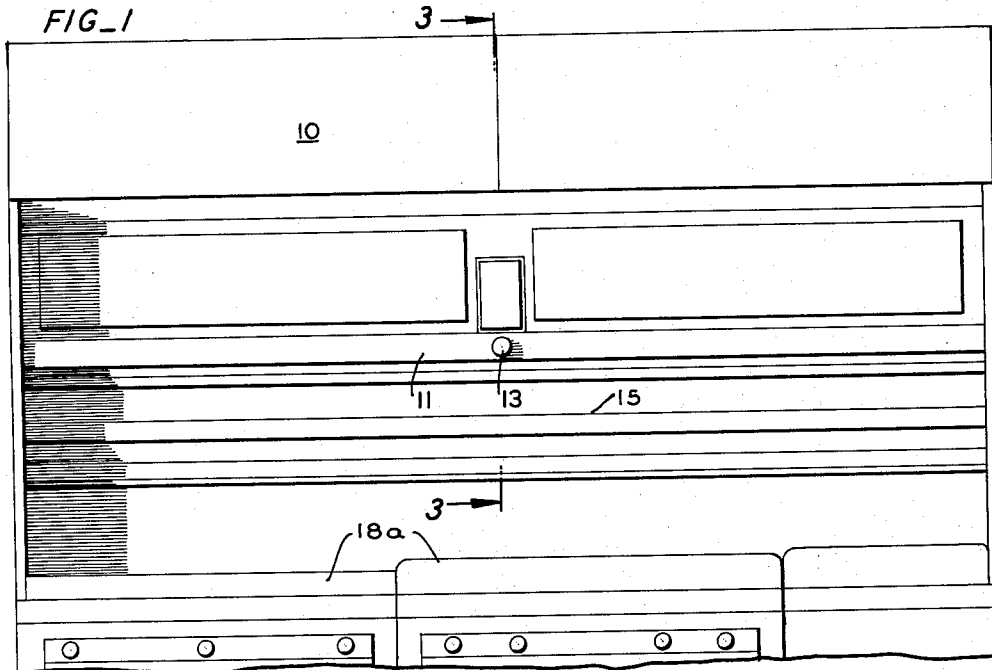
Nov. 29, 1960

E. GRASWICH ET AL
GREASE EXTRACTING ATTACHMENT FOR
VENTILATORS FOR KITCHEN RANGES

2,961,941

Filed Jan. 6, 1958

6 Sheets-Sheet 1



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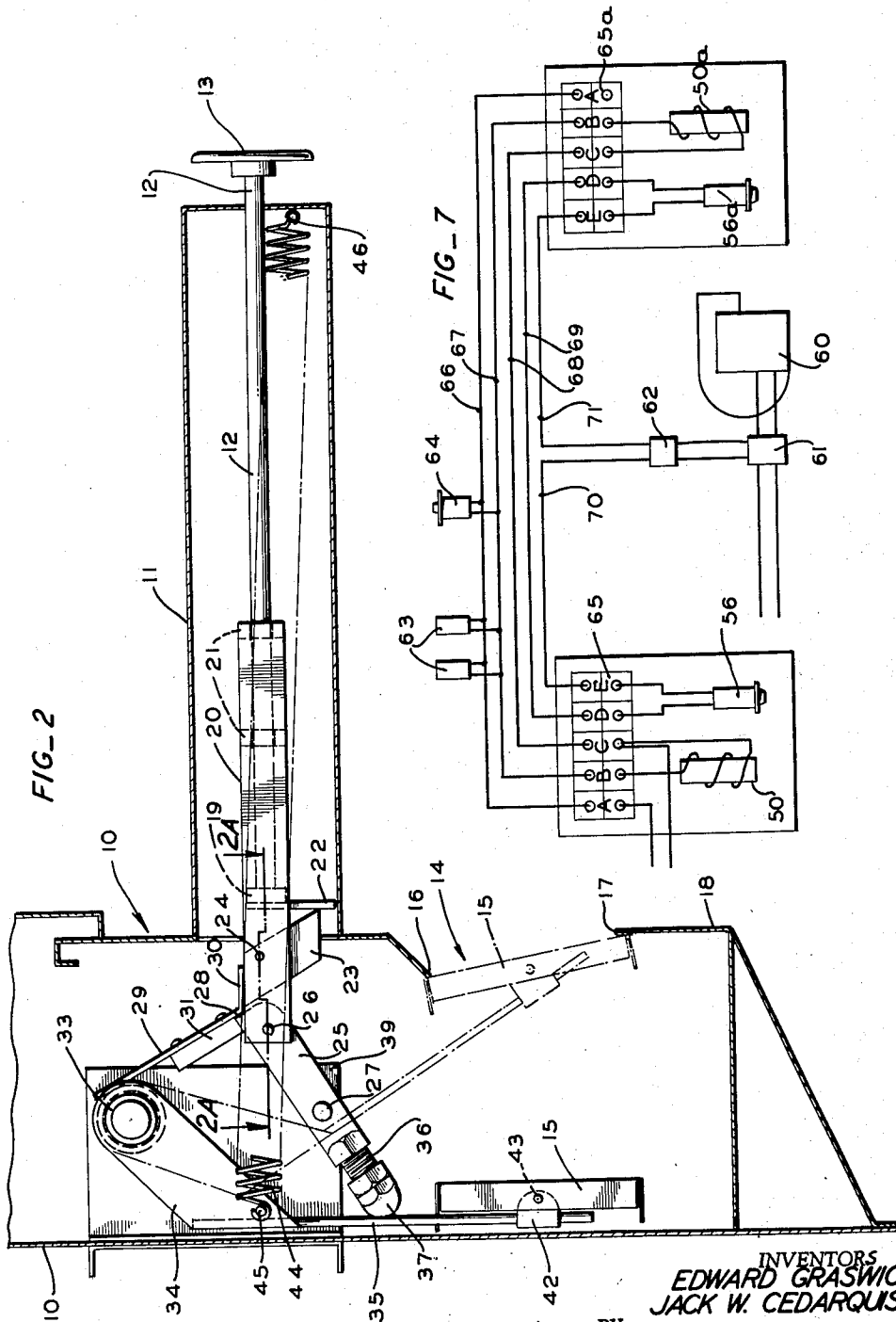
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6 Sheets-Sheet 2



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FIG_5

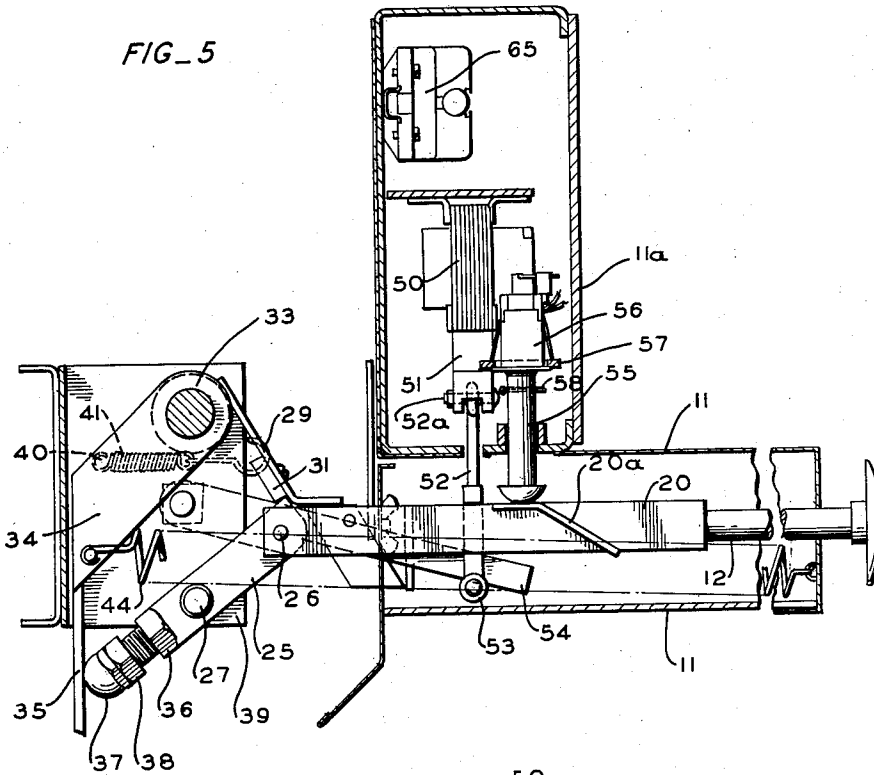
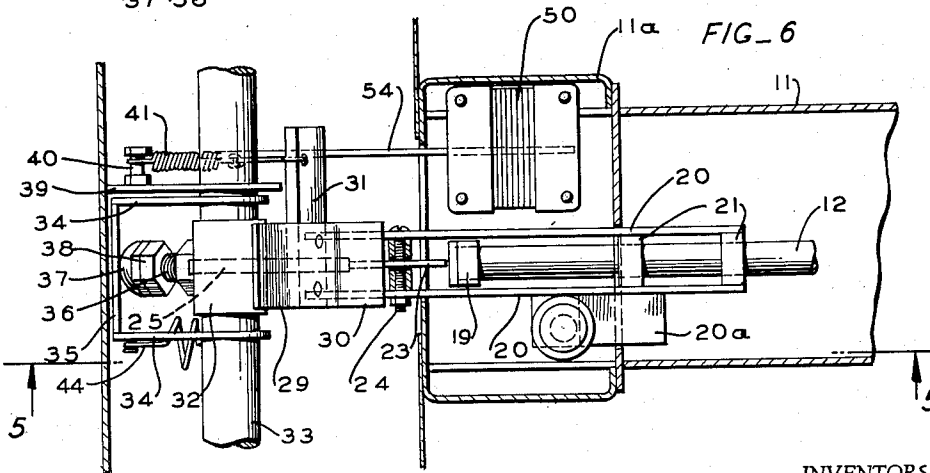


FIG_6



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6 Sheets-Sheet 5



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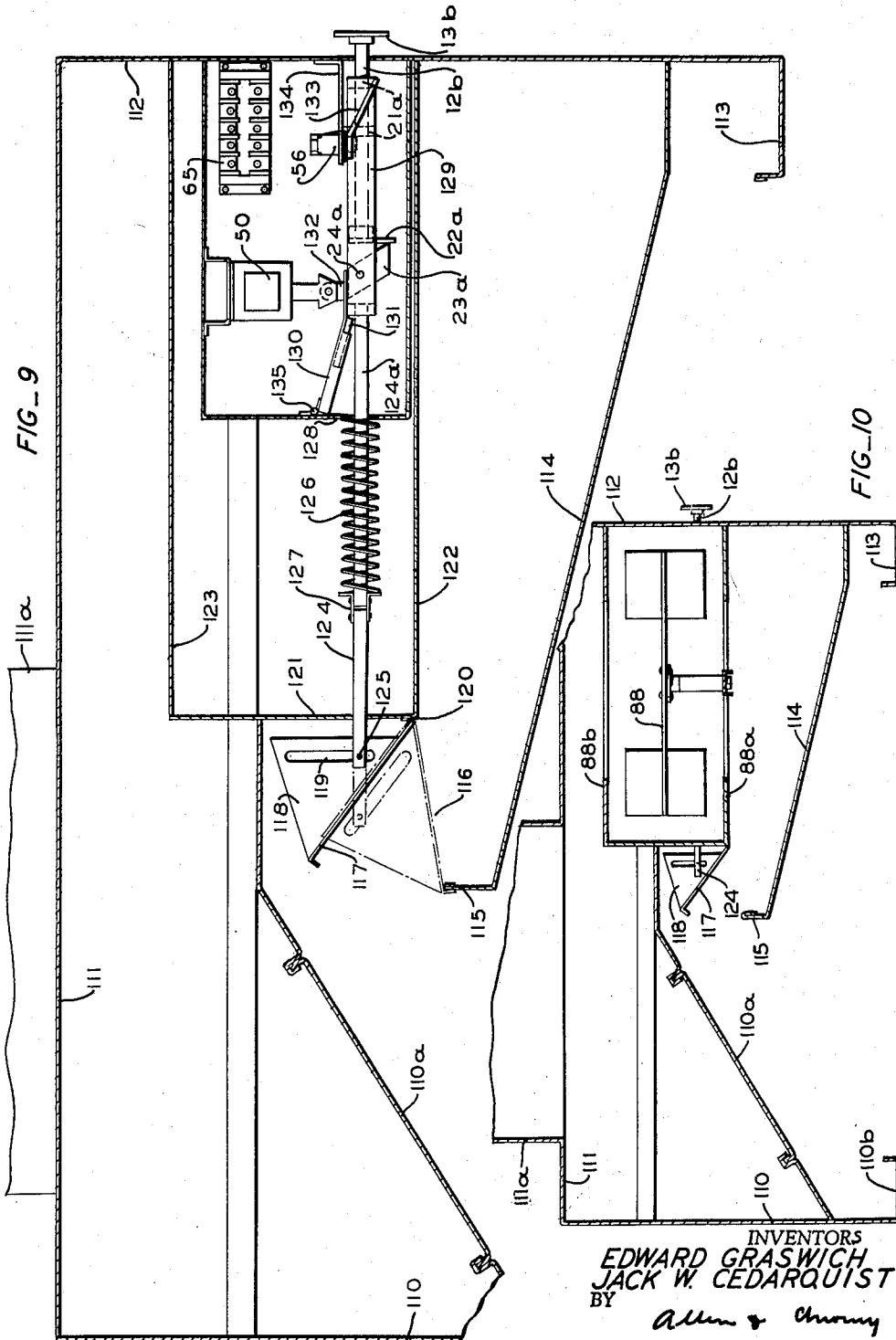
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6 Sheets-Sheet 6



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2,961,941

GREASE EXTRACTING ATTACHMENT FOR VENTILATORS FOR KITCHEN RANGES

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8 Claims. (Cl. 98—115)

This invention relates to ventilator apparatus for exhausting cooking gases from cooking surfaces in general. More particularly this invention relates to ventilator apparatus in which manually or automatically controlled means is provided for substantially eliminating or preventing the occurrence of fires in the ventilator passage caused by burning of the cooking gases that are being exhausted.

An object of this invention is to provide an improved ventilator structure for use with cooking ranges, said ventilator having means to reduce hazards from fires igniting the gases being exhausted thereby.

Still another object of this invention is to provide an improved ventilator structure for use with cooking ranges, said structure having a fire door positioned in the lower part thereof so that it is visible to the cook operating the cooking range, whereby whether the door is open or closed may be readily determined.

A further object of this invention is to provide an improved fire door arrangement to the bottom portion of the ventilator passage for cooking ranges, said door being constructed to close off the entire passage so that no grease covered surfaces thereof are left exposed to fire when said door is closed.

Still a further object of this invention is to provide an improved electrically controlled arrangement for closing and opening ventilator doors provided to ventilator ducts for exhausting cooking gases.

Other and further objects of this invention will be apparent to those skilled in the art to which this invention relates from the following specification, claims and drawing.

In accordance with this invention there is provided an improved arrangement for controlling the operation of doors, such as, fire doors associated with the lower end of the ventilator passage employed for exhausting cooking gases from cooking surfaces of ranges. With this arrangement the entire passage is closed when the door is closed so that no grease covered surfaces of the passage are exposed. These doors are provided with spring loaded operating levers that may be controlled or tripped either manually or electrically so that they function to close the fire door, the same operating leverage being employed for manually opening the door.

Where the door operating leverage is adapted to be tripped or unlatched by electrical means the leverage may also be provided with an electrical switch actuating member that controls the electrical circuit to the ventilator blower whereby this circuit is interrupted when the fire door is closed. Where only manual control of the door is provided and a blower is employed in the ventilator, the same switch actuating member for automatically controlling the circuit of the blower motor, when the door operating leverage is tripped, may be employed, or a manually controlled switch may be provided for this purpose.

Further details of this invention will be set forth in

2

the following specification, claims and drawing in which briefly:

Fig. 1 is a front view of the bottom portion of the ventilator structure showing its relation with respect to the top of the cooking surface of the range;

Fig. 2 is a sectional view taken along the line 3—3 of Fig. 1 showing the fire door open;

Fig. 2a is a sectional view taken along the line 2a—2a of Fig. 2;

Fig. 3 is a sectional view similar to Fig. 2 showing the fire door closed;

Fig. 4 is a vertical sectional view showing the door operating structure shown in Fig. 3 and a rotatable gas degreasing device positioned in the gas ventilator above this structure;

Fig. 5 is a sectional view taken along the line 5—5 of Fig. 6 showing only the door operating leverage and also showing electrically actuated as well as manually actuated tripping or unlatching means for said leverage, together with means for controlling the ventilator blower motor switch;

Fig. 6 is a plan view of the mechanism shown in Fig. 5;

Fig. 7 is a schematic wiring diagram of connections employed with this invention;

Fig. 8 is a vertical sectional view of a modified form of this invention;

Fig. 9 is a vertical sectional view of another modified form of this invention; and

Fig. 10 is a view of the rotatable vane device that is positioned on either side of the door operating mechanism shown in Fig. 9.

Referring to Figs. 1—4 of the drawings in detail, there is illustrated an embodiment of this invention employing a sheet metal structure 10 defining a passage or gas vent. This structure is provided with a sheet metal extension 11 extending to the front thereof and having positioned therein a rod member 12 that is provided with a handle 13 attached to the front end thereof as shown in Figs. 2 and 3. The bottom of this sheet metal structure is provided with a bottom portion 18 that is formed with an opening 14 which is adapted to be closed by the door 15, and through which gases from the cooking surfaces 18a shown in Fig. 1 are exhausted. This opening has a top lip portion 16 and a bottom lip portion 17 which are adapted to be engaged by the aforesaid door to close said opening.

The inner end of the rod member 12 is provided with a trip member 19 that has a depending portion 22 which is adapted to engage the pointed front of a pivoted member 23 that is pivotally supported by the pin 24 on the members 20. These members 20 are in the form of elongated strips that are attached to the sides of the bearing members 21 as shown in Figs. 2a and 6 and which are provided with suitable holes for slidably receiving the rod 12.

The innermost ends of these members 20 are pivotally attached to the toggle member 25 by means of a pin 26. The toggle member 25 is pivotally supported on the plate 39 by means of the stud 27 and this plate is attached to inner surface of the wall structure 10. Adjacent to the pin 26 the toggle member 25 is provided with an angular shape or corner 28 which is adapted to be engaged by the members 29 and 31 which are held against said corner by the spring 41, one end of which is attached to the member 31 and the other end of which is attached to the stud 40 that is supported by the plate 39, as shown in Fig. 6. The member 29 is provided with a foot portion 30 that is adapted to be engaged by the upper end of the trip member 23 as will be described more fully hereinafter in the description of the operation of this invention.

The members 29 and 31 function as a latch for the toggle member 25 and for this purpose the sleeve 32 to

which this member 29 is attached is rotatably supported on the tubular member 33 which is also supported by the plate 39. The bracket members 34 are also rotatably supported on the tubular member 33 and the sleeve 32 is positioned between these bracket members which are provided for the purpose of swingably supporting the arm 35 to which the door 15 is attached. The upper part of the arm 35 is attached to the lower portions of these bracket members by welding or the like and the hinge part 42 that is attached to the frame of the door 15 by means of the pin 43 is adjustably attached to the lower portion of this arm.

The toggle member 25 is provided with a threaded member 36 which is fixedly attached to the lower end of this toggle member and which is provided with a foot 37 that is adjustably supported on this threaded member 36. The foot 37 is adapted to engage the door supporting arm 35 to hold the door in open position against the tension of the spring 44, one end of which is attached to the pin 45 that is attached to one of the bracket members 34 as shown in Figure 6 and the other end of which is attached to the front of the well structure 11 by means of the hook 46 as shown in Figure 2.

The form of this invention shown in Fig. 2 provides only for manually tripping the door closing mechanism and this is accomplished by pressing inward on the handle 13 that is mounted on the outer end of the rod 12. Thus, when it is desired to have the door 15 close the opening 14, the handle 13 is pressed inward toward the projecting well structure 11 a short distance so that the trip member 22 engages the front of the pivotally supported lever 23 causing this lever to be swung on its pivot 24 a sufficient distance so that the upper end thereof lifts the foot portion 30 of the member 29 whereby the members 29 and 31 are moved clear of the corner portion 28 of the toggle 25 thereby releasing this toggle member so that it may swing in a counter clockwise direction on its pivot 27. As a result, the member 25 releases the door supporting member 35 which is then swung forward by the spring 44 and the door 15 is carried forward to close the opening 14 as shown in Fig. 3.

The door operating mechanisms illustrated in Figs. 2 and 3 may be installed in ventilator structure such as shown in Fig. 4 wherein a rotatable set of vanes is positioned in the ventilator passage defined by the wall structure 10b. The rotatable vane device may take the form shown in Patent No. 2,793,712, issued on May 28, 1957. This rotatable vane structure comprises a horizontal substantially circular baffle member 10e that is mounted on a suitable shaft and bearing arrangement supported on a channel iron frame member 10d in a manner similar to that shown in the above patent. A set of radially extending vanes 10f is provided at the bottom of the rotatable baffle 10e and a similar set of radially extending vanes 10g is provided at the top of this baffle. These vanes are attached to the top and bottom of the baffle at spaced points so that a plurality thereof is employed around the outer half of the top and bottom of the baffle. The cooking gases are guided to the opening 10h provided in the horizontal wall 10c and in general these gases follow the paths designated by the lines 10k.

The passage leading to the rotatable vane structure is defined by the front and back wall members 10 which define a passage extending substantially vertically above the opening 14 in the lower part of the ventilator structure. The inclined wall member 10a extends between the front passage wall 10 and the upper wall 10b and it is of course obvious that this inclined wall 10a may be shortened so that the front wall 10 may be moved forward to the front part of the horizontal wall 11 whereby the gas passage may be provided between the top of the extension 11 substantially vertically to the opening 10h of the rotatable vane housing if this is desired.

As mentioned above, the cooking gases are guided along paths designated by the lines 10k and it will be

observed that these paths are of a tortuous configuration so that the gases more or less abruptly change direction in their passage through the vane structure and this is desirable since it enhances the extraction of greases carried by these gases. The greases extracted from the gas drop down upon the baffle portions 10c and flow from these downward through the passage. Some of the grease will of course drop upon the inclined wall 10a and flow downward along this wall to the trough portion 18 in the lower part of the ventilator structure and such grease as is collected in this trough may be scooped out therefrom when it is congealed or suitable drain pipes may be provided to this trough portion at spaced intervals for the purpose of draining the grease out of the trough portion when the grease is in fluid condition.

The embodiment of this invention shown in Figs. 5 and 6 may be either manually tripped as described above in connection with the description of Figs. 2 and 3 or it may be tripped by an electromagnetic mechanism that may be either manually controlled by an electric switch or it may be controlled by means of thermostats suitably located on the lower part of the vent structure. The housing 11a that is positioned on top of the extension 11 is provided for the purpose of enclosing the relay 50 which has associated therewith a magnetic armature 51, the lower end of which is attached to the rod 52 by means of a pin 52a. The lower end of this rod 52 is provided with a roller 53 that is adapted to support one end of the arm 54, the other end of which is pivotally supported on the plate 39, and this arm 54 is adapted to engage the arm 31 that is attached to the member 29. The housing 11a also encloses a switch 56 that is supported therein on the bracket 57 and this switch is provided with an actuating member 55 that projects into the extension 11 and rides on the member 20a that is provided with an inclined portion and a horizontal portion. This member 20a is supported by one of the members 20 for the purpose of actuating the switch 56 as will be described hereinafter. The relay 50 and switch 56 are connected as shown in the wiring diagram illustrated in Fig. 6.

This wiring diagram shows a pair of relays 50 and 50a and a pair of switches 56 and 56a which are connected to individual terminal boards 65 and 65a and this arrangement may be employed for controlling a pair of door operating mechanisms that may be provided to a single ventilator structure and blower arrangement.

The wiring diagram illustrates a pair of terminal blocks 65 and 65a, each having five terminal positions A, B, C, D and E, and each of these terminal positions includes an upper terminal and a lower terminal. Each of these terminal blocks may be positioned in a housing such as the relay housing 11a and it may be associated therein with the particular relay 50 and switch 56 that are connected to selected lower terminals thereof. The lower terminals A and C of the block 65 are connected to a suitable source of current supply such as the conventional 115 v. supply. One side of the relay 50 is also connected to the lower terminal C and the other side of this relay is connected to the lower terminal B. The lower terminals D and E are connected to the blower cut-out switch 56. In the case of the terminal block 65a, the lower terminals B and C are connected to the relay 50a and the lower terminals D and E are connected to the switch 56a. The upper terminals A and B of each of the blocks 65 and 65a are connected together by the conductors 66 and 67 and the thermostats 63 are bridged across these conductors as shown. The manual switch 64 is also bridged across these conductors. Accordingly, when either of the thermostatic switches 63 or the manual switch 64 are closed the circuits between the 115 v. current supply and the windings of the relays 50 and 50a are closed. The upper terminal C of the blocks 65 and 65a are connected together by the conductor 68, the upper terminals D of the

5

blocks 65 and 65a are connected together by the conductor 69 and the upper terminals E of these blocks are connected to the respective upper terminals of the blower control switch 62 by means of the conductors 70 and 71, respectively. The lower terminals of this switch 62 are connected to the magnetic switch 61 which is connected to the 110 v., 220 v. source of supply, and to the blower motor 60. The blower motor 60 and the blower associated therewith are positioned to provide a forced draft through the passage of the ventilator structure 10 and for this purpose they may be located at any desirable point along the stack forming this passage.

The blower cut-out switches 56 and 56a are positioned in the relay housing 11a as shown in Fig. 5 and these switches are adapted to be held closed by the operating rods such as rod 55 which is adapted to engage the member 20a. Accordingly, when this rod engages the inclined portion of the member 20a, that is, when the members 20 are shifted to the left in the closing of the door 15, the switch 56 is opened and the blower is cut out when the door 15 is closed. When the door 15 is opened, the members 20 are in position so that the switch operating rod 55 engages the elevated portion of the member 20a and the cut-out switch 56 is closed so that the blower motor may be energized.

The form of this invention illustrated in Fig. 8 employs a ventilator structure that is provided with a horizontal opening 14a positioned more or less directly over the cooking surface and this opening 14a is adapted to be closed by the door 15a. The door 15a cooperates with the wall structure 80 and 81 which define the opening 14a and the wall structure 81 is provided with a trough 82 at the lower end thereof encircling the front and sides of the opening 14a and this trough may be arranged to catch any grease that may be precipitated around this opening from the cooking gases. This trough may be provided with an opening through the wall 80 for draining said trough. The wall 80 is joined to a horizontal wall 83 which is provided with a drain pipe 84 and this horizontal wall 83 is joined to the bottom end of the inclined wall 85 that extends to the rear wall 86. Another horizontal wall 87 is positioned above the inclined wall 85 and this horizontal wall 87 defines the upper extent of the gas passage leading to the rotatable vane structure 88 which is positioned above the opening 87a in the wall 87 and is also similar to the rotatable vane structure disclosed in Patent No. 2,793,712 mentioned above. This rotatable vane structure is positioned above the opening 87a which is smaller than the diameter of said vane structure so that the gases entering said opening are caused to follow a tortuous path as indicated generally by the lines 87b. The horizontal wall 87 extends forward over the top of the door mechanism including the door 15a and the operating mechanism therefor.

The door 15a is attached by means of a hinge 89 and is provided with a band member 90 having bent end portions 91 and 92, said band being attached at these bent portions to the front and back of the door 15a. This band member 90 is provided with a portion 90a which is adapted to engage the bottom of the rod 55 which actuates the switch 56. The switch 56 and the relay 50 are positioned in a small housing 11a that is attached to the top of the horizontal wall 87 and the switch actuating rod 55 and the relay rod 52a extend into the ventilator structure through suitable openings formed in the bottom of the housing 11a and aligned with corresponding openings formed in the horizontal wall 87.

A member 93 of substantially triangular configuration, is also attached to the door 15a and this member extends upward from this door so as to be straddled by the parallel members 94 which are positioned one on each side of the vertical member 93. A pin 95 is carried by the parallel members 94 and this pin 95 is adapted to en-

6

gage one of the sides of the triangular member 93 to lift the door 15a to its open position when the operator pulls on the handle 13a so that rod 12a and members 94 are shifted laterally. When the door is open the top of the triangular member 93 engages the latching member 96 which is attached by the screw 97 to one end of the channel member 98, the other end of which is attached by the spring hinge to the vertical frame member 101 that extends between the horizontal member 87 and the wall 81.

The member 100 is attached to the top of the latching member 98 and this member 100 is provided with a pin for pivotally attaching it to the bottom of the relay rod 52a.

The door 15a is shown in open position in Fig. 8 and it is also shown in broken lines in closed position. It is held in the open position by means of the triangular member 93 when the latter is in engagement with the latch 96 that is supported on the latching member 98 by the screw 97. When it is desired to close the door 15a manually, the handle 13a is pressed inwardly a short distance so that the parallel members 94 engage the depending portion of the latch 96 and cause this latch 96 to be elevated sufficiently so that the triangular member 93 is released thereby. The depending portion of the latch 96 is provided with an inclined surface so that the ends of the parallel members 94 may slidably engage this inclined surface and move the latch upward. When the member 93 is disengaged by the latch 96, the door 15a is free to move by gravity to its closed position in which it closes the opening 14a. When the operator desires to open the door 15a, he simply moves the handle 13a and the rod 12a attached thereto outward so that the pin 95 slidably engages the side of the triangular member 93 and thereby elevates the door 15a away from the opening 14a until the upper portion of the triangular member 93 is engaged by the latch 96 and held thereby.

The door 15a may also be unlatched by energizing the relay 50 which is connected as shown in the wiring diagram, Fig. 6. When the relay 50 is energized it functions to lift the member 98 which is connected to the relay armature by the member 100 and the rod 52a, and the member 93 is unlatched.

In Figs. 9 and 10 there is shown another embodiment of this invention which may be employed as a broiler hood and the like and the back wall structure of which may be coincident with or the same as the wall 86 of the hood structure shown in Fig. 8, in which case both hood structures may open into the same stack such as the stack 111a. This hood is provided with rear wall structure 110, a top wall 111 and a front wall 112. The front wall terminates in a trough 113 and slightly above this trough there is provided an inclined wall 114 which terminates in a vertical section 115 that defines one of the lips of the opening 116. This opening is adapted to be closed by the door 117 which is provided with a vertical triangular member 118. The door 117 is supported by the hinge 120 on the corner of the horizontal wall 122 and vertical wall 121 and the horizontal wall 122 extends from the door 117 to the front wall 112.

The door operating mechanism which will be described in detail hereinafter, is positioned between the horizontal walls 122 and 123 which extend between the front wall 112 and the wall 121. While the walls 122 and 123 are shown joined to these walls 112 and 121, they may be provided with wall extensions positioned behind the front wall 112 and in front of wall 121 to form the front and back of the rotor housing in cases where the bottom 88a and top 88b of this housing are extensions of the walls 122 and 123, respectively.

The rotatable vane structure 88, similar to the rotatable vane structure 10 shown in Fig. 4, is adapted to be positioned in a housing having a bottom wall 88a and a top wall 88b which may be extensions of the walls 122

and 123, although they may be separate. The vane structure 88 may be positioned either back of or to the front of the door operating mechanism illustrated in Fig. 9 and in Fig. 10 it is shown in front of this mechanism.

The member 118 that is attached to the door 117 is provided with an elongated slot 119 that is adapted to engage the actuating member 125 carried by the rod 124. This rod 124 is attached to the rod 124a by the coupling members 127 which are provided with projections that engage one end of the compression spring 126 which is positioned between these projections and the wall 128 through which the rod 124a extends. The wall 128 defines a compartment in which are positioned the door latching and trip mechanisms including the relay 50 and the blower cut-out switch 56. The latch 130 is supported on the wall 128 by a spring hinge 135 and this latch carries a member 131 that is adapted to engage the forward end of the members 129, which forward end is attached to the rod 124a. The members 129 comprise a pair of strip members that are held together by bearing members 21a in which the rod 12b is slidably supported. The rod 12b is provided with a trip member 22a which is fixedly attached to said rod and is adapted to engage the forward portion of the trip lever 23a that is pivotally attached to the members 129 by the pin 24a. The rod 12b is also provided with an actuating handle 13b that is positioned on the outside of the wall 112.

The trip member 130 is provided with an extension to which the upstanding member 132 is attached and this member 132 is pivotally attached to the armature of the relay 50 which is supported by a suitable bracket attached to the top wall portion 128 of the compartment. One of the strip members 129 is provided with a switch actuating member 133 which is shaped with a horizontal portion and an inclined portion for the purpose of actuating the switch 56 when the members 129 are shifted laterally. The switch 56 is supported on the bracket 134 that is attached to the wall 112.

The inclined wall 114 is positioned below the rotatable vane structure 88 and as a result grease will collect on this wall. In order to facilitate removal of this grease, this wall may be made removable. It may be provided with an angular extension extending down into the trough 113 to hold it in place. On the other hand the wall 114 may be provided with a door similar to the door 110a in the inclined wall opposite to the wall 114. The door 110a is provided with edge flanges that are frictionally held in a groove formed around the door opening.

The door 117 may be opened by pulling the rod 12b outward by gripping the handle 13b and when this is done the pin 125 carried by the rod 124 slidably engages the member 118 in the slot 119. Thus when the door 117 is closed this pin is in the upper end of the slot 119 as shown by the broken lines and when the door is open it is in the lower end of this slot as shown in Fig. 9. When the door is open the spring 126, that is positioned on the rod 124a between the projections of the members 127 and the wall 128, is compressed. The door is held open and the spring 126 is held compressed by the latching member 131 which engages the end of the members 129 and thus prevents the spring 126 from closing the door 117 until this latch member is released. Releasing the latch member may be accomplished manually by pressing the handle 13b and causing the rod 12b to press the trip member 22a against the lever 23a thereby lifting the trip member 130; or releasing the latch member may be accomplished by energizing the relay 50 thereby causing this relay to lift its armature and the member 132 which is attached to the trip member whereby said trip member may be lifted out of engagement with the end of the strip members 129.

Releasing the latch member permits the spring 126 to close the door 117 and also permits the rod 124a which is attached to the members 129 to move these latter members laterally with said rod. Since the switch operating

member 133 is attached to one of the members 129, movement of these latter members also moves the switch actuating member 133 and permits the switch 56 to be opened to cut off the blower motor as previously described in connection with the description of the wiring diagram.

While we have shown and described a preferred manner of carrying out our invention, and a preferred apparatus for the same purpose, the invention is obviously capable of modification and variation from the form shown, so that the scope thereof should be limited only by the scope of the claims appended hereto.

What we claim is:

1. In ventilator structure adapted for exhausting cooking gases from cooking surfaces of ranges the combination of wall structure forming a passage for exhausting cooking gases from the cooking surface of a range, said passage having an opening for admitting the cooking gases into said passage, a door for said opening, means for supporting said door so that the position of said door both in open and closed position is visible to the cooking range operator, said door being adapted to close the bottom of said gas exhausting passage so that no grease collecting wall parts of said passage are exposed at the bottom thereof when said door is closed, said door supporting means comprising an arm, means for pivotally supporting one end of said arm on said wall structure and means for attaching the other end of said arm to said door, a lever, means for pivotally supporting said lever on said wall structure, means for moving one end of said lever into engagement with said arm for moving said door into open position, latching means for engaging the other end of said lever for holding said door in open position, means for disengaging said latching means from said lever and means for closing said door when said latching means is disengaged from said lever.

2. In ventilator structure adapted for exhausting cooking gases from cooking surfaces of ranges the combination of wall structure forming a passage for exhausting cooking gases from the cooking surface of a range, said passage having an opening for admitting the cooking gases into said passage, a door for said opening, means for supporting said door, so that the position of said door both in open and closed position is visible to the cooking range operator, said door being adapted to close the bottom of said gas exhausting passage so that no grease collecting wall parts of said passage are exposed at the bottom thereof when said door is closed, said means comprising an arm, means for pivotally supporting one end of said arm on said wall structure and means for attaching the other end of said arm to said door lever, means for pivotally supporting said lever on said wall structure, means for moving one end of said lever into engagement with said arm to hold said door in open position, latching means for engaging the other end of said lever for maintaining said one end of said lever pressed against said arm so that said lever holds said door in open position, electromechanical means for disengaging said latching means from said lever, thermostatically controlled switch means for controlling said electromechanical means, said thermostatically controlled switch means being positioned to be responsive to ignited gases above the cooking surface, and means for closing said door when said latching means is disengaged from said lever.

3. In ventilator structure adapted for exhausting cooking gases from cooking surfaces of ranges the combination of wall structure forming a passage for exhausting cooking gases from the cooking surface of a range, said passage having an opening for admitting the cooking gases into said passage, a door for said opening, means for supporting said door so that the position of said door both in open and closed position is visible to the cooking range operator, said door being adapted to close the bottom of said gas exhausting passage so that no

grease collecting wall parts of said passage are exposed at the bottom thereof when said door is closed, said door supporting means comprising an arm, means for pivotally supporting one end of said arm on said wall structure, means for attaching the other end of said arm to said door, a lever, means for pivotally supporting said lever on said wall structure, means for moving one end of said lever into engagement with said arm to hold said door in open position, latching means for engaging the other end of said lever for holding said door in open position, means for disengaging said latching means from said lever, means for closing said door when said latching means is disengaged from said lever, and manually operable means also engaging the other of said levers for opening said door.

4. In ventilator structure adapted to be used to exhaust gases from cooking ranges the combination of a wall structure forming a ventilating passage for exhausting cooking gases, said passage having an opening near the bottom thereof for admitting said cooking gases, means for supporting said structure above the cooking surface of the cooking range, a door for closing the lower end of said passage to cut off air circulation from said passage in case the cooking gases are accidentally ignited, means including an arm for pivotally supporting said door, said door being adapted to close said opening near the bottom of said gas exhausting passage so that no grease collecting wall parts of said passage are exposed at the bottom thereof when said door is closed, a lever engaging said arm for holding said door in open position, said door being adapted to be swung away from said opening against a wall of said passage whereby when said passage is opened, said door does not obstruct passage of cooking gases therethrough, latch means for latching said lever when said door is in open position, means for tripping said latching means, means for closing said door when said latching means is tripped, said tripping means including means adapted to be moved in one direction to trip said latching means and in the other direction to move said lever into engagement with said arm and open said door.

5. In a ventilator structure adapted for exhausting cooking gases from cooking surfaces of ranges, the combination of wall structure forming a passage for exhausting cooking gases from the cooking surface of a range, said passage having an opening for admitting the cooking gases into said passage, a door for said opening, means for supporting said door so that the position of said door both in open and closed position is visible to the cooking range operator, said door being adapted to close the bottom of said gas exhausting passage so that no grease collecting wall parts of said passage are exposed at the bottom thereof when said door is closed, said door supporting means comprising an arm, means for pivotally supporting one end of said arm on said wall structure and means for attaching the other end of said arm to said door, a lever, means for pivotally supporting said lever on said wall structure, manually operable means connected to one end of said lever and adapted to be pulled by the cooking range operator to bring the other end of said lever into sliding contact with said arm to open said door, said lever also having means for frictionally engaging said arm to hold said door in open position, latching means for engaging the other end of said lever for holding said door in open position, means for disengaging said latching means from said lever and means for closing said door when said latching means is disengaged from said lever.

6. In a ventilator structure adapted to be used to exhaust gases from cooking ranges the combination of a wall structure forming a ventilating passage for exhausting cooking gases, said passage having an opening near the bottom thereof for admitting said cooking gases, means for supporting said structure above the cooking surface

of the cooking range, a door for closing said opening near the bottom of said passage to cut off air circulation from said passage in case the cooking gases are accidentally ignited, an arm having one end attached to said door, means for pivotally supporting the other end of said arm on said wall structure, said door being adapted to close said opening near the bottom of said gas exhausting passage so that no grease collecting wall parts of said passage are exposed at the bottom thereof when said door is closed, a lever engaging said arm to swing said door into its open position, said arm being adapted to swing said door away from said opening and along side of a wall of said passage whereby when said door is open it does not obstruct passage of cooking gases through said passage, latch means for latching said lever to hold said door in its open position, means for tripping said latching means, means for closing said door when said latching means is tripped, and manually operable means adapted to be moved in one direction to engage said tripping means and to trip said latching means and in the other direction to move said lever into engagement with said arm and open said door.

7. In ventilator structure adapted to be used to exhaust gases from cooking ranges the combination of a wall structure forming a ventilating passage for exhausting cooking gases, said passage having an opening near the bottom thereof for admitting said cooking gases, means for supporting said structure above the cooking surface of the cooking range, a door for closing said opening near the bottom of said passage to cut off air circulation from said passage in case the cooking gases are accidentally ignited, an arm having one end attached to said door, means for pivotally supporting the other end of said arm on said wall structure, said door being adapted to close said opening near the bottom of said gas exhausting passage so that no grease collecting wall parts of said passage are exposed at the bottom thereof when said door is closed, a lever engaging said arm to swing said door into its open position, said arm being adapted to swing said door away from said opening and alongside of a wall of said passage whereby when said door is open it does not obstruct passage of cooking gases through said passage, releaseable means engaging said lever to hold said door in its open position, means for closing said door when said releaseable means is released, and manually operable means for releasing said releaseable means when moved in one direction so that said closing means closes said door and for engaging said lever to open said door when moved in the opposite direction.

8. In ventilator structure adapted to be used to exhaust gases from cooking ranges the combination of a wall structure forming a ventilating passage for exhausting cooking gases, said passage having an opening near the bottom thereof for admitting said cooking gases, means for supporting said structure above the cooking surface of the cooking range, a door for closing said opening near the bottom of said passage to cut off air circulation from said passage in case the cooking gases are accidentally ignited, an arm having one end attached to said door, means for pivotally supporting the other end of said arm on said wall structure, said door being adapted to close said opening near the bottom of said gas exhausting passage so that no grease collecting wall parts of said passage are exposed at the bottom thereof when said door is closed, a lever having one end engaging said arm to swing said door into its open position, means for pivotally supporting said lever on said wall structure, said arm being adapted to swing said door away from said opening and alongside of a wall of said passage whereby when said door is open it does not obstruct passage of cooking gases through said passage, latch means for latching said lever to hold said door in its open position, means for tripping said latching means comprising a shiftable member hav-

11

ing one end rotatably attached to the other end of said lever, a rotatable member attached to said shiftable member for engaging said latch means and an elongated member for engaging said rotatable member to unlatch said latch means, means for closing said door when said latch means is tripped, said shiftable member including means adapted to be moved in one direction to trip said latch means and in the other direction to move said lever into engagement with said arm and open said door.

5

12

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