Feb. 3, 1925. 1,525,076

E. KENER, JR

INCINERATOR

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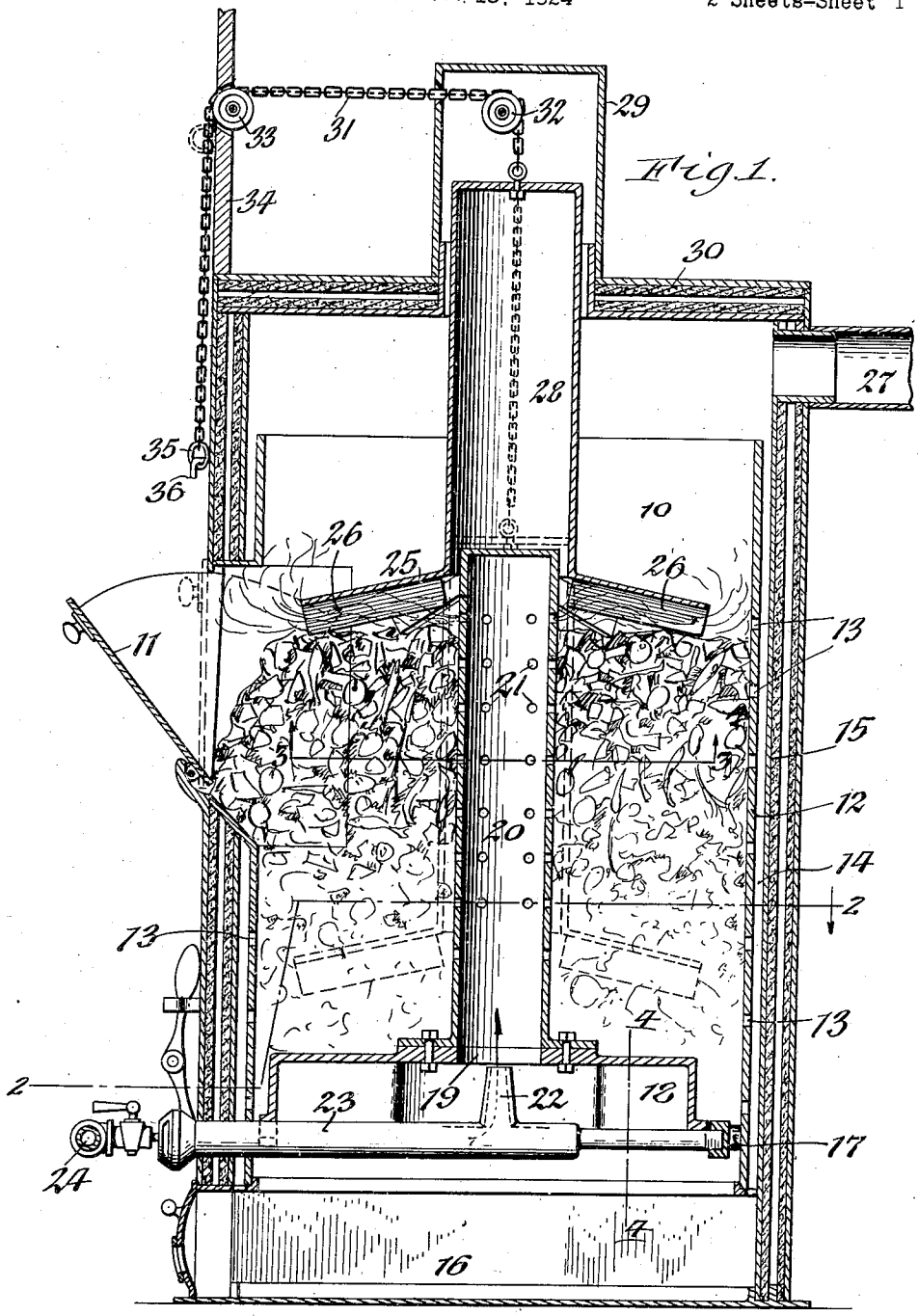


Fig. 1.

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Fig. 2.

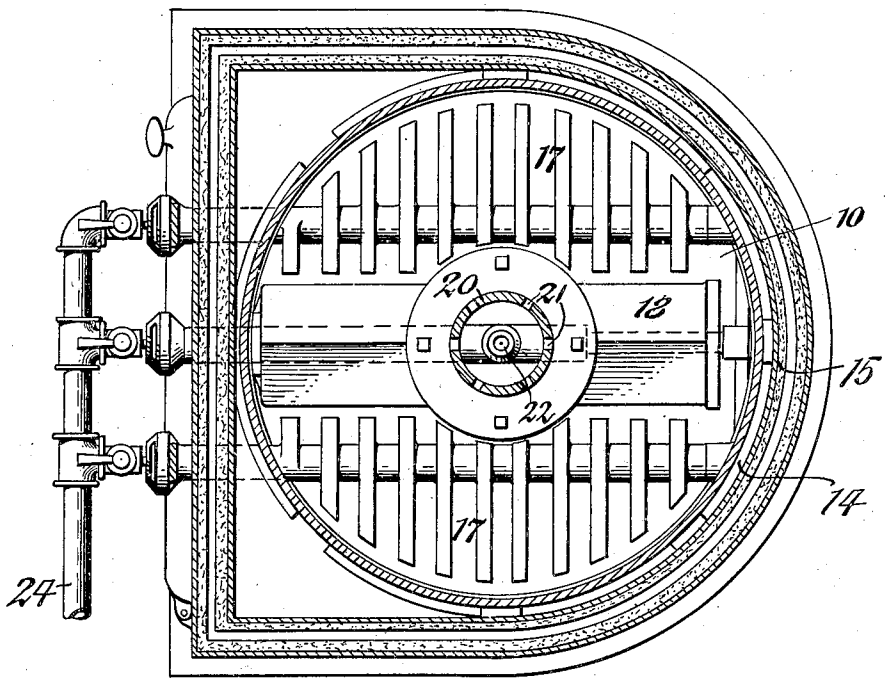


Fig. 3.

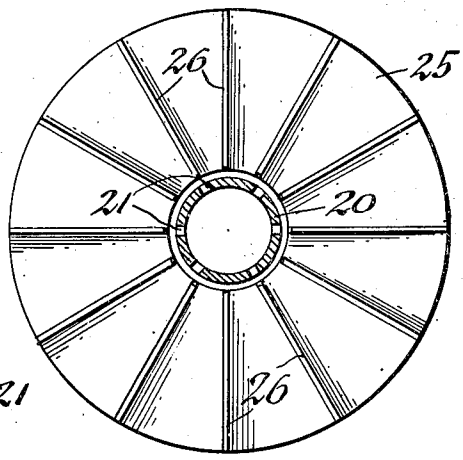
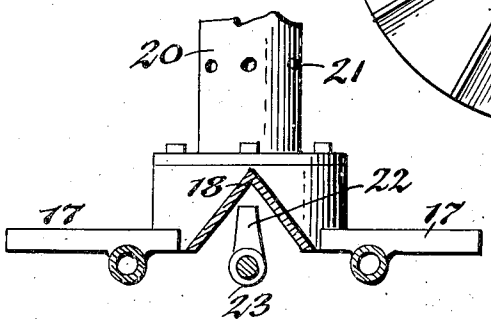


Fig. 4.



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Patented Feb. 3, 1925. 1,525,076

UNITED STATES PATENT OFFICE.

EDWARD KENER, JR., OF BUFFALO, NEW YORK.

INCINERATOR.

Application filed February 18, 1924. Serial No. 693,466.

To all whom it may concern:

Be it known that I, EDWARD KENER, JR., a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Incinerators, of which the following is a specification.

The objects of this invention are to provide an incinerator for burning kitchen refuse, garbage and the like in such manner that the same is completely reduced to ashes without permitting any objectionable odors to escape to the exterior of the apparatus or the building and to accomplish this result by means which are comparatively simple in construction, capable of being manufactured economically, easy of manipulation, and not liable to get out of order.

In the accompanying drawings:

Figure 1 is a vertical section of my improved incinerator. Figures 2 and 3 are horizontal sections, on the correspondingly numbered lines in Figure 1, looking downwardly and upwardly, respectively. Figure 4 is a vertical section taken on line 4—4, Fig. 1.

Similar characters of reference indicate like parts throughout the several views.

The numeral 10 represents the combustion chamber or refuse receptacle which is intended to receive the pile of refuse, kitchen garbage or the like which is to be destroyed by cremation. This material is filled into this chamber through an inlet opening in the upper part of its side which is normally closed by a door 11. The side of this pile of ashes bears against an inner wall 12 having perforations 13 through which the ashes resulting from the burning refuse can pass laterally from the top of the pile and drop through a vertical space 14 between the inner wall 12 and an outer wall 15 into an ash pit 16. This latter is arranged below the grate 17 which supports the pile of ashes on the bottom. This grate comprises two sections and between these is arranged a hollow bridge 18 which has a central opening 19 in its top while the upper sides of its ends are of inverted V-form so that any refuse or ashes will slide off therefrom onto the grate sections. The latter are so mounted that they can be turned or moved for dumping the ashes thereon into the ash pit.

Secured with its lower end rigidly to the bridge and opening at its lower end into the underside of the same is an upright tubular burner 20 which is closed at its upper end and is provided at different points in its height with a plurality of gas outlet openings 21 whereby the flames of the gas when lighted are directed laterally from the outer side of the burner against the upper part of the pile of garbage. The gas is discharged upwardly into the lower end of the burner by a nozzle 22 arranged on the upper part of a delivery pipe 23 within the ash pit and supplied from a supply pipe 24 on the exterior of the incinerator.

Within the upper part of the combustion chamber is arranged a vertically movable spreading plate 25, having preferably the form of an upwardly dished disk and provided on its underside with laterally extending ribs 26 which are adapted to rest on the top of the pile of refuse. As the gas flames issue laterally from the uppermost openings in the burner the same are spread by the plate 25 over the top of the pile of refuse and thereby not only dry and burn the same but also heat the same from the top down and liberate any combustible gases in the refuse. These gases are intercepted by the flame of the burner and ignited so that the heat thereof is utilized for reducing the garbage. Furthermore the burning of the gases thus generated by the destruction of the garbage destroys any odors contained therein, thereby preventing the escape of any objectionable odors from the upper part of the combustion chamber through the vent flue 27 which leads to the chimney or exterior of the building.

This spreading plate rests by gravity on the pile of refuse and descends as the height of the pile is lowered by the burning of the refuse from the top downwardly and the removal of the ashes from the top of the pile so as to permit the consumption of the refuse to progress.

The central part of the spreading disk is provided on its upper part with an upwardly projecting cap 28 of tubular form which is closed at the top and open at the bottom and receives the upper end of the burner. As the spreading plate is raised and lowered within the combustion chamber the cap slides on the burner and not only serves as a guide between these parts but it also prevents the burning gas from passing from the burner directly into the combustion chamber but instead compelling

the same to pass laterally underneath the spreading plate to the edge thereof so that the gases become thoroughly mixed with air and mingle with the combustible odor bearing gases given off from the heated garbage and thus insure destroying the same before they can escape to the outside.

The upper end of the cap moves vertically in a dome 29 projecting upwardly from the central part of the top 30 of the combustion chamber.

Any suitable means may be employed for raising the spreading plate and connected parts and holding the same in an elevated position while a charge of garbage is being introduced into the combustion chamber. The means which are shown for this purpose in the drawings, as an example, comprise a lifting chain 31 or other suitable line or flexible member having its inner parts arranged within the dome and connected with the top of the spreader cap and having its outer part arranged externally of the apparatus where the same can be manipulated by the attendant. The intermediate part of the chain passes around guide pulleys 32, 33 arranged respectively on the upper part of the dome, and a bracket 34 on top of the combustion chamber. The outer part of the chain is provided with a ring 35 which is adapted to be engaged with a hook 36 on the exterior of the combustion chamber for holding the spreader plate in its elevated position, but is detached therefrom when the apparatus is in operation.

As the cap descends with the spreading plate during the gradually decreasing height of the pile of refuse following its gradual consumption by the flame of the burner, this causes the cap to progressively cover up the openings of the burner from the upper end downwardly as the cremation proceeds. By this means the amount of gas which escapes from the burner and burns against the refuse is gradually reduced so that the heat generated by the burner is checked in the same measure as the height of the pile of refuse is reduced and thereby automatically adapts the gas supply to the mass of fuel under treatment and thus utilizes the fuel economically.

Owing to its simplicity this incinerator can be manufactured at low cost. The same has a large capacity, it enables garbage of a miscellaneous character, either wet or dry or a mixture of these kinds, to be readily and quickly cremated with a minimum consumption of gas because the gas generated from the garbage aids as part of the fuel for heating, drying and burning the mass of garbage, and as this incinerator has no delicate part the same is very durable and not likely to get out of order by normal use.

I claim as my invention:

1. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a grate arranged in the lower part of said chamber and adapted to support the pile of refuse, a hollow bridge arranged adjacent to said grate, and a burner rising from said bridge and adapted to receive a supply of gas at its lower end and having an outlet above its lower end from which the burning gas is adapted to escape and strike the refuse in the chamber.

2. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a grate arranged in the lower part of said chamber and adapted to support the pile of refuse, a hollow bridge arranged adjacent to said grate and having its upper side constructed in the form of an inverted V, and a burner rising from said bridge and adapted to receive a supply of gas at its lower end and having an outlet above its lower end from which the burning gas is adapted to escape and strike the refuse in the chamber.

3. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a grate arranged in the lower part of said chamber and adapted to support the pile of refuse, a hollow bridge arranged adjacent to said grate, a burner rising from said bridge and adapted to receive a supply of gas at its lower end and having an outlet above its lower end from which the burning gas is adapted to escape and strike the refuse in the chamber, and a gas delivery pipe arranged below said bridge and having an upwardly projecting delivery nozzle which directs the gas into the lower end of said burner.

4. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a bridge arranged in the lower part of said chamber, an upright hollow burner arranged centrally within said chamber and rigidly secured at its lower end to said bridge and having its upper part perforated to permit gas to escape therefrom in the form of a flame, and means for supplying gas to said burner at the lower end thereof.

5. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a bridge arranged in the lower part of said chamber, an upright hollow burner arranged centrally within said chamber and rigidly secured at its lower end to said bridge and having its top closed and the upper part of its side perforated, and means for supplying gas to the lower end of said burner.

6. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a bridge arranged in the lower part of said chamber, an upright hollow burner arranged centrally within said chamber and rigidly secured at its low-

er end to said bridge and having its top closed and the upper part of its side perforated, means for supplying gas to the lower end of said burner, and a spreading disk movable vertically on said burner and adapted to engage the top of said pile of refuse.

7. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a bridge arranged in the lower part of said chamber, and upright hollow burner arranged centrally within said chamber and rigidly secured at its lower end to said bridge and having its top closed and the upper part of its side perforated, means for supplying gas to the lower end of said burner, and a spreading disk adapted to engage the upper side of said pile of refuse and provided centrally with an upwardly projecting cap which is adapted to slide vertically on said burner.

8. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a bridge arranged in the lower part of said chamber, and upright hollow burner arranged centrally within said chamber and rigidly secured at its lower end to said bridge and having its top closed and the upper part of its side perforated, means for supplying gas to the lower end of said burner, and a spreading disk adapted to engage the upper side of said pile of refuse and provided centrally with an upwardly projecting cap which is adapted to slide vertically on said burner, said spreading disk being of upwardly dished form.

9. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a bridge arranged in the lower part of said chamber, an upright hollow burner arranged centrally within said chamber and rigidly secured at its lower end to said bridge and having its top closed and the upper part of its side perforated, means for supplying gas to the lower end of said burner, and a spreading disk adapted to engage the upper side of said pile of refuse and provided centrally with an upwardly projecting cap which is adapted to slide vertically on said burner, said spreading disk being of upwardly dished form and provided on its underside with ribs extending from the central part of said disk to the marginal part thereof.

10. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a bridge arranged in the lower part of said chamber, an upright hollow burner arranged centrally within said chamber and rigidly secured at its lower end to said bridge and having its top closed and the upper part of its side perforated, means for supplying gas to the lower end of said burner, a spreading disk adapted to engage the upper side of said pile of refuse and provided centrally with an upwardly projecting cap which is adapted to slide vertically on said burner, and a dome arranged on the top of said combustion chamber and adapted to receive said cap.

11. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a bridge arranged in the lower part of said chamber, an upright hollow burner arranged centrally within said chamber and rigidly secured at its lower end to said bridge and having its top closed and the upper part of its side perforated, means for supplying gas to the lower end of said burner, a spreading disk adapted to engage the upper side of said pile of refuse and provided centrally with an upwardly projecting cap which is adapted to slide vertically on said burner, and means for raising and lowering said spreading plate and connected parts.

12. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, a bridge arranged in the lower part of said chamber, an upright hollow burner arranged centrally within said chamber and rigidly secured at its lower end to said bridge and having its top closed and the upper part of its side perforated, means for supplying gas to the lower end of said burner, a spreading disk adapted to engage the upper side of said pile of refuse and provided centrally with an upwardly projecting cap which is adapted to slide vertically on said burner, a dome arranged on the top of said combustion chamber and adapted to receive said cap, and means for raising and lowering said spreading plate and cap comprising a chain having its inner end connected with said cap, and its outer end arranged externally of the combustion chamber, and guide rollers around which the intermediate part of said chain passes.

13. An incinerator comprising a combustion chamber adapted to receive a pile of refuse to be burned, an upright tubular gas burner arranged in the combustion chamber and provided with a plurality of openings in its sides throughout the height thereof, and a cap movable vertically on said burner and adapted to be supported by the pile of refuse and to descend therewith in the same measure as the height of the pile is reduced upon being burned by the flame from said burner.

In testimony whereof I affix my signature.

EDWARD KENER, JR.