

[54] INDOOR COMBUSTION UNIT

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[58] Field of Search 126/120, 137, 25, 8

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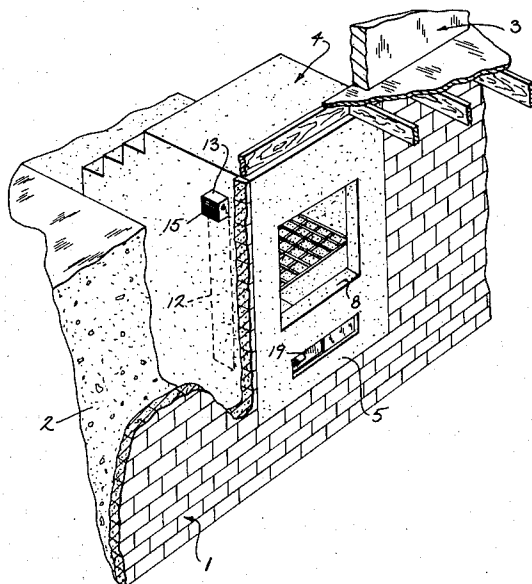
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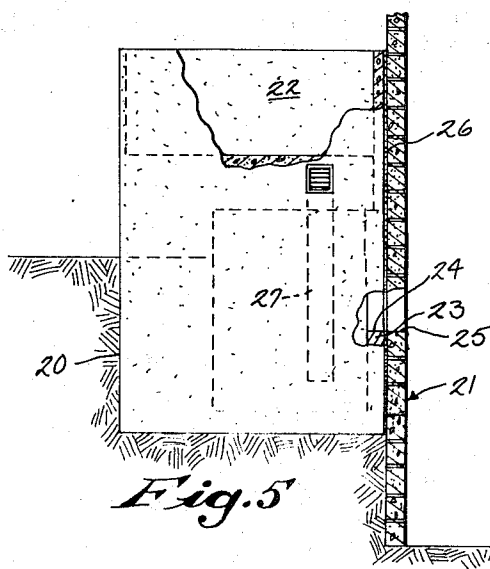
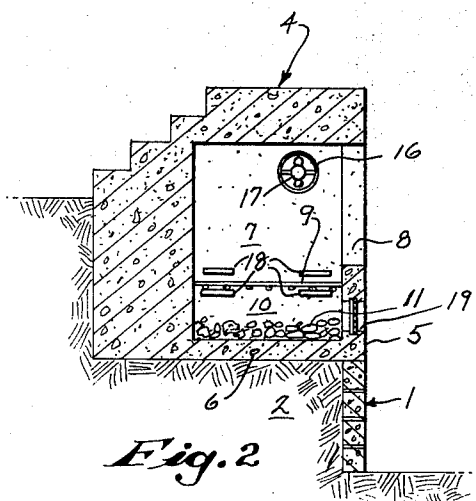
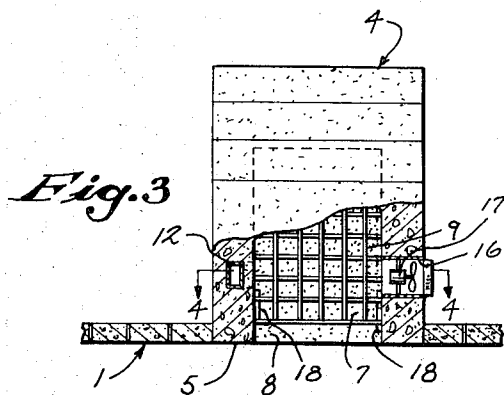
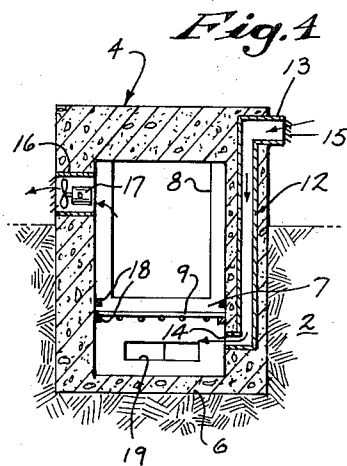
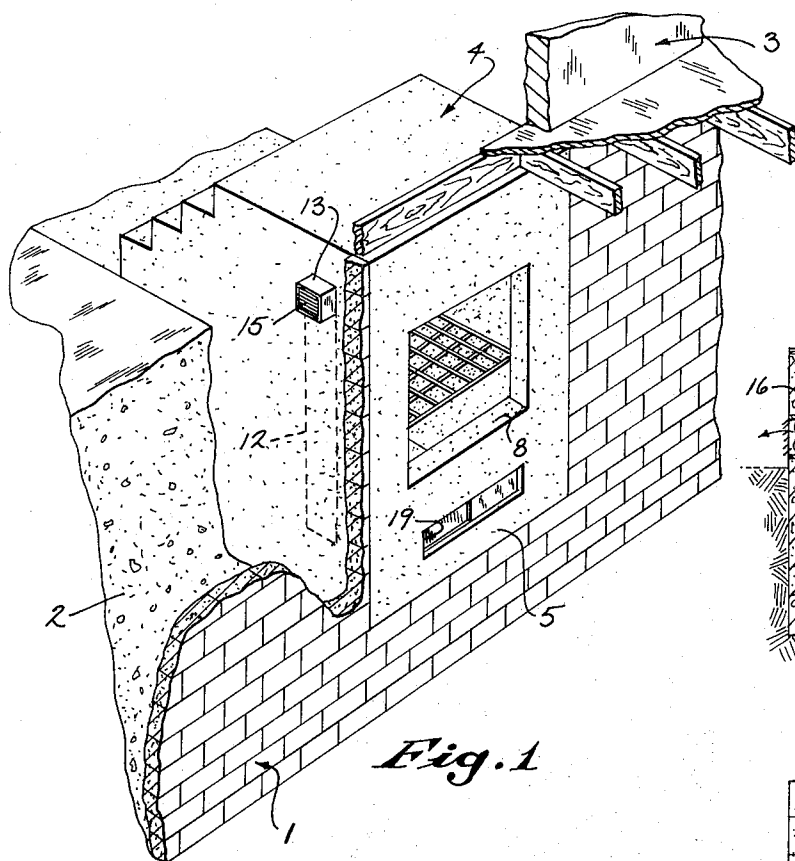
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ABSTRACT

A present concrete exterior unit such as step or planter unit for a home is constructed as a hollow unit with top, bottom and side walls and with the lower portion extended downwardly below the frost line and into the basement level. An appropriate opening in the basement wall exposes the interior of the hollow unit, which is provided with a grill and a charcoal chamber beneath the grill. An air duct is integrally formed in the sidewall of the unit with an air inlet located above the ground line and with an air discharge extending in the opposite direction into the combustion chamber. The opposite sidewall of the unit includes an air exhaust fan located above the ground line to provide a forced removal of air, grease and other foreign matter as the result of combustion.

10 Claims, 5 Drawing Figures





INDOOR COMBUSTION UNIT

BACKGROUND OF THE INVENTION

This invention relates to an indoor combination unit and particularly an open fire grill unit which can be built into a home or other building without the necessity for a chimney.

Many homes having fireplaces which include a grill adapter to permit cooling within the fireplace. Alternatively, special grill units or construction are provided having a sunken combustion chamber with the grill supported immediately thereabove and with the usual chimney. All such units, of course, have required special chimney constructions and present certain hazards as a result of the accumulation of grease within the chimney. Further, the construction of the units are relatively expensive and add significantly to the cost of a home. There is, therefore, a very significant need for a relatively low cost grill unit for incorporation into the home.

SUMMARY OF PRESENT INVENTION

The present invention is particularly directed to an open fire grill-type unit which can be incorporated into a dwelling with a minimum expense. Generally, in accordance with the present invention, the grill unit is integrated into an exterior structural element of the housing such as a preformed step unit, a planter, or other similar unit. The integrated structural unit and grill unit can, of course, be built in place with suitable concrete blocks, bricks poured concrete or other elements but in a highly satisfactory construction is formed as a pre-cast unit. The grill unit is built into the structure with the interior wall exposed and provided with a grill opening. An air inlet passageway means is also built into a sidewall of the structural unit with an upper air inlet connected by a vertical channel or passageway means which terminates in an air discharge or outlet means below the grill and within the combustible chamber. An air exit or exhaust means is provided in spaced relation to the air passageway means and preferably in the opposite wall. A fan may of course be provided, preferably in the exhaust, to provide a forced air draft for optimum burning.

Thus in accordance with a particularly novel construction and feature of the present invention, a concrete exterior member such as step or planter unit is constructed as a hollow unit and built abutting or integrated into the conventional basement wall. The unit extends downwardly below the frost line and into the basement level. The basement wall is formed with an appropriate opening aligned with the unit to expose the interior of the hollow unit. A grill is located within the unit and is preferably provided at the lower level of the opening with a jack-type structure to permit selective spacing of the grill from the bottom wall of the unit. Means are provided for introducing charcoal or other desirable combustible materials beneath the grill. An air duct is integrally formed in the sidewall of the unit with an air inlet located above the ground line and with an air discharge extending in the opposite direction into the combustion area. The opposite sidewall of the unit is preferably provided with an air exhaust unit which includes a fan or the like to provide a forced removal of air. In addition the opening can be provided with glass doors or other removable or the like to pre-

vent withdrawal of air from the room and creation of drafts within the room if desired.

The present invention has been found to provide a very reliable and relatively inexpensive method of incorporating a grill unit or open fire grill into a housing unit or into a dwelling.

BRIEF DESCRIPTION OF DRAWING

The drawing furnished herewith illustrates the best mode presently contemplated by the inventor for carrying out the present invention in which the above advantages and features are clearly disclosed as well as others which will be clearly understood from the following description of the illustrated embodiments.

In the drawing:

FIG. 1 is a pictorial view of a grill unit incorporated into the basement level of a dwelling;

FIG. 2 is a vertical section through the grill unit shown in FIG. 1 and more clearly disclosing details of construction;

FIG. 3 is a top view of the unit shown in FIGS. 1 and 2 with parts broken away and sectioned;

FIG. 4 is a vertical section taken generally on line 4-4 of FIG. 3; and

FIG. 5 is a side elevational view of an exterior planter unit incorporating an open fire grill unit incorporating the teaching of the present invention.

DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

Referring to the drawings and particularly to FIG. 1, a fragmentary portion of a basement wall 1 located within a ground area 2 is illustrated. The illustrated basement wall is formed of the conventional concrete block widely employed in dwellings and the like. The dwelling 3 is, of course, supported upon the upper end of the basement wall generally at or somewhat above ground level. The dwelling 3 will have suitable door openings or the like above the ground level, with a suitable step assembly or unit 4 providing a convenient walk-up to the doorway. In accordance with the present invention the step unit is formed as a hollow unit having an inner wall 5 which is incorporated into the basement wall 1 exposed, within the dwelling. The step unit 4 further includes a bottom wall 6 as well as the usual top and the sidewalls to define a hollow chamber 7. The step unit projects downwardly as most clearly shown shown in FIGS. 2 and 4 below the ground level in accordance with the usual advisable construction to locate the bottom wall 6 below the three foot frost line. The chamber 7 thus projects downwardly below the frost line and the top edge of the basement wall 1. The wall 5 is provided with an opening 8 generally in alignment with the upper portion of the chamber 7, with a grill 9 suitably supported within the chamber 7 and just below the opening 8. The grill 9 thus is spaced upwardly slightly from the bottom wall 6 to form a combustion chamber 10 within which a suitable combustible material such as charcoal 11 is located.

Outside air is supplied to facilitate the burning of the charcoal 11 through a special integrated duct unit 12 embedded in the side wall of the step unit 4. The duct 12 is shown as a conventional rectangular duct unit extending through the one sidewall of the unit 4. The upper end terminates above the line of ground 2 and is provided with an inlet 13. The lower end of the duct 12 terminates in alignment with the lower end of the

chamber 10 and is provided with a discharge duct 14 for supplying of the air from the exterior into the combustion chamber 10. The inlet duct 13 may be provided with a suitable perforated closure or cover 15 such as closely spaced louvers or a suitable pivotal flap structure such as widely employed in connection with exterior wall fans.

The air is preferably drawn into the combustion chamber through a forced air system which, in the illustrated embodiment of the invention, includes a discharge duct 16 embedded in the opposite wall adjacent the upper end of the grill chamber. A fan 17 is mounted within the duct 16 and will thus provide a means which will positively create an air draft within the chamber 7 causing air to move inwardly through the duct 12 to facilitate burning of the charcoal 11 and then discharging of the air as well as grease and other foreign matter through the duct 16. The outer end wall of the duct 16 may of course also be provided with a perforated cover 8 similar to cover 15 or the like.

The opening 8 to the chamber 7 may also be provided with a set of glass doors, not shown, to minimize the drawing of air from the dwelling and thereby minimize drafts and the like.

Further the grill 9 may of course be adjustably mounted to permit variation in the spacing of the grill 9 from the bed of combustible material 11 in accordance with conventional practice, thus the grill 9 can be provided with a plurality of fixed mounting tabs 18 to which the grill is manually movable or the like. Alternatively, a suitable jack structure, not shown, can be provided to support the grill 9 and include an actuator located exteriorly of wall 5 for selective positioning of the grill 9.

Further the combustion of material 11 will create ashes which must be removed. This may be accomplished in any suitable manner such as provided by a removable grill to allow access to the chamber 10 or an exterior door covered opening 19 may be provided for removal of the ashes and the like.

The present invention thus provides a very convenient and inexpensive construction of directly building a grill type unit into a dwelling while maintaining an efficient grilling construction.

The unit may of course use some other functional unit such as a planter which is often provided on the exterior wall of the housing. Further the unit can be formed as a total precast unit to fit within the wall structure as shown in FIG. 1 or as a separate unit abutting a conventional block or poured concrete basement wall having an opening aligned with the back wall of the present unit.

Thus, in FIG. 5, a planter 20 is illustrated abutting a conventional block basement wall 21. The upper wall of the planter is recessed as at 22 in which ground is located for supporting of suitable flowers, bushes or other suitable or desired plantings, not shown. The planter 20 projects downwardly below the frost line and is provided with a rear wall 23 with an opening 24 aligned with a similar opening 25 provided in the basement wall 21. The planter 20 is sealed to the basement wall 21 in any suitable manner and preferably with a sealing material 26 located between the planter and the basement wall to positively prevent leakage of water or another foreign matter from the exterior into the basement.

The grill unit for planter 20 may otherwise be constructed as described in connection with the previous embodiment with the special air supply duct unit 27 especially formed within the planter and an oppositely located discharge duct, not shown.

Once again the unit provides very convenient means of incorporating a grill type unit into a dwelling without the normal expense associated with a separate grill unit.

Various modes of carrying out the invention are contemplated as being within the scope of the following claims, particularly pointing out and distinctly claiming the subject matter which is regarded as the invention.

I claim:

1. A combustion chamber unit forming a part of an exterior dwelling apurtenance unit, said exterior apurtenance unit including enclosing wall means defining exterior wall portions and an interior chamber, said unit being constructed to project substantially downwardly below ground level and above ground level, and said unit including an opening to said unit or body located at least partially below ground level, and an air duct means secured within the sidewall of the unit and having an air inlet above the ground level line and a discharge opening located beneath the ground level and adjacent the lower portion of the inner chamber.

2. The combustion unit of claim 1 having an exhaust duct means provided in the wall of the unit above said ground line for exhausting of air from the chamber.

3. The combustion chamber unit of claim 1 wherein the walls of said apurtenance unit are of continuous concrete construction, said air duct means including a tubular member secured within the sidewall of the unit and extending vertically therethrough, said air inlet having a restricted outer opening to prevent entrance of foreign matter.

4. The combustion unit of claim 1 including a grill member, and mounting means fixedly secured within the wall means to support the grill member in spaced relation to the bottom wall to define a combustible material chamber.

5. The combustion unit of claim 4 wherein said grill member is adjustably mounted with respect to said bottom wall.

6. The combustion unit of claim 1 wherein said unit constitutes an exterior step unit abutting a dwelling and having a step means and a flat porch-like area, said unit having vertical sidewalls with the air inlet duct means located in the one sidewall and the discharge duct means located in the opposite sidewall.

7. The combustion chamber unit of claim 1 forming a part of a dwelling having a basement with exterior walls and wherein said unit includes a generally rectangular inner chamber having top, bottom, back and sidewalls and an inner wall forming a part of said basement wall with said opening therein.

8. The unit in accordance with claim 1 forming a part of a dwelling having a basement with exterior walls and wherein said unit is a preformed unit having preformed cast sidewalls, a front wall, top and bottom walls and a rear wall having an opening and means for interconnections of the unit and the basement wall with said opening exposed within the dwelling.

9. The unit in accordance with claim 1 forming a part of a dwelling having a basement with exterior walls and wherein said unit is a preformed unit having preformed

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cast sidewalls, a front wall, top and bottom walls and a rear wall having an opening and means for securing of the unit abutting a basement wall, said basement wall having an opening aligned with the opening in the rear wall.

10. The combustion unit of claim 1 forming a part of a dwelling having a basement with exterior walls and

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wherein said exterior unit is a preformed unit having opposite sidewalls and a front wall and a top and bottom wall and a rear wall defining said chamber, said rear wall located within the basement wall and forming a continuation and integrated part of said basement wall.

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