W. J. GORDON & M. W. HOUSE.

Lamp.

No. 129,728. Patented July 23, 1872.

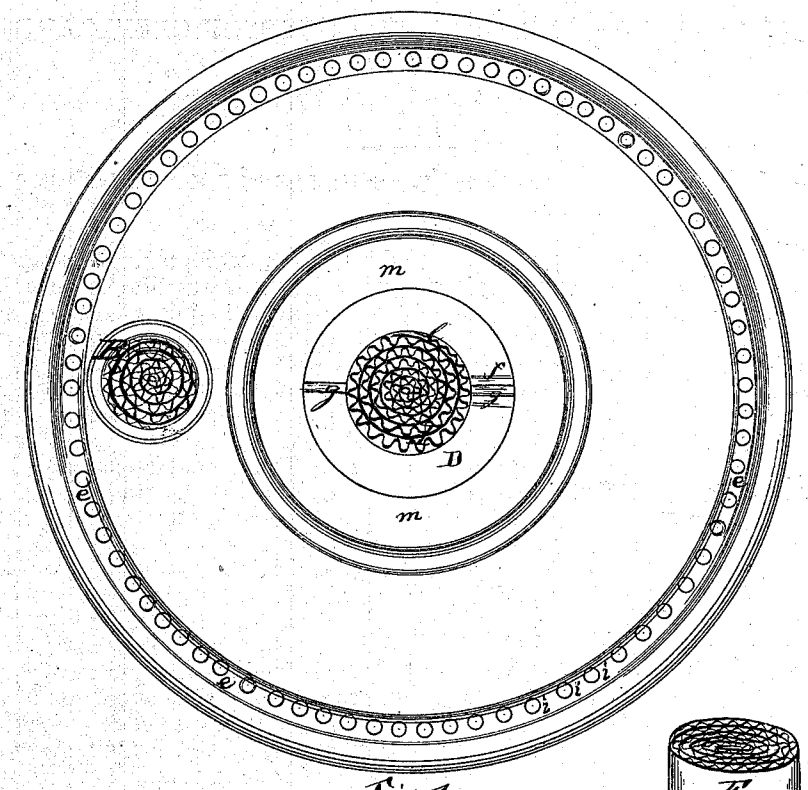

Fig. 1.

Fig. 3.

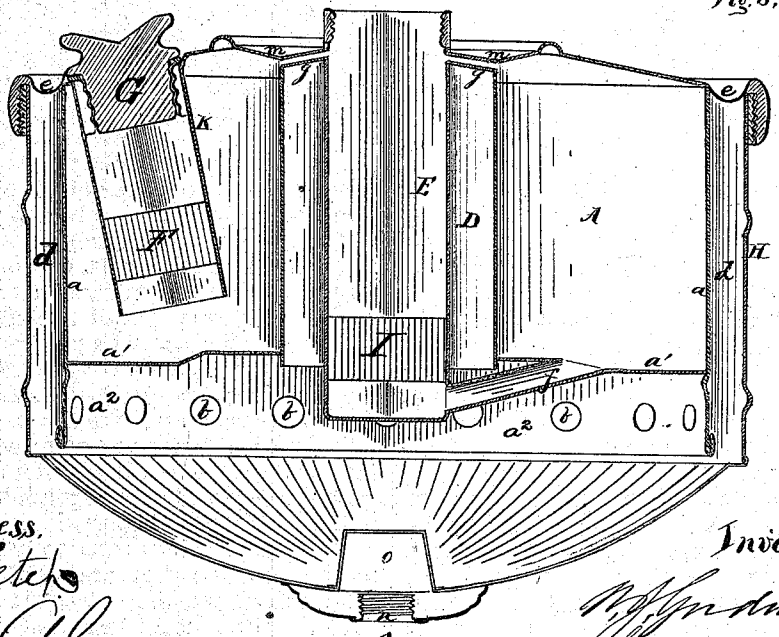

Fig. 2.

Witness.
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WILLIAM J. GORDON AND MARK W. HOUSE, OF CLEVELAND, OHIO.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **129,728**, dated July 23, 1872.

To all whom it may concern:

Be it known that we, WILLIAM J. GORDON and MARK W. HOUSE, both of Cleveland, in the county of Cuyahoga and State of Ohio, have made an invention of certain new and useful Improvements in the Construction of Lamps; and that the following is a full, clear, and exact description and specification of our said invention.

Our improvements are specially adapted to lamps which are employed to burn kerosene in factories, but may be used with advantage for other purposes. Their objects are to prevent the escape of oil over the body of the lamp, either from the overflow at the wick or at the filling-hole; to prevent the flickering of the light by currents of air; to enable the lamp to be used in connection with a bracket; and to lessen the risk of the communication of flame to the fluid within the lamp-body. To these ends our invention consists of certain constructions and combinations, which are specified particularly in the claims at the close of this specification.

In order that these improvements may be fully understood, we have represented in the accompanying drawing one form of lamp in which they are embodied.

Figure 1 represents a top view of said lamp. Fig. 2 represents a vertical central section of the same. Fig. 3 represents a plan of one of the flame-guards.

The body A of said lamp is constructed, by preference, of cylindrical form, and has a central passage, D, through which the air passes to the wick. The wick is contained in a wick-holder, E, arranged, in this example, within the said passage, and fitted at its upper end with a screw, to which the burner may be applied. The burner to be used is one surrounded with a solid circular curtain or guard, which extends between the base of the cone or deflector and the top of the lamp-body, so as to exclude air from passing to the wick over the lamp-body, and compel it to be drawn from beneath, through the central passage D. In order to prevent oil (which may overflow at the nozzle of the wick-tube of the burner and may run down the burner to the top of the lamp-body) from running over the top of the lamp-body, a portion, *m*, of the top of the lamp-body is constructed of a dishing or conical form, lowest at the central passage D and highest at its greatest distance from that passage, so as to form a sink to receive such oil and conduct it to the central passage. The lamp-body is surrounded by a case, H, which forms a drip-cup, into which said oil is received. The said case also operates as a wind-guard to prevent gusts of air from affecting the upward current in the central passage D, and forms the means of connecting the lamp-body with a bracket, the bottom of the case being for this latter purpose fitted with a screw, *n*, suitable for screwing upon the end of a wall-bracket. This lamp-case is made of larger diameter than the lamp-body, so that an air-space, *d*, is formed between the two; and the air required to feed the flame is permitted to enter into this space through apertures *i i* at its top or upper side, so that such air passes down around the lamp-body and tends to keep it cool. The lamp-body A is fitted with a flange, *e*, which, in the present example, overlaps this exterior air-space *d*, and has at its periphery a screw-ring that screws upon a screw constructed at the top of the lamp-case, so that the lamp-body may be secured rigidly to the lamp-case. The filling-hole B is formed in the top of the lamp-body; and in order that oil which may be accidentally spilled from the feeder, or may overflow at the filling-hole during filling, from running down the outside of the lamp-case and dropping to the floor of the room, the flange *e* has a gutter formed in it, and the perforations *i* are formed in the bottom of said gutter, so that the gutter collects the oil, and the perforations permit it to escape downward into the lamp-case. The perforations or apertures *i*, when made in the said flange, perform the double purpose of permitting the overflowed oil to escape into the case, and of admitting air in a downward direction into the external air-space *d;* and when air is thus admitted it is practically impossible for external currents or gusts of air (which are generally horizontal or thereabout) to affect the flame of the lamp, as they are warded off by the solid wall of the lamp-case. In order to prevent the accidental passage of flame into the lamp-body from the filling-hole B a corrugated sheet-metal flame-guard, F, is combined with the said hole. This flame-guard consists of a strip of thin sheet metal, corrugated and

coiled spirally with a plain strip, so as to form a disk of small tubular passages, into which flame cannot pass without extinction. We prefer to combine this flame-guard with the filling-hole by means of a filling-tube, K, so that the guard is sufficiently below the filling-hole to permit of the insertion of a screw-plug, G, for closing the filling-hole.

In order to prevent the accidental passage of flame from the bottom of the wick-holder E to the lamp body, the bottom of the wick-holder is fitted with a similar corrugated flame-guard, I, which performs the work efficiently. A lamp-body constructed with a central passage for air to the wick, and with the access of air to the wick at the top of said passage prevented by a solid guard, must have some provision for permitting air to pass laterally to the central passage when the lamp is set upon a flat surface. In order that the lamp represented in the drawing may permit air to pass, the cylindrical wall *a* of its body is extended downward below the bottom a^1 of the body, and the extended part a^2 is perforated, as at *b b*, so that it forms a perforated foot for the lamp when it is set upon a flat surface, which foot, being an extension of the sheet metal of which the body is formed, can be constructed at a low cost. In place of constructing the rim of the flange *e* with a screw-ring, we sometimes construct it with a smooth lip, which overlaps the smooth rim of the lamp-case. We also sometimes construct the flange so as to fit into the rim of the lamp-case. The weight of the lamp may then be borne by a ring-shoulder inside of the case or by the foot a^2 resting upon the bottom of the case. We also sometimes construct the lamp-body with a second top, separated from the first by a thin air-space, and in such case we prefer to construct the flange *e* upon the rim of the exterior top instead of upon the inner one. If preferred, the flange *e* may be made fast to the rim of the lamp-case and separate from the top of the lamp-body.

In addition to the modes of operation above described, the lamp is peculiarly adapted to manufactories, for the reason that the person who attempts to remove it from the lamp-case while the light is burning is compelled, necessarily, to exercise great care; for, if the attempt be made to remove the lamp rapidly from the lamp-case, so large an amount of air is required to fill the cavity of the lamp-case that air is drawn down the lamp-chimney with sufficient force to blow out the flame; consequently care must be exercised if the lamp is to be kept burning.

In the lamp thus described the wick-holder E is connected with the lamp-body by means of a large passage, *f*, for oil, and two minute passages, *g g*, for vapor. The screw *n*, also, at the bottom of the lamp-case, is covered by a cap, *o*, which is soldered to the bottom of the lamp-case, so as to prevent the escape of oil that may be collected in the said case.

We claim as our invention, and desire to secure by Letters Patent—

1. The lamp-body, constructed with a central passage for the passage of air to the wick, and with a sink at the upper end of said passage to direct into it fluid that may overflow at the wick-tube and run down the burner to the lamp-top, substantially as before set forth.

2. Also, the combination of the lamp-body, constructed with a central passage, with a cup-formed lamp-case of larger size, by means of a flange perforated with apertures to admit air into the annular space between the sides of the lamp-body and said case, substantially as before set forth.

3. Also, the combination of the lamp-body, the lamp-case, the flange intervening between the said body and lamp-case, and constructed in gutter form for collecting oil at the periphery of the lamp-body, and the openings to permit said oil to pass into the lamp-case, substantially as before set forth.

4. Also, the combination of the lamp-body, the cup-formed lamp-case, the flange intervening between the lamp-body and the lamp-case, the apertures for admitting air into the space between the lamp-body and the lamp-case, and the screw, by means of which the lamp is connected with the wall-bracket, substantially as before set forth.

Witness our hands this 3d day of May, A. D. 1871.

W. J. GORDON,
MARK W. HOUSE.

Witnesses:
M. W. MONTGOMERY,
C. H. PAYNE.