O. J. CHARLES.

INCINERATOR.

APPLICATION FILED SEPT. 11, 1911.

1,056,259. Patented Mar. 18, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

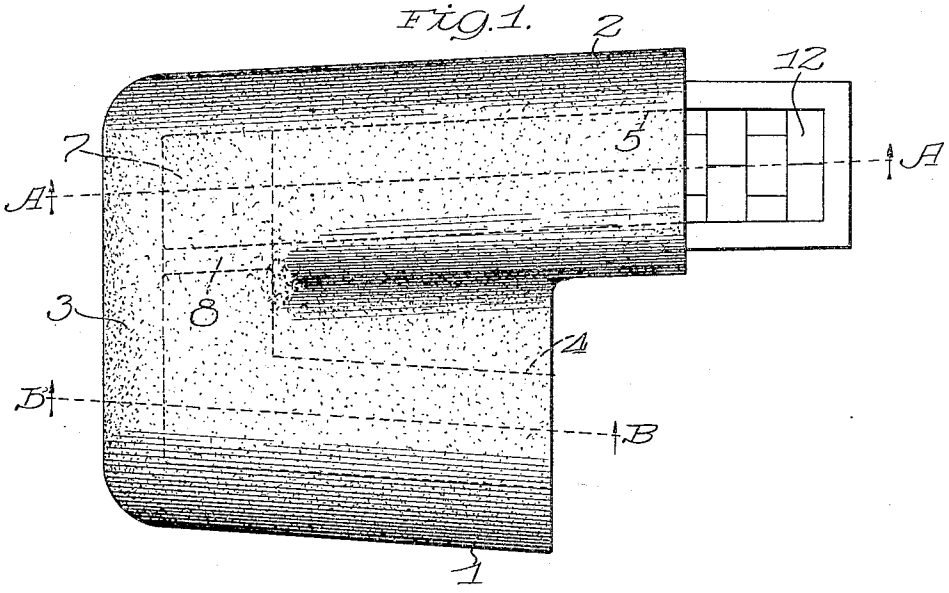


Fig. 2.

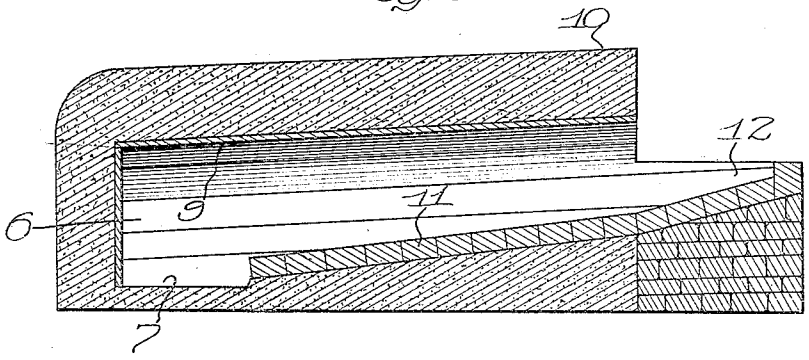
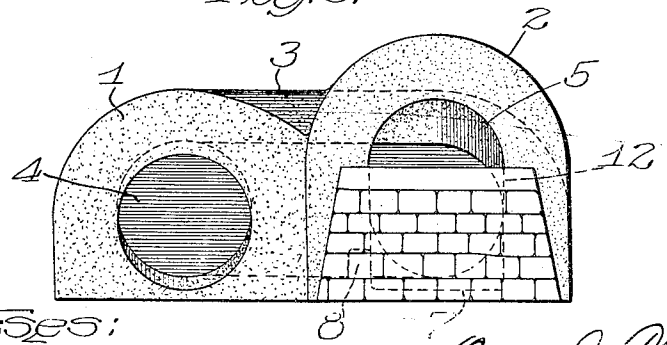


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

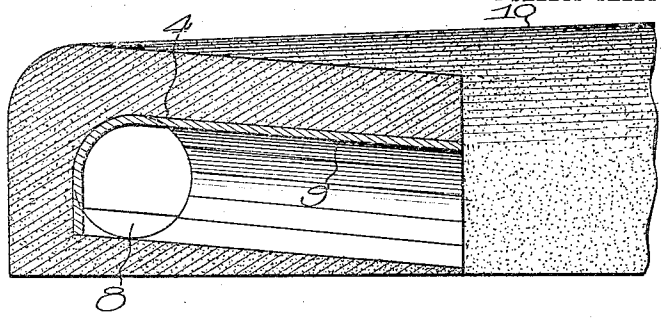
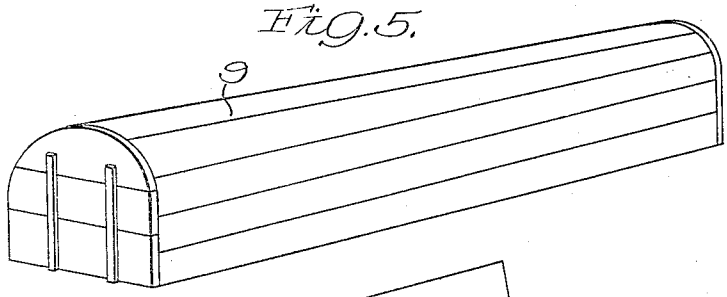


Fig. 5.



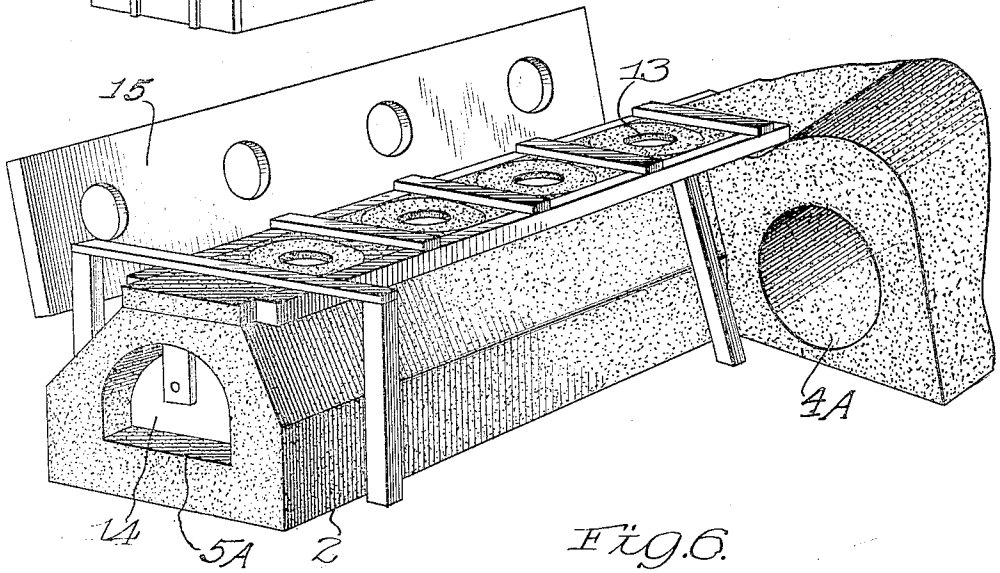


Fig. 6.

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UNITED STATES PATENT OFFICE.

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INCINERATOR.

1,056,259. Specification of Letters Patent. Patented Mar. 18, 1913.

Application filed September 11, 1911. Serial No. 648,880.

To all whom it may concern:

Be it known that I, OSCAR J. CHARLES, a citizen of the United States of America, and a resident of San Antonio, county of Bexar, State of Texas, have invented certain new and useful Improvements in Incinerators, of which the following is a specification.

The main objects of this invention are to provide an improved form of incinerator for burning garbage and other refuse, both solid and liquid, as well as the gases liberated therefrom, without the emission of smoke or noxious odors, or gases, and especially suitable for disposing of the refuse of military encampments, farms, hotels, houses, and communities, etc., not provided with sewers; and to provide an improved incinerator of this kind which is simple and economical in construction, and which can be efficiently operated with relatively small fuel consumption.

An illustrative embodiment of this invention is shown in the accompanying drawings, in which—

Figure 1 is a plan view of a specific form of the incinerator suitable for military encampments and capable of being readily erected from materials usually at hand. Fig. 2 is a sectional elevation taken on the line A—A of Fig. 1. Fig. 3 is a front end elevation of the same. Fig. 4 is a sectional elevation taken on the line B—B of Fig. 1. Fig. 5 is a perspective view of one of the forms or molds which are used in shaping the walls of the incinerator when it is built up as shown. Fig. 6 is a perspective view of a modified form of the incinerator especially designed to enable it to be used as a latrine.

In the construction shown in the drawings, the device comprises a substantially U-shaped tubular or tunnel-like structure, having the parts 1 and 2 of relatively different lengths extending in the same general direction and connected at their rear ends by a transverse part 3. There is thus formed a fire-box 4 in the part 1, a refuse chamber 5 in the part 2, and a connecting flue or gas chamber 6 in the part 3.

The fire-box 4 is substantially circular in cross-section and extends inwardly from the front end of the part 1 and is preferably gradually inclined upwardly toward its inner end. The refuse chamber 5 is preferably of semi-circular cross-section to provide a flat floor and an arched roof. This chamber slopes upward gradually from the rear to the front, and its sectional area is gradually reduced toward its open or front end. The flue or gas chamber 6 in the transverse part 3 is preferably substantially horizontal and has a pit or trap 7 formed therein at the inner end of the chamber 5, so as to catch and retain any liquid that might reach the inner end of the refuse chamber before being consumed, and thereby prevent such liquid from entering the fire-box. A low wall or dam 8 extends across the floor of the chamber 6 so as to increase the effective depth of the liquid trap.

Although in the drawings the fire-box 4 is shown inclined and the gas chamber 6 is shown horizontal, it will be readily understood that the construction may be respectively reversed, and accomplish the same results,—*i. e.*, the fire-box may be horizontal and the chamber 6 inclined upwardly from the fire-box to the refuse chamber.

The incinerator may be constructed in various ways and of any material which is gas and liquid tight, and suitable for withstanding the heat. In the construction here shown, temporary molds or frames 9 are built up of wood, as illustrated in Fig. 5. A suitable mold can be made up of empty oil barrels. The walls may then be built up of suitable plastic material, reinforced by wire, if desired, and set by building a fire within and burning out the mold frames. A mixture of ordinary clay, straw, salt, and wire has given good results for military use. These materials and this specific method of construction are mentioned merely by way of illustration, as it is obvious that other materials and other methods of construction may be used in carrying out this invention, such details being dependent upon choice, convenience, cost, permanency of the installation, character of service for which the device is intended, etc.

For convenience in charging and cleaning the refuse chamber, a floor 11, preferably of fire brick, may be built in the chamber 5, and this is continued outwardly from the end of the part 2 to form a receiving platform 12.

In the modification shown in Fig. 6, a plurality of circular holes 13 are provided in the upper wall of the refuse chamber, so that the device may serve as a latrine. In this form, the top is provided with a seat having holes 16 registering with the holes

13. All holes are, of course, kept closed during intervals of disuse as by covers on the seat holes (not shown) and closures 14 at the open ends of the fire and refuse chambers 4 A and 5 A. When the refuse is to be burned, the wooden seat and the closures are removed and fire proof slabs or closures are placed over the openings 13.

The operation of the device shown is as follows: A fire, say of wood, is started and kept going in the chamber or fire-box 4. The upward inclination of the tunnel from end to end causes a sufficient draft to support the fire and produce an intense heat, and the material of the walls of the refuse chamber absorbs and retains the heat so that the said chamber soon acquires a temperature capable of consuming any combustible matter contained therein. Garbage and refuse matter, both solid and liquid, are emptied on to the receiving platform 12 and pushed into the chamber 5, wherein the material is rapidly incinerated by the intense heat. Gases liberated from the refuse are consumed in the gas chamber 6, thereby intensifying the heat as it passes over the refuse in the chamber 5. In case liquid is poured into the device in such quantity that some of it flows to the rear of the floor 11 before being consumed, it will collect in the pit or trap 7, where it is retained until evaporated by the heat of the flames passing over it.

The tapering of the refuse chamber to a slightly contracted outlet, in addition to the almost horizontal disposition of the passages, has the effect of preventing a too rapid escape of gases from the combustion chamber, and insures complete combustion of all such gases, and thereby prevents the escape of smoke or harmful or objectionable gases.

This invention has in this specification been described as applied to a refuse incinerator, but it will be readily understood, by those skilled in this art, that the invention is equally applicable to numerous other uses, as for example the combustion of smoke, and the utilization in various ways of the heat resulting from the thorough and economical combustion of the gases, etc., in the long chamber 5.

Although but one specific embodiment of this invention is herein shown and described, it will be understood that numerous details of the construction shown may be altered or omitted without departing from the spirit of this invention, as defined by the following claims.

I claim:—

1. A device of the class described, comprising a substantially horizontally disposed tubular structure having a bore extending inwardly from each of the two ends thereof, one of said bores being adapted to serve as a fire-box, and the other bore being upwardly inclined and gradually reduced in transverse area toward its open end, said bores being connected by a transversely extending, horizontally disposed bore adapted to serve as a gas chamber.

2. A device of the class described, having two horizontally disposed hollow portions of respectively different lengths communicating at their adjacent ends to form a continuous tube open at its ends, the shorter of said portions being adapted for use as a fire-box and the longer one being inclined upwardly and gradually reduced in transverse area toward its open end.

3. An incinerator, comprising a substantially U-shaped, horizontally disposed structure, and having the legs thereof of relatively different lengths, said structure having a bore extending therethrough, open at both ends, and inclined upwardly from the open end of the shorter leg to the open end of the longer leg, the bore of said shorter leg being adapted for use as a fire box and the bore of said longer leg being adapted for use as a refuse chamber.

4. An incinerator, comprising a substantially U-shaped, horizontally disposed structure, and having the legs thereof of relatively different lengths, said structure having a bore extending therethrough, open at both ends, and inclined upwardly from the open end of the shorter leg to the open end of the longer leg, the bore of said shorter leg being adapted for use as a fire box and the bore of said longer leg being adapted for use as a refuse chamber and being contracted at its open end.

5. An incinerator, comprising a substantially U-shaped, horizontally disposed structure, and having the legs thereof of relatively different lengths, said structure having a bore extending therethrough, open at both ends, and inclined upwardly from the open end of the shorter leg to the open end of the longer leg, the bore of said shorter leg being adapted for use as a fire box and the bore of said longer leg being adapted for use as a refuse chamber, and a receiving platform located at the open end of said longer leg.

Signed at San Antonio this 5th day of September 1911.

OSCAR J. CHARLES.

Witnesses:

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H. H. BEARD.

Correction in Letters Patent No. 1,056,259.

It is hereby certified that in Letters Patent No. 1,056,259, granted March 18, 1913, upon the application of Oscar J. Charles, of San Antonio, Texas, for an improvement in "Incinerators" an error appears in the printed specification requiring correction as follows: Page 2, lines 83, 94, and 106, strike out the comma and the word "and;" and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 22nd day of April, A. D., 1913.

[SEAL.]

C. C. BILLINGS,

Acting Commissioner of Patents.