(No Model.)

J. J. MILLER.

OIL BURNER.

No. 281,107. Patented July 10, 1883.

Fig: 1.

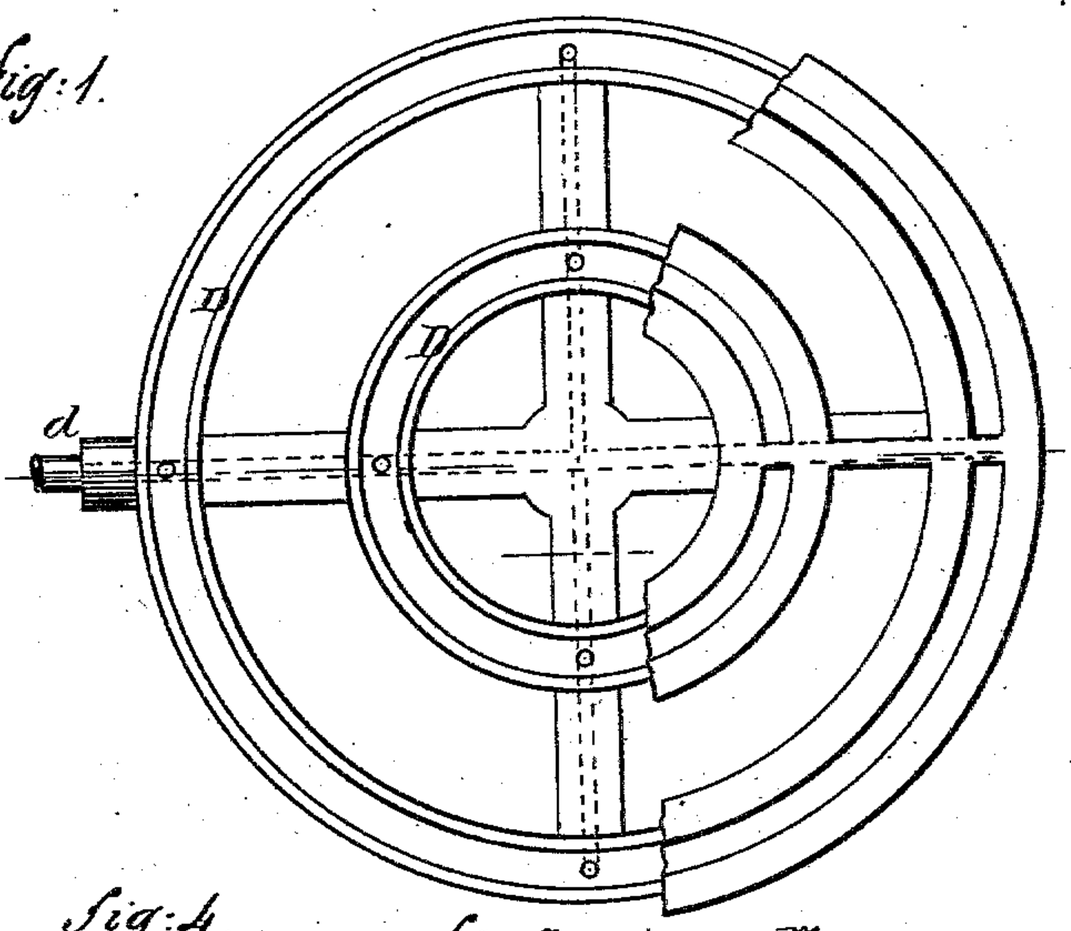


Fig: 2.

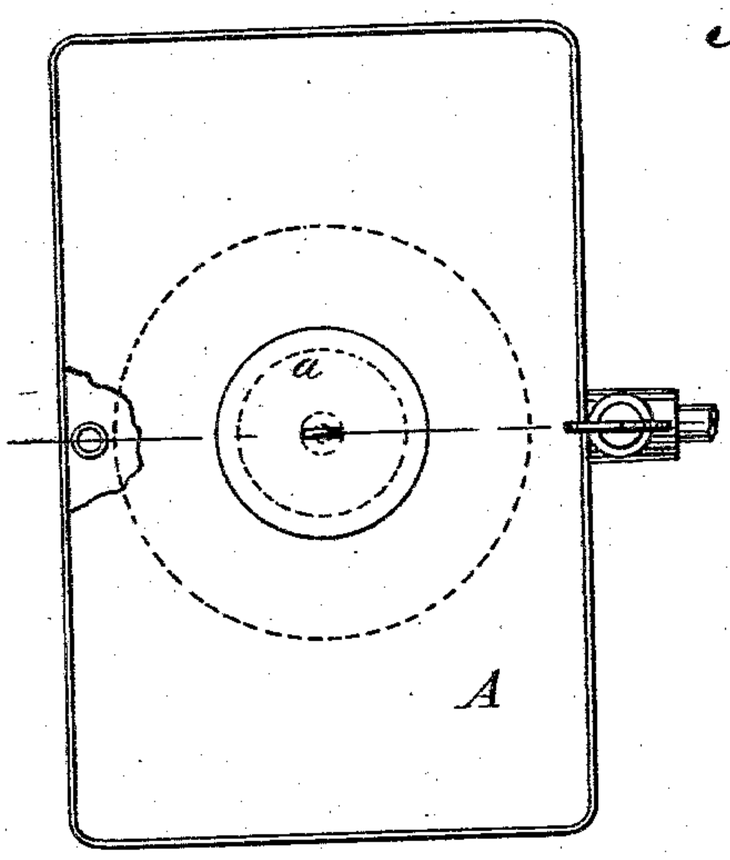


Fig: 4.

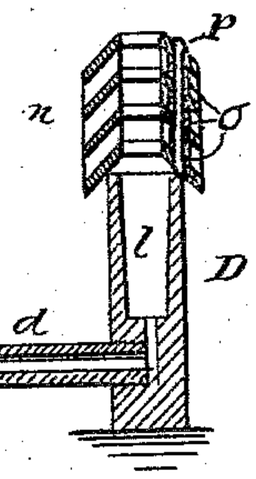


Fig: 3

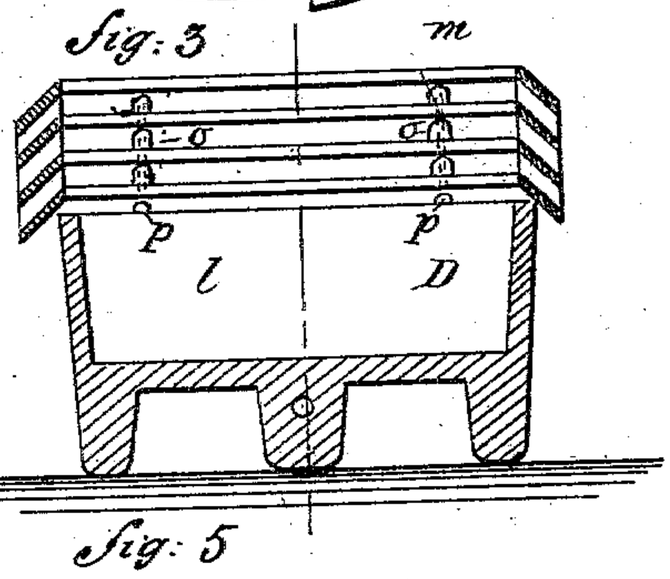


Fig: 5

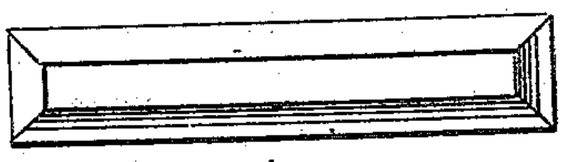


Fig: 7.

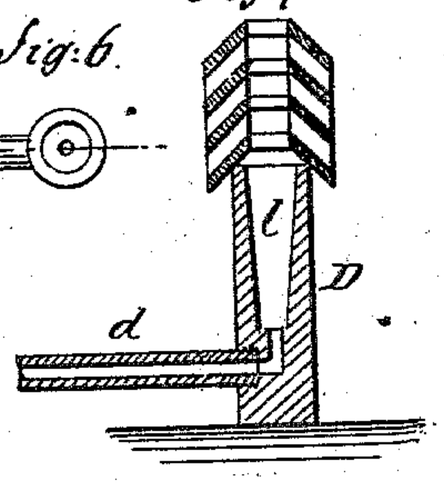
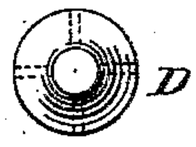


Fig: 6



WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN J. MILLER, OF CHICAGO, ILLINOIS.

OIL-BURNER.

SPECIFICATION forming part of Letters Patent No. 281,107, dated July 10, 1883.

Application filed October 2, 1882. (No model.)

To all whom it may concern:

Be it known that I, JOHN J. MILLER, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Oil-Burners, of which the following is a full, clear, and exact description.

My improvements relate to the class of lamps in which the oil is supplied to a burner from a reservoir.

The object of my invention is to secure a continuous and uniform supply of oil to the burner and the heating of the same to a suitable condition for combustion by the burner through deflectors. The further object is to secure safety in this class of lamps.

To this end my invention consists in the construction and combination of parts forming an oil-burner, hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of a lamp of my improved construction. Fig. 2 is a sectional side elevation of the same. Figs. 3 and 4 are sections, and Fig. 5 a top view of a burner of a flat form with my improvements. Figs. 6, 7, and 8 show a single round burner.

A is the oil-reservoir, provided at the top with a filling-plug, *a*.

In the lower part of the reservoir is a cross-partition, *b*, by which a lower chamber, B, is formed, having an outlet, *c*, at one side, which leads to the pipe *d*, that supplies oil to the burners D.

In the partition *b* is fixed a thimble, *e*, which is formed as a seat for a valve, *f*, which is on the upper side of the float *g* in the chamber B. The valve is provided with a stem, *f'*, extending up through the thimble, whereby the valve and float are guided in their movement, and the thimble *e* is provided with holes in the portion forming the seat of the valve, for allowing passage of the oil from the reservoir A to the chamber B.

Between the outlet *c* and the tube *d* is fitted a valve, *h*, on the end of a screw-rod, *i*, this valve being for regulating the flow of oil into the tube *d* or for cutting it off entirely.

From the oil-chamber B a tube, *k*, extends upward and terminates in the upper part of the reservoir A, for allowing the escape of gases which might accumulate in the chamber B.

The burner may be of the circular form shown in Figs. 1 and 2, of the flat form shown in Figs. 3, 4, and 5, or made of the single round burners, as shown in Figs. 6, 7, and 8. In either case the ring or tip is formed hollow, as shown at *l*, and the space filled with pumice-stone, asbestus, mineral wool, or other suitable absorbent of non-combustible character.

The burners are shown as provided with deflectors *m*, which consist of thin sheets of metal shaped to conform to the tube of the burner. When the burner is flat, as in Figs. 3 and 4, the deflectors *m* will be plane sheets, arranged one above the other, a little distance apart, at an inclination of about forty-five degrees, standing away from the burner, to supply air to the flame from its exterior. In case the burners are circular, as in Figs. 1 and 2, these deflectors will be shaped like low conical frustums, the interior one being inverted, leaving an annular space between them for the flame. These deflectors are joined together by means of vertical rivets *p*, each rivet passing through all the deflectors of one burner; and they are kept apart to leave the required air-spaces by means of washers *o* around the rivets *p*. The number of these deflectors may be diminished or increased to produce the character of flame required. The addition of more deflectors produces more perfect combustion and a brighter flame, and vice versa. By combining these deflectors with the elevated chamber D the incombustible absorbent material held in said chamber may be sufficiently heated to vaporize the oil contained in it, and a white flame is produced without the aid of a chimney or of a combustible wick.

In the operation of the lamp the reservoir A is to be filled or partially filled with oil, and the oil passing through the holes in the thimble *e* will fill the chamber B until, by the rising of the float, the valve is closed, when the supply will be cut off, and will be thereafter supplied only as consumed by the burners. The oil passing by the tube *d* to the burners is taken up by the absorbent material, which

will hold the oil in sufficient quantity, so that it will become heated to a proper condition for combustion between and above the deflectors.

I am aware that lamps have been provided with oil-supply valves operated by floats, and with gas-relief tubes similar to my tube K, and I do not claim either of these, broadly; but

What I claim as my invention is—

1. The combination, with a reservoir, A, and lower chamber, B, separated by a partition, of a thimble, *e*, fitted in said partition, provided with a cylindrical upper portion and a conical lower portion, fitted for a valve-seat penetrated by holes communicating between the reservoir A and the chamber B, and a float, *g*, provided with a valve, *f*, shaped to fit the valve-seat, and a stem, *f'*, fitted to slide in the cylindrical portion of the thimble *e*, as shown and described.

2. The parallel interchangeable deflectors *m*, secured one above the other in any number required, as described, forming a series of similar air-passages, in combination with the burners D, provided with the heating-chamber *l* and absorbent non-combustible material therein, and an elevated reservoir, A, and connecting-pipe *d*, for pressing oil into chamber *l*, whereby said burners may be adapted to produce a light of the brightness required without the use of a chimney or a combustible wick, as specified.

JOHN J. MILLER.

Witnesses:
ERNST PRUSSING,
EDWARD BORNEMANN.