

No. 801,251.

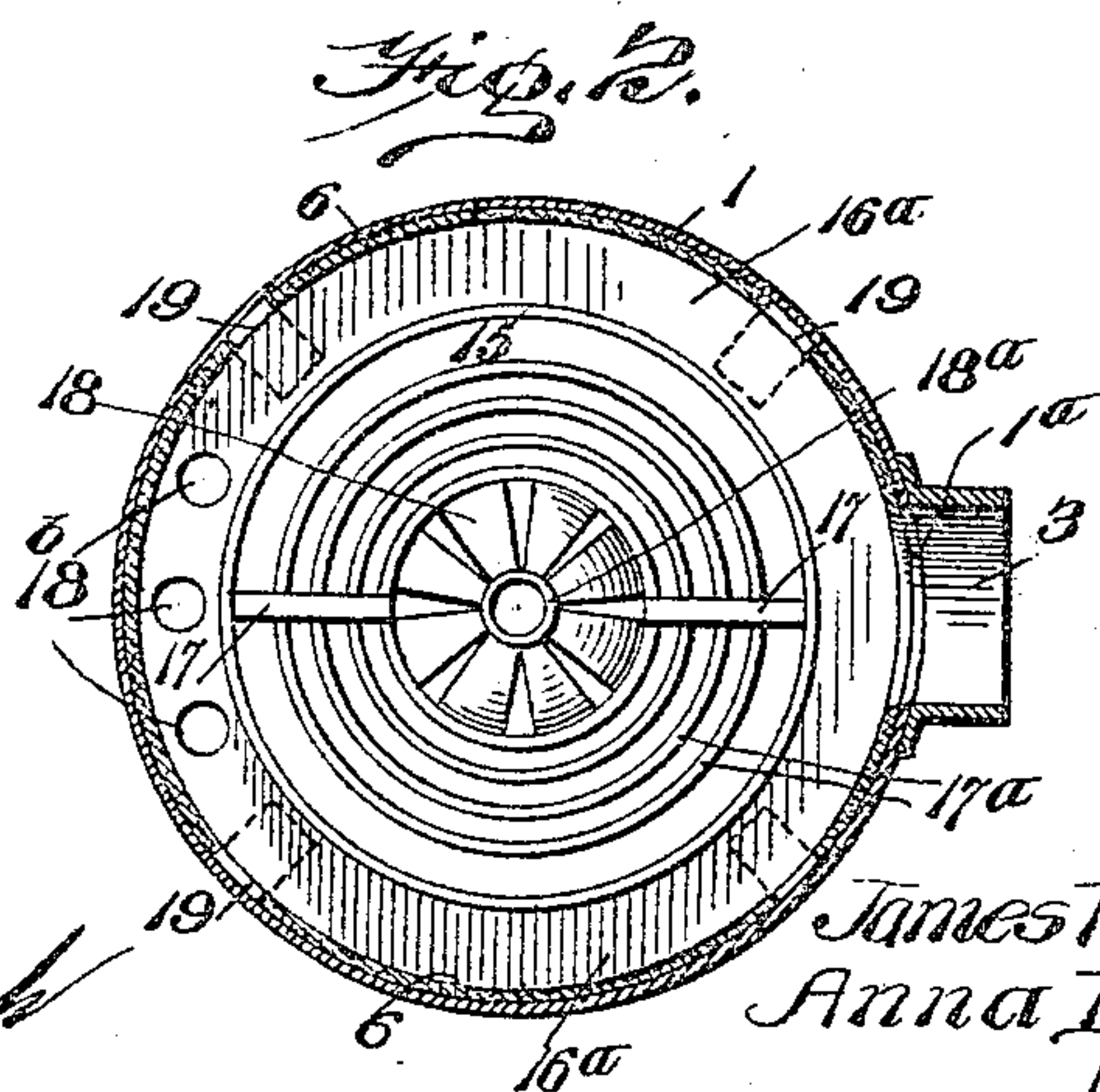
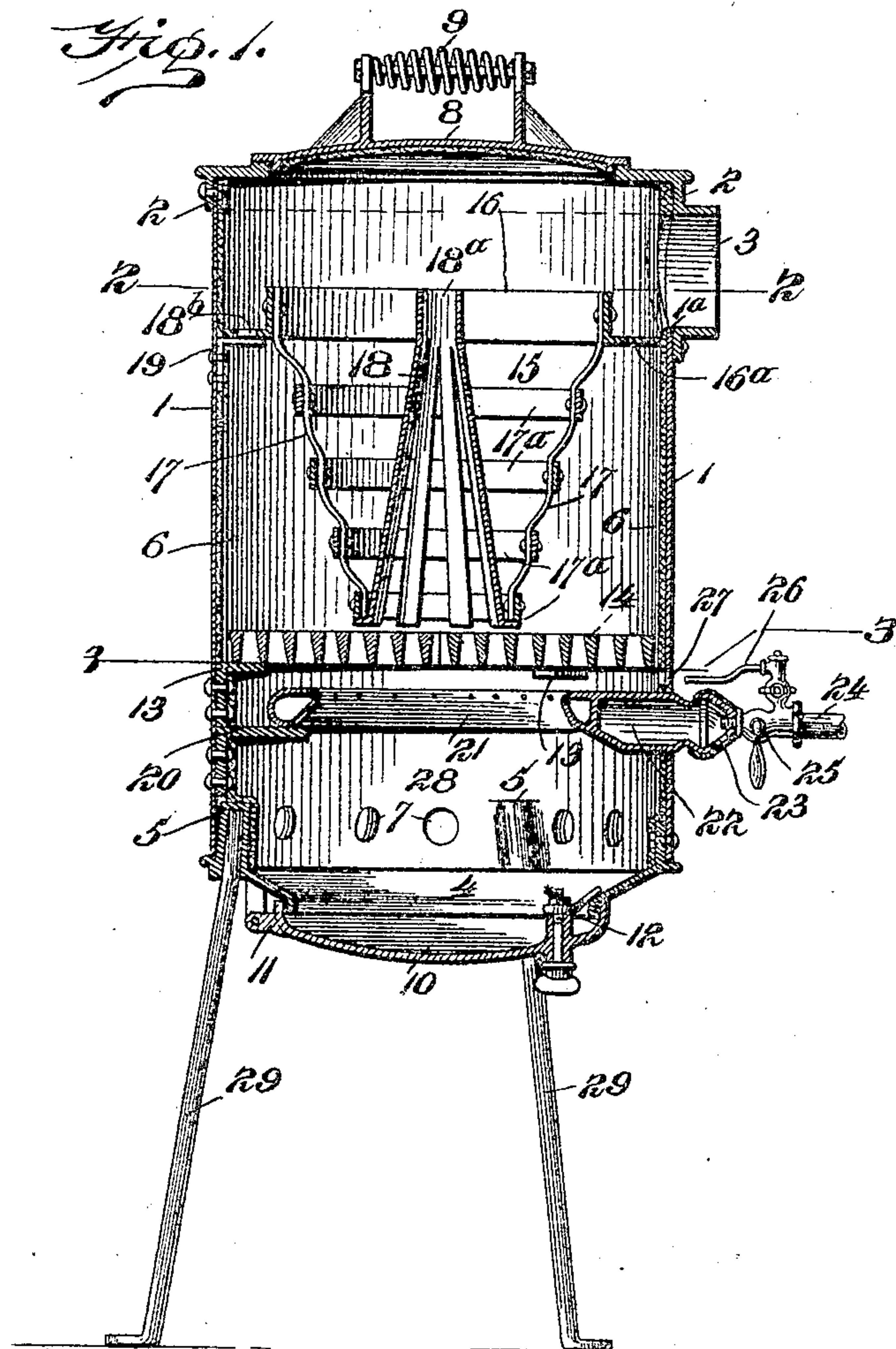
PATENTED OCT. 10, 1905.

J. R. & A. B. KILBOURNE.

REFUSE BURNER.

APPLICATION FILED AUG. 23, 1904.

2 SHEETS—SHEET 1.



WITNESSES:

H. S. Dieterich

N. H. Simms

INVENTORS

James R. Kilbourne

Anna B. Kilbourne

BY

Knight Bros

Attorneys

No. 801,251.

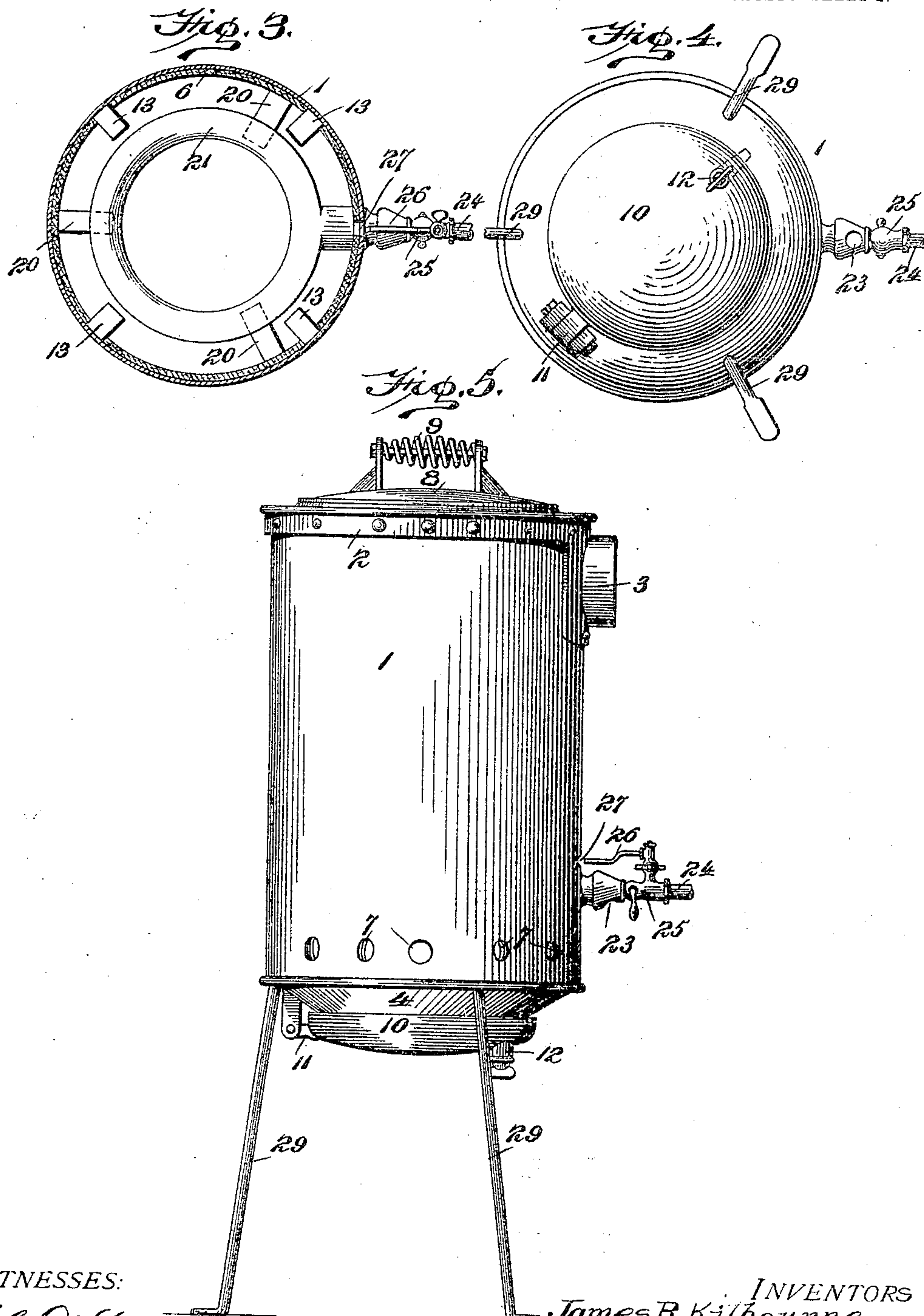
PATENTED OCT. 10, 1905.

J. R. & A. B. KILBOURNE.

REFUSE BURNER.

APPLICATION FILED AUG. 23, 1904.

2 SHEETS—SHEET 2.



WITNESSES:

H. G. Dieterich

H. V. Limmer

INVENTORS

James R. Kilbourne
Anna B. Kilbourne

BY

Knight & Co.
Attorneys

UNITED STATES PATENT OFFICE.

JAMES R. KILBOURNE AND ANNA B. KILBOURNE, OF COLUMBUS, OHIO.

REFUSE-BURNER.

No. 801,251.

Specification of Letters Patent.

Patented Oct. 10, 1905.

Application filed August 23, 1904. Serial No. 221,869.

To all whom it may concern:

Be it known that we, JAMES R. KILBOURNE and ANNA B. KILBOURNE, citizens of the United States, and residents of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Refuse-Burners, of which the following is a specification.

This invention relates to refuse-burners; and it has for its object to provide a portable furnace that may be used about the house to readily, rapidly, and economically consume the ordinary household-refuse.

Another object is to provide a device of this kind that is neat in appearance, sanitary, and odorless, and that may be taken apart and cleaned.

Further objects and advantages will appear in the following description and will be more particularly pointed out in the claims.

In the drawings, Figure 1 is a vertical sectional view of the device. Fig. 2 is a section on the line 2 2, Fig. 1. Fig. 3 is a section on the line 3 3, Fig. 1. Fig. 4 is a bottom plan view, and Fig. 5 is an elevation.

An outer shell forming the combustion-chamber is provided, comprising a vertical wall 1, formed of sheet metal and cut away at 1^a, a top formed of cast metal with a central feed-opening, an annular depending flange 2, in which the vertical wall 1 fits, and a laterally-opening flue portion 3, which depends into the cut-away portion 1^a, and a bottom inclined toward the center and formed of cast metal with a central discharge-opening 4 and leg-sockets 5. The interior wall of the shell is covered with asbestos or other refractory material 6, while near the bottom in the vertical wall 1 are provided draft-openings 7. The feed-opening of the outer shell is closed by a removable cover 8, having a non-conducting handle 9, while the discharge-opening is closed by a cup-shaped door 10, hinged at one side 11 and secured at its opposite side by a turning-latch 12. Supporting-legs 29 are removably fitted in the sockets 5.

Removably positioned on lugs 13, extending inwardly from the outer shell, is a grate 14, formed of two semicircular sections. Above the grate 14 and within the shell is centrally positioned a receptacle 15 of annular horizontal section, having a downwardly-tapering open outer wall and an upwardly-tapering

open inner wall, said receptacle being spaced from the top and side walls of the shell and 55 from the grate and having an annular upper end 16 to catch the refuse dumped into the feed-opening and a radial flange 16^a, that closes the space between the upper end and the outer shell except for the draft-openings 18^b, formed 60 in the flange. The downwardly-tapering outer wall of this inner cylinder is constructed of vertical ribs 17 and successively smaller rings 17^a, while the upwardly-tapering inner wall comprises a slatted cone 18, having an open 65 upper end 18^a. This construction of the receptacle provides for inner as well as outer exposure to the burning gases, and the two walls are such that these burning gases have free access to the material to be burned. The 70 inner receptacle is supported by its flange upon projections 19, extending from the inner wall of the outer shell and is thereby removably positioned within the shell.

Below the grate 14 is the ash-pit 28, and in 75 the ash-pit and above the draft-openings 7 is positioned on inwardly-extending arms 20 an annular or ring burner 21, the air-mixing portion 22 of which extends through the vertical wall of the outer shell and is provided on the 80 outside of the shell with an air-opening 23 and a jet 24, controlled by a valve 25. A pilot-burner 26 connects with the valve 25 and directs a flame through opening 27 in the shell 85 above the ring burner.

The operation of the invention is as follows: Refuse is dumped through the feed-opening in the outer shell into the inner receptacle or refuse-chamber 15, where it is supported between the outer cage-like wall and the inner 90 slatted cone, the peculiar shape of which supports the body of refuse in a light porous mass and prevents it packing down into an impervious condition. Circulation of hot gases from the burner through the mass is 95 thus favored, and evaporation of the liquid content and burning of the refuse are thereby facilitated. The ring burner 21 is lighted through the medium of the pilot light or burner 26. The flame from the burner is directed 100 through the grate against both the exterior and interior of the material in the receptacle. Most of the products of combustion pass upwardly to the flue through the receptacle, the shape and construction of the receptacle serving 105 to keep the material in such condition

that a draft can be established through the receptacle and presenting the outer and inner surfaces of the body of refuse most advantageously to the action of the fire. While the closing of the space around the receptacle by means of flange 15^a causes the main draft to pass through the garbage-receptacle, said flange has perforations 15^b on the side of the receptacle away from the outlet-flue, and these insure ventilation of the space outside of the inner receptacle, thereby causing all gases and vapors to pass out through the flue. As the refuse is dried and burned the ash or dried refuse drops through the open walls of the central receptacle onto the grate, where it is subjected to further burning, and the ash therefrom then passes through the grate and through the central opening of the annular burner 21 into the ash-pit 28 below the grate 14 and may be thereafter removed through the door 10.

While we have shown and described the preferred embodiment of our invention, we desire it to be understood that we may make various changes within the scope of the appended claims without departing from the spirit of our invention.

Having described our invention, what we claim is—

1. In a refuse-consumer, the combination of the outer shell having an outlet, a burner arranged therein, and the receptacle located within the shell in position to subject its contents to the action of the burner; said receptacle having its outer wall constructed of rings decreasing in diameter from its top to its bottom and located in the path of the material so as to agitate the same as it drops on being consumed.

2. In a refuse-consumer, the combination of the outer shell having an outlet, a burner arranged therein, and the receptacle located within the shell in position to subject its contents to the action of the burner; said receptacle having its outer wall constructed of rings decreasing in diameter, and having an open cone extending upwardly within it.

3. In a refuse-consumer, the combination of the outer shell having an outlet, a burner arranged therein, and the receptacle located within the shell in position to subject its contents to the action of the burner; said receptacle having its outer wall constructed of rings decreasing in diameter from its top to its bottom, and having an upper flange fitting the outer receptacle and located in the path of the material so as to agitate the same as it drops on being consumed.

4. In a refuse-consumer, the combination of the outer shell provided with an outlet, a burner arranged therein, and a receptacle located within the shell in position to subject its contents to the action of the burner; said receptacle having its outer wall constructed

of rings decreasing in diameter, and having an upper flange fitting the outer receptacle, with perforations through said flange at a point away from the outlet of the outer shell.

5. In a refuse-burner, the combination with the outer shell having an outlet, of a downwardly-tapering open-sided receptacle arranged centrally therein and spaced from the top and sides thereof, a grate below said receptacle, and a burner disposed to supply a flame against the wall of the receptacle.

6. The combination with the shell having an outlet, of an open-walled receptacle positioned within the shell and constructed to support the material, a grate beneath the receptacle and a ring burner positioned to direct its flame through the grate and against the material.

7. In a refuse-burner, the combination with an outer shell having an outlet, of an inner receptacle spaced from the wall of the outer shell and having an opening in its bottom, a grate spaced from the lower end of the inner receptacle, and a ring burner directing its flame against material on the grate.

8. In a refuse-burner, the combination with an outer shell, having a flue near its top, of an inner receptacle spaced from the side walls of the outer shell and opening at its top and its bottom into the shell, a grate spaced from the lower end of the receptacle, a burner directing its flame into the inner receptacle, and asbestos lining on the inner surface of the outer shell.

9. In a refuse-burner, the combination with an outer shell having a flue-opening, of an inner receptacle spaced from the side walls of the outer shell and opening at its top and bottom into the shell, a grate spaced from the lower end of the receptacle, and a burner directing its flame into the inner receptacle.

10. In a refuse-burner, the combination with the outer shell having an outlet and a feed-opening at its top, of a receptacle spaced from the top and the side walls of the shell and opening at its top and bottom into the shell, a grate spaced from the lower end of the receptacle, and a burner directing its flame against the material on the grate.

11. In a refuse-burner, the combination with an outer cylinder having a flue-opening, of an open-ended receptacle positioned in said shell and having a feed-opening at the top, a grate spaced from the lower end of the receptacle, a burner for the material on the grate, and an ash-chamber formed in the inner shell below the grate.

12. In a refuse-burner, the combination with the combustion-chamber, of a refuse-receptacle located therein and having a plurality of horizontal rings decreasing in diameter from the top to the bottom and located in the path of the material so as to agitate the same as it drops on being consumed.

13. In a refuse-burner, the combination with the outer shell, having an outlet, of the refuse-receptacle spaced from the side walls of the outer shell and having an opening at its bottom, a grate spaced from the lower end of the refuse-receptacle, a ring burner directing its flame into the receptacle, and an ash-receptacle below the burner.

14. In a refuse-burner, the combination with an outer shell having an outlet, of an open inner refuse-receptacle spaced from the side walls of the outer shell, and a ring burner directing its flame into the inner receptacle and

positioned to permit the ashes to pass through its center.

In testimony whereof we have set our hands, each in the presence of two witnesses.

JAMES R. KILBOURNE.
ANNA B. KILBOURNE.

Witnesses as to James R. Kilbourne:

O. KNIGHT, Jr.,
HERVEY S. KNIGHT.

Witnesses as to Anna B. Kilbourne:

GEORGE B. KILBOURNE,
LINCOLN KILBOURNE.