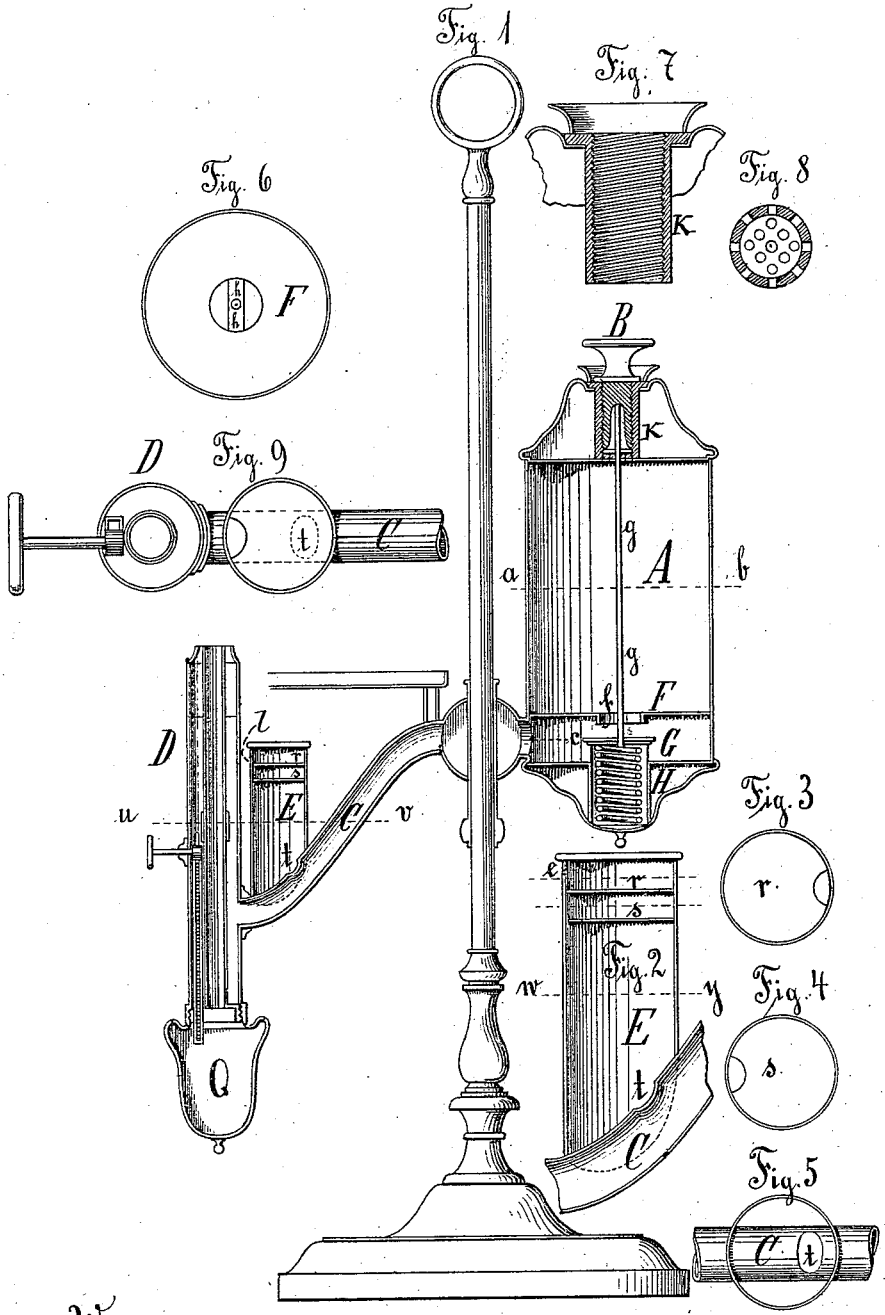
R. SARRE.

Lamp.

No. 211,793. Patented Jan. 28, 1879.



Witnesses:
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UNITED STATES PATENT OFFICE.

RUDOLPH SARRE, OF BERLIN, PRUSSIA, ASSIGNOR TO GUSTAV STOBWASSER, OF SAME PLACE.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **211,793**, dated January 28, 1879; application filed August 1, 1878.

To all whom it may concern:

Be it known that I, RUDOLPH SARRE, of Berlin, Prussia, have invented a new and useful Improvement in Petroleum-Lamps, with a regulator for preventing explosion, of which the following is a specification:

My invention relates to a lamp having a lateral air-tight reservoir and a regulator, effecting a safe combustion of petroleum.

Heretofore, a great many of the improvements for accomplishing a like effect resulted only in diminishing, but failed to avert fully, the danger of an explosion.

The object of my invention is to overcome the defects of ordinary lamps.

My invention is particularly adapted for use in connection with the well-known slide or student's lamp, and will be hereinafter more fully described, and then claimed.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a vertical section of the lamp embodying my invention. Figs. 2 to 9 are detail views—viz., Fig. 2, of the regulator; Figs. 3 and 4, of the apertured plates in the latter; Fig. 5, a horizontal section taken through the line *w y* of Fig. 2, showing the base to which the regulator is attached on the feed-tube; Fig. 6, a horizontal section taken through the line *a b* of Fig. 1, showing the manner of guiding the valve-rod; Figs. 7 and 8, detail views of the screw bushing or socket and filling-orifice; Fig. 9, a horizontal section taken on the line *u v*, Fig. 1.

The regulator E is described as follows, viz: The same stands on the top side of the feed-tube C, near the burner, as seen in Fig. 1. The feed-tube is intended to convey the petroleum from the reservoir A into the wick-tube of burner D, and on the ascending upper side of said feed-tube is formed an aperture, *t*, which aperture is environed by a vertical cylinder of a suitable height, the cylinder being securely and hermetically fastened upon the feed-tube by soldering or by a screw-neck.

A cover soldered to the cylinder has a small aperture, *l*, at the inner side of its upper part. Within this cylinder, at a short distance from its top, are located two stationary or fixed plates, of which the lower one has an aperture on the side toward the burner, Fig. 4, while the other has an aperture on the opposite side, Fig. 3.

The self-closing device within the reservoir is described as follows: In the lower part of the reservoir A is located and secured a fixed plate, F, having a central outlet-opening, *f*, in the middle of which a small bridge-plate, *h*, Fig. 6, is fastened. A hole in said bridge-plate serves to guide the valve-rod *g*, which is also additionally guided in the bottom of a screw socket or bushing, K, fitted into the top of the reservoir.

By means of the valve G, consisting of a metal plate and a leather packing-strip fastened to the valve-rod *g*, the compartment above the bottom F in the reservoir A is capable of being separated or cut off from the lower one. This is done by the self-acting spiral spring H as soon as the screw-plug B is taken out of the filling-orifice at the top of the reservoir A, this screw when turned down pressing down the spiral spring by means of the valve-rod *g*, and thus keeping the passage *f* open.

The screw B is hollowed out at its bottom, for receiving and pressing down the valve-rod *g*. This operation, however, is not performed until the screw has gone down sufficiently far to shut off the admittance of air to the reservoir. The socket or bushing K, receiving said screw-plug, is threaded internally, and acts as a filling-tube, it being perforated at its bottom and sides.

I desire it to be understood that the regulator need not necessarily be of a cylindrical form, and also that the burner may be inclosed by the regulator.

The management of the lamp and the operation of the device are as follows: To make use of the lamp, the screw-plug B, after the wick has been drawn in, is first to be taken out for filling the fountain or reservoir. The act of raising the plug gives the spring space for expansion, and presses the valve G against the passage or opening of the division-plate F, whereby the upper part of the reservoir A is closed and separated both from the regulator and the wick-holder. The petroleum can then be poured in, and the danger of overflowing is avoided. The reservoir having been filled, the

screw-plug is placed into the socket or bushing and screwed down, in doing which the valve is opened and the oil is admitted into the wick-holder and burner, expelling the air contained therein. As soon as the level of oil reaches the aperture *t* of the regulator, whereby the air entering the reservoir A is cut off, the liquid ceases to flow from the reservoir. Then, of course, the oil is at an equal level both in the wick-holder and the regulator.

The consumption of the oil by the flame causes the sinking of the oil-level in the wick-holder and regulator, thus permitting air to enter through *e r s t*, this air ascending in the form of bubbles through the feed-tube C into the lower part of the reservoir A. The flow of oil will then again take place to restore the former level, and this operation is repeated whenever the aperture *t* becomes free. The air admitted to the lower part of the reservoir accumulates at this point until the level of oil below the plate-bottom F has sunk sufficiently far, when the air is allowed to ascend, which, after longer pauses, is done in larger bubbles.

The partition-plates *r* and *s*, located within the regulator, are intended to prevent the petroleum from flowing out of the orifice *e*—the only place of the regulator where that might occur in case the lamp should be overturned.

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

The combination of a regulator having partition-plates apertured on opposite sides with an oil-supply pipe, reservoir, and burner-tube, substantially as herein described.

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

RUDOLPH SARRE.

Witnesses:
BERTHOLD ROI,
EDWARD P. MACLEAN.