Feb. 20, 1934. J. G. FAHLSTROM 1,947,836

INCINERATOR

Filed Dec. 26, 1931

Fig. 1.

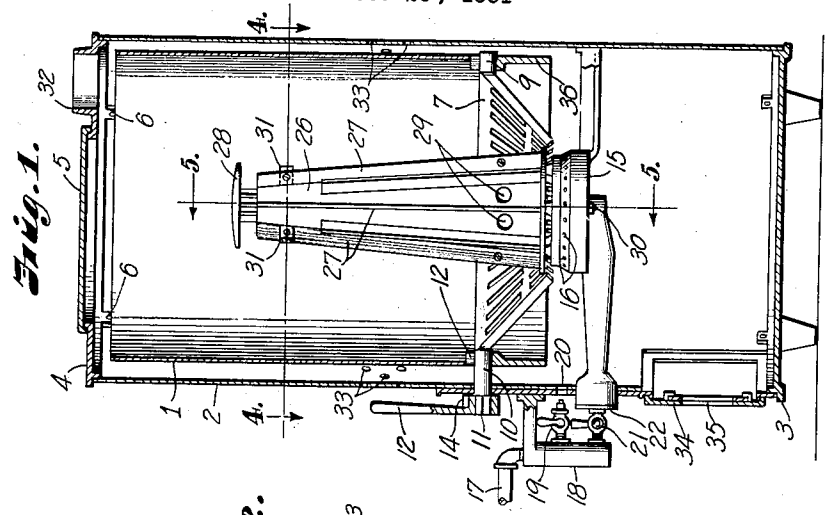


Fig. 3.

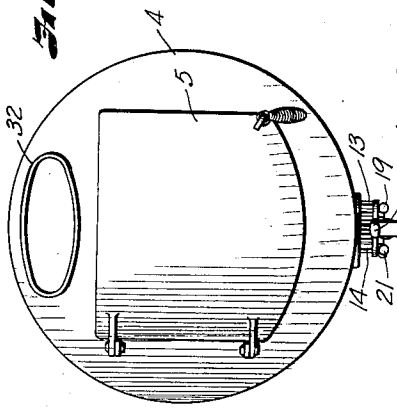


Fig. 2.

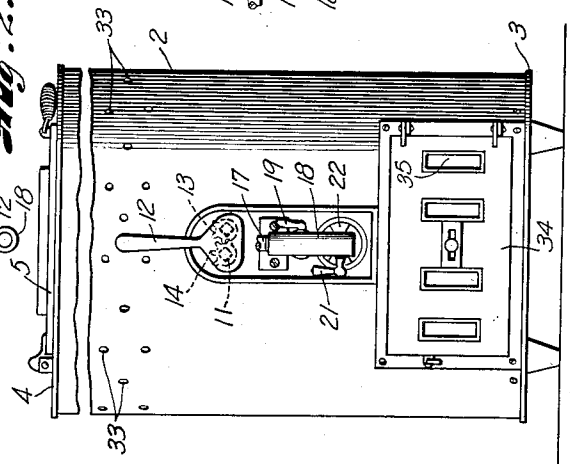


Fig. 4.

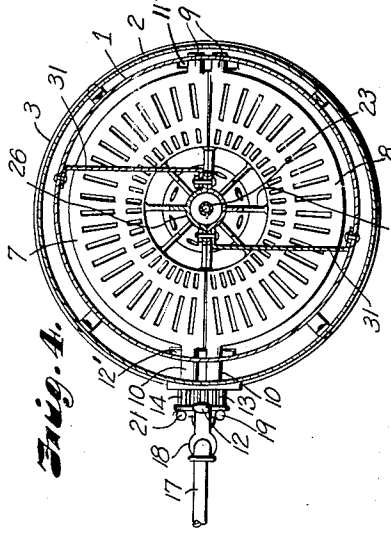
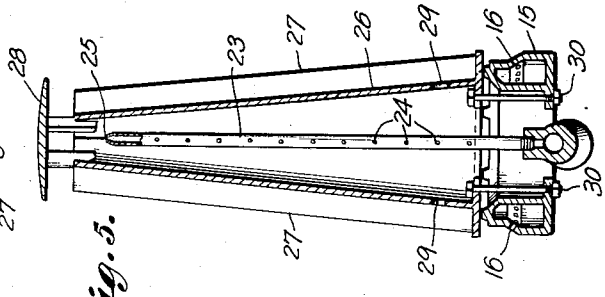


Fig. 5.



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INCINERATOR

John G. Fahlstrom, Kansas City, Mo.

Application December 26, 1931
Serial No. 583,217

8 Claims. (Cl. 110—18)

My invention relates to an incinerator and more particularly to a small incinerator adapted for installation in the home for the disposal of garbage.

In incinerators as heretofore constructed, difficulties have been experienced in completely burning the garbage due to insufficient flame distribution and to the tendency for the garbage to extinguish the flame. This results not only in an objectionable waste of gas and in unpleasant odors, but also presents a definite danger of explosion.

In the incinerators now available, the garbage is usually disposed at a rate so slow that offensive odors are created. Difficulty has been experienced also in completely burning the garbage.

The present type of incinerator now available has the further objection of unduly heating the space occupied by the incinerator making it unpleasant for use on a warm summer day.

One object of my invention is to provide an incinerator which will completely consume the garbage with a minimum consumption of gas in the minimum space of time without objectionable odor or perceptible smoke.

Another object of my invention is to provide an incinerator which will permit the garbage to burn from the top and bottom and also from the center of the mass.

Another object of my invention is to provide an incinerator which will preclude the danger of the gas flame being extinguished by a collection of garbage.

A further object of my invention is to provide an incinerator which will prevent the space wherein it is operating from becoming unduly heated.

Other objects of my invention will appear from the following description.

In general my invention contemplates the provision of an imperforate shell as distinguished from the perforated shells now commonly found on incinerators. At the bottom of this shell is mounted a grate in the form of an inverted, truncated cone. At the aperture of the grate I provide a gas burner having a plurality of radially disposed orifices through which gas issues. Over the burner I place a conically shaped casing suitably supported from the shell and secured to the burner.

Within the cone I mount a vertically disposed conduit provided with a series of orifices forming a burner disposed within the cone. The end of the conduit is likewise provided with an orifice permitting a flame to be thrown around the inside periphery of the cone as well as upwardly thereof. At the top of the cone is positioned a baffle plate adapted to spread the flame coming from the uppermost orifice of the conduit and at the same time prevent any garbage from falling into the cone. The shell is surrounded by a casing which is placed eccentrically to the shell. This casing has a series of openings which permit air to be drawn into the space formed by the shell and the casing. This air has two functions. It prevents the radiation of heat into the space in which the incinerator is placed and allows air to pass over the top of the shell furnishing oxygen which supports the combustion of the garbage from the top. A usual air inlet and ash door is positioned below the grate allowing air to pass upwardly through the incinerator for the consumption of the garbage. The flue through which the products of combustion pass is placed over the point of narrowest spacing. The object of so placing the flue will appear more fully hereinafter.

Referring now to the drawing, which is to be read in connection with the accompanying specification and which forms part thereof;

Figure 1 is a sectional view showing an incinerator embodying my invention.

Figure 2 is a front elevation partially broken away, of the incinerator of my invention.

Figure 3 is a plan view of the incinerator.

Figure 4 is a sectional plan view taken on the line 4—4 of Figure 1.

Figure 5 is a detail section taken on the line 5—5 of Figure 1.

More particularly referring now to the drawing, an imperforate shell 1 is mounted within a casing 2 which is disposed eccentrically to the shell 1 as can readily be seen by reference to Figure 4. The casing 2 is provided with a pedestal 3 of any suitable design and a cover 4. A hinged door 5 is provided for permitting the garbage to be thrown into the incinerator for destruction. The shell 1 is hung from the cover plate 4 by suitable lugs 6. Positioned at the lower portion of the shell 1 is a grate formed of a pair of members 7 and 8. Grate members 7 and 8 are provided with extensions 9 and 10 which rest in grooves 11' and 12'. Shafts 10 terminate in squared portions 11. A handle 12 having integral therewith a segmental gear 13 is positioned over one of the squared portions 11. The other squared portion has a segmental gear 14. It will be appreciated that when the handle 12 is moved to rotate gear 13 and one of the shafts 10, the other shaft 10 will be rotated in an opposite direction through the agency of gear 14, allowing the grate to be dumped.

A burner 15 is supported from the outside casing 2 and is provided with a plurality of orifices 16. The gas enters at 17 into manifold 18. Extending from manifold 18 is a pair of valve ducts. Valve 19 controls the pilot flame which is thrown into the casing through opening 20. The valve 21 controls the gas supply to the burner through the customary Bunsen burner arrangement

wherein air is admitted through openings 22. Centrally of the burner is positioned a pipe 23 provided with a plurality of orifices 24 through which jets of flame issue. The upper portion of the pipe 23 is provided with an orifice 25 through which a jet of flame issues. Surrounding the pipe 23 is a conically shaped member 26 provided with a series of heat radiating flanges 27. The member 26 prevents the garbage from putting out the flame from the central burner and is adapted to be heated to a red heat by the flame issuing from the jets 24 in order to consume the garbage from a position centrally of its mass. At the top of conical member 26 is positioned a baffle 28, against which a jet of flame issuing from orifice 25 is directed. As can be seen from the drawing the baffle 28 is spaced from the top of the conical member 26 allowing a sheet of flame to be thrown between the baffle and the top of the conical member. This sheet of flame will insure the ignition and burning of the garbage from the top. A series of holes 29 may be provided in the conical member to permit the ignition of the garbage from the bottom. These holes 29 may be omitted if desired. The conical member 26 may be of any suitable construction and is preferably formed of two complementary members joined together. The conical member 26 is supported by the burner 15 and secured thereto by a pair of bolts 30. The upper portion of the conical member is secured to the shell 1 by suitable braces 31. The casing 2 is disposed in eccentric relation to the shell 1, the greatest spacing being provided in the vicinity of the front of the incinerator. Positioned over the section of minimum spacing is the flue 32, through which the products of combustion pass. The casing 2 is provided with a plurality of openings 33 through which air may pass into the space formed by shell 1 and casing 2. This air will serve to keep the exterior casing 2 from becoming heated and will thus prevent the radiation of heat. Due to the fact that the draft will be stronger near the flue, I dispose the portion of smaller width under the flue. In this manner, air will enter through the holes 33 in the front of the casing and pass upwardly through the portion of greatest eccentricity over the top of the shell 1, furnishing air to support the combustion of the garbage over the top of the shell and out through the flue. An ash pit door 34 is provided with suitable adjustable openings 35 to enable the draft to be regulated. The lower portion of the shell 1 has a thickened, depending skirt 36 against which the jets of flame issuing from the orifices 16 are directed. This will deflect the burner heat upwardly into the garbage, and will preclude the burning out of the sides of the shell.

It will be appreciated that I have accomplished the objects of my invention. I have provided an incinerator which will burn garbage separately and expeditiously. Due to the rapid rate of burning and the complete combustion insured, offensive odors will not be created nor will perceptible smoke issue from the chimney attached to the flue. The space in which the incinerator rests will not become unduly heated due to the protective air space provided by the eccentric outer casing 2. The garbage will be consumed by burning from the top to the bottom and from the center of the mass. The ashes are quickly and completely dumped. The protective cone not only prevents the gas flame from being extinguished but distributes heat to kindle the garbage from the center of its mass and to distribute the heat and flame over the top thereof.

Having thus described my invention, what I claim is:

1. An incinerator comprising in combination an imperforate shell, grates closing the lower portion of said shell and having an opening centrally thereof, a burner adapted to burn gaseous fuel positioned in said opening, said burner including an annular ring-shaped portion provided with jets, and an elongated vertical portion provided with peripheral jets, a baffle in the form of a cone surrounding said vertical portion of the burner, said conical baffle being truncated to form an aperture, a baffle extending in a plane parallel to and spaced from the plane of truncation, said baffle being provided with supporting means adapted to be removably seated in said aperature, a jet at the upper extremity of and extending axially of said vertical burner portion adapted to direct a flame against said spaced baffle.

2. An incinerator comprising in combination a casing, an imperforate shell positioned within said casing, grates closing the lower portion of said shell and having an opening centrally thereof, a burner adapted to burn gaseous fuel positioned in said opening, said burner including an annular ring-shaped portion provided with jets, and an elongated vertical portion provided with peripheral jets, a baffle in the form of a cone surrounding said vertical portion of the burner, said conical baffle being truncated to form an aperture, a baffle extending in a plane parallel to and spaced from the plane of truncation, said baffle being provided with supporting means adapted to be removably seated in said aperture, a jet at the upper extremity of and extending axially of said vertical burner portion adapted to direct a flame against said spaced baffle.

3. An incinerator according to claim 2 in which said casing is positioned eccentrically with respect to said shell.

4. An incinerator according to claim 2 in which said casing is positioned eccentrically with respect to said shell and is provided with perforations to permit the entry of cooling air into the space between said shell and said casing.

5. An incinerator according to claim 1 in which said conical baffle is provided with heat transferring fins.

6. An incinerator according to claim 1 in which said spaced baffle is removably mounted in the aperture of said conical baffle.

7. An incinerator according to claim 2 having said casing positioned eccentrically to said shell, perforations provided in said casing to permit the entry of cooling air into the space between said shell and said casing and a flue connection located over the portion of least eccentricity.

8. An incinerator comprising in combination an imperforate shell, a burner positioned within said shell adapted to burn gaseous fuel, a casing surrounding said shell, said casing being positioned eccentrically to said shell, perforations provided in said casing to permit the entry of cooling air into the space between said shell and said casing, and the flue connection positioned over the portion of least eccentricity.

JOHN G. FAHLSTROM.