A. J. ROBERTS.

GARBAGE INCINERATOR.

APPLICATION FILED NOV. 5, 1915.

1,337,668. **Patented Apr. 20, 1920.**

3 SHEETS—SHEET 1.

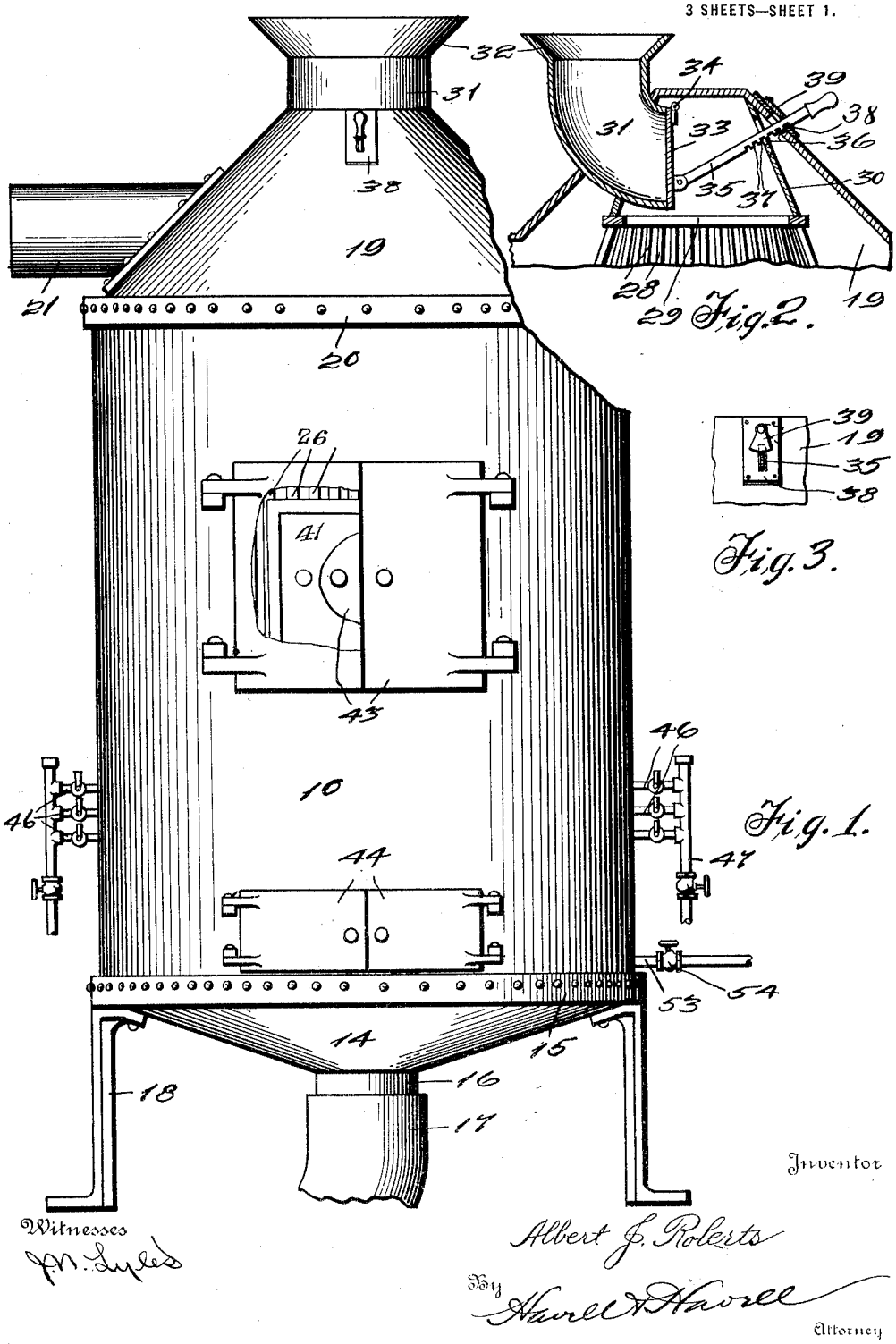


Fig. 2.

Fig. 3.

Fig. 1.

Witnesses

P. M. Lyles

Inventor

Albert J. Roberts

By Harrell & Harrell

Attorney

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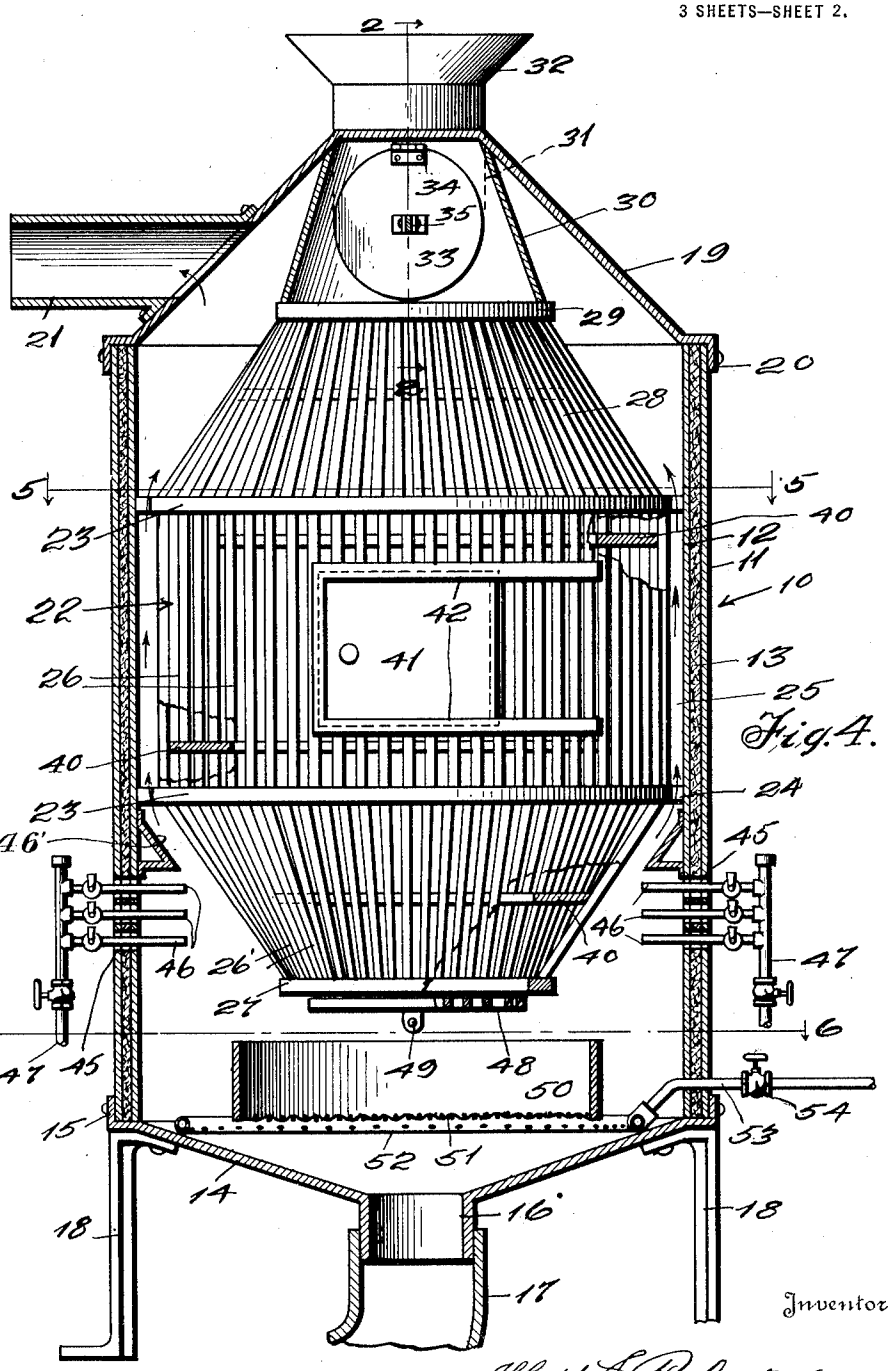


Fig. 4.

Witnesses

J. M. Lyles

Inventor

Albert J. Roberts

By Harrell & Harrell

Attorney

A. J. ROBERTS.

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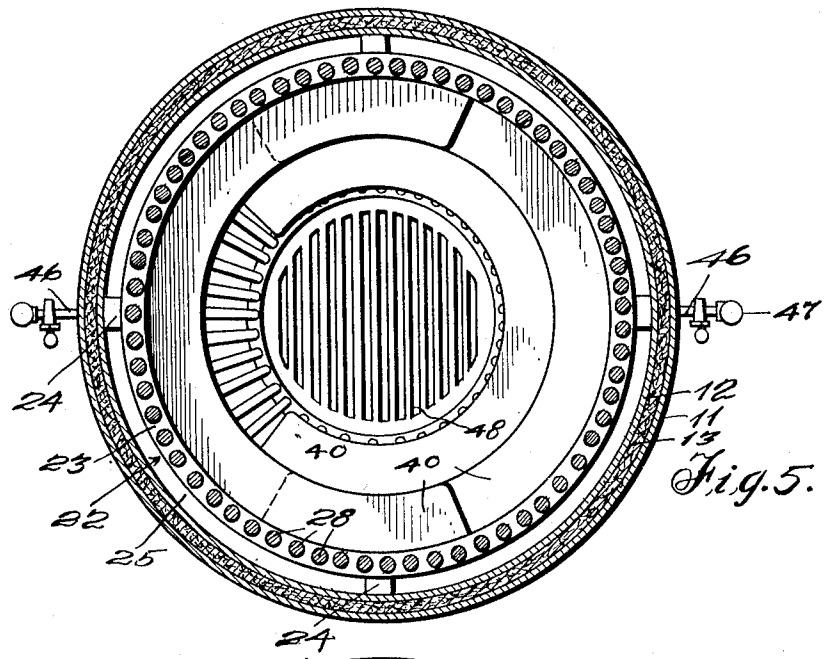


Fig. 5.

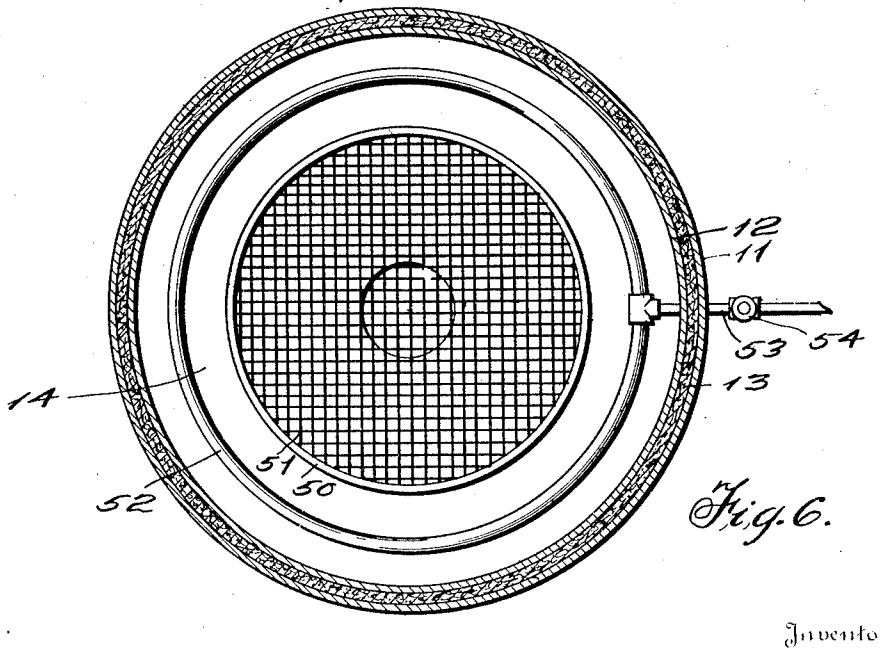


Fig. 6.

Witnesses

F. M. Lyles

Inventor

Albert J. Roberts

By Harris & Harris

Attorney

UNITED STATES PATENT OFFICE.

ALBERT J. ROBERTS, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO PITTSBURGH GARBAGE INCINERATION CO., INCORPORATED, OF PITTSBURGH, PENNSYLVANIA.

GARBAGE-INCINERATOR.

1,337,668. Specification of Letters Patent. Patented Apr. 20, 1920.

Application filed November 5, 1915. Serial No. 59,809.

To all whom it may concern:

Be it known that I, ALBERT J. ROBERTS, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented new and useful Improvements in Garbage-Incinerators, of which the following is a specification.

My invention relates to improvements in garbage consumers or incinerators.

An important object of the invention is to provide apparatus of the above mentioned character, which will thoroughly burn the garbage in an expeditious manner, and which is highly convenient in use.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawings forming a part of this specification and in which like numerals are employed to designate like parts throughout the same,

Figure 1 is a front elevation of apparatus embodying the invention,

Fig. 2 is a vertical sectional view through the hood, taken on line 2—2 of Fig. 4,

Fig. 3 is a detail elevation of a latch included in the apparatus,

Fig. 4 is a central vertical longitudinal sectional view through the casing with the cage shown in elevation and partly broken away,

Fig. 5 is a horizontal sectional view taken on line 5—5 of Fig. 4, and,

Fig. 6 is a similar view taken on line 6—6 of Fig. 4.

In the drawings wherein for the purpose of illustration is shown a preferred embodiment of my invention, the numeral 10 designates a preferably cylindrical vertical body portion of the shell or casing of the apparatus, comprising outer and inner casings 11 and 12, which are cylindrical, concentric, and spaced for receiving therebetween packing 13, formed of a poor heat conducting material, such as asbestos.

The body portion 10 of the casing is arranged upon a bottom or end 14, which is conical and decreases in diameter downwardly. The upper end of the bottom 14 has a flange 15, bolted or otherwise rigidly attached to the outer casing 11. At its reduced lower end the bottom 14 has an outlet coupling 16, for connection with a discharge pipe 17, which may lead to a sewer or the like. The bottom 14 is rigidly mounted upon feet 18, which serve to support the entire apparatus.

The numeral 19 designates a conical hood or top, increasing in diameter downwardly and having a lower flanged end 20, receiving the body portion 10 of the casing, to which it is bolted or otherwise rigidly connected. The hood 19 is provided with a flue or pipe 21, for the discharge of products of combustion, as shown.

The numeral 22 designates a tubular grate as a whole, arranged within the body portion 10 of the casing. This tubular grate or cage embodies rings 23, spaced as shown, and held in place by lugs 24, rigidly attached to the inner casing 12. As clearly shown in Fig. 5, these rings are concentric with relation to the inner casing 11 and are spaced therefrom, providing an annular passage 25 for the products of combustion. Arranged between the rings 23 are spaced vertical bars 26, rigidly secured thereto. These bars are preferably circular in cross-section. The lower tapered end of the tubular grate or cage embodies spaced rods 26′, rigidly attached to the lower ring 23, and having a bottom ring 27 rigidly secured thereto. The upper tapered end of the grate or cage comprises spaced bars 28, rigidly secured to the upper ring 23 and having a ring 29 rigidly attached to their upper ends.

Arranged within the hood or top 19 is a cap or housing 30, rigidly secured to the ring 29, and provided upon one side with an opening for receiving an inlet chute or tube 31, as more clearly shown in Fig. 2. This chute is provided with a flaring mouth 32, for conveniently receiving the garbage to be burned. The chute 31 is adapted to discharge into the tubular grate or cage and its lower end is normally closed by a door 33, hinged thereto as shown at 34. Pivotally connected with the lower end of this door is a rack bar 35, operating through openings 36, and extending to the exterior of the hood 19. This rack bar is provided with teeth 37, adapted to receive therebetween a portion of a stationary catch 38, such rack bar being normally held in the locked position by a pivoted holding segment or member 39.

Arranged within the tubular grate or cage 22 are approximately semi-circular

horizontal baffle plates 40, the ends of which overlap, as clearly shown in Fig. 5. These baffle plates are superposed and are vertically spaced, as shown. The baffle plates serve to cause a more complete circulation of the products of combustion and heated gases, when passing through the tubular grate or cage.

In order that access may be had to the interior of the tubular grate or cage 22, the same is provided with an opening, normally covered by a slide door 41, operating in guides 42, attached to the exterior of the rods 22. The body portion of the casing 10 is provided with an opening arranged adjacent and in register with the opening covered by the door 41, and this last named opening may be normally closed by horizontally swinging doors 43. The body portion 10 is provided adjacent its bottom with a second opening, normally closed by horizontally swinging doors 44.

Extending through openings 45 in the body portion 10 are sets of gas burners 46, receiving gas from pipes 47. These burners are arranged to introduce their flames into the body portion 10, adjacent the lower end of the tubular grate or cage 22. 46′ designates guards for the burners.

Arranged near and below the ring 27 is a circular grate 48, pivotally supported between its ends, as shown at 49. Any suitable means may be employed to normally hold the grate in the horizontal position, and to turn it for dumping.

Arranged beneath the grate 48 is an ash receiving receptacle 50, held in place by any suitable means. This receptacle has a foraminous bottom 51, which may be formed of screening. Surrounding the receptacle 50, in proximity thereto, is an apertured annular pipe 52, to spray water upon the bottom 14 and by the rebound from the bottom upon the foraminous material 51, thus washing the ashes or the like from these parts, such ashes passing through the coupling and pipe 17. Connected with the perforated pipe 52 is a pipe 53, having communication with a source of water and provided with a cut off valve 54.

The operation of the apparatus is as follows:

The burners 46 are operated in the usual manner, and the door 33 may be suitably opened, for receiving garbage or the like fed in through the chute 31. This garbage passes into the tubular grate or cage 22, and is there subjected to the action of the heat, whereby it is burned. The products of combustion travel upwardly exteriorly and interiorly of the tubular grate, and discharge through the tube 21. The ashes pass through the grate 48 or may be dumped therefrom, and discharge into the receptacle 50. The water from the tube 52 sprays upon the bottom 51 and the bottom 14, and washes the ashes into the coupling 16 and pipe 17. This will be better understood when it is stated that the streams of water do not pass directly from the apertures in the tube 52 to the foraminous bottom 51. On the other hand, the streams of water first strike the bottom 14 and rebounding therefrom come in contact with the bottom 51 for the purpose stated.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that various changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claims.

Having thus described the invention, what I claim is:

1. A garbage incinerator comprising a cylindrical casing, a cage within the casing composed of horizontal rings with vertical bars connected to said rings, arcuate baffle plates arranged in offset relation in said cage, a doorway carried by the cage, a door movable in said doorway, doors on the casing registering with said first-named door, means for introducing garbage to the interior of said cage, and a grate at the bottom of said cage.

2. A garbage incinerator comprising a casing, a cage within the casing composed of a substantially cylindrical central portion and conical end portions, said portions of the cage being formed of horizontal rings and spaced-apart bars connected with said rings, said casing and cage having door controlled openings therein, arcuate baffles arranged in offset relation in said cage, a housing connecting with the upper portion of said cage, a chute extending through said housing, a door on the inner end of the chute, means for operating the door and for keeping the door open or closed, burners arranged to direct their flame horizontally against the lower conical portion of the cage, and a grate in the bottom of the lower conical portion of said cage.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALBERT J. ROBERTS.

Witnesses:
W. J. White,
Thos. Tregomowan.