A. MÜLLER.
Lamp.

No. 217,895. Patented July 29, 1879.

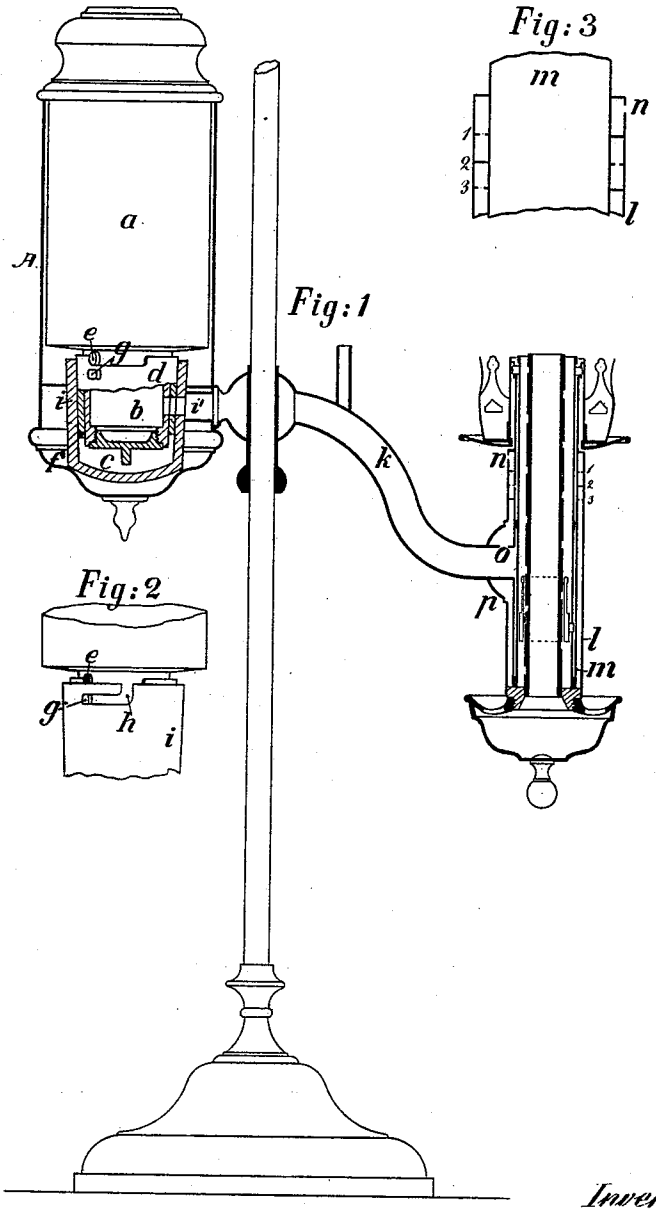


Fig: 1

Fig: 3

Fig: 2

Witnesses.
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UNITED STATES PATENT OFFICE.

ADOLF MÜLLER, OF BERLIN, PRUSSIA, GERMANY, ASSIGNOR TO HERMANN THEODOR KOERNER, OF SAME PLACE.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **217,895**, dated July 29, 1879; application filed April 22, 1879.

To all whom it may concern:

Be it known that I, ADOLF MÜLLER, of Berlin, in the Kingdom of Prussia and Empire of Germany, have invented a new and useful Improvement in Petroleum-Lamps; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This my invention relates to certain new and useful improvements in lamps for burning liquid hydrocarbon or illuminating-oils distilled from petroleum; and it is my object to construct such a lamp as will obviate accidents, and will be more impervious to oils of such very fluid and volatile nature.

My invention more particularly refers to the so-called "student's lamp;" and it consists in a peculiar valve arrangement to the oil-reservoir, and in a device for securely coupling the reservoir to the lamp, for forming a hermetically-tight communication of the same with the feed-pipe, which will not be interrupted by upsetting said lamp; also, in the arrangement of air-vents in a jacket to the burner, which furnish communication, through diaphragms and through the feed-pipe, with the oil-reservoir, as will more fully hereinafter be explained.

In the drawings, Figure 1 represents a sectional elevation of a student's lamp embodying my improvements. Fig. 2 represents an elevation of the oil-reservoir valves and locking device, and Fig. 3 an enlarged sectional view of the wick-tube jacket.

Like letters in the several figures of the drawings designate like parts.

A is the cylindrical pocket for the oil-reservoir, which is rigidly connected with the burner by a goose-neck-shaped pipe, *k*, in the usual manner. *a* is the cylindrical oil-reservoir, to the bottom of which I secure a metallic conical chamber, *b*, having an internally screw-threaded opening in its end for filling said reservoir with oil, to be hermetically closed by a screw-plug, *c*. Upon this conical chamber *b*, I place a conical sleeve, *d*, so as to form a tight joint therewith, and to turn thereon in the manner of a spigot in a faucet, and the distance of such turning movement I limit by a notch in the upper edge of said sleeve, the ends of which will butt against a pin, *e*, of chamber *b*. This sleeve *d* is longitudinally held in position upon chamber *b* by a pin or screw, *f*, to the lower end of said chamber.

A metallic cup, *i*, bored conically for receiving and forming a tight joint with the exterior surface of sleeve *d*, is secured by soldering into the bottom of the oil-reservoir pocket A. This cup *i* has a longitudinal and transverse slot, *h*, in its upper rim, which will engage with a pin, *g*, of sleeve *d*, and will lock said sleeve in the cup in the manner of a bayonet-joint.

Cup *i* has an aperture which is in direct communication, by pipe *i'*, with the feed-pipe *k*, and sleeve *d* and chamber *b* have apertures of equal area, longitudinally, in relatively corresponding positions therewith, all of which apertures will be radially on a continuous line with each other, after turning the reservoir *a* to the right as far as pin *e* in the notch of sleeve *d* and pin *g* in slot *h* will allow, when the oil can flow to the burner, and whereby the reservoir *a* is securely locked into the pocket A, so as to prevent its falling out if the lamp by accident is dropped or upset.

For removing the oil-reservoir from the lamp it has to be disconnected, first, by turning the same to the left, whereby the several apertures of the valve are hermetically closed.

The wick surrounding tube *m* of the burner I conceal in a larger tube, *l*, so as to leave an annular air-space between, which is closed in on top and bottom. The feed-pipe *k* communicates with the interior of tube *m*, and is hermetically jointed to tube *l* by a surrounding convex shield, *p*, and this feed-pipe I provide with a small vent, *o*, on its top, and in the space between tube *m* and shield *p*, which communicates with the outside atmosphere through said space between the tubes *l* and *m*, by a small vent, *n*, at near the top of the burner, and between the vents *o* and *n*, I interpose three (more or less) ring-like diaphragms, 1, 2, and 3, which divide the space between the tubes *l* and *m* vertically into several compartments, and each of which I provide with a small vent, placed for the consecutive dia-

phragms diametrically opposite, as shown in Fig. 3, whereby the air for replacing the consumed oil in the reservoir will have to follow a zigzag course, and no oil can be spilled through the vents by upsetting the lamp.

Whenever the oil in the burner sinks below the level of vent *o* in pipe *k*, sufficient air will ascend through said pipe into the reservoir in small bubbles to allow the necessary quantity of oil to feed into the burner for supplying the wick; and since no air can find an inlet into the said reservoir except through vent *o*, and through this only as long as the oil is below the level of said vent, the amount of oil in the burner is limited to the smallest necessary quantity.

By turning the reservoir *a* so as to shut the valve underneath, the supply of oil to the burner is entirely shut off, when the flame will extinguish after such oil contained in the burner and feed-pipe at the time being has been consumed, which will be of advantage to parties who are apt to fall asleep with reading, and who thus can save an otherwise useless wasting of oil.

A lamp provided with my above-described improvements is rendered incapable of leakage and explosion with any reasonable attention, and can be relied upon as being perfectly safe against accidents.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with the pocket A, having a cup in its lower end, and the feed-pipe *k*, connected exclusively with said cup, of the oil-reservoir having a depending chamber which fits said cup, and is provided with a side aperture connecting directly with the feed-pipe, whereby the oil runs directly from the oil-reservoir into the feed-pipe and does not fill the pocket, substantially as described and shown.

2. The pocket A, having cup *i* in its lower end, which is made with a tapering bore, and is connected directly with the feed-pipe by means of pipe *i'*, in combination with the oil-reservoir having a depending chamber of tapering form, which fits tight in said cup, and has a side aperture connecting exclusively with the feed-pipe, substantially as described and shown.

3. In combination with the oil-reservoir *a* of a student's lamp, having conical chamber *b* and conical sleeve *d*, with pin *g*, the conically-bored cup *i*, forming part of pocket A, and having slot *h*, for locking with pin *g* of sleeve *d*, and the chamber *b*, sleeve *d*, and cup *i*, having side apertures which are brought to communicate by a turn movement of the reservoir *a*, after having been inserted in its pocket A, substantially as described and shown.

4. In combination with the burner of a student's lamp and the wick-inclosing tube *m* and feed-pipe *k*, having vent *o*, the tube *l*, having vent *n*, and forming an air-jacket around tube *m*, intersected by diaphragms 1 2 3, with vents consecutively in diametrical opposite positions, the same being constructed and arranged substantially as described, for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ADOLF MÜLLER.

Witnesses:
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