June 5, 1928. 1,671,964

E. BREITWIESER

INCINERATOR

Filed Dec. 16, 1926 2 Sheets-Sheet 1

Fig. 1.

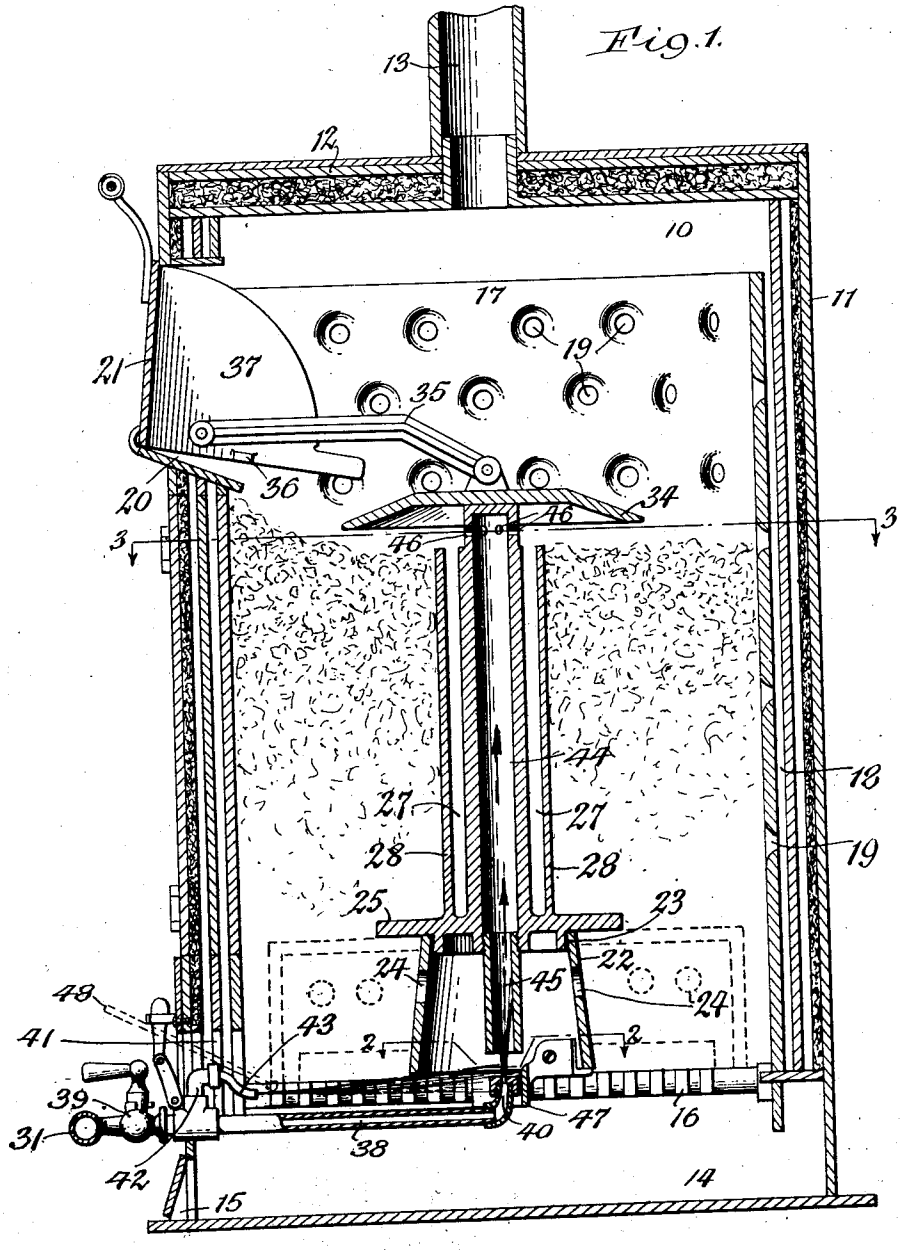
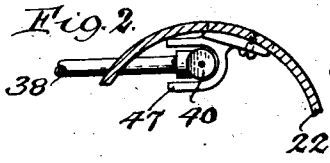


Fig. 2.



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Fig. 3.

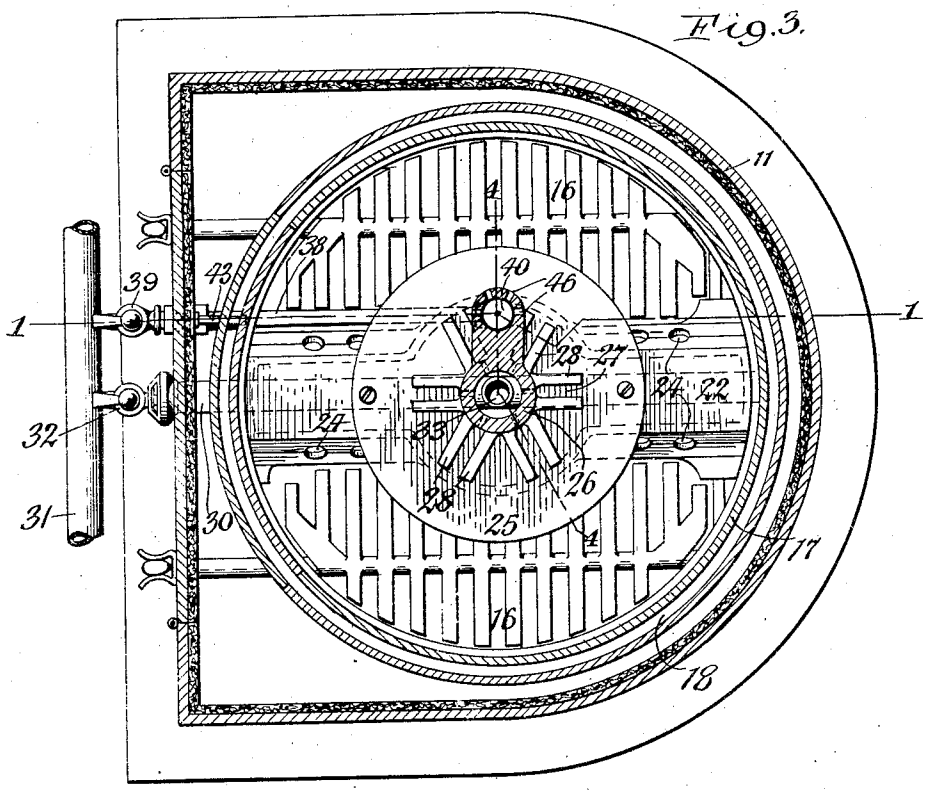


Fig. 4.

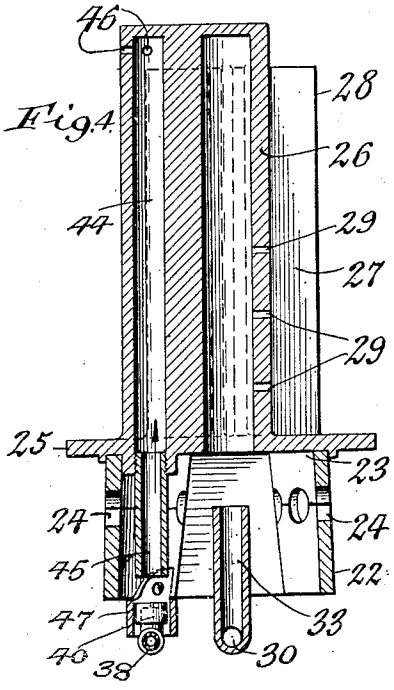
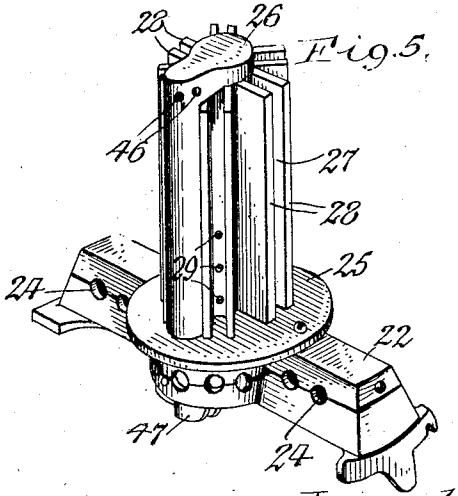


Fig. 5.



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UNITED STATES PATENT OFFICE.

EDWARD BREITWIESER, OF BUFFALO, NEW YORK, ASSIGNOR TO BUFFALO CO-OPERATIVE STOVE CO., OF BUFFALO, NEW YORK, A CORPORATION OF NEW YORK.

INCINERATOR.

Application filed December 16, 1926. Serial No. 155,301.

This invention relates to an incinerator for destroying the garbage, refuse and waste derived from kitchens or households and to dispose of the same without perceptible smoke or odor.

In incinerators as heretofore constructed some difficulty has been experienced in completely lighting the gas used for burning the material which is objectionable not only on account of the waste of fuel and the odors resulting therefrom but also the danger of permitting unignited gas to accumulate in the incinerator where the same is liable to explode and cause damage to property and persons.

The object of this invention is to provide means for lighting the burner and distributor of the incinerator from the exterior thereof so as to ensure ignition of the gas over all parts of the burner and distributor and thus avoid any explosions, odors or waste of fuel.

In the accompanying drawings:

Figure 1 is a vertical section of an incinerator provided with my improved lighting means and taken on line 1—1, Fig. 3. Figure 2 is a fragmentary horizontal section taken on line 2—2, Fig. 1. Figure 3 is a horizontal section taken on line 3—3, Fig. 1. Figure 4 is a fragmentary vertical section taken on line 4—4, Fig. 3. Figure 5 is a perspective view of the distributor containing part of my improved lighting means.

Similar characters of reference indicate like parts in the several figures of the drawings.

Referring to Figures 1 and 3, the numeral 10 represents the combustion chamber which is formed within an enclosing casing, housing or shell consisting of an upright wall 11 and a top 12 which is provided with a smoke pipe 13 leading to a chimney or other flue whereby the products of combustion are conducted to the exterior of the building in which the incinerator is installed. In the lower part of this casing is an ash pit 14 which receives air through an inlet 15 on its front side. Between this ash pit and the combustion chamber is arranged a grate which supports the waste material to be destroyed and preferably consists of two sections 16, 16 arranged side by side with a gap between them.

Extending upwardly from the grate but terminating short of the top of the combustion chamber is a receptacle 17 which is adapted to receive the material to be burned. This receptacle is spaced from the wall of the casing by an intervening upright passage 18 extending from the ash pit to the top of the combustion chamber and provided with a plurality of perforations 19. The material to be burned is introduced into the receptacle through a feed opening or inlet 20 in the upper part of the side wall of the casing and is normally closed by a movable door 21.

Arranged centrally within the receptacle and above the gap between the grate sections is a gas distributor whereby gas flames are directed against the waste material for destroying the same. This distributor comprises a hollow base 22 arranged diametrically across the lower part of the receptacle and having an open underside, a central opening 23 in its top and horizontal rows of side openings 24 in its side walls. Above the base is arranged a pedestal which has a flange 25 at its lower end secured to the base and provided with a hollow upright column 26 which is closed at its upper end and opens at its lower end into the central part of the base. On its periphery the distributor column is provided with a plurality of upright flutes or channels 27 each of which is preferably formed between two upright ribs 28 cast integrally with the column. The lower part of each of these channels communicates with the interior of the column by one or more openings 29 while the upper part of the column is preferably cut off from direct communication with the channels.

Gas is supplied to the distributor by a main gas supply pipe 30 arranged below the base of the burner and extending through the wall of the casing to a gas supply manifold 31 and provided with a hand operated regulating valve 32 on the exterior of the casing and a main delivery nozzle 33 at its inner end which is arranged within the central part of the base and projects upwardly toward the lower end of the hollow column. The gas issuing from the main delivery nozzle flows partly laterally into the hollow base and the openings in its side wall where it burns when ignited in flames against the

lower part of the material in the receptacle, while another part of the gas passes from the main nozzle upwardly into the columns and outwardly through the openings 29 into the lower parts of the channels and then burns in flames, when ignited, which pass upwardly through the channels and against the central part or heart of the mass of rubbish, garbage or similar material which is arranged in the receptacle around the pedestal.

On top of the pedestal is arranged a baffle 34 preferably in the form of an upwardly dished disk which overhangs the pedestal and operates to deflect the burning flame of gas issuing from the upper ends of the channels laterally over the top of the mass of refuse in the receptacle which is to be burned. This baffle is preferably moved toward and from its operative position over the pedestal upon opening and closing the feed door by means of lifting arms 35 pivotally connected at their opposite ends with the feed door and baffle and adapted to be engaged on their undersides by lifting lugs 36 on cheeks 37 forming part of the feed door.

By these means the garbage or other material is heated by gas flames on the bottom, inner side and top and also by heated air engaging the outer side of the same in passing from the ash pit through the passage between the receptacles and the casing to the top of the combustion chamber, thereby drying the material and burning the same to ashes thoroughly and expeditiously and with a minimum consumption of gaseous fuel.

The means herein shown for lighting the gas issuing from the nozzle 33 of the burner embodying my invention and in their preferred form these are constructed as follows:

The numeral 38 represents a pilot gas supply pipe extending through the casing below the base of the distributor and having its outer end provided with a hand operated regulating valve 39 and connected with the gas supply manifold. Adjacent to one side of the main gas delivery nozzle 33 the pilot gas supply pipe is provided with a secondary pilot lighting nozzle 40 and on the outlet side of the hand valve 39 and within a match hole 41 in the casing the pilot gas pipe is provided with a branch pipe 42 terminating in a primary lighting nozzle 43 which points inwardly toward secondary lighting nozzle 40. Immediately above and in line with the secondary lighting nozzle is an upright pilot lighting extension passage which in the present case consists of an upper section 44 formed on the pedestal between two of the channels thereon and a lower section 45 formed by a short piece of pipe screwed into the lower end of the upper section. At its upper end the pilot extension passage is provided with one or more top lighting openings 46 which are arranged adjacent to the upper ends of the upright flame channels in the pedestal. For the purpose of retaining the secondary pilot nozzle in alinement with the upright pilot passage in the pedestal a fork shaped retaining bracket or guide 47 is provided, this bracket being secured to the lower edge of the base and embraces the secondary pilot nozzle, as shown in Figs. 1, 2 and 4.

When it is desired to light the burner of the incinerator the hand valve 39 of the main pilot supply pipe is first turned on so as to cause gas to escape from the primary and secondary lighting nozzles adjacent to the base of the distributor. A lighted match 48 is now inserted through the lighting opening or match hole 41 within reach of the jet of gas issuing from the primary lighting nozzle whereupon this jet is lit and shoots a flame horizontally inward toward the jet of gas streaming upwardly out of the secondary lighting nozzle, thereby igniting the gas also at the latter. When the gas is lit at the secondary lighting nozzle a flame is projected upwardly through the upright lighting passage and issues laterally through the top lighting openings 46 of the pedestal. Immediately after touching off the gas at the primary pilot lighting nozzle the attendant turns on the main gas valve 32 and when the gas issues from the central delivery nozzle 33 of this pipe it is immediately ignited by the flame of the secondary lighting nozzle and caused to burn within the base of the distributor and issue as flame from the base openings 24 against the lower part of the mass of material to be destroyed. Some of this burning gas also passes upwardly into the hollow column, thence laterally through the openings 29, thence upwardly through the several channels and against the material which bridges the outer sides of the channels, and thence laterally underneath the baffle and over the top of the pile of refuse in the receptacle. If for any reason any unignited gas should rise in the column or in one or more of its channels, such gas upon reaching the upper ends of the respective channels will be immediately ignited by the flames issuing from the top pilot lighting openings and caused to spread over the top of the refuse.

In this manner it is impossible for any large body of unignited gas to accumulate in the top of the receptacle and combustion chamber where the same if subsequently ignited might produce an explosion. Possible scarring or injury of the attendant is thus avoided as well as unnecessary waste of gas. After the incinerator is thus completely lighted at the bottom and top of the

burner the pilot gas supply valve may be turned off and left in this condition until the next lighting operation.

This lighting device is not only very simple in construction but also permits of positively lighting the gas at the various places where the same issues so as to create no fear of possible explosion, annoyance or damage due to ignition of any accumulated gas.

I claim as my invention:

1. An incinerator comprising a receptacle adapted to receive the material to be burned, a distributor arranged in said receptacle and provided with a pedestal having an upright hollow column which is open at its lower end, an upright channel on the exterior of said column and communicating with the interior of the latter, and an upright pilot gas passage having a pilot exit opening adjacent to the upper end of said channel, a main gas supply pipe having a delivery nozzle projecting upwardly toward the lower end of said column, and a pilot gas supply pipe having a discharge nozzle projecting toward the lower end of said pilot light passage.

2. An incinerator comprising a receptacle adapted to receive the material to be burned, a distributor arranged in said receptacle and provided with a pedestal having an upright hollow column which is open at its lower end, an upright channel on the exterior of said column and communicating with the interior of the latter, and an upright pilot gas passage having a pilot exit opening adjacent to the upper end of said channel, a main gas supply pipe having a delivery nozzle projecting upwardly toward the lower end of said column, and a pilot gas supply pipe having a discharge nozzle projecting toward the lower end of said pilot light passage, the interior of said column and said column being in communication only at the lower parts thereof.

3. An incinerator comprising a receptacle adapted to receive the material to be burned, a distributor arranged in said receptacle and provided with a pedestal having an upright hollow column which is open at its lower end, an upright channel on the exterior of said column and communicating with the interior of the latter, and an upright pilot gas passage having a pilot exit opening adjacent to the upper end of said channel, a hollow base communicating through its top with the lower end of said column, a main gas supply pipe having an exit nozzle projecting upwardly toward the lower end of said column, a pilot gas supply pipe having an exit nozzle which projects upwardly toward the lower end of said pilot light passage, and a bracket arranged on said base and engaging with said pilot light nozzle.

4. An incinerator comprising a receptacle adapted to receive the material to be burned, a distributor arranged in said receptacle and provided with a pedestal having an upright hollow column which is open at its lower end, an upright channel on the exterior of said column and communicating with the interior of the latter, and an upright pilot gas passage having a pilot exit opening adjacent to the upper end of said channel, a hollow base communicating through its top with the lower end of said column, a main gas supply pipe having an exit nozzle projecting upwardly toward the lower end of said column, a pilot gas supply pipe having an exit nozzle which projects upwardly toward the lower end of said pilot light passage, and a bracket secured to said base and having a fork which embraces said pilot light nozzle.

5. An incinerator comprising a receptacle adapted to receive the material to be burned, a distributor arranged in said receptacle and provided with a pedestal having an upright hollow column which is open at its lower end, an upright channel on the exterior of said column and communicating with the interior of the latter, and an upright pilot gas passage having a pilot exit opening adjacent to the upper end of said channel, a main gas supply pipe having a delivery nozzle projecting upwardly toward said column, and a pilot gas supply pipe having a secondary outlet nozzle arranged adjacent to said delivery nozzle and a primary nozzle adapted to direct a flame toward said secondary nozzle.

6. An incinerator comprising a receptacle adapted to receive the material to be burned, a distributor arranged in said receptacle and provided with a pedestal having an upright hollow column which is open at its lower end, an upright channel on the exterior of said column and communicating with the interior of the latter, and an upright pilot gas passage having a pilot exit opening adjacent to the upper end of said channel, a main gas supply pipe having a delivery nozzle projecting upwardly toward said column, a pilot gas supply pipe having a secondary outlet nozzle arranged adjacent to said delivery nozzle and a primary nozzle adapted to direct a flame toward said secondary nozzle, and a hollow base communicating with the lower end of said column and having lateral gas outlet openings.

7. An incinerator comprising a receptacle adapted to receive the material to be burned, a distributor arranged in said receptacle and provided with a pedestal having an upright hollow column which is open at its lower end, an upright channel on the exterior of said column and communicating with the interior of the latter, and an up-

right pilot gas passage having a pilot exit opening adjacent to the upper end of said channel, a main gas supply pipe having a delivery nozzle projecting upwardly toward said column, a pilot gas supply pipe having a secondary outlet nozzle arranged adjacent to said delivery nozzle and a primary nozzle adapted to direct a flame toward said secondary nozzle, a hollow base communicating with the lower end of said column and having lateral gas outlet openings, and a bracket on said base for supporting said pilot gas supply pipe.

In testimony whereof, I hereby affix my signature.

EDWARD BREITWIESER.