

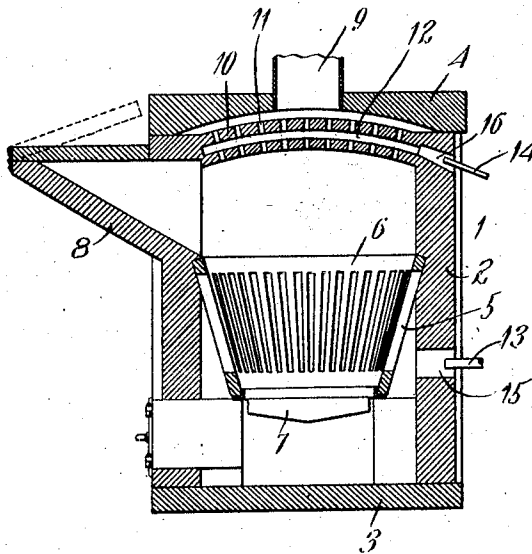
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W. W. CUMMINGS

INCINERATOR

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Inventor:

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By his atty.

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UNITED STATES PATENT OFFICE.

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INCINERATOR.

Application filed September 20, 1922. Serial No. 589,476.

To all whom it may concern:

Be it known that I, WILLIAM W. CUMMINGS, a citizen of the United States, residing at 15 Winter Street, Woburn, in the county of Middlesex and State of Massachusetts, have invented new and useful Improvements in Incinerators, which are fully set forth in the following specification.

This invention relates to certain improvements in incinerators and has for its objects to more perfectly and economically incinerate garbage or other refuse, either gaseous, solid or liquid and to destroy all the odors incident thereto.

Hitherto incinerators have been constructed using a flame of either coal, oil or gas playing directly on the garbage or other material to be incinerated—or such incinerators have had an added flame playing on the gases in certain combustion chambers indirectly or directly—or the gases from the first distillation of the refuse have been conducted again through the fire before discharging them into the flue, but in each case there has been no certainty of the odors being destroyed because it has been possible to distill more gases than the flame could destroy or the temperature could not be maintained at a sufficiently high point to break up the gases.

In order to attain the objects hereinbefore set forth, I provide an incinerator having embodied therein a container for the garbage or other refuse and directly above this container I provide a partition, preferably consisting of an arch with passages extending vertically therethrough and also having passages extending therethrough at an angle to said vertical passages. Without departing from the spirit of my invention, however, the partition may be made in the form of a diaphragm or checker brickwork. A burner is supplied for providing a comparatively small flame for distillation of the material to be incinerated and another burner capable of providing a larger and more intense flame is provided for breaking up the gases through the medium of the partition hereinbefore referred to by rendering said partition incandescent and by so directing the flames that no more of the gas be distilled from the material by the lower flame than can be completely destroyed by the incandescent partition or arch, the result accomplished being that none of the gases can escape into the flue of

the incinerator without coming into intimate contact with said incandescent partition.

The invention consists in the combination and arrangement of parts set forth in the following specification.

The single figure of the drawing is a vertical section through the incinerator.

In the drawing, 1 is the casing of the incinerator consisting of side walls 2, a bottom 3 and a top 4. 6 is a hollow frusto-conical shaped container provided with slots 5 in its side walls. A grate 7 is provided beneath the container 6. The material to be incinerated is introduced into the container 6 through a hopper 8 located above and at one side of the container 6. A flue 9 leads out of the top of the casing and beneath said flue and directly above the container 6 is a partition 10 constituting, in the present embodiment of my invention, an arch, which is provided with vertically extending passages 11 passing therethrough and with passages 12 extending therethrough at an angle to said vertical passages.

The partition 10 is of approximately the same diameter as the upper end of the container 6, however, so that a large number of vertically extending passages 11 can be provided in the partition 10, and this is very essential in order that the gases arising from the material being incinerated shall be thoroughly broken up and be brought into contact with the large area of the incandescent material of said partition.

A burner 13 provides heat for incinerating the contents of the container 6 and another and separate burner 14 provides heat for the partition 10. Openings 15 and 16 in the side walls 2 of the casing are provided for the flames from the burners 13 and 14 respectively to pass through, for respectively heating the material in the container and for consuming the gases which arise therefrom and contact with the partition 10.

The burner 14 is positioned to direct flames against the partition 10 and preferably into the passages 12 to heat the partition 10 to an incandescence sufficiently high to break up and burn the gases from the material in the container.

The general operation of the incinerator is as follows:—

The material to be incinerated is inserted in the container 6 through the hopper 8. Flames from the burner 13 are then directed

through the opening 15 in the proper direction to distill the material in the container and the gases arising from this distillation pass upwardly into contact with the material forming the partition or arch 10. This has previously been brought to an intense heat by flames from the gas burner 14 which pass into the arch 10 through the passages 12. The arch is heated to an incandescence sufficiently high and is provided with a large number of passages to break up and burn the gases arising from the material in the container 6. All these gases must pass through the small passages or openings 11 in the arch and therefore are brought into intimate contact with the incandescent surfaces of the arch before they can escape through the flue 9 to the chimney or outer air.

It will be understood that in carrying my invention into practical operation the source of heat may be gas, oil, coal or electricity, although in the present embodiment of my invention I have illustrated the gas burners 13 and 14 for supplying the heat.

In operating the device of this invention, it will be understood that the heat derived from the burner 13 will be only sufficient to distill sufficient gas, so that the intense heat of the incandescent partition can destroy all of the gases arising from the container, in order that none of said gases may escape into the flue without coming into intimate contact with said incandescent partition, whereby any obnoxious odors or unburned gases may escape into the atmosphere.

I claim:—

1. An incinerator having, in combination, a container for material to be incinerated, a burner to heat the material in said container, a partition located directly above said container and being of approximately the same diameter and having openings

therein for the passage of gases there-through and a second burner positioned out of the passage for said gases and adapted to direct flames against said partition to heat the same whereby gases arising from the heated material in said container may be destroyed.

2. An incinerator having, in combination, a container for material to be incinerated, a burner to heat the material in said container, a partition located above said container having vertically extending openings for the passage of gases therethrough and having other openings extending there-through at an angle to said first-named openings and a second burner positioned out of the passage for said gases and adapted to direct flames through said other openings whereby gases arising from the heated material in said container may be destroyed.

3. An incinerator having, in combination, a container for material to be incinerated, a flue leading out of said incinerator, a hopper opening through the side wall of said incinerator, said container located beneath said hopper, a burner to heat the material in said container, an arch located directly above said container and hopper and beneath said flue and having openings for the passage of gases therethrough and a second burner positioned out of the passage for said gases and adapted to direct flames against said arch to heat the same whereby gases arising from the heated material in said container may be destroyed.

In testimony whereof I have signed my name to these specifications in the presence of the subscribing witnesses.

WILLIAM W. CUMMINGS.

Witnesses:

F. A. VALENTE,
E. BUSH.