July 6, 1965 M. L. STARK ETAL 3,192,852

VENT FOR ROOM SPACE HEATERS

Filed July 31, 1963

FIG. 1.

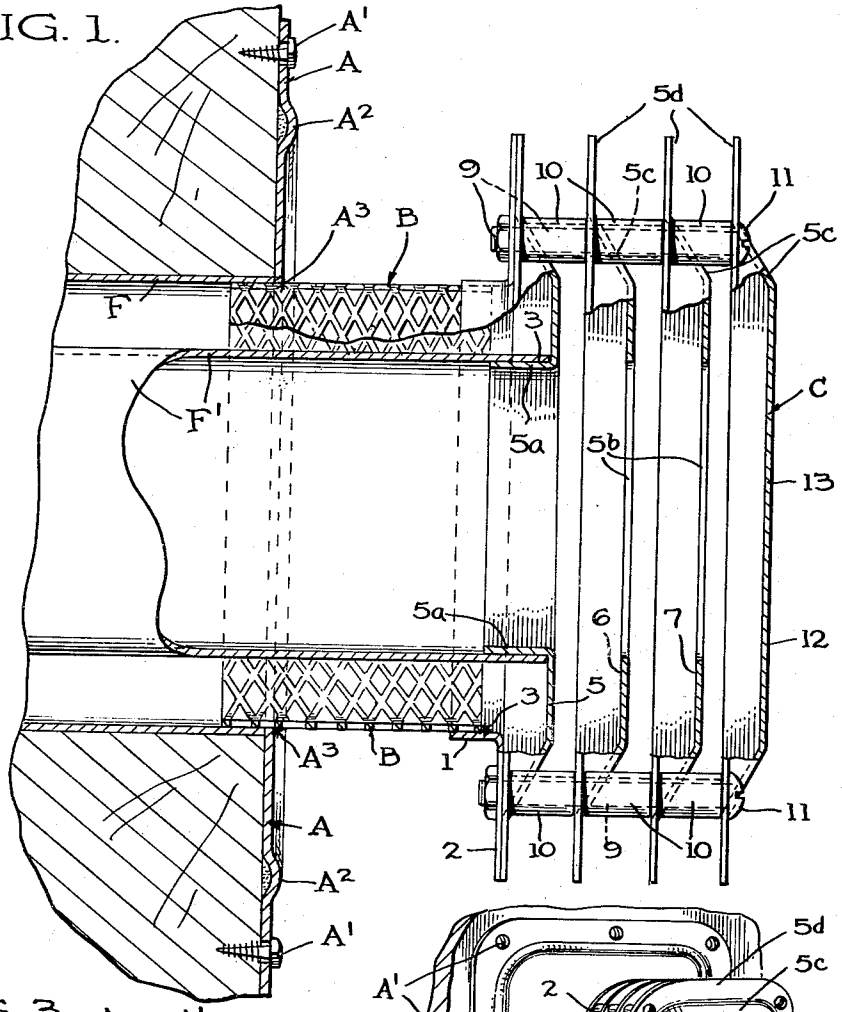
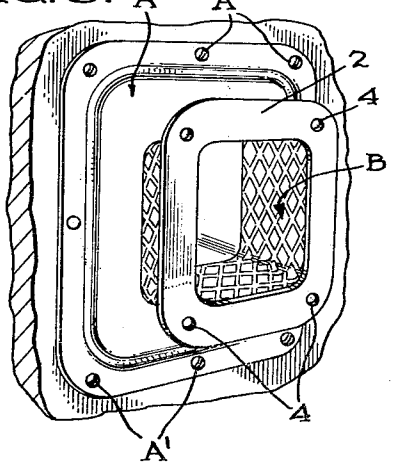


FIG. 3.



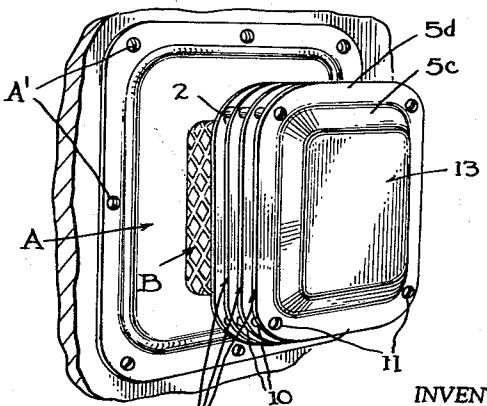


FIG. 2.

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VENT FOR ROOM SPACE HEATERS

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2 Claims. (Cl. 98—62)

This invention relates to a unit for venting and dispersing products of combustion exhausted from the burner of a room space heater while at the same time amply providing for supplying fresh air to the intake of the combustion chamber.

One of the objects of the invention is to provide a simple and practical form of construction which lends itself to standard manufacturing procedures, such as metal stamping, and which when completed may be readily mounted on a flue outlet by relatively unskilled workmen.

A further object of the invention is to provide an exhaust unit which is sturdy in the respect that it includes spaced dished rectangular spent gas baffles whose edges are not likely to be damaged by high winds, possibly with entrained objects such as boughs or limbs of trees, while providing for complete and rapid dispersion of spent gases and also providing a substantial fresh air intake unit through the use, for example, of diamond mesh expanded metal whose inherent stiffness lends itself to a preformed rectangular shape readily fitted into a wall plate to enter a rectangular fresh air flue.

With the above and other objects in view which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated, and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings, in which:

FIG. 1 is a vertical sectional view of the venting unit installed in a building wall.

FIG. 2 is a perspective view of the unit shown in FIG. 1.

FIG. 3 is a perspective view of the wall attaching plate and the expanded metal fresh air intake which carries the first of the baffles for the flue gases.

Similar reference characters designate corresponding parts throughout the several figures of the drawing.

Referring first to FIG. 1, it will be seen that the present assembly includes a rectangular wall mounting plate A provided with suitable openings A′ for receiving screws or other fastenings to mount the unit on an external face of a building wall adjacent the installation of the room space heater, usually of the gas type.

The plate A is provided with a calking material receiving groove A^2 to seal the surface between the unit and the wall.

Heretofore, it has been the general custom to make venting units of circular cross section. However, it has been found that such units not only frequently turn or twist along the general longitudinal center of the installation, either because of an applied external force, or in some cases by vibration, but also become easily crushed or deformed by accident or design, thereby impairing their efficiency and usefulness.

Accordingly, the present invention, in its general aspect, includes a wall attaching plate A, an expanded metal fresh air intake unit B, and a gas outlet unit C.

The unit B is of substantially rectangular cross section and also presents sufficient stiffness to withstand external pressures tending to displace the same, while, at the same time, insuring the free passage of fresh air in contrast with similar fine mesh screen which often collects dust, pollen, rust or the like.

The outlet unit C, as will presently appear, presents a series of rectangular plates with stiffened medial portions and substantial impact resisting exposed edges.

The inner end of the diamond mesh expanded metal air intake B is telescopically fitted into the rectangular external fresh air flue F, while the rectangular combustion flue F′ passes entirely through the screen unit and communicates with the diffusion labyrinth of the outlet unit. At the point where the screen passes through the attaching plate A, it is welded thereto as indicated at A^3.

The outer end of the rectangular expanded metal mesh B is telescopically fitted in the inwardly offset collar **1** of the primary supporting plate **2** of the exhaust unit C to which collar the mesh is spot-welded as indicated at **3**.

The plate **2** is provided with openings **4** for the purpose of assembling thereto a series of rectangular medially dished venting baffle plates **5**, **6**, **7**. The first of these plates is provided with a central collar *5a* connected to the outer end of the combustion flue F′.

The plate **5**, along with plates **6** and **7**, constitute a group of intermediate gas dispersion plates having central rectangular openings *5b*, inclined side walls *5c*, and the flat outer flanges *5d*. While the gas dispersion plates **5**, **6**, **7** have registering openings *5a*, nevertheless the end plate **12** has a solid wall **13** as clearly appears from FIGS. 1 and 2.

The inclined walls *5c* and a portion of the flanges *5b* are provided with alined openings **9** to receive spacing sleeves **10**. These sleeves are in turn held in assembled relation to the primary supporting flange **2**, which is welded to the expanded mesh B, by screw-type bolts **11**.

From the foregoing, it will be seen that as the combustion gases pass through the flue F′, they will enter the gas dispersion unit comprising the series of spaced rectangular dispersion plates **5**, **6**, and **7**, and, upon striking the inner face of the wall **13**, will be diverted and distributed into the outer atmosphere between all of the flanges *5d* so that there will be no danger of the collection of carbon monoxide fumes in concentrated volume.

At the same time, it will of course be understood that the fresh air for the burner is taken into the burner chamber through the expanded mesh B.

The arrangement shown and described not only effectively accomplishes positive gaseous dispersion, but, at the same time, aids in directing rain water or the like away from the fresh air intake flue F as well as the gaseous flue F′, while resisting extraneous forces of the type referred to.

We claim:

1. A combined air intake and gaseous flue venting unit for fuel burners of room space heaters and the like, comprising,

a rectangular supporting plate (A) having a rectangular opening,

a rectangular expanded metal fresh air intake member (B) fitted into said rectangular opening and secured to said supporting plate (A),

and a gas dispersion outlet unit (C) fitted to the outer end of said fresh air intake member,

said unit including,

an inner supporting plate (**2**) having a rectangular collar (**1**) to which the rectangular expanded metal mesh is welded,

a gaseous flue connecting plate (**5**) having a central opening defined by an annular flange (*5a*) for connecting with the gaseous flue of the burner installation,

an outer impervious plate (**12**),

and a series of plates (**6**, **7**) between said supporting plate (**5**) and the outer impervious plate (**12**), all of the series of plates having registering openings,

and means for securing all of the plates of the gaseous dispersion outlet unit in spaced relation and to the supporting plate (2).

2. A combined intake and gaseous flue venting unit for fuel burners of room space heaters and the like, comprising,

a rectangular supporting plate (A) having a rectangular opening,

a rectangular expanded metal fresh air intake member (B) secured to said supporting plate (A) in said opening,

a gas dispersion outlet unit (C) fitted to the outer end of said rectangular fresh air intake member (B) said unit including,

an inner rectangular supporting plate (2) having a collar (1) to which the rectangular expanded metal member is welded,

an outer rectangular imperforate plate (12),

a rectangular gaseous flue connecting plate (5) of medially dished formation having a central opening defined by a rectangular collar (5*a*) connected with said gaseous flue,

a series of rectangular plates (6, 7) between said gaseous flue supporting plate (5) and the closed end wall plate (12), all of said plates having central registering openings,

a series of spacing sleeves (10) between opposite sides of all of the plates,

and a bolt like fastening (9) passing through said sleeves for securing all of the plates of the gas dispersion outlet unit to the flue supporting plate (2).

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