Oct. 12, 1937. C. J. RODMAN 2,095,452

INCINERATOR

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FIG. 1.

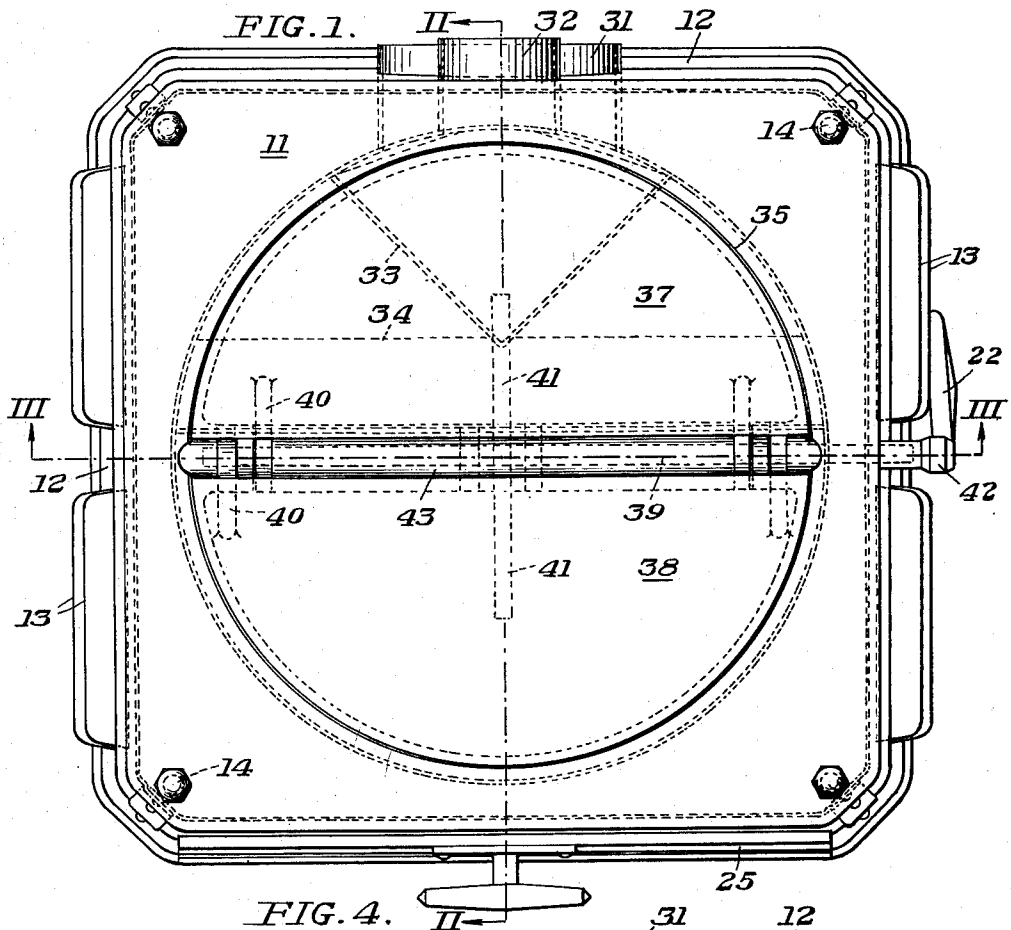
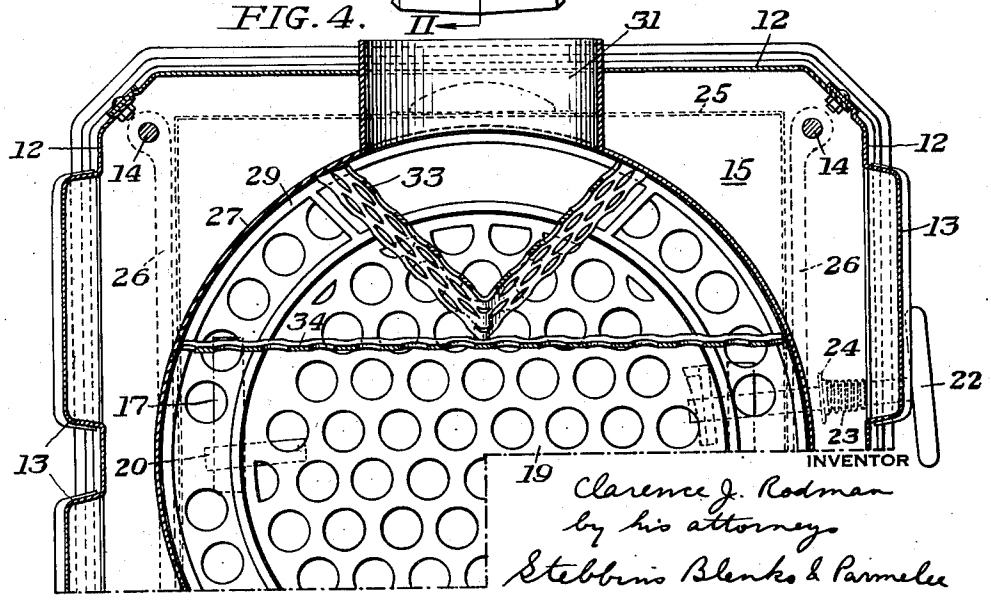


FIG. 4.



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by his attorneys

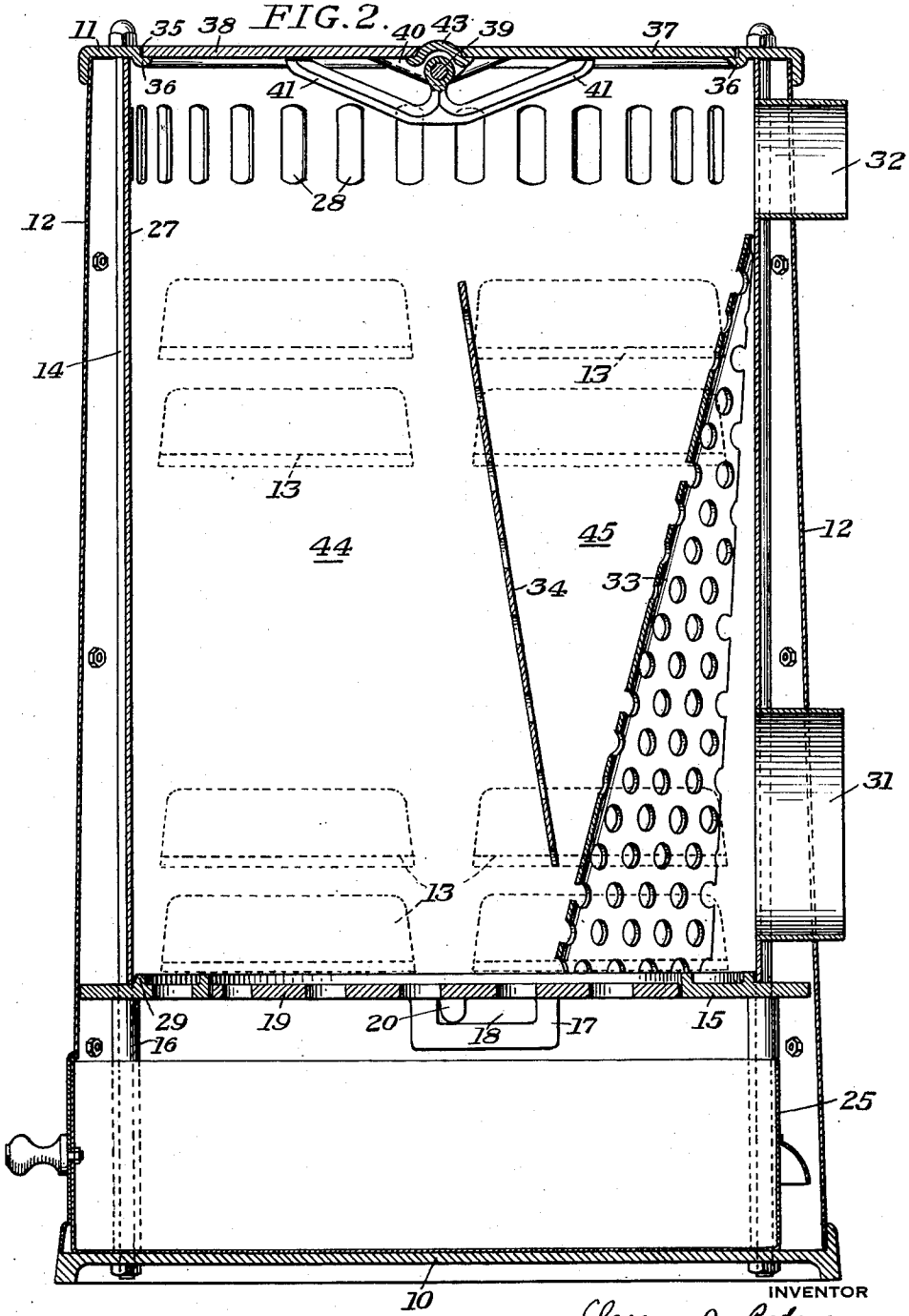
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FIG. 2.



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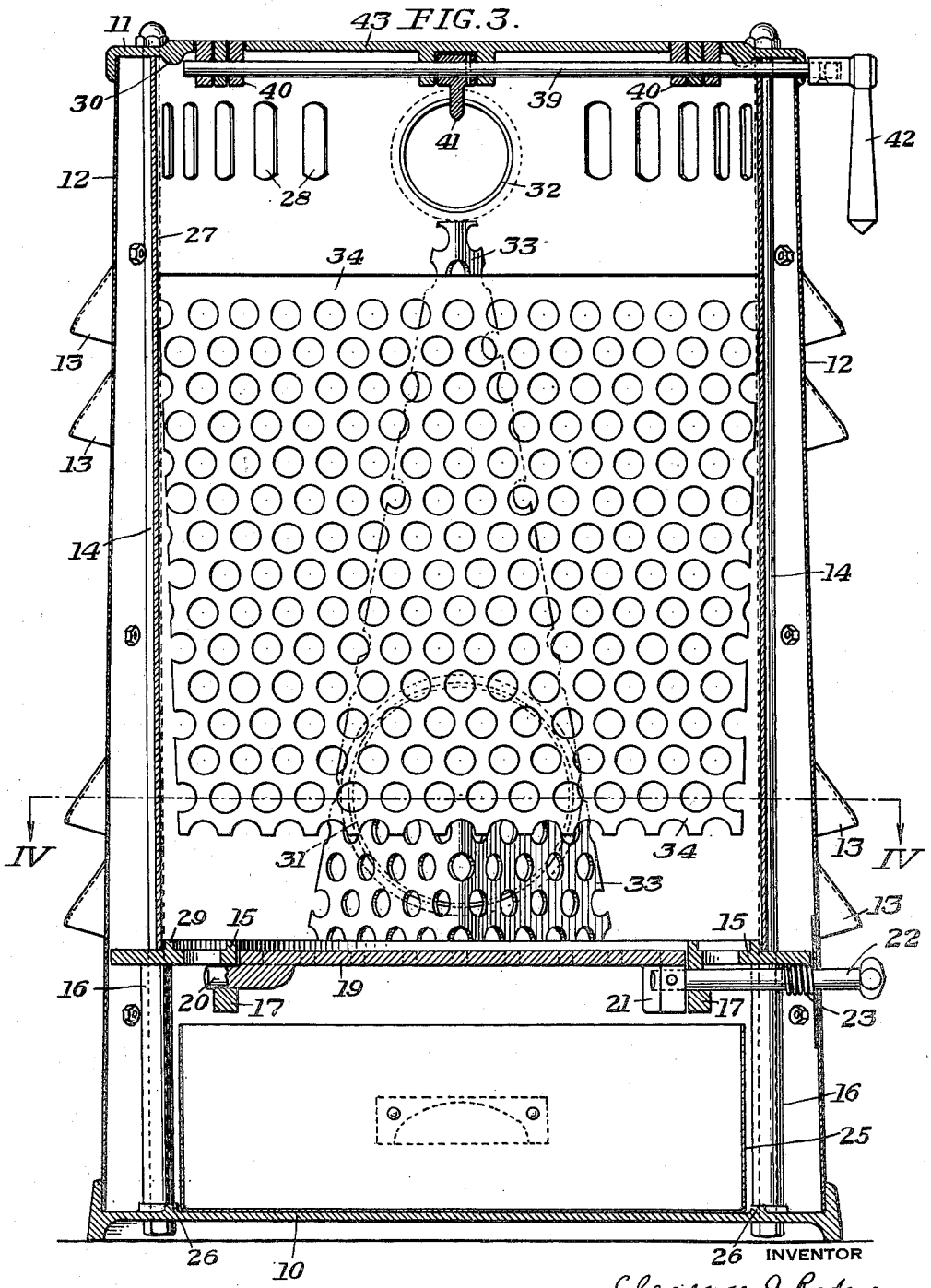
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INCINERATOR

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FIG. 3.



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Patented Oct. 12, 1937 2,095,452

UNITED STATES PATENT OFFICE

2,095,452

INCINERATOR

Clarence J. Rodman, Alliance, Ohio

Application January 28, 1936, Serial No. 61,184

3 Claims. (Cl. 110—18)

This invention relates to incinerators and, in particular, to domestic incinerators for consuming household rubbish and garbage.

Domestic incinerators as previously known, have usually required the burning of fuel other than rubbish or garbage, in order to maintain combustion of the latter. Difficulty has also been experienced with devices of this kind smoking, particularly in warm weather when the stack draft is reduced. Little or no consideration, furthermore, has been given to eliminating the fire hazard or complying with underwriters' requirements.

It is an object of my invention therefore, to overcome these various objections and provide a domestic incinerator having additional features of novelty and utility which will become more apparent as the following detailed description proceeds.

In accordance with my invention, I provide an incinerator having separate compartments or chambers for receiving wet refuse or garbage, and rubbish, or relatively dry waste matter. These compartments are so arranged that combustion of the rubbish facilitates the drying out of the wet refuse or garbage to render it combustible. The construction is such that the air for combustion is preheated which further aids the desiccation of the wet refuse. A special provision is also made to prevent smoking even though combustion proceeds at such a relatively low rate that only a small stack draft is created. Separate doors are provided for the rubbish and garbage compartments and these doors are self closing, thus avoiding fire hazards and complying with underwriters' standards.

For a complete understanding of the invention reference is made to the accompanying drawings illustrating a preferred embodiment, although it will be recognized that changes in the construction described and illustrated herein may be made within the scope of my broader claims.

In the drawings:

Figure 1 is a plan view;

Fig. 2 is a sectional view along the line II—II of Fig. 1;

Fig. 3 is a sectional view along the line III—III of Fig. 1; and

Fig. 4 is a sectional view taken along the line IV—IV of Fig. 3.

Referring now in detail to the drawings, the incinerator comprises a base plate 10, a cap plate 11 and side walls 12. The bottom plate and cap plate are flanged upwardly and downwardly respectively and the upper and lower edges of the side walls are received within the flanges. The side walls 12 are simply flat sheets lapped and bolted together as shown in Fig. 4. Draft inlet louvers 13 are pressed out of the side walls for a purpose which will be explained later.

Tie rods 14 connect the base plate and cap plate. A grate ring 15 is supported on spacer sleeves 16 surrounding the lower ends of the tie rods 14. The ring 15 has depending lugs 17 slotted as at 18. A grate 19 has a downwardly extending pivot 20 movable in the slot 18 in one of the lugs 17. Opposite the pivot 20 the grate 19 has a lug 21. An operating handle 22 extends through the slot in the other lug 17 into the lug 21. The handle 22 extends through a slot in the side wall 12. A spring 23 is compressed between the side wall through which the handle 22 extends and a back-up washer and cotter pin 24 (see Fig. 4). The spring provides sufficient friction on the side wall to hold the grate in position. The axis of the handle 22 and the pivot 20 is slightly eccentric relative to the grate 19 so that it is biased to one position but may be manually tilted for dumping.

An ash pan 25 is slidable on the base plate 19 between raised guide ribs 26.

The combustion chamber above the grate is enclosed by a cylinder 27 having openings 28 spaced circumferentially thereof near the top. The cylinder 27 is positioned by flanges 29 and 30 on the grate ring 15 and cap plate 11 respectively.

A main smoke pipe connection 31 extends through one side wall 12 and the cylinder 27. A smaller auxiliary smoke pipe connection 32 is similarly mounted near the top of the incinerator. Connections 31 and 32 both lead to the chimney or stack.

A generally V-shaped perforated baffle 33 extends upwardly from the grate ring 15 to a point just below the auxiliary connection 32, and overlies the main connection 31. A perforated transverse division wall 34 is removably positioned within the cylinder 27 and extends from a level above the grate upwardly to a level below the auxiliary connection 32. The wall 34 may be supported in the position shown by any convenient means such as pins (not shown) extending radially of the cylinder 27 under the wall. As the latter is shown in a sloping position, it will naturally wedge itself into position if supported from points on the sides adjacent the bottom thereof. The wall 34 separates the garbage and rubbish chambers, the former being between the wall and baffle 33 and the latter occupying the rest of the space within the cylinder 27.

The cap plate 11 is provided with a circular hole 35 the periphery of which has an inwardly extending flange 36. Semi-circular doors 37 and 38 are hinged on a shaft 39 extending transversely of the hole 35, the doors having ears 40 with holes for receiving the shaft 39. Operating fingers 41 are secured to the shaft 39 and are effective to raise the doors 37 and 38 alternately when the shaft 39 is rocked in opposite directions by means of a handle 42. A cover strip 43 overlies the space between the doors 37 and 38. It will be apparent that the shaft 39 is in substantially the same vertical plane as the upper edge of the division wall 34. The doors 38 and 37 when opened thus permit the deposit of rubbish and garbage respectively into the chambers provided therefor indicated generally by reference numerals 44 and 45.

The operation of the incinerator will probably be apparent from the foregoing description. When sufficient amounts of rubbish and wet garbage have been accumlated in the compartments 44 and 45 to require disposition, the door 38 is opened and the rubbish in the chamber 44 is lighted. Prior to lighting the rubbish, there is usually a slight stack draft which induces a flow of air in through the louvers 13, the openings 28 and downwardly over the garbage in the chamber 45 out through the connection 31. This natural draft exerts a continuous drying effect on the garbage even though there is no combustion taking place in the incinerator. When the rubbish starts to burn, however, the draft is considerably increased. The products of combustion flow first through the auxiliary connection 32 to the flue, greatly increasing whatever natural stack draft may exist. This increased stack draft draws the products of combustion downwardly through the rubbish in the chamber 44 and the garbage in the chamber 45 and out of the main flue connection 31 because of its greater size. The flow of combustion gases through the garbage causes the latter to be thoroughly dried and fed downwardly toward the grate where it is completely burned because of the high temperature maintained at that point by combustion of the rubbish. The baffle plate 33 prevents clogging of the flue connection 31 and permits free flow of products of combustion over the garbage and into the flue. As the rate of combustion decreases because of consumption of the rubbish and garbage, the stack draft will likewise decrease, but the incinerator will not smoke even so, because the auxiliary flue connection 32 is effective to conduct to the flue the products of combustion formed in the last stages of burning.

The air flowing through the inlet louvers 13 and upwardly around the cylinder 37 is pre-heated before entering the cylinder through the holes 28 and is thus made more effective in ensuring rapid drying of the wet garbage and complete final combustion thereof.

Numerous advantages of the invention have already been mentioned. In addition to those, it is light in weight and, therefore, relatively inexpensive to manufacture, yet is amply strong for the service required of it. It accomplishes the complete disposition of household rubbish and garbage without burning other fuel. The device is very simple to operate and requires little or no attention.

Although I have illustrated and described but one preferred form of the invention, it will be apparent that changes in the construction described may be made without departing from the spirit of the invention or the scope of the appended claims.

I claim:

1. An incinerator comprising a casing, a wall spaced inwardly thereof forming a combustion chamber, a partition extending across the chamber, doors in the top of the casing opening into the spaces on opposite sides of the partition, a flue connection adjacent the bottom of the chamber, an air inlet adjacent the top thereof, and air inlet ports in the casing.

2. In an incinerator, a grate, an enclosure extending upwardly therefrom, an auxiliary smoke-pipe connection adjacent the top of said enclosure, a main smoke-pipe connection adjacent the grate, a perforated baffle extending upwardly in front of the main smoke-pipe connection providing a down-draft flue, means dividing the space above the grate into a compartment adjacent said baffle for wet garbage, and a compartment spaced therefrom for dry rubbish whereby the draft and heat produced by combustion of the latter will dry said garbage to a combustible state.

3. The combination defined by claim 2 characterized by said dividing means being disposed at an angle to the vertical and having its lower end closely adjacent said baffle providing therebetween a hopper with a restricted outlet.

CLARENCE J. RODMAN.