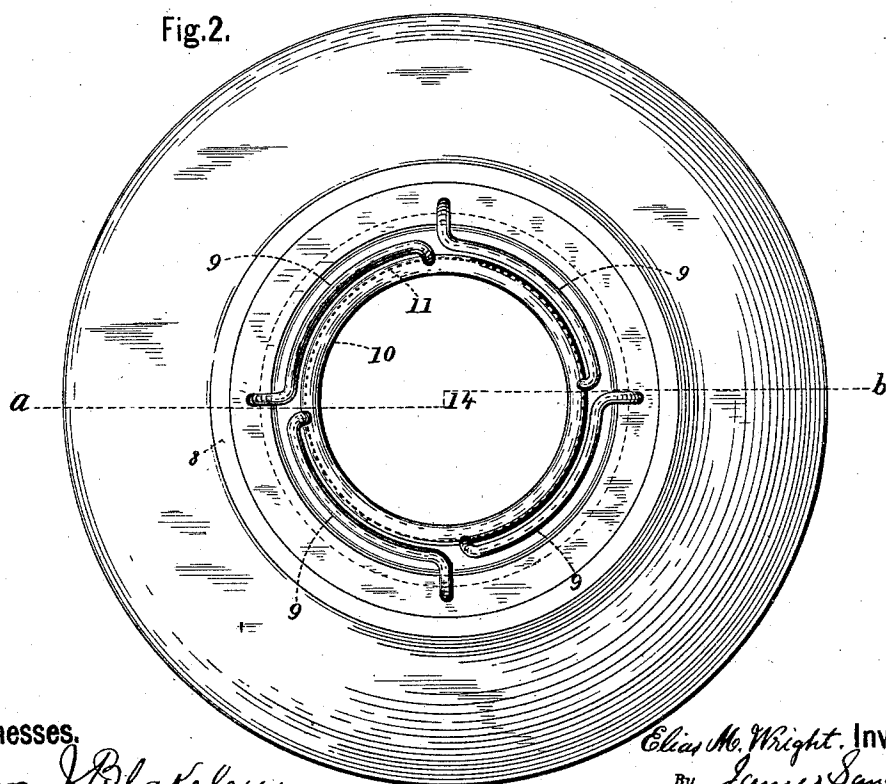
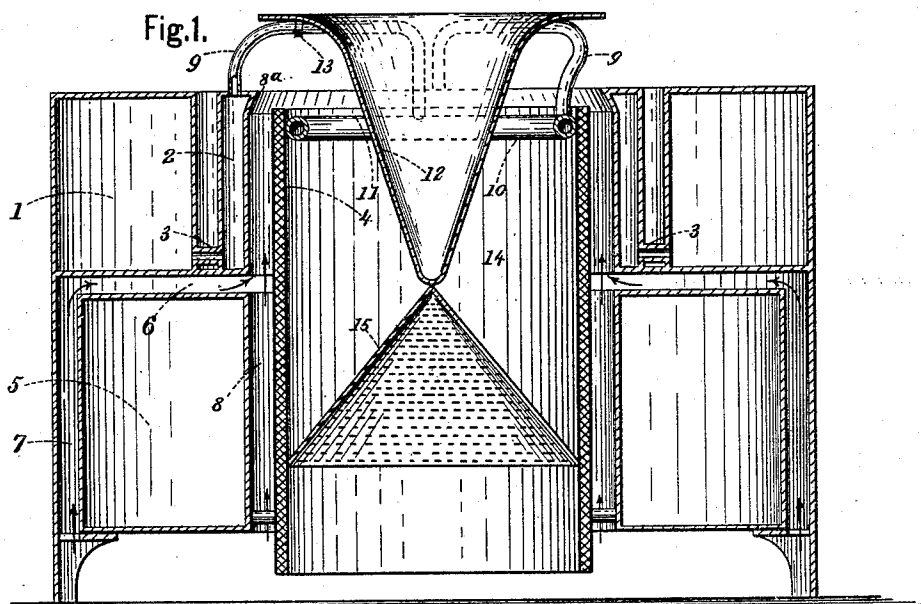


(No Model.)

E. M. WRIGHT.
BURNER FOR OIL STOVES.

No. 469,510.

Patented Feb. 23, 1892.



Witnesses.

Cora J. Blakeley.
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UNITED STATES PATENT OFFICE.

ELIAS M. WRIGHT, OF BUFFALO, NEW YORK.

BURNER FOR OIL-STOVES.

SPECIFICATION forming part of Letters Patent No. 469,510, dated February 23, 1892.

Application filed April 23, 1890. Serial No. 349,782. (No model.)

To all whom it may concern:

Be it known that I, ELIAS M. WRIGHT, a citizen of the United States, residing in Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements in Burners for Oil-Stoves, of which the following is a specification.

This invention consists in certain new and useful improvements whereby the steam and air for supporting combustion is superheated before passing into the flame and whereby the oil-reservoir is surrounded by a current of cool air while the burner is in operation.

The invention also consists in certain other details of construction, all of which will be hereinafter described and claimed, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation cutting vertically and longitudinally in or about line *a b*, Fig. 2; and Fig. 2 represents a top plan view, the deflector or spreader being omitted, so as to show a plan of the construction below it.

In said drawings, 1 represents an annular water-reservoir. Within the water-reservoir is a comparatively thin annular steam reservoir or generator 2, connected so as to communicate with the water-reservoir by one or more pipes 3, (shown in Fig. 1,) preferably a series of pipes 3. The water-reservoir and the steam-generator is located above the oil-reservoir and entirely surrounds the upper portion of the wick-tube 4. The annular oil-reservoir 5 is located far enough below the water-reservoir to leave an opening or air-flue 6 at the top between the two. Surrounding the oil-reservoir is an air-flue 7, which communicates with the flue 6, and between the oil and steam generator and the wick-tube 4 is a vertical annular flue 8. At the top the steam-generator inclines in all around toward the oil-tube, as shown at 8^a, the object being to cause the air to be forced into the flame.

The object in having the flues 6, 7, and 8 entirely surround the oil-reservoir is to provide a continually-moving column of cool air to keep the oil-reservoir cool when the oil-wick is burning or the burner is in operation.

Connected with the steam-generator is a series of pipes 9. They are preferably made of

copper, as being the best material for the purpose, as it conducts the heat quickly; but any other suitable material may be used. These tubes or pipes 9 connect and communicate with the top of the steam-generator, then project upward, then pass around in a horizontal circular direction, and then downward, so as to connect with a hollow perforated ring spreader 10, which is provided with a series of perforations 11. This ring spreader is located within the central air-space in the wick-tube 4 and just a little below the top of the wick-tube, so that the steam as it issues from the perforations 11 does not strike directly against the flame, but against the inner sides of the wick-tube and then into the flame. The object of this is to prevent the steam from being thrown with too much force against the flame.

The pipes or tubes 9 are arranged so as to form substantially a circle, as shown in Fig. 2, upon which an inverted-hollow-cone flame deflector or spreader 12 is mounted and secured thereto by staples 13 or in any well-known way. This flame-deflector 12 is preferably made of copper, so as to easily receive and retain the heat. It is made to extend a considerable distance down below the top of the wick-tube into the central air-space 14, the object being to gradually warm the air as it passes up to the flame. Below the inverted-cone spreader 12 is a perforated-cone air-equalizer 15. Its object is to prevent the air from passing up in a solid body by dividing it as it passes through the perforations and thereby prevent any flickering of the flame.

In operation the heat from the flame heats the steam-generator sufficiently to generate steam or vapor, which passes up through the tubes 9, when it becomes superheated as it passes through them, as they become very hot by being located directly above, so as to be enveloped by the flame. The superheated steam passes down into the perforated ring spreader, and from thence it passes through the perforations 11 and to the flame, carrying a large portion of highly-heated air with it. This construction by its action entirely deodorizes the oil, so that there is no perceptible smell of oil of any kind while it is in operation. Consequently a stove provided with

this burner can be used without the least objection in the parlor as well as anywhere else.

The locating of the ring spreader within the inner sides of the wick-tube just below the top of the same and having the perforations located so as to carry the superheated steam against the inner side of the wick-tube produces heat enough to convert the oil into gas before it reaches the flame, and thereby produces a more perfect combustion, and, furthermore, it protects the wick, because it is not necessary to raise it to the top of the tube to produce all the gas required for combustion.

I claim as my invention—

1. In an oil-burner, the combination of an annular water-reservoir, a steam-generator connected thereto by pipes, a ring deflector, a flame-deflector, and a series of pipes connected with the steam-generator and passing up to form a support for the flame-deflector and then down to the perforated ring deflector, an oil-reservoir, and a wick-tube connected thereby by pipes, substantially as described.

2. In an oil-burner, the combination of a cone-shaped deflector, its point extending downward below the top of the wick-tube into the central air-space within it, and a perforated cone-shaped air-equalizer having its point extending upward toward the lower

part of the flame-deflector, for the purposes described.

3. In an oil-burner, the combination, with the steam-generator, of a flame-deflector, a ring deflector located a little below the top of the wick-tube, and a series of heating-pipes connected with the steam-generator and passing up over the wick-tube around and in contact with the flame-deflector and from thence down to the perforated ring spreader located within the central air-space of the wick-tube, for purposes substantially as described.

4. In an oil-burner, the combination of an annular water-reservoir, an inner annular steam-generator connected therewith by pipes and having an inwardly-projecting portion at the top surrounding the wick-tube, a series of pipes connecting the steam-generator with a perforated ring spreader located on the inner side and below the top of the wick-tube, a cone-shaped flame-deflector located above the pipes connecting the steam-generator and the perforated ring spreader, a wick-tube connecting with an annular oil-reservoir, and a series of air-flues surrounding the oil-reservoir and wick-tube, substantially as described.

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Witnesses:

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