

(No Model.)

2 Sheets—Sheet 1.

S. H. ALTICE, H. P. ROBERTS & C. REED.

HEATER FOR STOVES AND OTHER PURPOSES.

No. 401,096.

Patented Apr. 9, 1889.

Fig. 2.

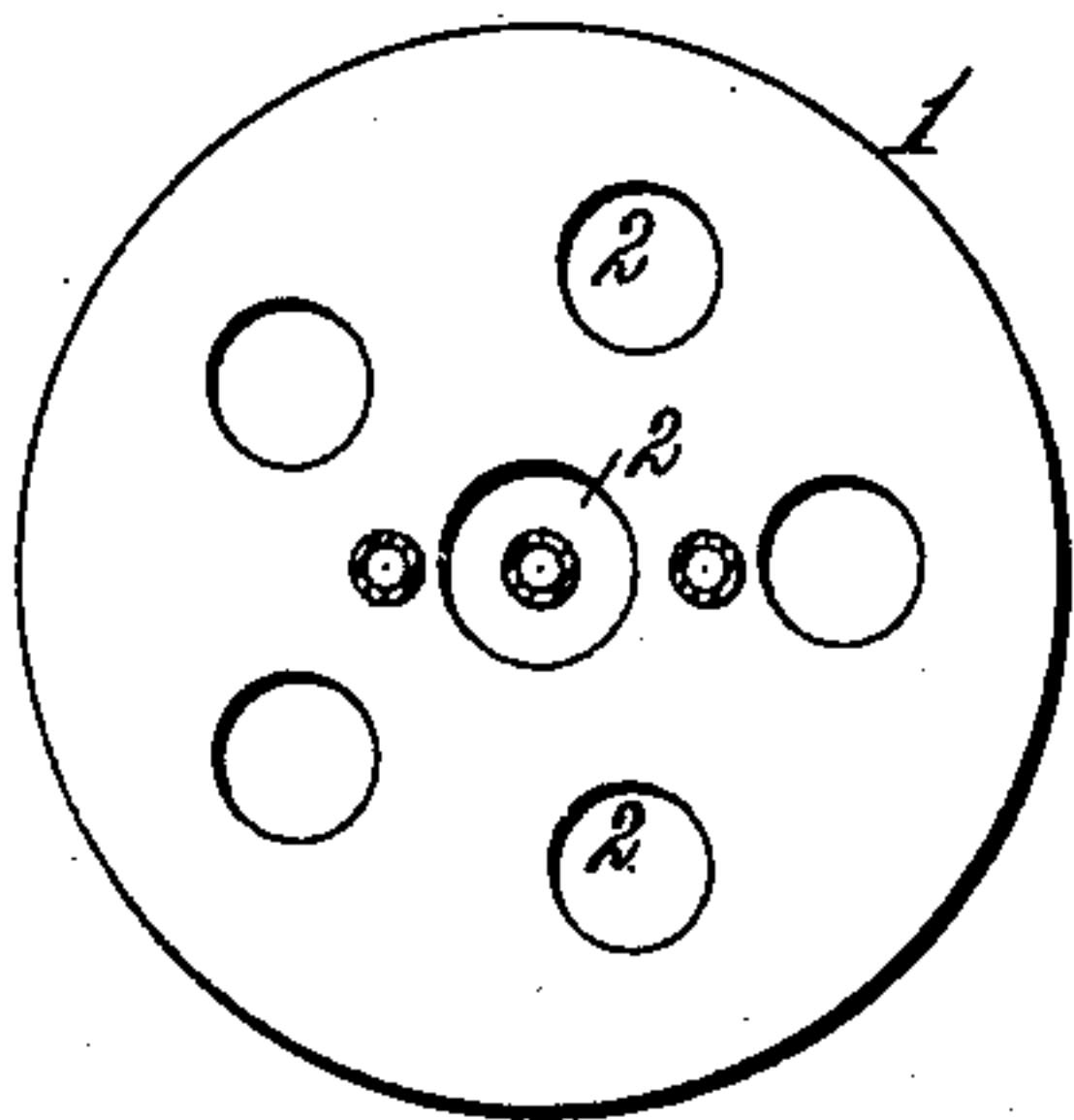
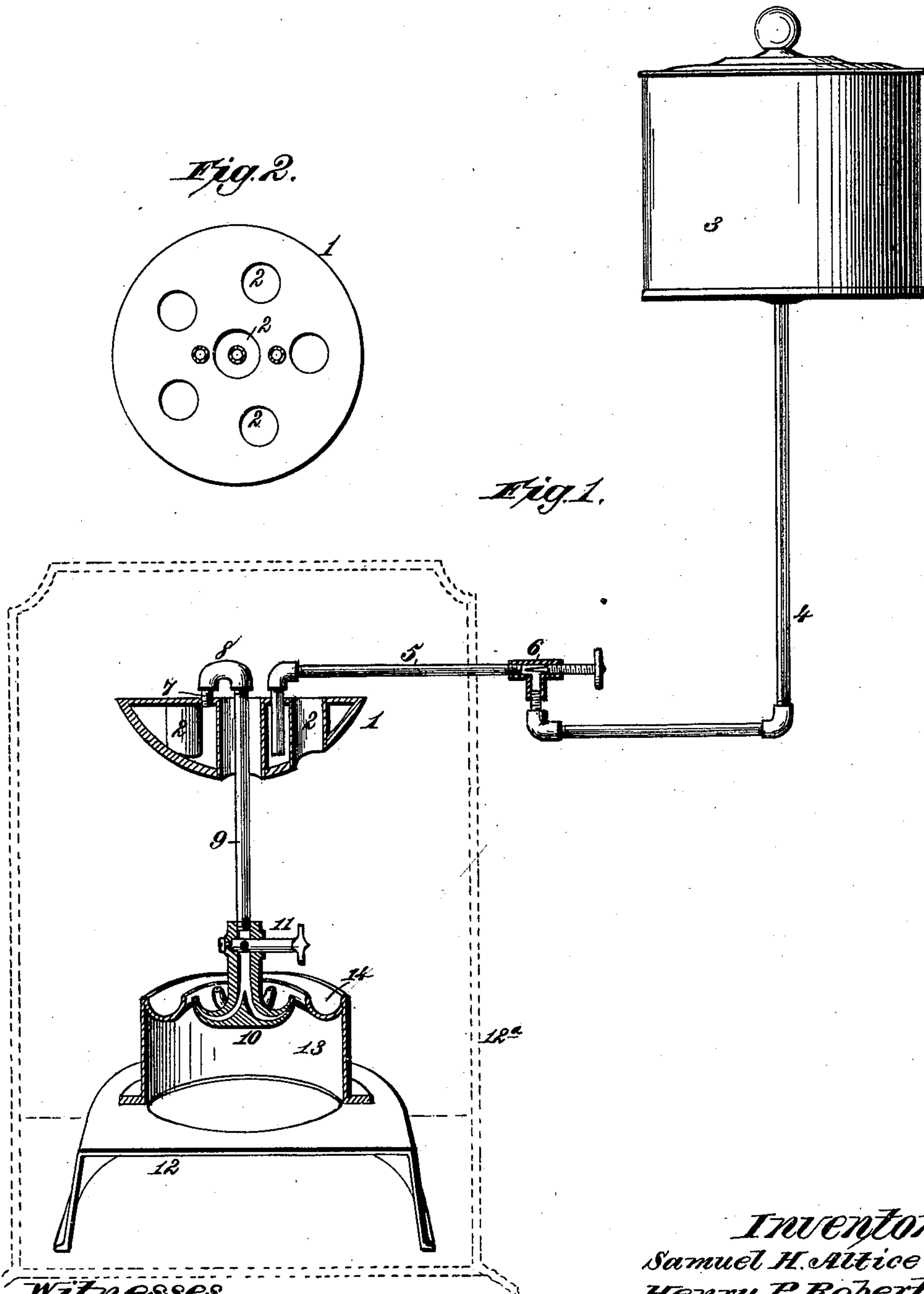


Fig. 1.



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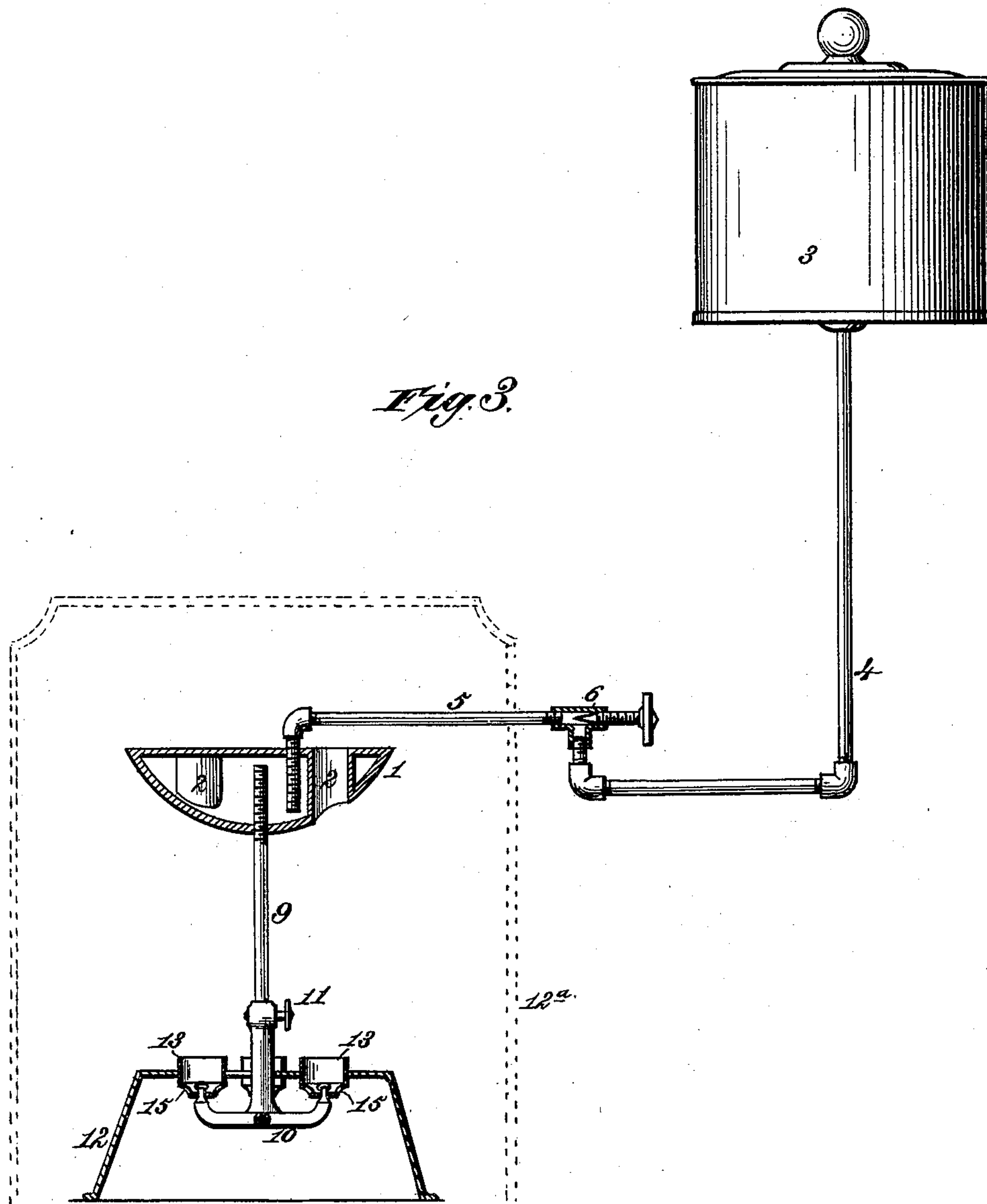
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S. H. ALTICE, H. P. ROBERTS & C. REED.

HEATER FOR STOVES AND OTHER PURPOSES.

No. 401,096.

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Witnesses,
Robert Pratt,
Geo. H. Rea.

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James L. Norris,
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UNITED STATES PATENT OFFICE.

SAMUEL H. ALTICE, HENRY P. ROBERTS, AND CUNNINGHAM REED, OF
JAMESTOWN, NEW YORK; SAID ROBERTS ASSIGNOR TO SAID ALTICE
AND REED.

HEATER FOR STOVES AND OTHER PURPOSES.

SPECIFICATION forming part of Letters Patent No. 401,096, dated April 9, 1889.

Application filed May 3, 1888. Serial No. 272,682. (No model.)

To all whom it may concern:

Be it known that we, SAMUEL H. ALTICE, HENRY P. ROBERTS, and CUNNINGHAM REED, citizens of the United States, residing at
5 Jamestown, in the county of Chautauqua and State of New York, have invented new and useful Improvements in Heaters for Stoves and other Purposes, of which the following is a specification.

10 This invention has for its object to provide a novel apparatus for vaporizing crude oils—such as petroleum—and burning the vapor for heating stoves and other purposes.

The object of our invention we accomplish
15 in the manner and by the means hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation of the apparatus, showing the stove to be heated in
20 dotted lines; Fig. 2, a top plan view of the retort; and Fig. 3, a vertical sectional view similar to Fig. 1, showing a modification.

In order to enable those skilled in the art to make and use our invention, we will now
25 describe the same in detail, referring to the drawings, wherein—

The numeral 1 indicates a hollow retort having a convex bottom and a flat top wall through which extend a series of tubes, 2,
30 constituting flues, which are open at the top and bottom.

The numeral 3 indicates an elevated crude-oil reservoir connected by pipes 4 and 5 with the interior of the retort to drop the oil upon the bottom wall thereof. A needle or other
35 valve, 6, is provided in the pipe 5, to control the supply, and this oil-conducting pipe enters the top of the retort and extends to near the bottom thereof. A vapor-outlet tube, 7,
40 rises from the top of the retort and by a curved elbow, 8, connects with a vertical tube, 9, which descends through the central tubular flue of the retort to a suitable distance below the latter, where it is supplied with vapor-
45 burners 10. A valve, 11, is provided in the vapor-conducting tube 9 to regulate the flow of vapor to the burners. A pan, 12, open at the front, is arranged in the stove 12^a to be heated, and carries an annular air-chamber,
50 13, which rises up beside the burners for the

purpose of supplying air thereto, and thus consuming smoke, so that a clear white flame is obtained. The upper portion of the air-chamber 13 is provided with an annular
trough, 14, located around the burners, to con- 55
tain oil for heating the retort in starting the apparatus.

In operation the crude oil falls upon the bottom of the hot retort and is converted into vapor, which rises in the gas-outlet tube 7, 60
and thence passes down the vapor-tube 9 to the gas-burners 10. The flame from the burners heats the stove 12^a; and likewise heats the vapor-tube 9, and by passing up through the tubular flues 2 the retort is maintained 65
at a very high temperature, this being necessary in order to obtain pure vapor from crude oil, such as petroleum. As the oil-conducting pipe 5 discharges the oil directly upon the highly-heated bottom wall of the retort, the 70
tar that usually comes from crude oil is consumed, and the vapor thereby made clear and practically free from ammonia.

In our apparatus it is not possible to supply air through the same tube that conducts 75
the vapor to the burners, and for this reason we locate the open pan 12 in the stove, as before explained, this open pan supplying the air-chamber 13 with the air which delivers it about the burners to consume the 80
smoke and provide a white flame. The bottom of the retort is convex and overhangs the burners, so that portions of the flames are spread laterally, while other portions of the flames rise through the tubular flues, whereby 85
the stove is heated suitably for the conditions required. The apparatus may be used for heating furnaces and steam-generators as well as for heating stoves for culinary and warming purposes. 90

In Fig. 3 we show a modification of the invention, in which the vapor-conducting tube 9 is screwed into the bottom wall of the retort and extends to near the top wall thereof, so as to take the vapor from the upper part of 95
the retort and conduct it down to the burners 10. In the modified construction each burner-tip extends into a separate air-chamber, 13, open at its lower portion, as at 15, to the pan 12, and the vertical walls of these 100

chambers extend through and rise above the top wall of the hollow pan 12. In both constructions the walls of the pan serve to compel all air entering the latter to pass into and through the open lower part of the air-chamber or chambers 13 upon the vapor at the burner-tips to consume all smoke. The lower portions of the air-chambers 13, below the openings 15, serve as receptacles for oil to start the apparatus, as described, with reference to the trough 14.

We are aware that a hollow retort having flues, an oil-supply pipe, and a burner-carrying pipe is not broadly new with us. Further, that a casing around a vapor-burner has heretofore been proposed, and, finally, that a stove for burning oil has heretofore comprised a water-containing cylinder having a central tube in which is located a vapor-burner and above which tube and the water in the cylinder is located an oil-vaporizing chamber. Such features, therefore, we disclaim.

What we claim is—

1. The open air-supply pan 12, having a perforated top wall and adapted to set within a stove, and the air-chamber 13, open at the top, supported by and rising above said top wall, and in communication at its base with the interior of the air-supply pan, in combination with the burner projecting into the air-chamber, the retort, the vapor-conducting tube, and the oil-supply pipe, substantially as described.

2. An oil vaporizer and burner consisting

of the retort 1, having flues 2 extending entirely through it, the oil-supply tube 4, the vapor-conducting tube 9, communicating with the retort, descending therefrom, and provided with a burner at its lower end, the open air-supply pan 12, adapted to set within a stove and having a perforated top wall, and the air-chamber 13, open at the top, supported by and rising above said top wall surrounding the burner, and in communication at its base with the interior of the air-supply pan, substantially as described.

3. An oil vaporizer and burner consisting of the retort 1, having flues 2 extending through, the oil-supply pipe 4, the vapor-conducting tube 9, leading down from the retort and provided at its lower end with a series of burner-tips, the air-supply pan 12, adapted to set within a stove and having a series of openings in its top wall, and a series of air-chambers, 13, supported in said openings and each one rising above the top wall surrounding a burner and provided with openings 15 at its lower end, placing it in communication with the interior of the air-supply pan, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

SAMUEL H. ALTICE.
HENRY P. ROBERTS.
CUNNINGHAM REED.

Witnesses:

FRED. R. PETERSON,
W. A. BRADSHAW, Jr.