Aug. 25, 1936. J. FEIGENBAUM 2,052,456

SMOKE AND ODOR CONSUMING INCINERATOR

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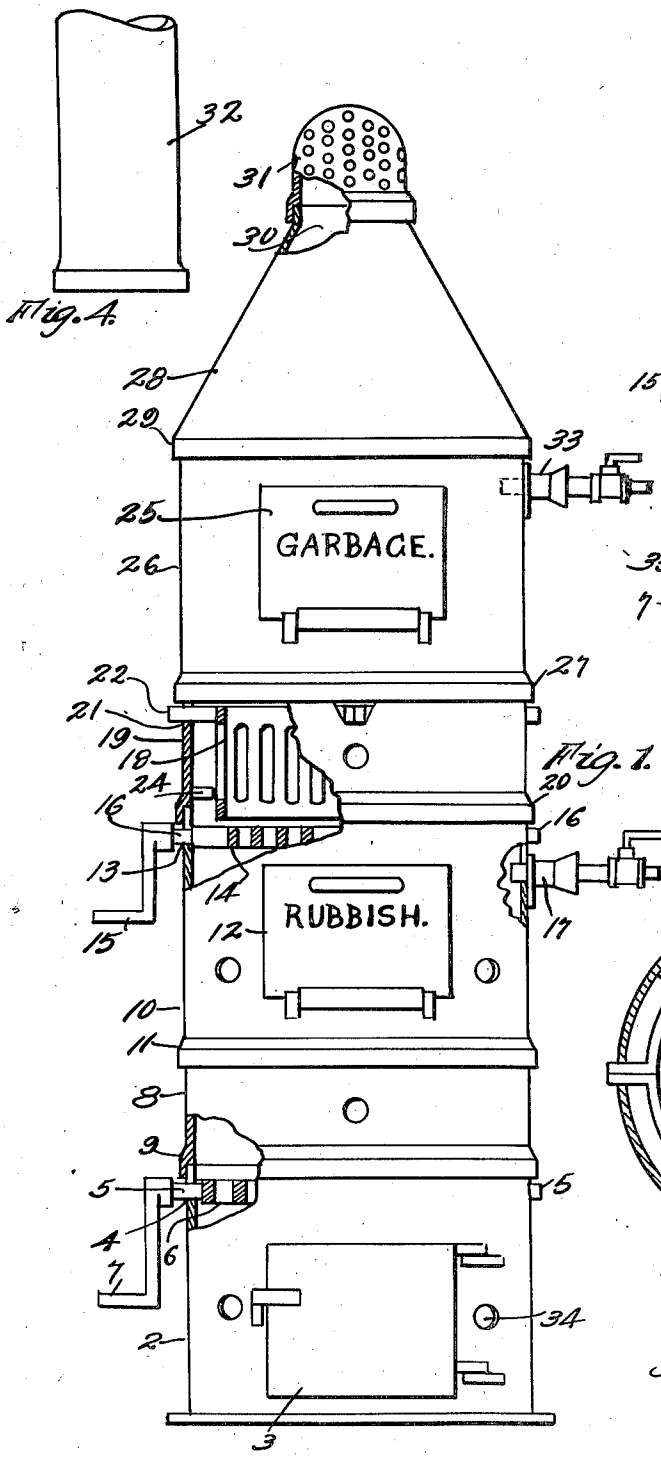


Fig. A.

Fig. 1.

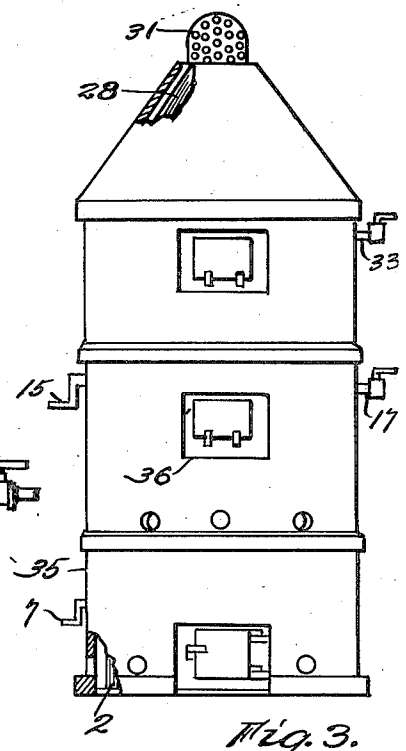
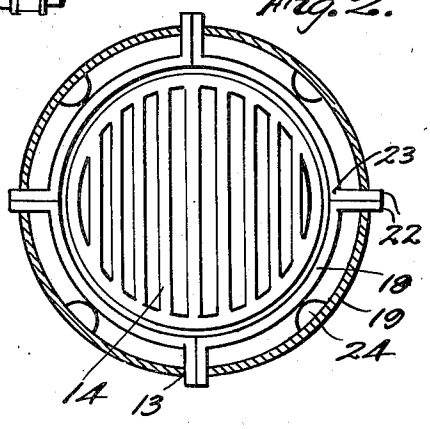


Fig. 3.

Fig. 2.



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SMOKE AND ODOR CONSUMING INCINERATOR

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2 Claims. (Cl. 110—17)

This invention is an incinerator.

It is an object of the present invention to provide means for the effective destruction of domestic garbage on the premises, and particularly to prevent the discharge of annoying smoke and odors during such destruction.

A further object is to provide a combined rubbish and garbage incinerator in which the heat arising from consumption of combustible rubbish may be used to aid in the reduction of wet garbage, and further to provide a burner for utilizing a gas or a liquid fuel for the complete reduction of the garbage, with or without the heat from rubbish fire.

An additional object is to provide an apparatus by which all objectional smoke and fumes arising from combustion of material in a combustion chamber and passing toward a vent to the atmosphere may be effectively and economically destroyed before passing from the outlet or vent.

Another object is to provide a compact, substantial and practical incinerator of the class concerned, and comprising an all metal shell built up of sections of such size that the incinerator may be erected on the place of use by one laborer without help, to effect economy. In this connection it is a further object to provide such an incinerator with an exterior, refractory, fireguard jacket for use in case of installation within a building or adjacent of a combustible structure, such as a nearby wooden fence, to reduce fire or personal injury hazard.

The invention consists in certain advancements in this art as set forth in the ensuing disclosure and having, with the above, additional objects and advantages as hereinafter developed, and whose construction, combination and details of means, and the manner of operation will be made manifest in the description of the herewith illustrative embodiment; it being understood that modifications, variations and adaptations may be resorted to within the scope, principle and spirit of the invention as it is more directly claimed hereinbelow.

Figure 1 is a front elevation, partly in section, of the metal incinerator.

Figure 2 is a horizontal section across the garbage basket, and its shell unit.

Figure 3 is a front elevation of the jacketed incinerator.

Figure 4 is an elevation of a fragment of a vent extension pipe.

In its preferred embodiment the incinerator includes a vertical shell having a basal ring section 2 forming an ash pit to which access is had by way of a door 3 hinged on the section 2 to open outwardly. The rim of the ring or base 2 is provided with opposite seats 4 for the trunnions 5 of a tipping grate 6 operative by a handle 7 fixed on one of the trunnions.

A vertical spacer ring section 8 has a bell flange 9 on its lower edge and this telescopes over the rim of the base 2 and serves to hold the grate trunnions to their seats 4; which are in the form of notches in the rim.

Superposed on the spacer 8 is a deeper section of shell 10 with a bell flange 11 matching the spacer rim, and this section 10 is provided with an outwardly opening door 12 through which combustible rubbish may be thrown into the fire space above the grate 6 for combustion.

The rim of the shell section 10 is oppositely notched at 13 to form seats for a tipping grate 14 which is operative by a side handle 15 fixed on one of its trunnions 16; these bearing in the seat notches just mentioned. This grate is adapted to receive garbage to be burned; this being greatly facilitated by ignition of a suitable fuel supplied to a burner 17 which is of the class effective to direct a spray-form of flame across the fire chamber just below the garbage grate 14; the burner being arranged clear of the grate 14 to avoid interference when this is tipped.

A feature of the invention resides in means to expedite the combustion of wet garbage by increasing its area of exposure to the flame from the burner 17, and also prevent its packing up against the shell wall. This means includes a basket-like device preferably formed of a number of foraminous, arcuate, vertical panel members 18, which, when assembled, form a cylindrical basket which is spaced inwardly from and concentric to the relative ring unit 19 of the shell. This unit has a bottom bell flange 20 fitting on the rim of the next lower shell section 10, and its rim has a series of notches or seats 21 to receive outstanding lugs 22 formed on or attached to the upper portion of the several basket members 18, which, as shown in Fig. 2, have meeting sides 23. Means, such as horns 24, are provided, in this case on the shell unit 10, to support and space the lower portions of the basket from the shell wall.

This spacing and the foraminous form of the basket insures that the fuel flame from the burner 17 will play up and over the heap of garbage dumped on the grate 14; this latter constituting the bottom of the garbage basket device.

Garbage may be introduced into the basket by way of an outwardly opening door 25 mounted

on a shell ring or section **26** having a bottom bell flange **27** fitting on the upper rim of the basket shell section or unit **19**, and serving to lock the basket forming members **18** against upward movement when the grate **14** is tilted up in the basket to discharge residue of garbage combustion.

Superposed on the shell unit **26** is a dome **28** having a bell flange **29** on its lower end and fitting the rim of the unit **26**. This dome converges upwardly and ends with a gas vent opening **30** which is covered by a spark arrester **31**, and in cases where it is necessary to extend the vent to a higher degree an extension pipe **32** is fitted to the dome **28** in place of the arrester; this being then applied to the upper end of the pipe.

A further feature of the invention is the provision of means to eliminate as far as possible the discharge of smoke and/or disagreeable odors from the combustion of material in the apparatus. To that purpose a spray-flame form of fuel burner **33** is fixed to the upper shell section **26** so as to discharge a flame into the products of combustion before they can escape from the vent at the top.

Ample air inlet holes **34** are provided to support combustion within the incinerator.

Where permissible the unprotected, iron shell incinerator of Fig. 1, may be installed, but in some cases where there is danger of igniting nearby combustibles or of personal injury it may be necessary to employ a protected apparatus as is shown in Fig. 3. This includes an outwardly spaced, enclosing jacket **35** of refractory material such as a fire-resistive, concrete composition. The jacket is made of suitable sections provided with door opening **36** for access to the several doors of the enclosed incinerator, and the several handles and fuel controls are all arranged externally of the jacket, as shown.

It will be seen that the short spacer shell sections and the longer door shell sections afford, in combination, the desired depth of chamber above the respective grates, and also permits of the making of cast-iron shell sections of a weight not beyond the capacity of the ordinary laborer to set the incinerator up in place of its use.

It is obvious that since the meeting joints of the several sections are of equal size and complementary design, various combinations of the sections of the shell may be resorted to, such as the omission or inclusion of the rubbish or of the garbage burning features, as may be desired.

In cases where the additional expense is no objection automatic time controls for the fuel burners may be incorporated to function in their well known manner of cutting off fuel supply after a predetermined period of lapsed time.

By making each section a complete horizontal belt or course unit and of a weight such that one man can load and unload it for transport and handle it for installation, the complete incinerator can be produced and ultimately erected in situ at a total cost less than any other device of the kind now on the market. A feature is that the apparatus is self-securing when set up and requires no extraneous bolts or screws for fastening.

What is claimed is:

1. In an incinerator, the combination of a shell made up of sections, one of said sections having notches in its upper rim, a grate pivotally supported in said notches, a second section superposed on said first mentioned section so as to prevent upward movement of said grate bodily, a set of foraminous members supported by the upper portion of said second section and means for holding said members inwardly of said second section to form with said grate a circular basket, the grate being tiltable centrally of said members.

2. An incinerator as set forth in claim 1, and in which the said second section has notches in its rim and said basket members have outwardly projecting lugs seated in said last mentioned notches, and a third shell section superposed on the rim of the said section and operative to prevent upward un-seating of the said members from their rim seats; the uppermost shell section having an access door to the basket and having a flame injecting burner for smoke consumption, and the first mentioned or grate supporting section having a flame injecting burner arranged below the bottom plane of the said grate.

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