

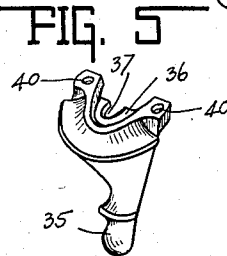
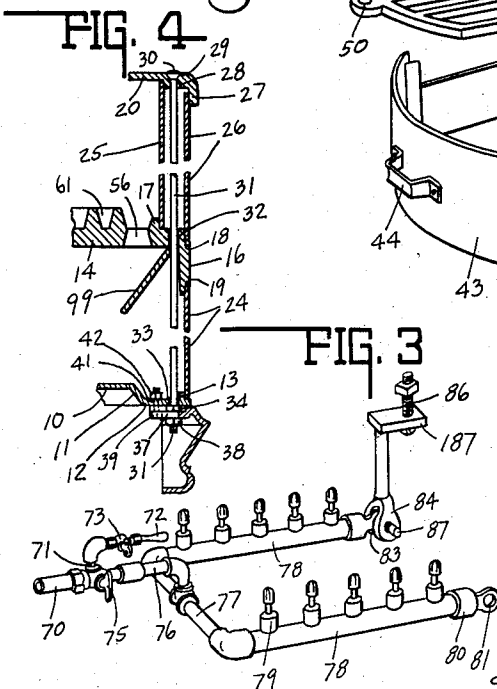
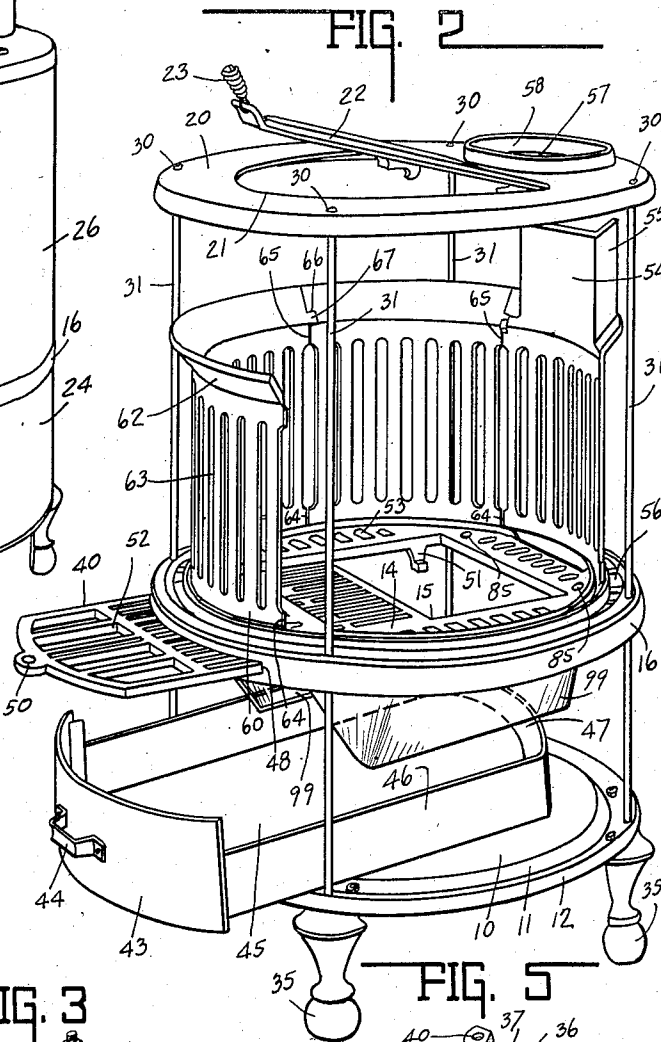
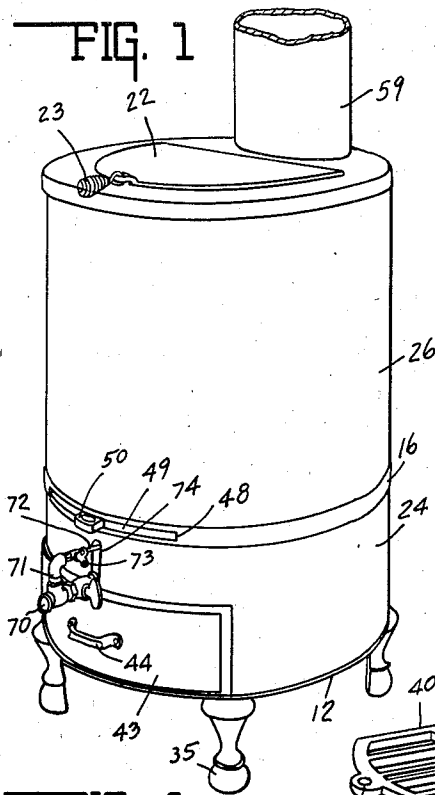
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INCINERATOR

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INCINERATOR

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2 Claims. (Cl. 110—18)

This invention relates to a domestic type incinerator.

The chief object of this invention is to provide an incinerator construction which will be non-clogging and which is so constructed that it may be readily assembled and disassembled, and it furthermore is so constructed that it is comprised of but few parts and these requiring a minimum amount of machining.

The chief feature of the invention consists in the construction of an incinerator which is adapted to burn not only combustible rubbish but is also adapted to burn garbage and the like, and while burning the same to be substantially odorless.

The full nature of the invention will be understood from the accompanying drawing and the following description and claims:

In the drawing, Fig. 1 is a perspective view of the incinerator.

Fig. 2 is a perspective view of the incinerator frame work with the casings or side walls removed and a portion of the bowl forming sections removed, the ash pan and cleanout grate being extended from operative position.

Fig. 3 is a perspective view of one form of burner.

Fig. 4 is a sectional view through the incinerator assembled.

Fig. 5 is a perspective view of one form of leg.

In the drawing 10 indicates a base plate which includes an outwardly and downwardly directed inclined flange 11 and the horizontal peripheral flange 12, provided with an upturned collar 13.

The grate plate, or base of the fire bowl, includes a plate portion 14, provided with a rectangular opening 15 and an annular depending skirt 16. Concentric therewith and extending oppositely and upwardly from the grate plate 14 is an annular flange 17. The skirt is recessed as at 18 and 19. A top 20 includes an opening having a semi-circular outline 21 which is closed by cover 22 of the same outline and which is hingedly mounted along the flat side thereof and at its mid-portion supports a handle 23, whereby the cover may be elevated for filling the fire bowl.

A relatively heavy sheet iron annular spacing sleeve and casing forming member 24 is interposed between the bottom 10 and the grate plate 14 and supports the latter in spaced relation to the former. The top 20 is supported in spaced relation by an inside sleeve of relatively heavy sheet metal 25, and concentric therewith, and encircling the same in spaced relation, is the outside ornamental casing forming member 26

nested within the down turned flange 27 of the top. The lower end of casing 26 is seated in recess 18 and the upper edge of casing 24 is seated in recess 19 of the depending skirt 16 of the grate member. The two casings 25 and 26 form an air chamber around the combustion chamber and therefore, serve to keep the exterior casing 26 relatively cool. The opening 28 in the top 20 is conically recessed as at 29 to receive the tapered head 30 of a long bolt 31 which passes through opening 32 in the grate plate 14 and also passes through the opening 33 in the flange 12 of the bottom 10. A nut 34 rigidly clamps the several metal shells together and secures the top, grate plate and bottom in the spaced relation.

Preferably the four bolts 31 are mounted in the top 20. While in inverted relation the two casings 25 and 26 are associated therewith, the grate plate mounted thereon, then the lower casing 24 applied, then the bottom applied after which all of the nuts 34 are mounted on the bolts, and the construction is tightened in assembled relation. After this assembling, the several legs may be applied and herein each leg is shown having an ornamental foot 35, a socketed chamber 36 that envelopes or nests the nut 34, and a slot 37 that straddles the bolt 31. A nut 38 clampingly mounts the leg upon the bolt and base. To prevent swiveling and separating action, the short bolts 39 are passed through openings 30 and through the complementary openings 31 in the horizontal plate portion 12 and receive the anchoring nuts 42.

The casing 24 includes a rectangular opening which is closed by an arcuate sheet or door 43 having the handle 44 and secured to which is the bottom 45 and sides 46 of an ash drawer having the back 47. Said ash drawer is receivable within the ash chamber space between the bottom of the incinerator and the grate plate.

The depending skirt 16 of the grate plate is recessed as at 48 and slidably supported therein is a sliding grate 49 having the hand engageable portion 50. The grate plate 14 has a plurality of depending and inwardly offset lugs 51 arranged to slidably support each side of the sliding grate so that when the grate is nested it completely closes the rectangular opening 15 in the grate plate. The sliding grate and the grate plate are both apertured as indicated at 52 and 53 respectively.

The fire bowl is herein shown sectionalized and includes a plurality of identical sections, herein five in number, and the sixth section, which is

similar to the aforesaid but differs therefrom by a channel shaped extension having the inner wall 54 and the side walls 55, said walls with the inside casing 25 forming a flue so that air entering the lower chamber between the bottom and the grate plate, passes upwardly through the openings 56 in the latter and thence upwardly between the fire bowl and the inside casing 25 and thence through the channel shaped flue which discharges beneath an opening 57 defined by collar 58 that receives a smoke or stove pipe 59.

The channel flue in the rear section of the liner provides a free opening between the ash chamber which is also the combustion chamber for the gas burner and the smoke outlet, so that if solidly packed material is put into the fire bowl shutting off the openings in portion of grate 14 surrounded by liner, and all of the openings in the liner itself—there would still be draft to support combustion of the burning gas; otherwise the gas flame would smother out and unburned gas pass through opening 74 and into the room.

Each of the identical sections forming the fire bowl includes an arcuate portion, the lower edge of which, 60, is seated in the groove 61 in the grate plate and the upper edge of which terminates in an outwardly flared lip 62 which terminates immediately adjacent the inside casing 25 at a point considerably remote from the top. Each section includes the elongated openings 63 which form a perforated fire bowl. Each section has a butt joint connection with its adjacent section as indicated at 64. Each section at its top portion has a butt joint connection as at 65. Each outwardly flared portion at one end includes a groove 66 and at its opposite end includes a lug 67, the groove of one section receiving the lug in interlocking relation of the adjacent section. The sectional lining arrangement in addition to permitting the multiple manufacture of identical parts, also is of such a character that each liner section may be supplied to the interior of the casing, mounted therein, and operatively associated with the other liner sections without requiring the removal of the two shells 25 and 26. The liner is passed into the combustion chamber through the filling opening.

The before mentioned flaring of the sections of the fire bowl provides space between said sections and casing 25 which forms an air passage from the ash chamber into the fire bowl through openings 56 of grate 14 and openings 63 in liner sections, thus providing air for drying purposes during the time incinerator is being filled.

When readily combustible waste is to be burned, the cover 22 is opened and the material supplied to the fire bowl, and the material ignited. The air is supplied to the material through the openings 52 and 53 and the material burns. The fire will not choke or smother because the channel type flue is provided in the liner section that is positioned beneath the pipe opening 57. As stated the two casing members 25 and 26 form a heat insulating air chamber around the fire bowl and the portion of the device immediately thereabove. The flaring of the sections of the fire bowl provides that material deposited within the same, which would probably be conical shape by reason of the positioning of the opening, will automatically center inwardly in passing into the fire bowl as the material therein burns. If small enough, the ash falls

through the grate openings. Portions too large to fall through are permitted to drop into the ash pan therebeneath by the outward sliding of the grate 40. Material that rests upon the side edges of the grate plate may be knocked through the opening by the insertion of a stick or poker through the opening 21 in the top.

When the aforesaid mechanism is to be used for wet material such as garbage and the like which requires a relatively high heat for drying previous to incineration, and which heat is not obtainable from the material to be burned, a burner construction is embodied. Such a burner includes a T fitting or the like 70, with a branch 71 that terminates in a nozzle 72 controlled by a hand valve 73. Nozzle 72 extends through an opening 74 in the casing 24 and said nozzle constitutes a pilot light for the burner. The opening 74 provides passage for pipe 76 and also permits the air to pass through and into the chamber beneath the grate plate for supplying air for combustion purposes.

The main burner supply is controlled by the valve 75 and the line 76 therefrom is joined to a pair of oppositely extending lines 77, each of which supplies a nozzle supporting supply line 78, herein shown provided with a plurality of upwardly extending nozzles 79. The lines 78 and nozzles 79 are arranged in parallel relation. Each pipe 78 is capped as at 80 and the cap includes an eye 81 integral therewith. A yoke 82 having the plate portion 187 and arm portions 83, each provided with an opening 84, is supported by bolt 86 which passes through plate 187 and the grate plate at 85. A pin 87, or the like, pivotally connects the eye 81 with the yoke 82.

The free and closed ends of pipe 78 may be mounted together as the other ends similar to 77, and pipe or pipes 77 may also be provided with nozzles 79 thus materially increasing heat for drying.

The line 70 is preferably connected to a fuel or illuminating gas supply. If desired the burner construction may be arranged for oil fuel burning. Air for combustion is supplied through the opening 74 and around the curved member 43. The pilot light is merely a convenience for lighting the burner device or nozzle 79. The pilot light may be omitted and the burners may be lighted by applying a lighted taper to them through the ash door opening.

On the inside of lower casing 24 are secured two ash deflectors 99 of sheet steel, one on the right side and one on the left side of the ash chamber. Deflectors are of such a shape that the outside fits the curved section of casing 24 at a point just below where casing 24 meets grate 14. The plane of the deflectors slope downward and terminate on a line between the burner arm 78 and ash pan sides 46 and parallel to arm 78. Ashes dropping through slots 63 of liner and thus through openings 56 in grate 14, also through openings 53 in grate 14, are deflected into ash pan 45.

The invention claimed is:—

1. In an incinerator, the combination of a top plate having a refuse filling opening, and a smoke outlet, a closure for said opening, a base plate, an intermediate grate plate secured in spaced relation, an outer upper casing between the top plate and grate plate, an outer lower casing between the dumping plate and base plate, said intermediate plate having a peripheral series of apertures, a peripheral, laterally apertured fire bowl, supported by the intermediate

plate within the peripheral arrangement of the apertures and terminating in an outwardly and upwardly directed rim, an upper inner casing interposed between the two upper plates and positioned without the peripherally arranged apertures, said rim terminating in close proximity to the inner casing, and at an appreciable distance below the top plate, and a stack-like extension extending from the rim and in alignment with the smoke outlet but terminating slightly short thereof, the extension preventing refuse from passing downwardly between the bowl and inner casing but readily permitting smoke passage upwardly therethrough, and by reason of its termination below the top permitting smoke passage

laterally to the outlet of the gases and smoke rising vertically from the burning refuse, the grate plate being interiorly apertured to provide a vertical supply of air to the drying burning refuse, the peripheral apertures and lateral apertures also cooperating to facilitate drying and burning of said refuse. 5

2. A device as defined by claim 1, characterized by the addition of ash and non-combustible refuse guiding means depending from the intermediate plate for directing discharge to an ash drawer, and means provided in said intermediate plate for dumping the ash and non-combustible refuse. 10

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