

No. 702,377.

Patented June 10, 1902.

J. B. PAYNE.

OIL BURNER.

(Application filed Apr. 17, 1901.)

(No Model.)

Fig. 1.

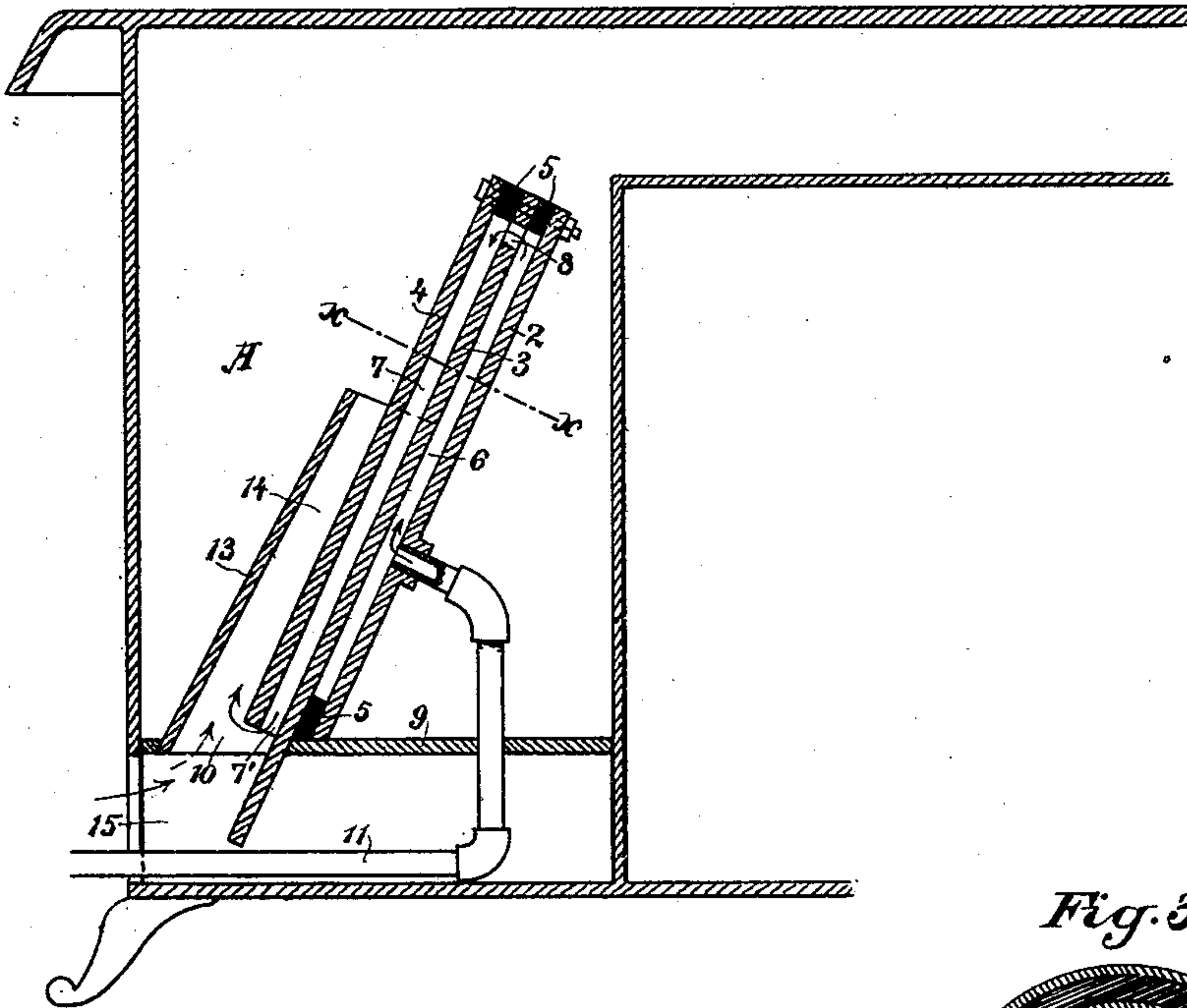


Fig. 2.

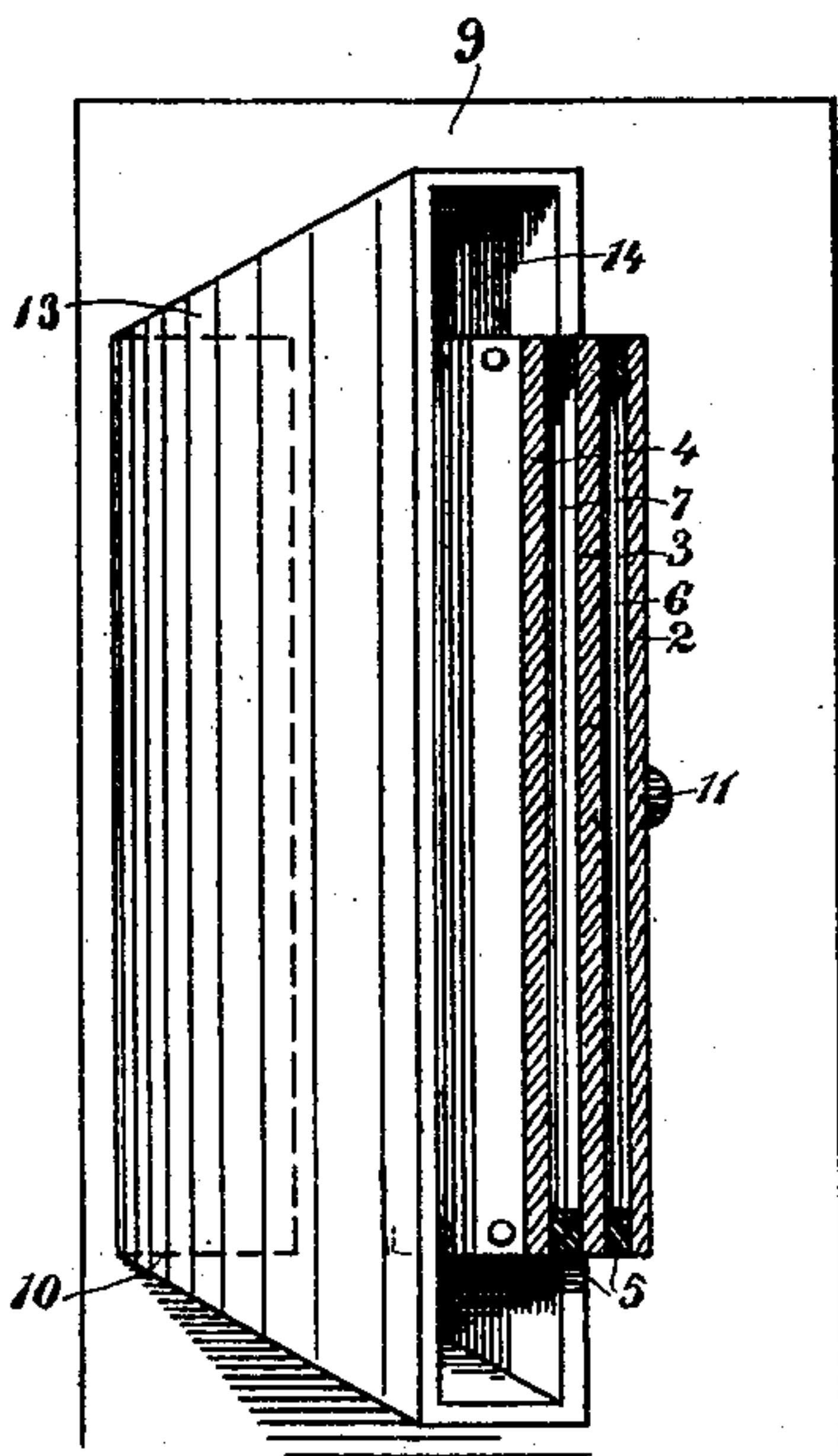
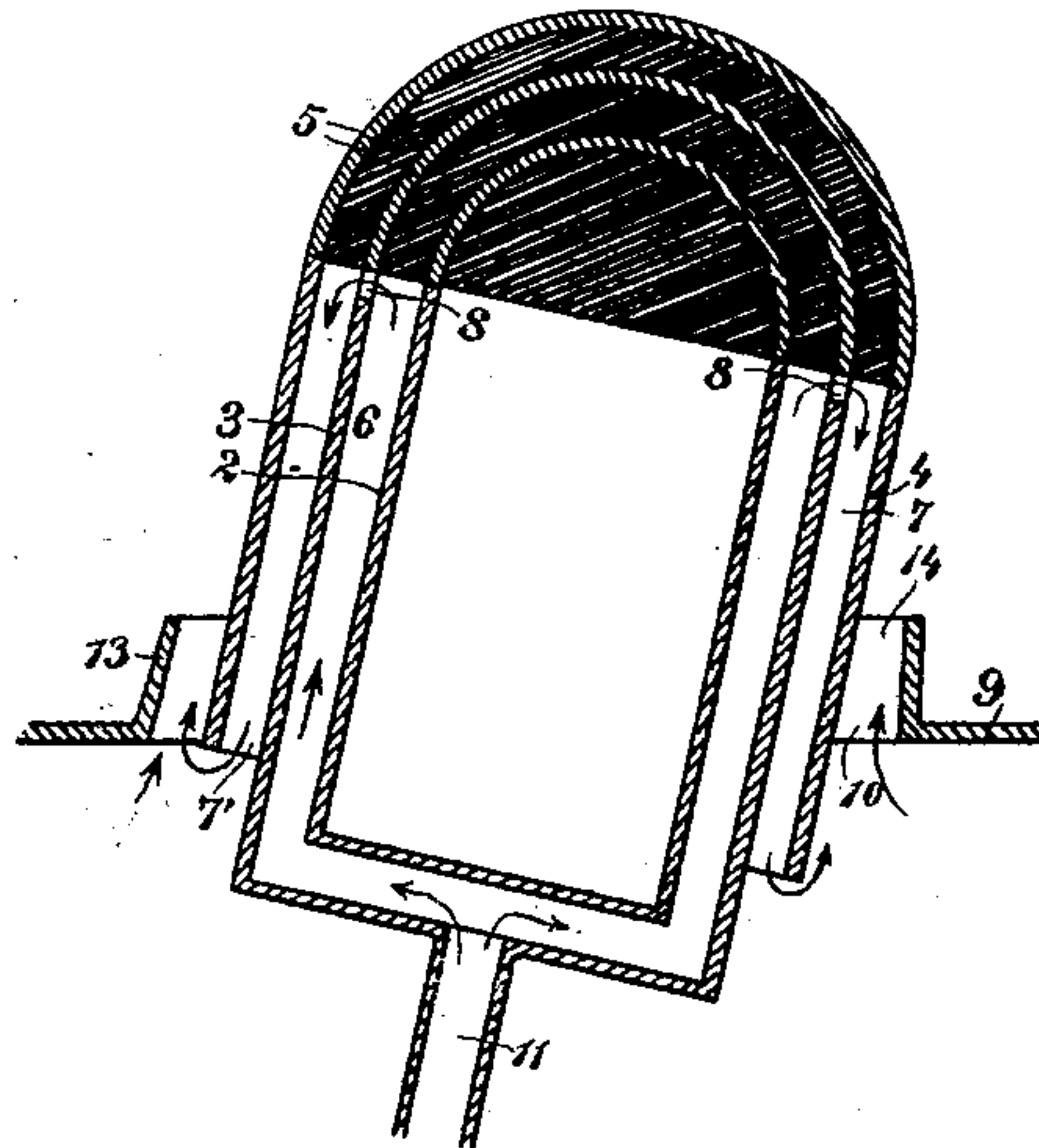


Fig. 3.



Witnesses,
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UNITED STATES PATENT OFFICE.

JAMES BENJAMIN PAYNE, OF HANFORD, CALIFORNIA, ASSIGNOR TO
HANFORD OIL-BURNER COMPANY, LIMITED, A PARTNERSHIP.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 702,377, dated June 10, 1902.

Application filed April 17, 1901. Serial No. 56,196. (No model.)

To all whom it may concern:

Be it known that I, JAMES BENJAMIN PAYNE, a citizen of the United States, residing at Hanford, county of Kings, State of California, have invented an Improvement in Oil-Burners; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to improvements in oil-burning devices; and its object is to provide a burner of simple construction for use in stoves, furnaces, and the like.

It consists, essentially, of a generator-chamber having a plurality of compartments suitably connected in their upper portion, whereby oil or gas may pass freely from one compartment to the other, a feed-pipe entering the rearmost of said chambers, a discharge-outlet in the bottom of the foremost, and of draft and deflecting plates arranged in relation to said generator, the details of which will be more fully set forth hereinafter.

Having reference to the accompanying drawings, Figure 1 is a vertical section through the burner and stove. Fig. 2 is a horizontal section on line *x x* of Fig. 1. Fig. 3 is a vertical section through a circular burner.

A represents a fireplace or combustion-chamber of an ordinary stove in which my burner is adapted to fit. The generator of this burner consists of the plates 2, 3, and 4, bolted together or otherwise joined at the edges and separated, as by an asbestos packing 5, to form the chambers 6 and 7 between these plates. The central plate 3 projects downward beyond the others and is perforated, as at 8, in its upper portion. The space between the lower edge of the plate 4 and plate 3 is left open, as 7'. These plates are fixed to or connected with a base-plate 9, which stands above or occupies the position of the usual stove-grate, and they are preferably inclined, as shown. This base-plate is designed to leave an open space beneath, into which the central plate 3 projects through the draft-opening 10. Rearward of this opening the oil-feed pipe 11 passes upward and enters the lower part of chamber 6. Similarly inclined as the three plates described is a fourth plate 13, secured to the base-plate and forming with the plate 4 a draft-passage

14. This deflection-plate 13 extends only about two-thirds of the length of the plate 4 and is flared upwardly, so as to extend beyond the edges of the plates 4, 3, and 2 and of a width approximately that of the combustion-chamber.

The oil entering the chamber 6 passes through the opening or openings 8 into the chamber 7, whence it flows downward through the passage 7'. Once ignited it meets the current of air entering through the openings 15 and 10, and a powerful draft is thus generated up through the passage or flue 14, the flame spreads out and around the burner, and passes thence over or around the oven in the usual way. The burner soon becomes highly heated, and the oil is volatilized in the chambers and issues through the opening 7' in the form of gas. The result is a steady, powerful, and smokeless flame.

In this device there are no reservoirs or parts to become clogged. The use of three plates united as described serves to form a simple and perfect generator, in which the volatilization of the oil becomes complete.

These burners may be made of any desired size or shape. In Fig. 3 I have shown a round form of burner, in which the principle and operation are the same.

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

1. The combination in an oil-burner of a horizontal base-plate having a draft-opening, a vaporizer consisting of a plurality of substantially flat parallel plates separated from each other to form a plurality of compartments, means whereby one compartment is made to communicate with another near one end of the plates, a supply-pipe entering one of said compartments, a discharge-opening in the lower portion of the final compartment, and a deflecting-plate substantially parallel with and separated from the final plate of the vaporizer, and rising above the base-plate so as to inclose the lower portion of the vaporizer said deflecting-plate having its sides diverging upwardly from the lower portion.

2. The combination in an oil-burner of a base-plate having a draft-opening therein, a vaporizer secured to said base-plate, said

vaporizer consisting of three parallel plates bolted together at the edges said edges separated by interposed packing whereby the chamber is divided into two compartments, 5 perforations in the upper part of the central partition by which the two compartments are connected, a feed-pipe entering one of said compartments, a discharge-opening in the lower portion of the other compartment, the 10 said central plate being longer than the other whereby it is projected through the draft-opening in said base-plate and projected below said plate, and a deflecting-plate extending upwardly from said draft-opening to form 15 a draft-flue.

3. The combination with a base-plate adapted to occupy substantially the position of a grate-bar in a combustion-chamber, and provided with a draft-opening, of a vaporizer ris-

ing from and inclined in relation to said base- 20 plate and consisting of a plurality of flat plates and means separating them to form a plurality of compartments said compartments communicating one with the other at the upper portions of the plates and one of said 25 plates extending below the others and into the line of draft, and a deflecting-plate rising from the draft-opening and forming substantially an inclosing housing for the lower portion of the vaporizer said deflecting-plate 30 separated from the front and sides of the vaporizer to form a draft-passage.

In witness whereof I have hereunto set my hand.

JAMES BENJAMIN PAYNE.

Witnesses:

O. H. WELLS,
JOHN F. TRYOR.