

R. LIDDELL.

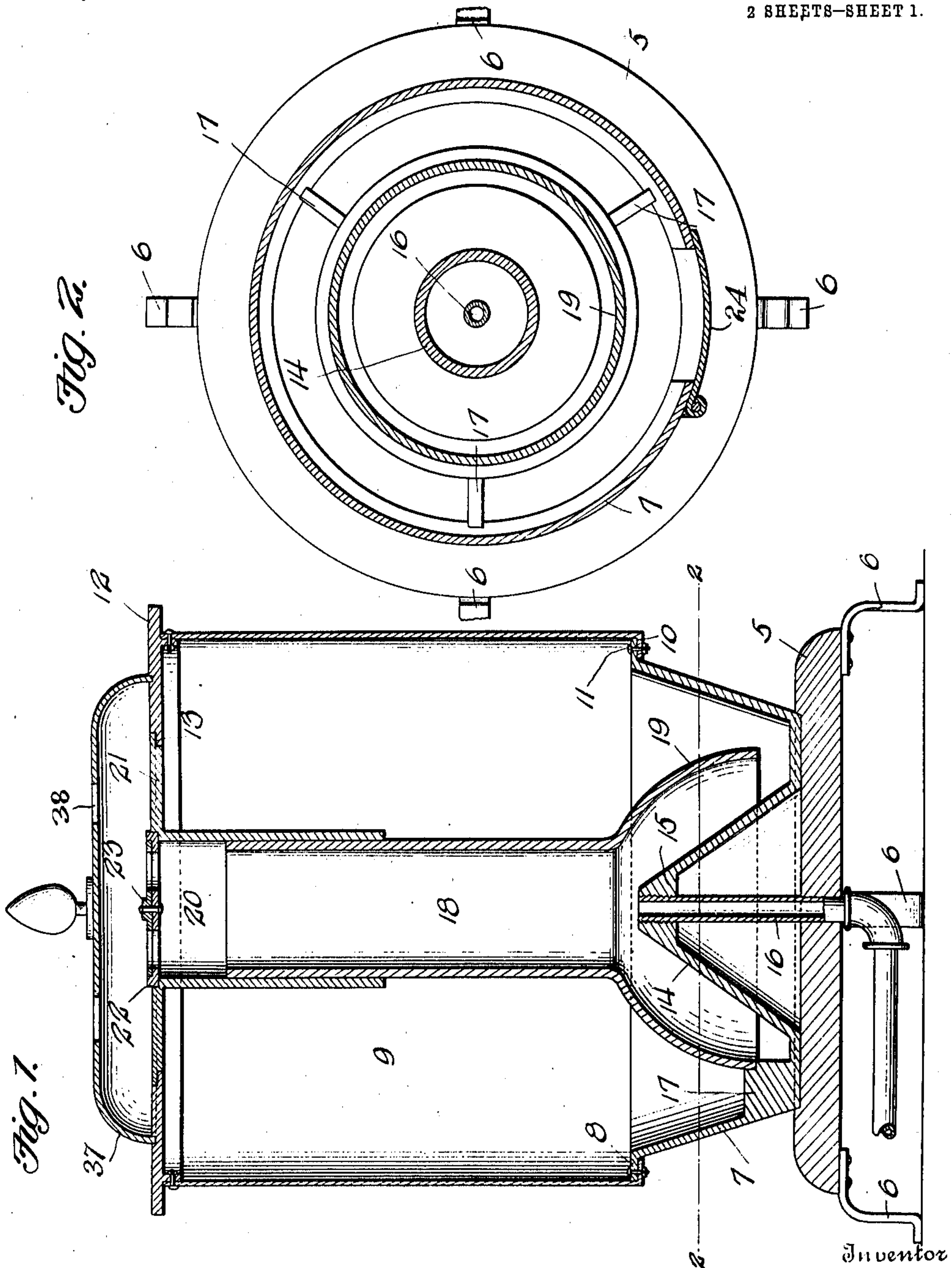
OIL BURNER.

APPLICATION FILED JULY 23, 1910.

Patented Apr. 18, 1911.

2 SHEETS-SHEET 1.

990,150.



Witnesses

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John A. Donagan

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By Victor J. Evans
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2 SHEETS—SHEET 2.

Fig. 3.

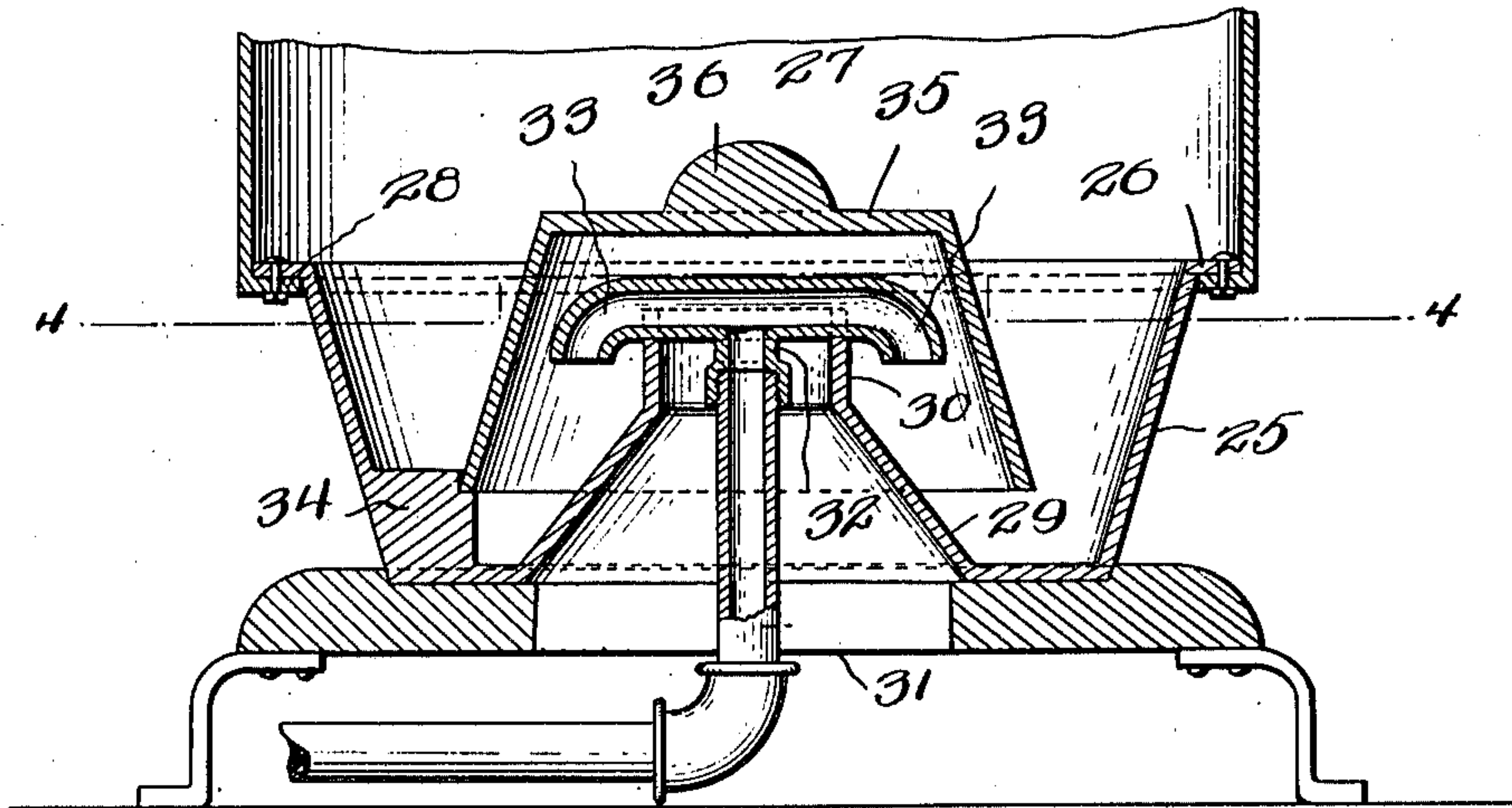
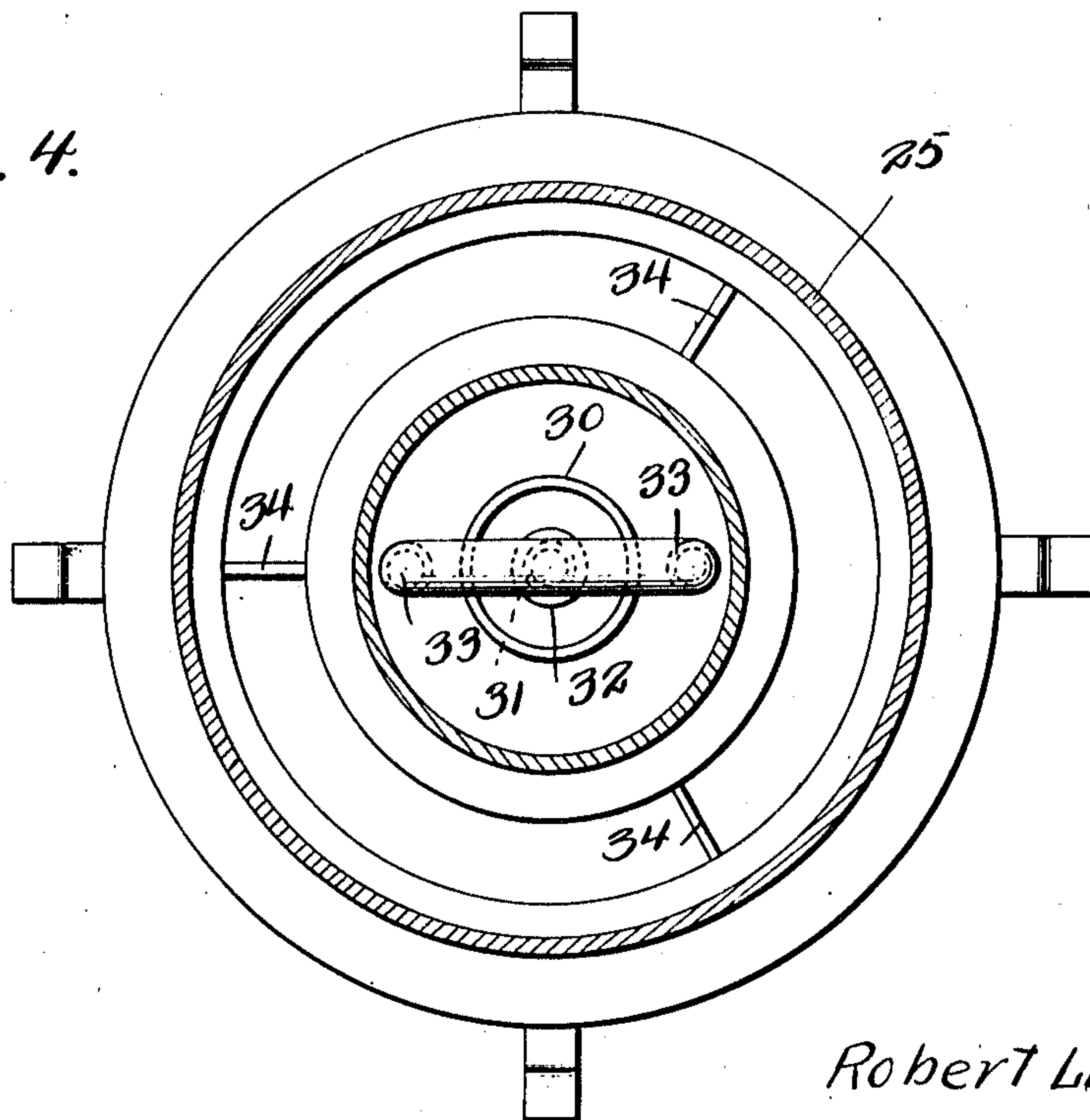


Fig. 4.



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UNITED STATES PATENT OFFICE.

ROBERT LIDDELL, OF TECUMSEH, NEBRASKA.

OIL-BURNER.

990,150.

Specification of Letters Patent.

Patented Apr. 18, 1911.

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To all whom it may concern:

Be it known that I, ROBERT LIDDELL, a citizen of the United States, residing at Tecumseh, in the county of Johnson and State of Nebraska, have invented new and useful Improvements in Oil-Burners, of which the following is a specification.

This invention relates to improvements in hydrocarbon burners, such as are usually employed with heating and cooking stoves.

It has for its object the provision of a burner which may be adjusted to the various dimensions of stoves now in use.

A further object is the provision of a burner in which the number of parts are reduced to a minimum and so arranged that they can be readily taken apart whenever desired for cleaning purposes.

With these and other objects in view, which will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claims; it being understood that various changes in the form, proportion, size, and minor details of the device may be made, within the scope of the appended claims, without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings:—Figure 1 is a vertical sectional view of the device; Fig. 2 is a sectional plan view on the line 2—2 of Fig. 1; Fig. 3 is a vertical section of a modified form of the device; Fig. 4 is a sectional plan view on the line 4—4 of Fig. 3.

Similar numerals of reference designate corresponding parts throughout.

The device about to be described, is shown applied to the body of an ordinary heating stove and forming a part of the said body.

The pedestal or base of the stove is shown to include a circular plate 5 supported by legs 6 and arranged on the plate 5 is the burner base 7. This member conforms substantially to the shape of an inverted frustum of a cone, its upper or widened end being provided with an outwardly extending circular flange 8.

The body of the stove is designated by the numeral 9 and is cylindrical in contour, having at its lower end an inwardly extending circular flange 10 which bears on the lower

face of the flange 8, the parts being secured together by means of bolts or rivets 11 passing through the flanges.

The top plate of the body 9 is designated by the numeral 12 and is supported by the upper edge of the body and has an enlarged central opening, the side of which is provided with a circular rabbet 13.

The central portion of the lower end of the burner base 7 is bulged upwardly to provide a frusto-conically shaped extension 14, the upper base portion of which is interiorly thickened, as shown at 15, and screw threaded so as to provide a threaded opening of uniform diameter. An oil inlet pipe is designated in general by the numeral 16 and has one end threaded into the threaded portion of the extension 14, as shown in Fig. 1.

Arranged in the space between the opposed faces of the base 7 and extension 14 and formed integral with the inner surface of the base 7 are a plurality of vertically extending spaced ribs 17, the inner sides of which are spaced from the adjacent surface of the extension 14 and the upper and outer corners of which are rabbeted. The ribs support, in spaced relation to the lower end of the burner base 7, a hood or casing, the said hood or casing including a cylindrical body portion 18, the lower end of which terminates in a hollow and substantially hemispherically shaped extension 19, the lower edge of said extension being seated in the rabbets at the upper and outer corners of the ribs 17. The upper end of the cylindrical portion 18 is received by one end of a similarly shaped member 20, the opposite end of which is provided exteriorly with a circular cover 21, the periphery of which is rabbeted and designed to bear in the rabbeted portion 13 of the top plate 12. With this construction, it will be manifest that the hood consists of telescoping sections, thus rendering it adjustable to various heights of stoves. Arranged in the upper end portion of the cylindrical extension 20 is a plate 22 having a plurality of spaced radial openings and pivotally mounted on the plate 22 is a similar plate 23 having openings to be moved into and out of alinement with the openings in the plate 22. The top plate 12 is provided adjacent to its outer periphery with a circular groove, and seated in this groove is an inverted dish-shaped covering 37 having a plurality of openings 38. These openings together with the openings of the

plates 22 and 23 provide passages for the air to pass into the hood to mix with the oil flowing from the inlet pipe 16.

In the operation of the device, thus far described, a quantity of oil is permitted to flow from the inlet pipe 16 to the bottom of the base 7. The oil is then ignited, this operation being performed by opening the door 24 in the side wall of the burner base 7. The burning oil heats the burner base 7 and also the hemispherical extension 19. After the greater part of the oil is consumed and the extension 19 is heated to the required degree, the valve (not shown) in the oil supply pipe is opened to permit a proper quantity of oil to flow through the pipe 16. The oil passing through the pipe 16 is vaporized by the heat of the conical extension 14 and hemispherical extension 19 and mixes with the air passing downwardly through the cylindrical extensions 18 and 20. This combined mixture of gas and air, when ignited, will further heat the surfaces of the extensions 14 and 19, the products of combustion passing upwardly and over the outer face of the hemispherical extension 19 into the space between the casing and hood, and thence through an opening (not shown) in the rear of the casing, to the chimney.

In the modified form illustrated in Figs. 3 and 4, the burner base is designated by the numeral 25 and conforms to the shape of an inverted rustum of a cone, having at its upper or larger end an outwardly extending circular flange 26. The cylindrical body of the stove is designated by the numeral 27 and is provided at its lower end with an inwardly extending flange 28 which is bolted or otherwise secured to the inner face of the flange 26. The central portion of the lower end of the burner base 25 is bulged upwardly so as to provide a frusto-conically shaped extension 29 having at its upper end a vertically extending cylindrical extension 30. An oil supply pipe is designated by the numeral 31 and leads upwardly through the frusto-conically shaped extension 29 and is provided at its upper end with a T-shaped burner tip, designated by the numeral 32. The opposite horizontal portions of the tip 32 are received by oppositely disposed sockets in the upper end of the cylindrical extension 30 and the extremities of the horizontal arms are curved downwardly, as shown at 33. With this construction it will be seen that a space is provided on opposite sides of the horizontal extensions of the tip for air which passes upwardly and through the extension 29. Arranged in the space between the extension 29 and inner face of the side wall of the burner base 25 are a plurality of vertical ribs 34 similar to the ribs 17, and the upper and inner corners of which are rabbeted. An inverted cup-shaped cap is designated by the numeral 35

and houses the burner tip with its lower edge seated in the rabbets of the ribs 34. The upper end of the cap is centrally provided with a knob 36 forming a finger hold for the operator when it is desired to lift the cap. The operation of the modified form is similar to the form just described, the difference in the two structures residing in the admission of air to the burner base.

From the foregoing, it will be seen that I have provided a device which is comparatively simple in structure, and inexpensive to manufacture, the parts being so arranged that a maximum amount of heating surface is located at the burner to promote the rapid vaporization of the oil.

Having thus described the invention, what I claim is:

1. An oil burner comprising a hollow inverted frusto-conically shaped base having at its upper edge an outwardly extending flange and further provided at its lower end with a centrally disposed frusto-conically shaped extension to receive one end of an oil supply pipe, said base being further and interiorly provided at its lower end portion with a plurality of spaced ribs having their upper and inner corners rabbeted, and a hood overlying the frusto-conically shaped extension and having its lower edge seated in the rabbets of said ribs.

2. An oil burner comprising a hollow inverted frusto-conically shaped base having at its upper edge an outwardly extending flange and further provided at its lower end with a centrally disposed frusto-conically shaped extension to receive one end of an oil supply pipe, said base being further and interiorly provided at its lower end portion with a plurality of spaced ribs having their upper and inner corners rabbeted, and an extensible hood overlying the frusto-conically shaped extension and having its lower edge seated in the rabbets of said ribs.

3. An oil burner comprising a hollow inverted frusto-conically shaped base having at its upper edge an outwardly extending flange and further provided at its lower end with a centrally disposed frusto-conically shaped extension to receive one end of an oil supply pipe, said base being further and interiorly provided at its lower end portion with a plurality of spaced ribs having their upper and inner corners rabbeted, and a hood comprising a pair of telescoping sections, one of which is provided with a hemispherical extension overlying the frusto-conically shaped extension and having its lower edge seated in the rabbets of said ribs.

4. An oil burner comprising a hollow inverted frusto-conically shaped base having at its upper edge an outwardly extending flange and further provided at its lower end with a centrally disposed frusto-conically shaped extension to receive one end of

an oil supply pipe, said base being further and interiorly provided at its lower end portion with a plurality of spaced ribs having their upper and inner corners rabbeted, 5 and a hood comprising a pair of telescoping sections, one of which is provided with a hemispherical extension overlying the frusto-conically shaped extension and having its lower edge seated in the rabbets of said

ribs, the other of said sections being provided at its upper end with a damper. 10

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT LIDDELL.

Witnesses:

MOSES LANGLEY,
JESSIE DEW.