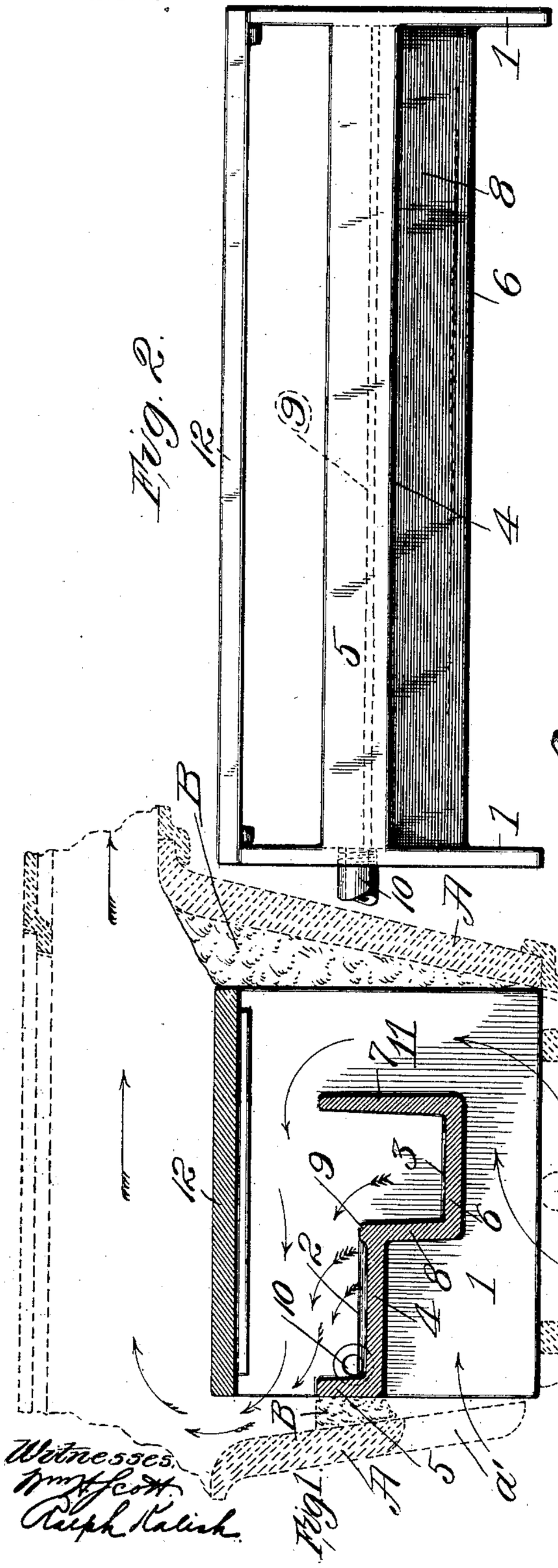
No. 756,742. PATENTED APR. 5, 1904.

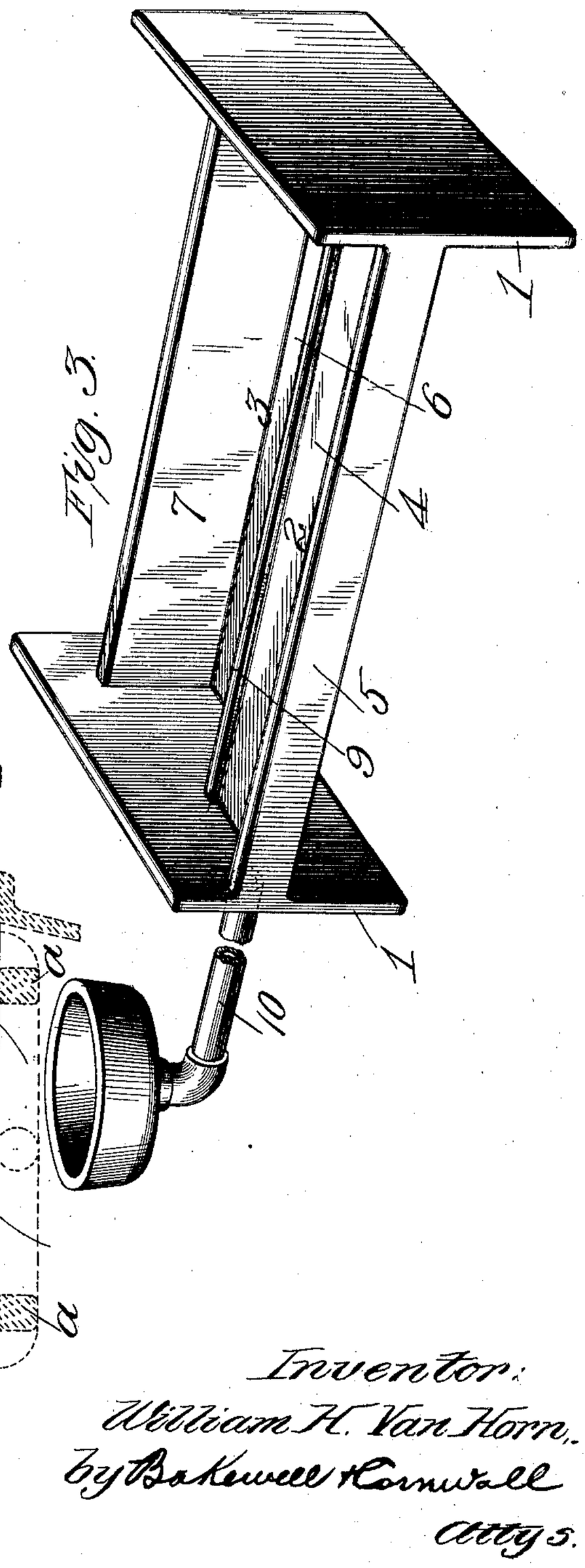
W. H. VAN HORN.

FUEL OIL BURNER.

APPLICATION FILED SEPT. 26, 1902.

NO MODEL.





Witnesses.
Wm. H. Coe.
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No. 756,742. Patented April 5, 1904.

UNITED STATES PATENT OFFICE.

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FUEL-OIL BURNER.

SPECIFICATION forming part of Letters Patent No. 756,742, dated April 5, 1904.

Application filed September 26, 1902. Serial No. 124,931. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. VAN HORN, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Fuel-Oil Burners, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a transverse sectional elevation. Fig. 2 is a front elevation, and Fig. 3 is a perspective view.

My invention relates to fuel-oil burners, my primary object being to provide a simple and inexpensive burner which can be applied to any stove of usual construction, including stoves commonly employed for burning coal or wood, and a further object is to so construct the burner that the degree of heat generated by the same can be regulated.

To these ends and also to improve generally upon devices of the character indicated my invention consists in the various matters hereinafter described and claimed.

Referring now more particularly to the drawings, A represents the fire-pot of a range of usual construction, *a* indicating the grate-bars, and *a'* the draft-openings usually found in the front of a range.

The present burner has supporting ends or heads 1, between which extend troughs 2 and 3 for the oil. The trough 2 has a bottom plate 4 and a front wall 5, while trough 3 has a horizontal bottom plate 6 and a rear vertical wall 7, the bottom plate 6 being preferably below the bottom plate 4. A vertical wall 8 extends between the bottom plates 4 and 6 and forms the front wall of the trough 3, the said wall 8 being extended upwardly, as shown at 9, to project slightly above the bottom wall 4, said projection or rib 9 being upon the inner side of the said bottom plate 4 and coöperating with the front wall 5, said bottom plate 4, and the heads 1 to produce the trough 2. An inlet-pipe 10 for the oil empties into the trough 2.

The burner just described can be readily attached to any stove of usual construction, said burner fitting within the ordinary fire-pot. It can be supported directly upon the grate-bars, as shown in Fig. 1, or upon separate supports provided in the stove in any convenient manner. Preferably the space between the back of the burner and the rear wall of the fire-pot and the portion of the space between the front wall of the burner and the front wall of the fire-pot and above the draft-openings *a'* are packed with fire-clay B, so that when the top 12 is placed in position the incoming air is forced to travel to the back of the burner and then forwarly across the same before reaching the exit-flue. The spaces between the heads 1 and the end walls of the fire-pot can also be packed with clay or the like, if so desired. When oil is admitted to the trough 2, it covers the bottom of the same and readily ignites, the supply being properly regulated. If it is desired to obtain a more intense flame than can be gotten from the oil in the trough 2, the feed is increased to permit the oil to flow over the rib 9 into the trough 3, and in this manner the area of burning oil is increased and the intensity of the flame is correspondingly augmented, the area of burning oil being increased not only by the oil in the trough 3, but also by the sheet of oil falling over the wall 8. Should it be desired to decrease the amount of heat, it is only necessary to decrease the feed of the oil in order to prevent the same from overflowing from the trough 2 into the trough 3. As the cover 12 is removable, access can be readily had to the troughs for the purpose of cleaning the same.

The present device is particularly intended for burning crude petroleum; but it is of course in nowise limited to such use.

As the troughs 2 and 3 are of less width than the supporting-heads 1, the wall 7 is spaced from the inner edges of the said heads, so that the fire-clay can be supported at the line including the said inner edges, and a flue 11 will be provided. Air enters the fire-pot and is conducted to the flue 11 at the rear of the burner, the air then passing forwardly

across the oil toward the front of the stove in the passage between the cover 12 and the burner, and said air then passes backwardly between the stove-top and the said cover 12. Thus the heated air is delivered directly to the front of the stove and then carried backwardly, whereby the direct intense heat is supplied to the forward portion of the stove as well as to the rear thereof.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a burner, heads, a fuel-supporting member between and supported by said heads and intermediate the upper and lower edges thereof, a cover over the upper face of said member and spaced therefrom to form a flame space and exit, said member extending only a portion of the width of the heads to provide communication between the flame-space and the space below said member, and the latter space serving as an air-supply chamber; substantially as described.

2. In a burner, heads, a fuel-supporting member between and supported by said heads and intermediate the upper and lower edges thereof, a cover over the upper face of said member and spaced therefrom to form a flame space and exit at one side of said burner, said member extending only a portion of the width of the heads to provide communication between the flame-space and the space below said member at the other side of said burner, and the latter space serving as an air-supply chamber which communicates with the space above the fuel-supporting member; substantially as described.

3. In a burner of the character indicated, heads, a substantially vertical wall at one edge of said heads and between them, said wall being of less height than said heads, a second substantially vertical wall intermediate said first-mentioned wall and the other edge of said heads and of less height than said heads, a third substantially vertical wall intermediate said first two mentioned vertical walls, and bottom walls respectively connecting the upper and lower portions of said third vertical wall with said other vertical walls; substantially as described.

4. In a burner of the character indicated, heads, a substantially vertical wall at one edge of said heads and between them, said wall being of less height than said heads, a second substantially vertical wall intermediate said first-mentioned wall and the other edge of said heads and of less height than said heads, a third substantially vertical wall intermediate said first two mentioned vertical walls, bottom walls respectively connecting the upper and lower portions of said third vertical wall with said other vertical walls, whereby upper and lower troughs are produced, and a rib intermediate said troughs; substantially as described.

5. In a burner of the character indicated, a lower, open, fuel-receiving trough, a separate upper, substantially horizontal, open, fuel-receiving trough arranged out of both vertical and horizontal alinement with said lower trough, heads closing the ends of said troughs, said heads extending laterally beyond the lower trough, a wall connecting the adjacent sides of the respective troughs with each other, whereby said troughs extend oppositely from said wall and are connected thereby, an oil-supply for the upper trough, and a cover supported by the heads and extending over the troughs; substantially as described.

In testimony whereof I hereunto affix my signature, in the presence of two witnesses, this 23d day of September, 1902.

WILLIAM H. VAN HORN.

Witnesses:
GALES P. MOORE,
GEORGE BAKEWELL.