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H. W. HANNEBAUM

3,499,432

HEATING UNIT

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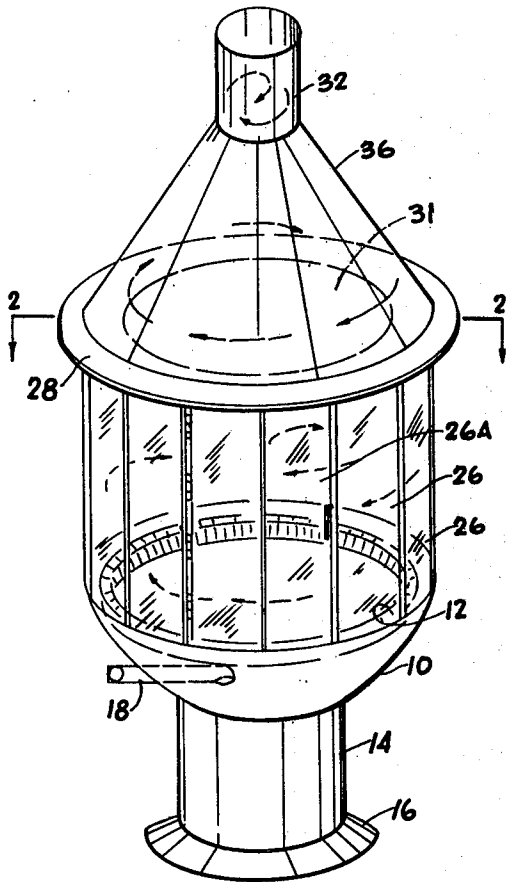


FIG. 1.

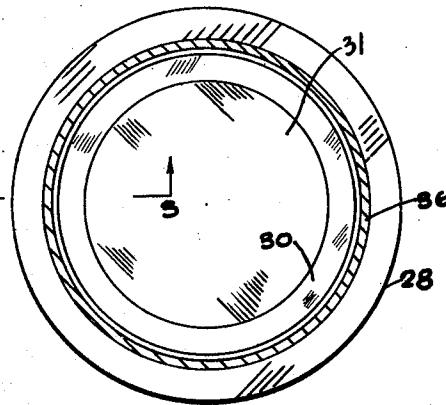


FIG. 2.

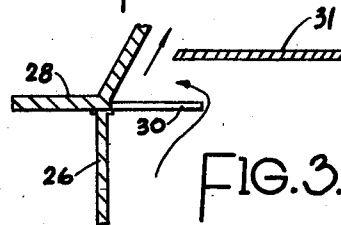


FIG. 3.

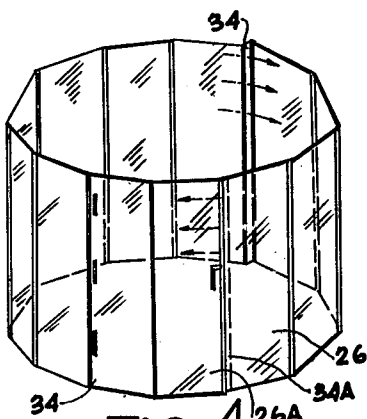


FIG. 4.

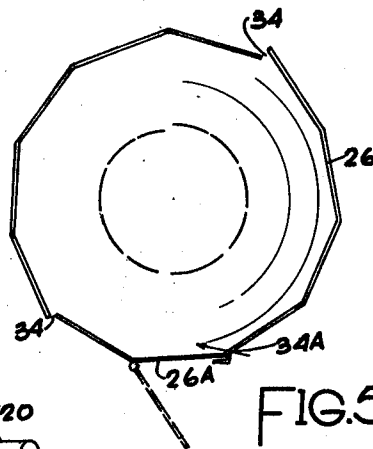


FIG. 5.

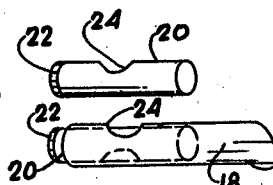


FIG. 6.

INVENTOR

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3,499,432

HEATING UNIT

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10 Claims

ABSTRACT OF THE DISCLOSURE

A heating unit which can be used in place of a conventional fireplace in a home, which can utilize wood as fuel, which operates efficiently and produces a beautiful and decorative effect while producing light as well as heat.

SUMMARY OF THE INVENTION

My unit comprises a firebox in the shape of a hollow bowl open at the top end and if necessary supported at its bottom by a vertical pedestal. A hollow vertical cylinder open at both ends is secured by its bottom end to the top end of the bowl. A vertical truncated cone open at both ends is secured at its bottom and larger end to the top end of the cylinder. A chimney or smoke stack is secured to the top and smaller end of the cone.

The bowl is provided with an air vent manually adjustable in area.

The cylinder is provided with a plurality of vertical clear or colored glass panes or windows having a plurality of vertical elongated air intake openings therebetween.

When fuel is placed in the firebox and burned, the box radiates heat efficiently and in suitable quantities for use. The air entering the intakes swirls around producing a beautiful lighting effect suitable for illumination and at the same time keeps the windows clean and free of smoke while eliminating most of the ashes via the chimney, thereby minimizing clean out problems. I call my unit the "Side Winder."

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings:

FIG. 1 is a perspective view of my unit;

FIG. 2 is a view through 2—2 in FIG. 1;

FIG. 3 is a view through 3—3 in FIG. 2;

FIG. 4 is a detail perspective view of the cylinder;

FIG. 5 is a detail cross sectional view of the cylinder; and

FIG. 6 is a detail view of the air vent.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Referring now to FIGS. 1–5, a firebox in the form of a hollow metal bowl 10 open at the top end and having an air cooled fire ring 12 welded to the bowl. The bowl 10 is supported at its base by a vertical pedestal 14 having an enlarged base 16. The ring is about four inches high, about five inches inward of the base of the windows (see below) and holds or contains the fire in the bowl.

A generally horizontal hollow vent tube 18 open at both ends extends inwardly to the interior of the box from the outside. A hollow tube plug 20 sealed at one end 22 and open at the other is manually slidable in the outer end of the tube. Tube and plug each have openings 24 in their outer walls whereby the registration between these openings can be manually adjusted to vary the area of the vent.

A hollow vertical cylinder is formed by eleven vertical panes or windows 26 of clear or colored fire proof glass so arranged as to define in cross section a regular

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polygon of eleven sides. These windows are all secured at bottom to the open top end of the box and are secured at their top end to outer and inner horizontal concentric rings 28 and 30.

An inverted hollow truncated cone 36 open at both ends is secured at its lower and larger ends to the rings and at its upper and smaller end to a vertical smoke pipe or stack or chimney 32.

Selected panes of glass define two fixed elongated vertical openings 34 of fixed width which serve as air intakes. One pane of glass 26A is hinged and acts as a door and has another similar opening 34A which can be varied in width as desired.

The Side Winder can be built or fitted with clear fire-proof glass windows, or colored fire-proof of colored shatter-proof glass windows. The glass can be scored in various patterns and cracked or the heat will cause the cracks to follow the cut lines, but this must be the plate-glass with the small one inch stainless steel wire mesh embedded into the plate glass. To get a beautiful erratic pattern on the plate glass shatter proof windows, it is not necessary to score them. Because of the clear or colored glass construction of the fireplace, anybody or anything is clearly visible through and beyond it, even while it is in operation. It will flood a very large living room with ample light to read by or to carry on any other activities. At night twenty-two fires are clearly visible and beautiful from the reflections of these glass windows. The fire light and red light from the embers also causes a sparkling effect on the glass—due to the tiny fissures in the shatter-proof windows.

The Side Winder will very nicely and safely burn wood, coal, rubber, old rags, paper, natural gas or anything that will burn. This I have done and the windows stay clean. The combustion is so perfect that the smoke is virtually eliminated which should greatly cut down the smog conditions.

A two inch thick mass of whirling air taken in through ¼ inch openings at two windows and one adjustable opening in the door, keeps the windows clean and free of smoke and also eliminates about eighty percent (80%) of the ashes up the chimney, making it almost unnecessary to clean out the ashes.

An inner ring 30 in the top of the fireplace serves as a deflector to draw the hot gases away from the top portion of the windows 26 as shown by arrow in FIG. 3. My invention has good heat output and will keep an eight room house or larger warm in ten below weather with very little fuel. It is used the year round in this cool climate and has been in constant operation for over two years and in this length of time I have burned three tons of pine wood—which makes it very economical. Also in this length of time the Side Winder has had no repairs and has caused no troubles of any kind and is entirely safe. No sparks ever get out on the floor. It causes absolutely no fumes or odors of any kind within the home under any conditions.

A flat heat spreader circular flat horizontal plate 31 distributes heat uniformly. The door hinge and the door latch are the only two working parts of my invention.

The underside of the fire bowl radiates heat downward typically on about one hundred fifty (150) square feet of the floor.

The Side Winder has removable glass windows and is set up or stacked in three parts, which is done in about ten minutes and is ready for use. Its performance is excellent with a six inch stove pipe or larger and a standard flue or chimney. The overall dimension is thirty-four by sixty-six inches, but can be built larger or smaller.

The oxygen consumption is very low, about that of the average wood burning stove. Therefore the amount of

warm air taken from the room is very small and very little cold air is drawn in to take its place from the outside of the home.

The Side Winder fireplace is excellent to cook or bake meats and most any other foods of any kind in, by wrapping in aluminum foil and placing the food inside the fireplace just outside of the fire ring. Due to the reflections of radiant heat and fast flow of hot air on all sides of the food it never needs handling or turning and will not burn or scorch even with the hottest of fires.

Our Side Winder fireplace has only one adjustable 16 inch long air intake at the edge of the door. It is adjustable from one inch opening to 1/4 inch opening and supplies all the draft for the fire and keeps the windows clean.

While I have described my invention with particular reference to the drawings, my protection is to be limited only by the terms of the claims which follow.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A heating unit comprising:
firebox means including a first portion adapted to receive fuel such as wood for burning and a second substantially cylindrical portion;
open at both ends and containing a plurality of windows disposed side by side, said cylindrical portion being secured to said first portion, said second portion of said firebox means including at least one opening positioned to allow air to enter the firebox means with a velocity vector substantially parallel to said cylindrical portion and perpendicular to the axis of said cylindrical portion to provide whirling air in said firebox; and
means for coupling said second portion to a chimney, said coupling means having a large lower end and a small upper end and secured to said cylindrical portion whereby the products of combustion pass upwards and out of the smaller upper end of said coupling means.
2. A unit as set forth in claim 1 further including a smoke stack or chimney secured to said coupling means.
3. A unit as set forth in claim 1 wherein said opening in said cylindrical portion of said firebox is an elongated narrow vertical opening admitting air into the interior of said firebox means.

4. A unit as set forth in claim 1 together with vent means in said first portion of said firebox means said vent means including a tube open at both ends, one end being disposed inside, the other end being disposed outside the box, said tube having an opening in its outer wall disposed outside the box, and a hollow tube being sealed at one end and slidable in the tube with the sealed end adjacent said other end of the tube, said plug also having an opening in its outer wall slidable into and out of registration with said tube opening.

5. A unit as set forth in claim 3 wherein said vertical opening in said cylindrical portion is variable in width.

6. A unit as set forth in claim 1 wherein said coupling means is a truncated cone.

7. A unit as set forth in claim 1 together with heat spreader means having a substantially disc-like shape positioned at the top end of said cylindrical portion in a plane perpendicular to said axis of said cylindrical portion.

8. A unit as set forth in claim 7 together with annular deflector means coupled to said cylindrical portion at said top end and spaced from said heat spreader means to provide for the flow of hot gases away from the top portion of said windows.

9. A unit as set forth in claim 3 wherein one of said windows serves as a door to said firebox means and has an adjustable opening to provide said elongated narrow vertical opening which supplies substantially all of the draft for a fire in said unit.

10. A unit as set forth in claim 1 wherein a plurality of vertical openings are formed around said cylindrical portion by gaps between said windows.

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