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VENTILATING APPARATUS

Filed May 23, 1930

Fig. 1.

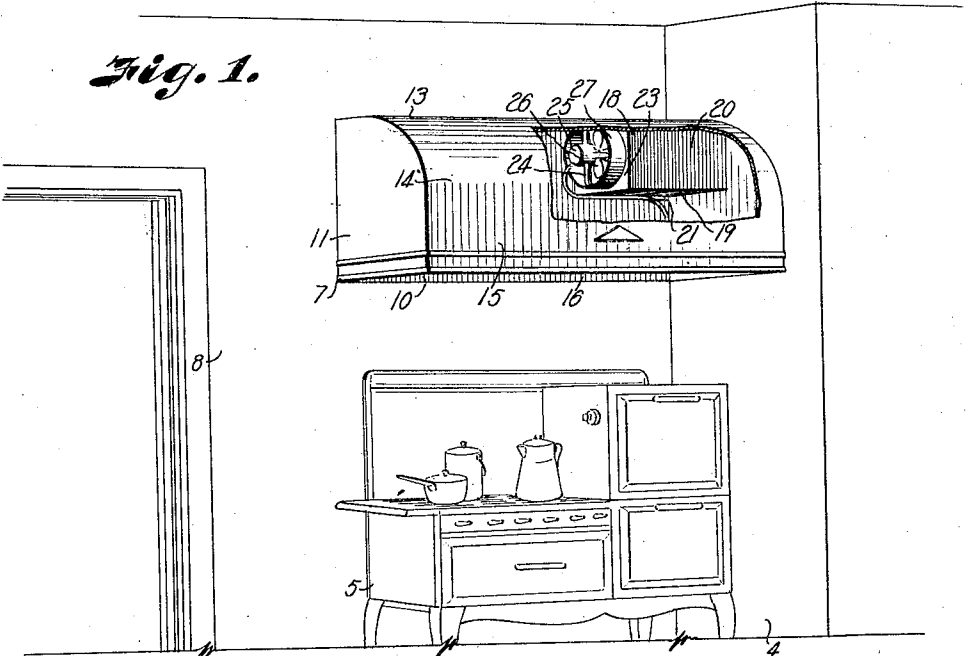


Fig. 2.

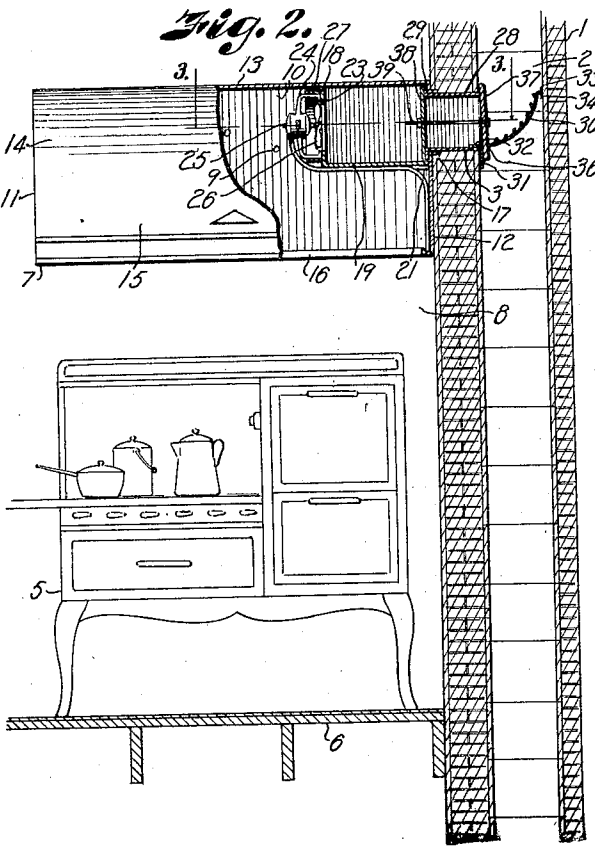


Fig. 3.

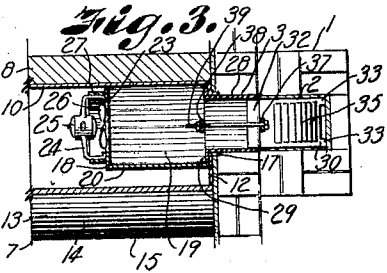
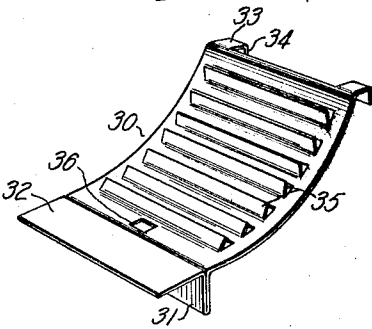


Fig. 4.



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VENTILATING APPARATUS

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My invention relates to ventilating systems and more particularly to apparatus for drawing cooking odors, excessive heat, smoke, steam and the like arising from cook stoves and other sources into a chimney or flue to be discharged.

The principal objects of my invention are to provide an apparatus for this purpose that is simple in construction, effective in operation, and that will function successfully irrespective of wind conditions.

In accomplishing these and other objects of my invention I have provided improved details of structure, the preferred form of which is illustrated in the accompanying drawing, wherein:

Fig. 1 is a perspective view of a canopy, illustrated in functional relation to a stove, a part of the canopy being broken away to show an exhaust cabinet and fan.

Fig. 2 is an elevational view of the stove and a portion of the canopy; the exhaust cabinet, flue and a deflector plate being shown in central vertical section.

Fig. 3 is a fragmentary view on the line 3-3 Fig. 2, illustrating the exhaust cabinet in central section and showing a plan view of the deflector plate.

Fig. 4 is a detail perspective view of the deflector plate.

Referring more in detail to the drawing: 1 designates a chimney extending above the roof of a house and having a vertical conduit 2 and a transverse, square flue opening 3 communicating the conduit with the interior of a kitchen 4.

Extending above a stove 5, supported on the floor 6 of the room is a canopy 7, fixed to a wall 8 of the room by nails 9 or the like driven through the rear wall 10 of the canopy. The canopy further includes end walls 11 and 12 and a top wall 13, curved as indicated at 14 and terminating in a front wall 15, thus forming a rectangular mouth 16 for the canopy, sufficiently large to extend over the entire stove.

An inwardly directed flange 17 on the end 12 of the canopy is seated in the opening 3 of the chimney and a vacuum exhaust cabinet 18 comprising a lower wall 19 and a front

wall 20 is fixed in the upper corner of the canopy adjacent the flue by flanges 21, welded or otherwise secured to the rear and upper walls of the canopy.

Mounted on a peripheral flange 23 of the inlet end of the exhaust cabinet is a motor support 24, carrying a motor 25 for driving a fan 26 of a diameter corresponding to the distance across the opening 3 of the flue, a ring 27 surrounding said support to increase the suction of the fan.

A peripheral lining 28 in the opening 3 is provided with an outwardly directed flange 29, adapted to engage the end 12 of the canopy, and is retained therein as presently described.

Mounted in the channel 2 of the chimney is an arcuate deflector plate 30 having a depending end flange 31, retractively bent and extended in a line with the plate to form a lip 32 seated on the lower wall of the lining 28, the opposite end of the deflector plate terminating in spacing fingers 33 having downwardly depending portions 34 for engaging the inner wall of the chimney.

The deflector plate is further provided with a series of louvers 35, and with an opening 36 adjacent its flange 31 for receiving a bar 37, crossing the inner end of the opening 3, a complementary bar 38 being mounted across the opposite end of the opening and a bolt 39 being extended centrally through the bars to securely retain the exhaust cabinet and the deflector plate adjacent the flue opening.

Assuming an apparatus to be constructed and assembled with a flue as described, its operation would be as follows:

Rotation of the fan by the motor draws vapors and odors arising from the stove upwardly into the canopy and into the exhaust cabinet to be expelled therefrom into the chimney.

Since the chimney ordinarily extends above the roof of the building the vapors are carried sufficiently far from their source to prevent their return into the building as frequently occurs with ventilating systems discharging smoke and the like through a wall and into the atmosphere.

Due to the position of the cabinet in the canopy, a maximum degree of vacuum is produced above the stove and because of the arcuate deflector plate in the channel of the chimney down-draft is prevented, so that burners, or the like, connected to the lower end of the chimney are not affected through operation of the ventilator.

What I claim and desire to secure by Letters Patent is:

1. In combination with a stove and a chimney having a flue opening communicating with a room containing the stove, a canopy supported above the stove, an exhaust cabinet open at both ends in the canopy and communicating with said flue opening, an exhaust fan in one of the open ends of the cabinet for drawing vapors from the room and delivering the same into the chimney, through the remaining open end of the cabinet, a deflector plate in the chimney, and common means for securing the cabinet and the deflector plate in their relative positions.

2. In apparatus of the character described, in combination with a wall having an opening, a canopy having an opening in one end, a flange surrounding said opening and adapted to seat in the wall opening, an exhaust cabinet in the canopy adjacent the wall opening and communicating therewith, a lining in the wall opening having a flange engaging the first-named flange, bars across the opposite ends of said opening, and a bolt extended through the bars for securing the lining in the wall opening to maintain the canopy adjacent said opening.

3. In apparatus of the character described, in combination with a chimney having a flue opening, a canopy having an opening in one end, a flange surrounding said canopy opening and adapted to seat in the flue opening, an exhaust cabinet open at both ends in the canopy adjacent the flue opening and communicating therewith, at one end, a fan located adjacent said cabinet and aligned with the opposite end thereof a lining in the flue opening having a flange engaging the first-named flange, a deflector plate in the chimney below the flue opening, and common means for securing the lining and plate in their respective relation with the flue opening.

4. In apparatus of the character described, in combination with a chimney having an intermediate lateral flue opening, a deflector plate in the chimney having a lip extending into said opening, upwardly directed louvers in the plate to permit flow of air from the lower portion of the chimney through the plate, an exhaust cabinet open at both ends adjacent the opposite end of the flue opening, and having one of its open ends registering with said flue opening, a fan positioned at the remaining open end of said cabinet and means for securing the exhaust cab-

inet and deflector relative to the flue opening.

5. In apparatus of the character described, in combination with a chimney having a flue opening, an exhaust cabinet having an opening in one end wall, a flange surrounding said cabinet opening and seated in the flue opening, a lining in the flue opening having a flange for engaging said end wall of the cabinet, a deflector plate in the chimney having a lip extending into the flue opening, a stop flange on the plate, and common means for securing the exhaust cabinet, lining and deflector plate relative to the flue opening.

6. In apparatus of the character described, in combination with a chimney having a lateral flue opening, an exhaust cabinet having an opening in one end wall, a flange surrounding the cabinet opening and seated in the flue opening, a lining in the flue opening having a flange for engaging said end wall of the cabinet, an arcuate deflector plate in the chimney having a series of louvers, a lip on the plate extending into the flue opening, a stop flange on the plate, a bar across one end of the flue opening and extending through the plate adjacent the stop flange, a bar across the opposite end of the flue opening and engaging the end of the cabinet, and means for drawing the bars together.

7. In apparatus of the character described, in combination with a chimney having a lateral square flue opening, an arcuate deflector plate in the chimney having a transverse end lip extending into said opening, and having spacing fingers on its opposite end for engaging the chimney wall, an exhaust cabinet on the opposite end of the flue opening, and means for securing the exhaust cabinet and deflector plate relative to the flue opening.

In testimony whereof I affix my signature.

FRANK G. RYAN.