

Aug. 23, 1955

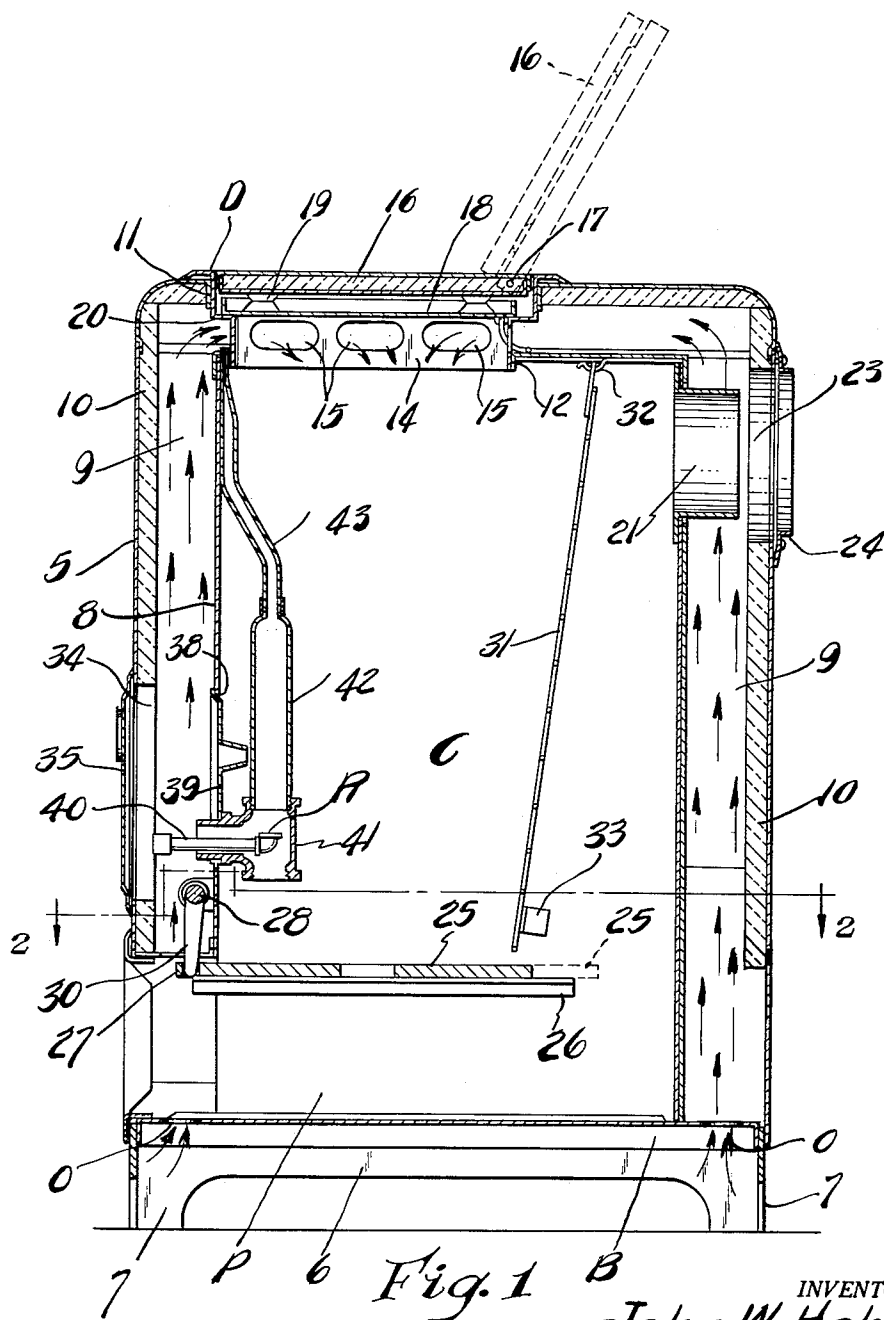
J. W. HEBERT

2,715,880

INCINERATOR

Filed Oct. 26, 1951

2 Sheets-Sheet 1



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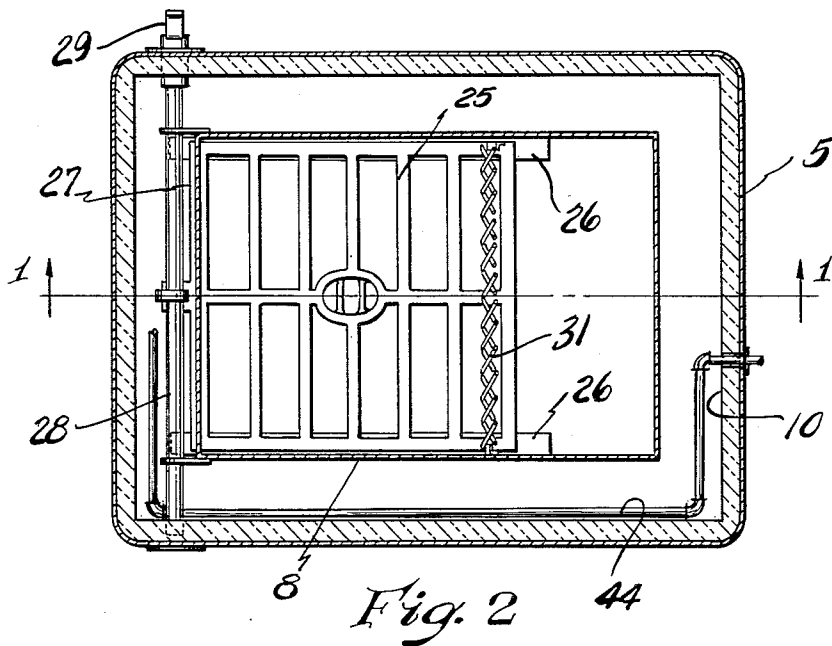
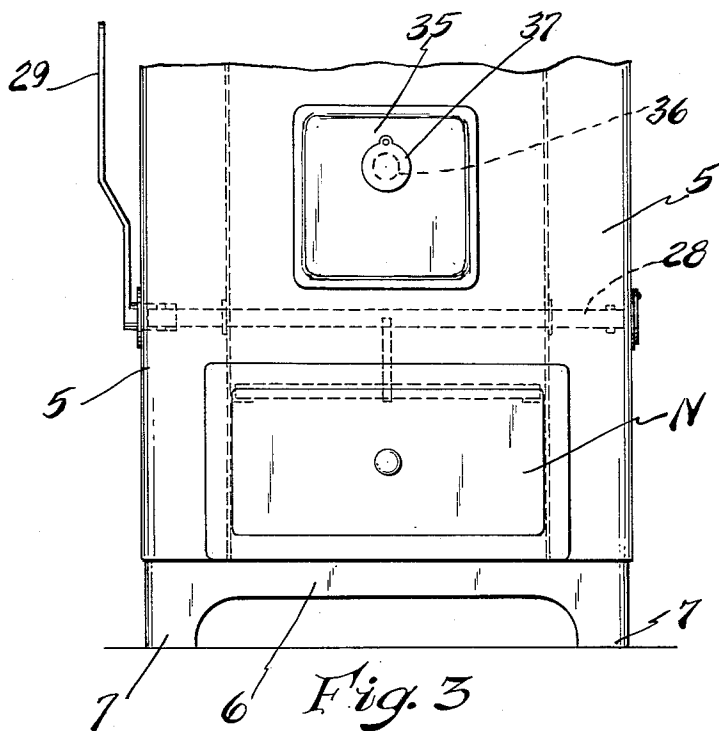
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INCINERATOR

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Application October 26, 1951, Serial No. 253,419

7 Claims. (Cl. 110—18)

This invention relates to incinerators of the general type adapted for the burning of raw garbage and all combustible office and household waste and refuse, including worn out wearing apparel and paper of all kinds.

One of the prime objects of the invention is to design an incinerator in which combustible refuse may be dehydrated and burned rapidly, without odor, in a minimum length of time, and with a minimum of gas or electric current from any outside source of supply.

Another object is to design a simple, compact incinerator of neat and pleasing appearance which can be installed in the basement, utility room or kitchen of a residence or other building, and which requires a minimum of floor space, maintenance and attention.

A further object is to provide a very simple, practical and inexpensive frame construction which permits air circulation over the upper end of the inner shell or combustion chamber, and the admission of air to said combustion chamber.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportion and minor details of construction, without departing from the spirit, or sacrificing any of the advantages of the invention.

The instant application is co-pending with application Serial No. 253,420, filed October 26, 1951, now Patent No. 2,696,178, dated December 7, 1954, for Refuse Incinerator With Charging Door Stop Mechanism, which shows the instant incinerator in combination with novel door stop means therefor.

In the drawings:

Fig. 1 is a vertical, sectional, side elevational view of my improved incinerator taken on the line 1—1 of Fig. 2, the numerous arrows indicating the flow of air between the outer housing and the inner shell, and the broken lines showing the door in open position.

Fig. 2 is a transverse, sectional, plan view taken on the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary, front elevational view of the incinerator.

Referring now more specifically to the drawings in which I have shown the preferred embodiment of my invention, the numeral 5 indicates a preferably, but not necessarily rectangular outer housing or shell mounted on a base 6 in any desired manner and provided with legs 7 at the corners thereof as usual.

Located in this housing 5 is an inner shell 8, said shell being mounted on the base B so as to provide unobstructed air passages 9 between the walls of the outer housing and the inner shell, and air cell sheets of insulation 10 are secured to the inner surface of the outer housing to insulate and minimize heat radiation.

Flanged openings 11 and 12 are provided in the upper ends of the housing and inner shell respectively, and a

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fabricated door frame D is mounted in the opening 11, said frame being formed with a downwardly extending skirt 14 extending into and closely fitting the opening 12, and a plurality of slotted openings 15 are formed in said skirt at a point directly above the top of the inner shell, so that air drawn upwardly through the openings O between the walls of the outer housing and inner shell will flow through said slotted openings 15 into the combustion chamber C, all as indicated by the numerous arrows shown in Fig. 1 of the drawings.

An insulated feed door 16 forms a closure for the open door frame D, and swings about hinge pins 17, and when swung upwardly to position shown in broken lines in Fig. 1 of the drawings, the garbage or other refuse can be readily fed to the combustion chamber C.

The door frame D includes a bottom plate 18 and pressed bosses 19 are formed on the door and bottom plate respectively to space the bottom plate which rests on the flanged section 20 of the skirt 14 when the door is in closed position.

A flue outlet 21 is mounted on the back wall of the inner shell at a point directly adjacent the top of the housing, and over which a smoke pipe (not shown) is telescoped.

A smoke pipe opening 23 is provided in the back wall of the outer housing in alignment with the outlet 21, and a collar 24 surrounds said opening, this collar being of a larger diameter than the pipe to permit entrance of air around said pipe for cooling purposes.

A grate 25 forms the bottom of the combustion chamber C and is slidably mounted on track rails 26 as shown, the front end 27 of the grate projecting beyond the front wall of the inner shell and for a purpose to be presently described.

A horizontally disposed shaft 28 spans the housing 5 and is journaled in the side walls thereof in any conventional manner, one end of the shaft projecting beyond the side wall of the housing for receiving a lever 29, and a shaker rod finger 30 is mounted on said shaft with the lower end pivotally connected to the projecting end 27 of the grate 25 so that as the lever is actuated, the grate will be reciprocated to discharge ashes into the ash pit P or ash pan N provided in the ash pit of the incinerator (see Fig. 3 of the drawing).

A perforated back grille 31 is hingedly connected to the upper end of the inner shell at the point 32, and bracket stops 33 are provided on the side walls of the incinerator shell to hold said grille in position.

An opening 34 is provided in the front wall of the outer housing, and a sheet metal access panel 35 forms a closure therefor, a sight opening 36 being provided in said panel, and a cover 37 forms a closure for said opening.

A similar opening 38 is provided in the front wall of the inner shell, and a burner panel 39 forms a closure for said opening, a hollow lighter tube 40 being mounted on said panel to facilitate lighting the burner R which extends into a T 41 provided in the combustion chamber. A shell 42 is connected to the upper end of the T 41, and a vent pipe 43 leads upwardly therefrom and opens to the upper end of the inner shell directly adjacent the opening 15 so that any unburned gases flow through openings 15 to stack.

A gas line 44 leads from the back of the incinerator to the front wall and thence is connected to a burner R provided in the T as usual.

Air enters the incinerator through floor openings O, thence flowing upwardly between the outer housing and the inner shell; thence entering the combustion chamber through the openings 15, flowing downwardly over and through the garbage or refuse in the burner, assisting in the dehydrating and consumption of the refuse; thence

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the smoke and gases flow through the flue 21 and into the smoke pipe (not shown) as usual.

I wish to direct particular attention to the manner of forming the door frame with a tubular skirt portion which furnishes a charging passage for access to the inner shell and the admission of air to the combustion chamber; also to the fact that the air flow between the inner shell and the housing assists in cooling and the dissipation of heat. The fact that the openings 15 are located directly adjacent the top of the combustion chamber at the charging passage insures a column of fresh air flowing across the top of the combustion chamber and into the smoke pipe when the feed door is open, thus removing all danger of gas and/or odors escaping into the room when the feed or charging door is open.

From the foregoing description, it will be obvious that I have perfected a very simple, practical and inexpensive incinerator for burning garbage and refuse of all kinds.

What I claim is:

1. An incinerator comprising an upright outer housing, including front, back, top and side walls, an inner refuse-accommodating casing including front, back, top and side walls supported within the housing and spaced from the walls thereof to provide an air space around the front, back, sides and top of the casing, the housing and casing having aligned charging openings in the top walls thereof, a perforated door frame mounted in the aligned charging openings to provide a charging passage extending from the exterior of the housing to the interior of the casing, the lower portion of said housing having openings therein communicating with said air space to permit air to flow upwardly therein and be pre-heated while insulating the walls of said housing, said perforated frame admitting said air from the air space between the top walls of the housing and casing to the interior of said casing, and flue means leading out of the housing opening into the casing adjacent the top thereof and extending through said air space to further pre-heat said air.

2. The combination set forth in claim 1 in which a charging door is hingedly mounted for swinging movement away from said door frame, the frame being uniformly restricted at a point intermediate its length to form a smoke-tight seat for said door, said frame having a throat section disposed below said seat and extending into said casing, the perforations in said frame being in said throat directly adjacent the upper end of the casing.

3. The combination defined in claim 1 in which a horizontal grate is provided in said casing and an angularly disposed perforated, rear grille is pivotally hung on the inner casing adjacent the back wall thereof and terminates short of said grate, and stops provided on the side walls of the inner casing for limiting the rearward swing of the perforated grille.

4. An incinerator comprising, an upright, insulated, outer housing including front, back, top and side walls, an inner casing including front, back, top and side walls supported within the outer housing to provide a combustion chamber therein and spaced from the back, front and top walls thereof to form an unobstructed air space therebetween, the lower portion of said housing having openings therethrough in communication with said air space to permit the upward flow of air therethrough, the portions of the top walls of the housing and casing respectively adjacent the front walls thereof having vertically aligned charging openings therein, a vertically disposed door frame mounted in the housing opening and formed with a skirt section projecting into the opening in said inner casing to form a continuous charging passage from the exterior of the housing to the interior of the inner casing, an insulated door forming a closure for said frame, the skirt section having slotted openings in the front, back, and sides of said skirt section above the top of the inner casing to admit air from said space between the top walls of the housing and casing to said inner casing, and horizontally disposed flue means lead-

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ing out of the housing opening into the back wall of the casing directly adjacent the upper end thereof and leading through said air space.

5. An incinerator comprising an upright housing including front, back, top and side walls, an inner casing including front, back, top and side walls supported within said housing and spaced from said walls of the housing to define an insulating and air conducting chamber around the front, back, sides and top of the casing, said housing having a charging opening in the top wall thereof and said inner casing having a charging opening in the top wall thereof in alignment therewith, a door frame supported by said housing within the charging opening therein extending toward the charge opening in said inner casing to provide a charging passage leading from the exterior of the housing to the inner casing, a charging door to close the charging opening in said housing, the lower portion of said housing having openings therethrough communicating with said air space to permit air to flow upwardly therein and be pre-heated while insulating the walls of said housing, the lower portion of the door frame forming the passage including an opening above the top of the inner casing to admit air from the air chamber to the interior of said casing and permit air to flow upwardly around said casing and across the top thereof to said opening, said door frame having a laterally disposed, inwardly extending portion formed thereon to form a smoke-tight seat for said door when the door is in closed position, and flue means leading out of the housing opening into the casing and extending through the air chamber to pre-heat the air therein.

6. An incinerator comprising an upright housing including top and side walls, an inner casing including top and side walls supported within said housing and spaced from said walls of the housing to define an insulating and air conducting chamber around the sides and top of the casing, said housing having a charging opening in the top wall thereof and said inner casing having a charging opening in the top wall thereof in alignment therewith, a depending door frame supported by said housing within the charging opening therein extending toward the charge opening in said inner casing to provide a charging passage leading from the exterior of the housing to the inner casing, a charging door to close the charging opening in said housing, the lower portion of said housing having openings therethrough communicating with said air chamber to permit air to flow upwardly therein and be pre-heated while insulating the walls of said housing, the lower portion of the door frame forming the passage including an opening above the inner casing to admit air from the air chamber between the housing and casing to the interior of said casing and permit the upward flow of air around said casing and over the top thereof to said opening, and flue means leading out of the housing opening into the casing and extending through the air chamber to pre-heat the air therein.

7. An incinerator comprising, an upright housing including top and side walls, an inner casing including top and side walls supported within said housing and spaced from said walls of the housing to define an insulating and air conducting chamber around the sides and top of the casing, said housing having a charging opening in the top wall thereof and said inner casing having a charging opening in the top wall thereof in alignment therewith, a depending door frame supported by said housing within the charging opening and having a downwardly extending tubular skirt member extending in proximity to the charging opening in said inner casing to provide a charging passage leading from the exterior of said housing, and a charging door supported by said housing for closing said charging passage, said door frame, door, and top wall of the inner casing comprising a top closure for the inner casing, the lower portion of said housing having an opening therethrough communicating with said air chamber to permit air to be introduced to the latter, said top

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closure skirt member forming an opening at said charging passage connecting the portion of the air chamber between the tops of the inner casing and housing with the interior of said inner casing to permit air to flow from the opening in the lower portion of the housing around said casing and over the top wall thereof through the opening at said charging passage into said inner casing.

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