Aug. 5, 1924. 1,503,737

H. S. WOODWARD

INCINERATOR

Filed March 13, 1924

Fig. 1.

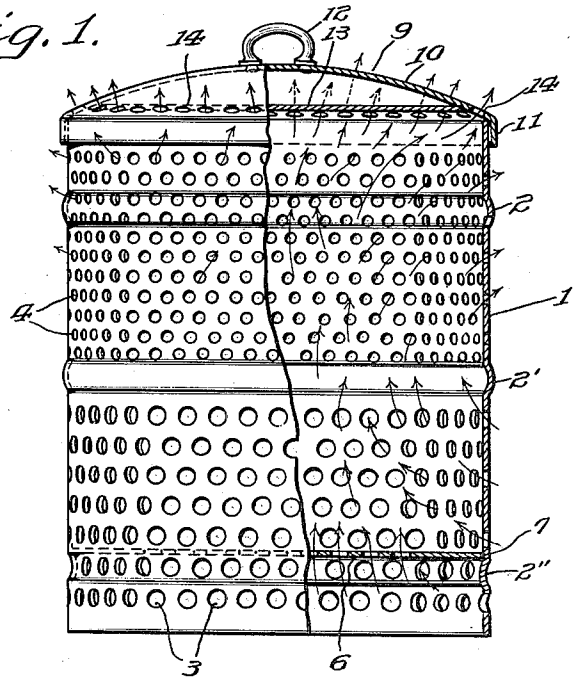


Fig. 2.

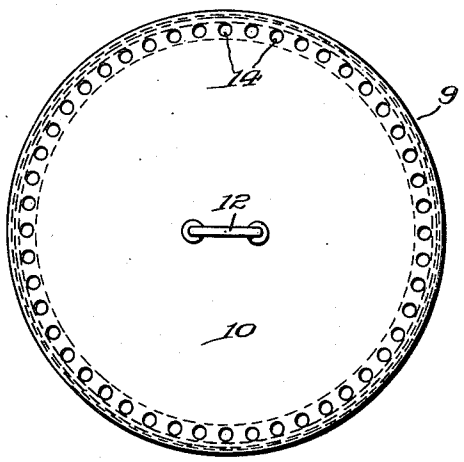
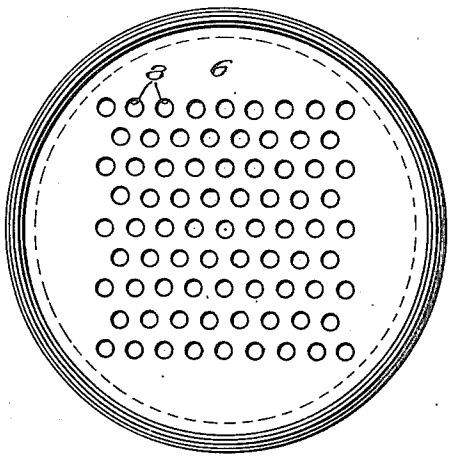


Fig. 3.



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UNITED STATES PATENT OFFICE.

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INCINERATOR.

Application filed March 13, 1924. Serial No. 698,864.

To all whom it may concern:

Be it known that I, HERBERT S. WOODWARD, a citizen of the United States, and a resident of Carbondale, county of Lackawanna, and State of Pennsylvania, have invented certain new and useful Improvements in Incinerators, of which the following is a specification, reference being had to the accompanying drawing.

The principal object of my invention is to provide an incinerator for burning leaves, rubbish or refuse which may be safely and conveniently employed for that purpose. A further object of my invention is to provide an incinerator composed entirely of sheet metal; which is strong and not easily damaged by the rough usage to which articles of this character are ordinarily subjected; which embodies a cover of novel construction and which is so arranged as to afford satisfactory and rapid combustion of the refuse or other matter being burned, while preventing the throwing off of sparks of sufficient size to cause accidental ignition of material in the vicinity of the incinerator.

A still further object of my invention is to provide an incinerator of the character aforesaid which may be readily and economically manufactured and marketed at a relatively low price, while still further objects, advantages and novel features of construction and arrangement comprehended by my invention will be apparent from the following description taken in connection with the accompanying drawing in which I have illustrated a preferred form thereof.

In the said drawings, Figure 1 is a view partially in elevation and partially in central vertical section of the incinerator with the cover in place, Fig. 2 is a top plan view of the cover and Fig. 3 is a top plan view of the body of the incinerator with the cover removed. Like numerals are used to designate corresponding parts in the several figures.

The invention, in the embodiment illustrated, comprises a cylindrical body 1 of sheet metal, conveniently formed by rolling up a rectangular sheet of metal of suitable width and length after the same has been perforated and beaded as hereinafter described and then welding the meeting edges of the sheet so as to hold the latter in substantially cylindrical form. The body is provided with a plurality of vertically spaced beads or ridges, preferably three in number, extending thereabout and designated as 2, 2′, 2″, these beads being conveniently rolled or otherwise formed in the flat sheet before the latter is brought to cylindrical form. As shown, one of these beads, 2, is disposed adjacent the upper end of the body, another, 2′, about midway between its ends, and a third, 2″, adjacent its lower end, this latter bead being struck inwardly and the others being struck outwardly with respect to the body wall, a function of these beads being to enhance the rigidity and stiffness of the body.

To permit the entrance of air to the interior of the body and the escape of the gaseous products of combustion therefrom, the body is provided with a large number of preferably circular perforations disposed substantially over its entire surface and extending through its wall, the perforations below the bead 2′ being generally designated as 3 and those above that bead as 4, and it will be noted that the perforations 3 are each of considerably greater area than the perforations 4. The relatively large size of the perforations 3 permits the air to pass very freely into the lower part of the body so as to maintain maximum draft and a high rate of combustion in the material being burned in the incinerator and which rests on the bottom thereof, hereinafter more fully described, and also accelerating the drying of material too damp for immediate combustion, but by reason of the relatively small size of the perforations in the upper part of the body and through which the gaseous products of combustion pass out of the body large pieces of burning material are prevented from being carried off with those products but are confined within the body, thus preventing accidental ignition of material in the vicinity, while, on the other hand, by reason of the very large number of these smaller perforations the escape of the gaseous products is freely permitted.

The incinerator is provided with a horizontally disposed bottom 6 of circular form which is arranged to rest on the inwardly struck bead 2′ and is welded to the body wall at a plurality of points 7 so as to fixedly retain the bottom in position. To permit the passage of air through the bottom, the latter is provided with a plurality of perforations 8 arranged therein in any desired form or pattern and it will be noted that as the bottom is disposed considerably above the

lower edge of the body and also above the lowermost perforations 3 therein, the air will be drawn through the latter and thence through the perforations 8 in the bottom while combustion is taking place in the material disposed thereon.

For closing the upper end of the body and confining the contents therein I provide a cover 9, also of sheet metal and consisting of a circular central portion 10 curved downwardly from its center in every direction and provided with a marginal, vertically disposed depending flange 11 of suitable diameter to engage over the upper edge of the body, the cover at its center being provided with a suitable handle 12 riveted or otherwise firmly secured thereto. To prevent buckling or twisting of the cover, and more especially when heated, I provide an annular reenforcing plate 13 which is of somewhat less diameter than the maximum diameter of the cover and dispose the same adjacent the under side of the central portion 9, concentrically thereof and with its peripheral edge in contact therewith, and then weld the edge of the plate to the under side of the central portion. The plate thus acts as a sort of brace or stiffening member to the central portion of the cover and provides a dead air space between it and the under surface of the central portion 10 and thus without unduly increasing the weight or bulkiness of the cover results in complete prevention of twisting or buckling under ordinary conditions of use. I also prefer to arrange a single series of perforations 14 around the marginal edge of the central portion of the cover beyond the edge of the plate so as to permit a certain portion of the gaseous products of combustion to pass off through the cover, these perforations being preferably of substantially the same size as those in the upper part of the body to thereby prevent sizable pieces of burning material from passing therethrough.

It will be apparent that by reason of the large number of perforations in the body and cover, the weight of the incinerator is considerably reduced over what it would be in the absence of such perforations and I thus am enabled to form the body and cover of sheet metal of such thickness as to satisfactorily withstand the rough usage to which articles of this character are ordinarily subjected without making the incinerator so heavy as to prevent its ready transportation from place to place, while the stiffening beads, arrangement and manner of securing the bottom in the body and the employment of the depending flange on the rigid cover all contribute toward maintaining the initial shape of the incinerator under conditions of use. Furthermore, I have found in practice that an incinerator of this character may be constructed at a relatively low cost, particularly when manufactured in large quantities, and may therefore be marketed at a reasonable price.

While I have herein described and in the accompanying drawing illustrated a preferred form of my invention with considerable particularity, I do not thereby desire or intend to limit myself specifically thereto as it will be understood that minor changes of construction and arrangement may be made if desired without departing from the spirit and scope of the invention as defined in the appended claims.

Having thus described my invention, I claim and desire to protect by Letters Patent of the United States:

1. A device of the class described, comprising a cylindrical body having a plurality of perforations extending through its wall, the perforations towards the upper part of the body being of less size than those in the lower part thereof, a perforated bottom disposed in the lower part of the body and fixedly secured thereto and a removable cover having a central downwardly curved portion provided with a depending peripheral flange for engagement over the upper end of the body and a stiffening plate fixedly secured to the under side of said central portion along the marginal edge of the plate.

2. A device of the class described, comprising a body formed of a single sheet of metal bent to cylindrical form and welded at its meeting edges, said body being provided with a plurality of spaced stiffening beads struck therein and a plurality of perforations extending through its wall, those adjacent the upper part of the body being of smaller size than those adjacent the lower part, a perforated bottom disposed within the body near the lower end thereof and above certain of said larger perforations, said bottom being supported on one of said beads and welded to the body, and a removable cover comprising a central circular downwardly curved portion provided with a peripheral depending flange for engagement over the upper end of the body and a circular stiffening plate disposed adjacent the under side of said central portion, spaced therefrom save at its edge and welded thereto along said edge.

3. A device of the class described, comprising a cylindrical body portion formed of sheet metal and having a plurality of vertically spaced stiffening beads struck therein, a perforated bottom plate resting on one of said beads and welded to the body at a plurality of points along its edge, said body being provided with a plurality of perforations extending through its wall below and above said bottom, the perforations adjacent the bottom being of larger size than those in the upper part of the body.

4. A device of the class described, com-

prising a body formed of a single sheet of metal bent to cylindrical form and welded along the meeting edges of the sheet, said body being provided with a plurality of vertically spaced stiffening beads struck in the wall thereof and a plurality of perforations extending through its wall, those in the lower part of the body being of greater size than those in the upper part, a circular bottom of perforated sheet metal disposed in the body to rest on the lowermost of said beads at a point above the lowermost of the larger perforations and welded to the body along its edge, and a removable cover comprising a central downwardly curved portion provided with a handle and a depending peripheral flange of diameter to engage over the upper end of the body, a circular stiffening plate of smaller diameter than said central portion disposed adjacent the under side thereof and welded thereto along the edge of the plate and a series of perforations in said central portion between the edge of said plate and said depending flange.

In witness whereof I have hereunto set my hand this 7th day of March, 1924.

HERBERT S. WOODWARD.