C. A. GIBBS.

GARBAGE INCINERATOR.

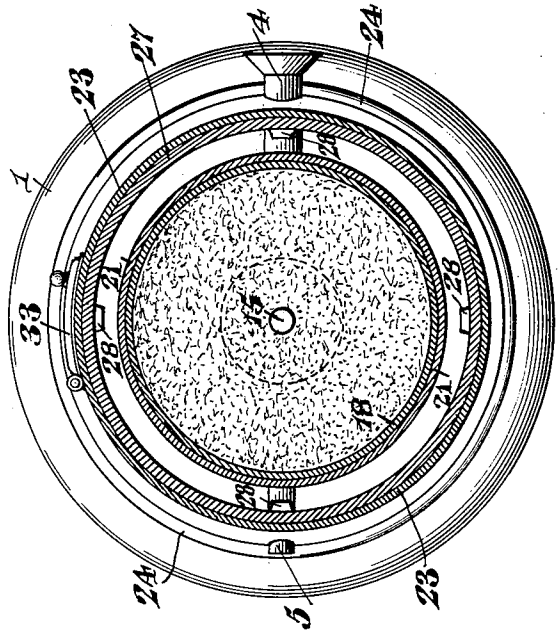
APPLICATION FILED NOV. 9, 1916.

1,246,416.

Patented Nov. 13, 1917.

2 SHEETS—SHEET 1.

Fig. 2.



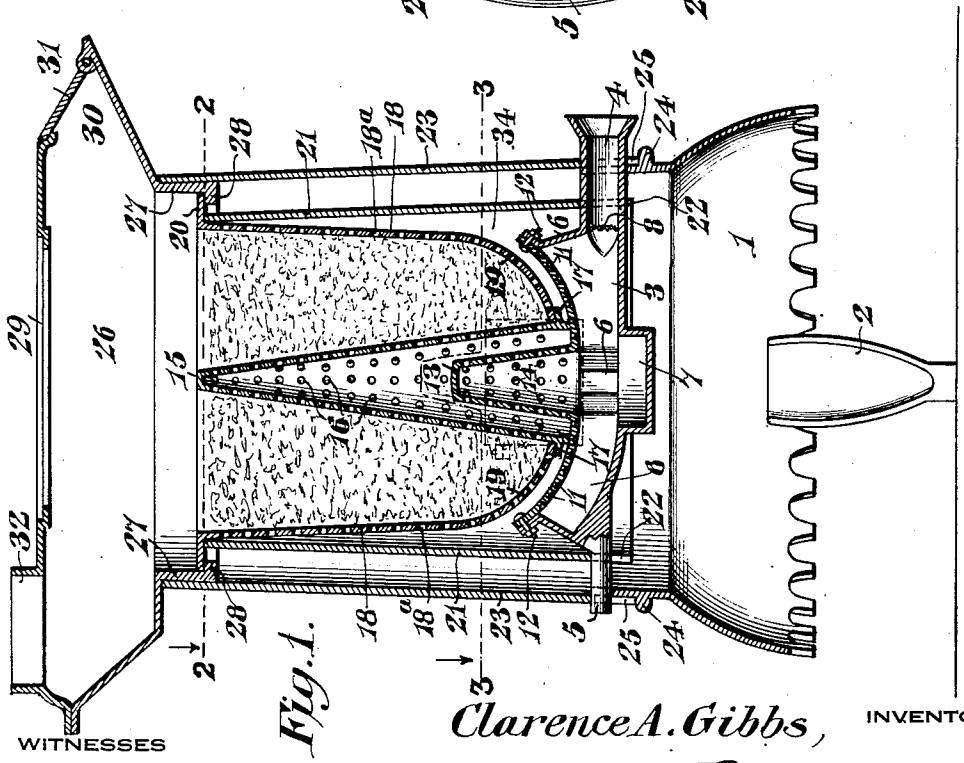


Fig. 1.

WITNESSES

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2 SHEETS—SHEET 2.

Fig. 4.

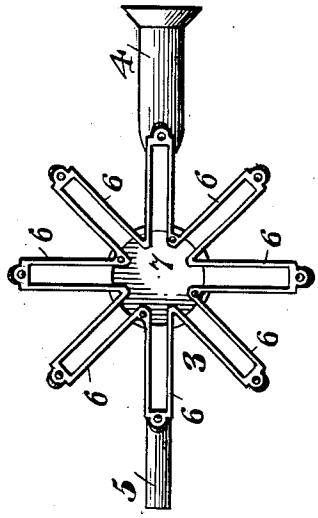


Fig. 5.

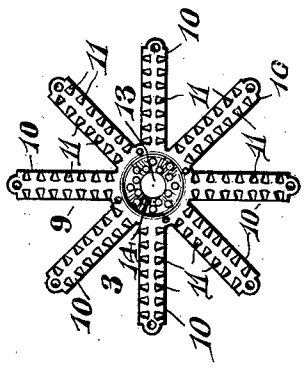


Fig. 6.

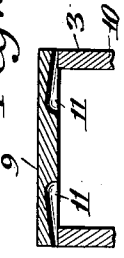
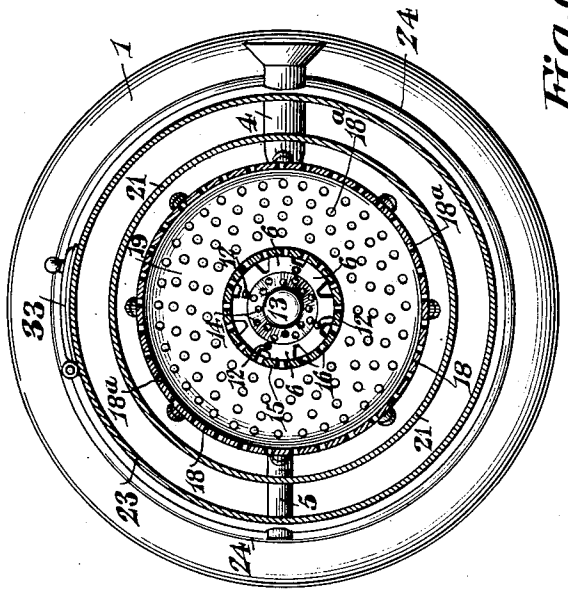


Fig. 3.



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CLARENCE A. GIBBS, OF WILLIAMSPORT, PENNSYLVANIA.

GARBAGE-INCINERATOR.

1,246,416. Specification of Letters Patent. Patented Nov. 13, 1917.

Application filed November 9, 1916. Serial No. 130,410.

To all whom it may concern:

Be it known that I, CLARENCE A. GIBBS, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Garbage-Incinerators, of which the following is a specification.

This invention has reference to garbage incinerators, although applicable to other purposes.

The object of the invention is to provide an incinerator of cheap and simple construction which by the use of gas as a fuel will thoroughly incinerate the garbage in a relatively short time, even though the garbage be initially quite wet or contain material of difficult reduction, like bones and fruit rinds, and the like.

In accordance with the present invention there is provided a suitable base sufficiently raised upon legs to insure ample air circulation. The base carries a burner of peculiar construction, on which burner there is lodged a garbage receptacle or basket with a closure by means of which flames from the burner may attack the exterior portion of the mass of garbage contained in the basket. Within the basket there is lodged a duct for the flame from the burner, by means of which there is formed a cavity in the garbage in the basket so that the flame may attack a large interior surface of the mass of garbage, as well as an exterior surface.

The incinerator also includes an outer casing and a suitable top with means for the attachment of a smoke pipe to convey the fumes to a suitable point of escape. The burner is so mounted that it may be readily tipped for dumping purposes on the removal of the garbage basket.

The invention will be best understood from a consideration of the following detailed description, taken in connection with the accompanying drawings forming part of this specification, with the further understanding that while the drawings show a practical form of the invention, the latter is not confined to any strict conformity with the showing of the drawings, but may be changed and modified so long as such changes and modifications come within the scope of the appended claims.

In the drawings:—

Figure 1 is a vertical diametric section of the incinerator.

Fig. 2 is a cross-section on the line 2—2 of Fig. 1.

Fig. 3 is a cross-section on the line 3—3 of Fig. 1, with the garbage omitted and with the inner cone shown in plan view.

Fig. 4 is a top plan view of one member of the burner.

Fig. 5 is a bottom plan view of the other member of the burner.

Fig. 6 is a fragmentary cross-section through one of the burner arms, including two opposite burner tips, the view being on a larger scale than the other figures.

Referring to the drawings, there is shown an incinerator provided with a base portion 1, which may be in the form of a casting, as is customary in stoves and the like, and this base portion is mounted upon legs 2 so as to elevate it above the floor or other support upon which the incinerator is placed.

Mounted on the base 1 is a burner 3 provided with an inlet pipe 4 and a supporting pintle 5 on diametrically opposite sides, so that the burner may be rocked with the pipe 4 and pintle 5 as pivots.

The burner 3 is of star form having radial branches 6 extending from a central chamber 7 which may drop somewhat below the level of the branches 6, considering the burner as installed, and the pipe 4 is in line with one of the burner branches and is provided with a gauze screen 8 where opening into said branch. The chamber 7 serves as a distributing chamber, whereby a stream of gas, prevented from boring by the screen 8, is caused to flow to and through the various branches 6. The burner is provided with a top plate or cover member 9 having branches 10 similar to and constituting covers for the branches 6. In what constitutes the under surface of the cover member 9 are channels 11 arranged along the long sides of the branches and narrowing toward the edges of the branches. The branches 6 and 10 form radial burner arms and the channels 11 form burner tips directing small streams of gas sidewise from the burner arms and along the length of the latter. The distribution of the radial burner arms in a circular series about the central por-

tion of the burner provides air passages between the arms, so that the burning gas issuing from the tips or channels 11 has an ample air supply causing the gas which may be injected into the pipe 4 and so distributed through the burner to burn with a hot blue flame. The channels 11 are preferably formed in the cover member 9 only, for manufacturing reasons. The cover member 9 is secured to the body of the burner by bolts 12, or in any manner suitable for permitting the formation of the burner in as many parts as may be found necessary in manufacture and the assemblage of these parts into a complete burner. The cover or cap member 9 has at its central portion a hollow conical projection 13 extending from the cover member 9 in a direction away from the burner, and in the installed position of the burner this conical projection 13 stands upright. The side walls of the cone 13 are pierced by numerous perforations 14, so that gas entering the burner beside escaping through the passages 11 may also escape through the perforations 14 and there burn.

Resting upon and rising from the burner in concentric relation to the cone 13 is another cone 15 of a diameter at the base to rest on the cover member of the burner in spaced relation to the cone 13. The cone 15 has its side walls pierced by numerous perforations 16.

The cone 15 near the base has outstanding lugs 17 forming a support for a garbage receptacle or basket 18 provided with numerous perforations 18^a and a rounded narrowing base portion 19 fitting the base portion of the cone and engaging the lugs 17.

The upper portion of the basket 18 forming the wide end thereof is provided with an outstanding radial flange 20 engaging the top of a casing 21 resting upon and carried by the pipe 4 and pintle 5, the casing having notches 22 permitting it to straddle the pipe 4 and lug 5. The basket 18 narrows from the upper wide end toward the lower end and the casing 21 is enlarged from the upper narrow end toward the bottom end in the installed position of the parts. There is also provided an exterior shell or casing 23 inclosing the several parts described and carried by an exterior circular flange 24 on the base 1. The shell 23 has notches 25 in position to straddle the pipe 4 and pintle 5, respectively.

Resting upon and carried by the shell 23 is a top 26 provided with a depending neck 27 entering the shell 23 and carrying inwardly directed lugs 28 in underriding relation to the flange 20. The top member 26 may be constructed in a manner customary in small stoves of the laundry type, having an opening 29 in the top, a side chute 30 with a door 31 and a smoke flue collar 32.

The base, cap, casing 21, basket 18, cone 15 and the burner may be all in the form of castings each of one or more pieces as may be found convenient in manufacture. The shell 23 may be a sheet metal shell or a casting, as desired. The shell 23 is provided on one side with a door 33 for access to the interior of the incinerator as may be found desirable.

The cone 15 is of a height to reach substantially to the top of the basket 18.

When the parts are all assembled garbage is introduced through the top 26 as by way of the opening 29, which may be afterward closed by a lid, as is customary, and the garbage is lodged about the cone 15 and between the latter and the walls of the basket 18. The mass of garbage is thus a hollow mass and when gas issuing from the burner is lighted the flames find access to the chamber between the burner, the basket and the casing 21, such chamber being indicated at 34 in the drawings. The jets of flame issuing from the passages 11 find ready access to the exterior of the basket and through the perforations 18^a to the outer portion of the mass of garbage. The perforations 18^a extend throughout the height of the basket inclusive to the rounded portion 19, so that a great portion of the garbage is subjected to the direct action of the flames. Moreover, by making the flames intense the garbage basket quickly becomes heated to a red or higher heat and the incineration proceeds with great rapidity.

Flames also enter the cone 15 through the conical extension 13, the perforations 14 of which project sidewise through the cone 13 and hence are directed against the inner wall of the cone 15 and rise therealong finding access to the garbage within the receptacle in the hollow central portion thereof by way of the perforations 16. In this manner the garbage is attacked both interiorly and exteriorly and is formed within the receptacle into a relatively thin-walled hollow mass, which therefore becomes rapidly dried and then burned to ashes.

The burner is made more or less concave in conformity with the rounded bottom of the garbage basket so that the flames are brought into substantially the same distance from the bottom of the garbage basket throughout its area.

Experience has taught that the garbage is rapidly dried out and then those parts of the basket against which the flames are directed are quickly brought to a red heat and the garbage is thoroughly incinerated, even such materials as large bones, like soup bones, and wet articles, like watermelon rinds, or articles of difficult material to incinerate, like certain fruit rinds, are all reduced to ashes in a relatively few minutes.

By forcing the gas it is possible to incin-

erate the garbage refuse accumulated in the course of a day in an ordinary family in about ten minutes with the incineration very thorough.

For family use the incinerator may have a capacity somewhat in the neighborhood of a peck. For larger establishments the incinerator may be made correspondingly larger.

There is ample opportunity in the construction of the incinerator for access of air to the burning gas and by having the cone 15 rise to about the height of the top of the garbage receptacle there is no liability of choking back the escape of the products of combustion and the steam formed during the initial part of the treatment of the garbage, since the high perforations in both the receptacle or basket and in the cone 15 permit the escape of both the products of combustion and steam in the top 26 for free passage therefrom through the usual smoke pipe.

When properly installed the incinerator is useful not only for the disposal of garbage, but may be used for other heating purposes, and even for cooking purposes, and is also well adapted for the heating of irons.

By providing the outlet passages 11 for gas at the sides of the burner arms instead of on top of the latter, any matter which may fall from the garbage receptacle will not be liable to enter and choke the passages 11.

When the incineration is complete and the parts have cooled down, the basket 18 may be readily removed after the top 26 is lifted from the incinerator, and then the cone 15 may be lifted therefrom. Now, the burner may be turned on its axis of rocking and any ashes or other accumulations on top of the burner are readily dislodged. On turning the burner to its first position and again setting the cone 15 and basket 18, and finally replacing the top 26, the incinerator is in position for further use. Of course, by making the opening 29 of sufficient size the basket 18 may be removed from the incinerator without the necessity of first removing the top 26.

What is claimed is:—

1. An incinerator, comprising a basic portion, a burner thereon having gas outlets and air passages into which the gas outlets discharge, a perforated cone carried by and rising from the burner, a perforated garbage receptacle surrounding and carried by the cone, and a casing surrounding the garbage receptacle and burner, whereby burning gas supplied by the burner is confined to the exterior of the garbage receptacle by the casing and is directed into the central portion of the garbage receptacle by the perforated cone.

2. An incinerator, comprising a burner having gas outlets and air passages into which the gas outlets discharge, a perforated cone carried by the burner and rising therefrom, a perforated garbage receptacle surrounding and supported by the cone and rising to substantially the same height as the cone, and a casing inclosing the burner and garbage receptacle.

3. An incinerator, comprising a burner having radial arms with side outlets for gas and with the spaces between the arms providing air passages into which the side outlets discharge, a perforated cone supported by and rising from the burner, and a perforated garbage basket carried by the cone and rising to substantially the same height as the cone, said garbage basket being in overriding spaced relation to the burner.

4. An incinerator, comprising a burner having radial arms with side outlets for gas and with the spaces between the arms providing air passages into which the side outlets discharge, a perforated cone supported by and rising from the burner, and a perforated garbage basket carried by the cone and rising to substantially the same height as the cone, said garbage basket being in overriding spaced relation to the burner, and the lower end of the garbage basket being convex and the adjacent portion of the burner concave.

5. An incinerator, comprising a burner having radial arms spaced apart with the arms provided with gas outlets extending laterally of the arms and opening into the spaces between the arms, said burner having a hollow perforated member rising centrally therefrom, a perforated cone supported by and rising from the burner and in surrounding spaced relation to the hollow member on the burner, and a perforated garbage receptacle surrounding the cone above and in spaced relation to the burner and carried by said cone, the said garbage receptacle and the cone rising to substantially the same height.

6. An incinerator, comprising a burner having radial arms spaced apart with the arms provided with gas outlets extending laterally of the arms and opening into the spaces between the arms, said burner having a hollow perforated member rising centrally therefrom, a perforated cone supported by and rising from the burner and in surrounding spaced relation to the hollow member on the burner, and a perforated garbage receptacle surrounding the cone above and in spaced relation to the burner and carried by said cone, the said garbage receptacle and the cone rising to substantially the same height, and said incinerator also including a casing exterior to the garbage receptacle and defining a combustion chamber between the casing and garbage receptacle.

7. An incinerator, comprising a basic

member, a shell rising therefrom, a top member carried by the shell, a casing interior to and spaced from the shell, a burner carried by the basic member within the casing at the lower end of the latter, said burner including a perforated member rising centrally therefrom, a perforated cone supported on and rising from the burner to substantially the top of the casing, and a perforated garbage receptacle surrounding and carried by the perforated cone and also rising to substantially the top of the casing.

8. An incinerator, comprising a basic member, a shell rising therefrom, a top member carried by the shell, a casing interior to and spaced from the shell, a burner carried by the basic member within the casing at the lower end of the latter, said burner including a perforated member rising centrally therefrom, a perforated cone supported on and rising from the burner to substantially the top of the casing, and a perforated garbage receptacle surrounding and carried by the perforated cone and also rising to substantially the top of the casing, the burner being provided with a pipe on one side and a pintle on the other constituting pivot supports for the burner.

9. An incinerator, comprising a basic member, a shell rising therefrom, a top member carried by the shell, a casing interior to and spaced from the shell, a burner carried by the basic member within the casing at the lower end of the latter, said burner including a perforated member rising centrally therefrom, a perforated cone supported on and rising from the burner to substantially the top of the casing, and a perforated garbage receptacle surrounding and carried by the perforated cone and also rising to substantially the top of the casing, the burner being provided with a pipe on one side and a pintle on the other constituting pivot supports for the burner, and the burner being concave and the garbage receptacle convex where adjacent.

10. In a garbage incinerator, a garbage receptacle and a burner associated therewith, said burner carrying the receptacle and comprising a hollow body member with radial branches underlying the receptacle, and a cover member for the branches and for the body member having passages defining burner tips discharging laterally of the branches into the spaces between the branches.

11. In a garbage incinerator, a garbage receptacle and a burner associated therewith, said burner carrying the receptacle and comprising a hollow body member with radial branches underlying the receptacle, and a cover member for the branches and for the body member having passages defining burner tips discharging laterally of the branches into the spaces between the branches, and said cover member having a central hollow perforated projection rising into the garbage receptacle in the installed position of the burner.

12. In a garbage incinerator, a garbage receptacle and a burner associated therewith, said burner comprising a hollow body member with radial branches, and a cover member for the branches and for the body member having passages defining burner tips discharging laterally of the branches into the spaces between the branches, and said cover member having a central hollow perforated projection rising into the garbage receptacle in the installed position of the burner, said garbage receptacle having the end adjacent to the burner convex and the burner adjacent to the garbage receptacle being concave.

In testimony whereof I affix my signature.

CLARENCE A. GIBBS.