2 Sheets—Sheet 1.

D. LUBIN.

Lamp.

No. 213,052. Patented Mar. 11, 1879.

Fig. 1

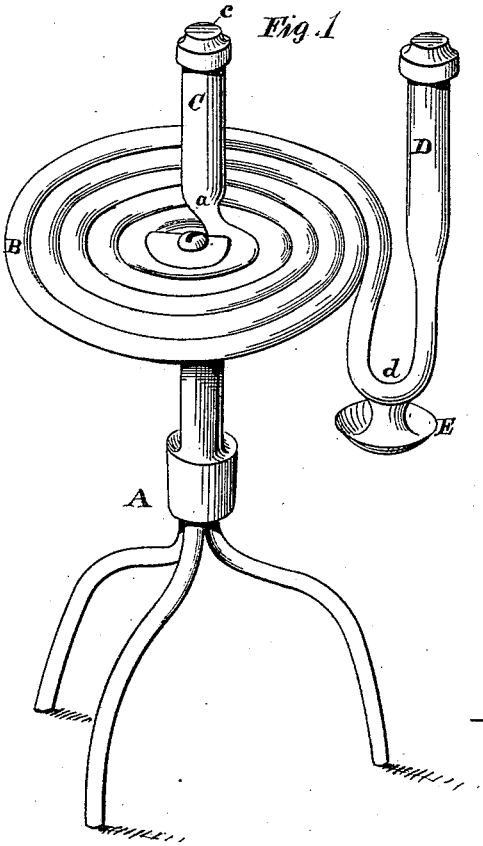


Fig. 2.

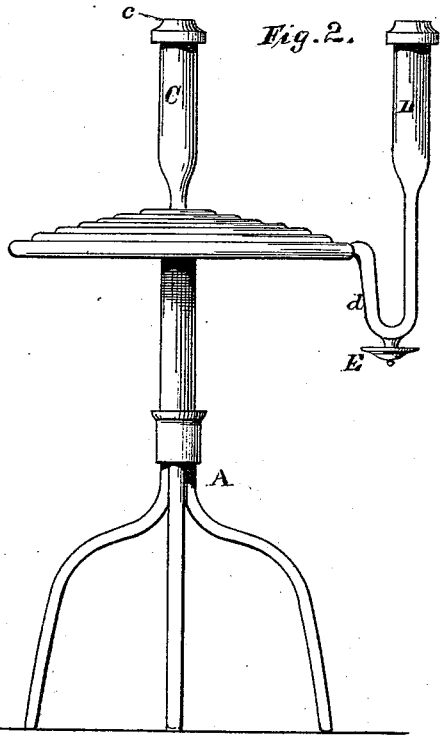


Fig. 3.

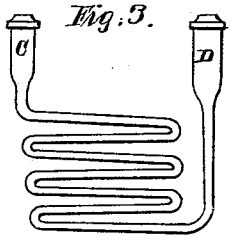
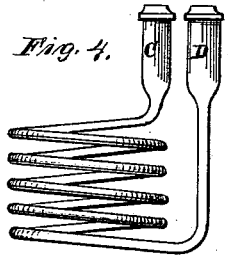


Fig. 4.



Witnesses

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Jos. A. Bayless

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David Lubin

2 Sheets—Sheet 2.

D. LUBIN.

Lamp.

No. 213,052. Patented Mar. 11, 1879.

Fig. 5.

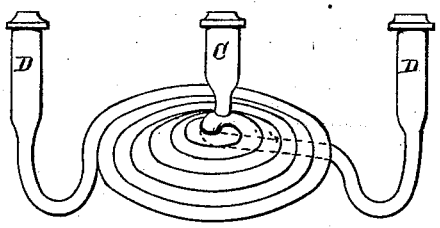
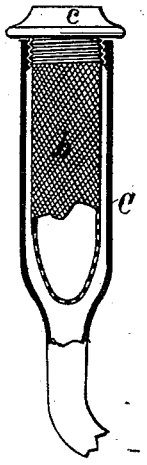


Fig. 6.



Witnesses
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UNITED STATES PATENT OFFICE.

DAVID LUBIN, OF SACRAMENTO, CALIFORNIA.

IMPROVEMENT IN LAMPS.

Specification forming part of Letters Patent No. **213,052**, dated March 11, 1879; application filed February 13, 1879.

To all whom it may concern:

Be it known that I, DAVID LUBIN, of the city and county of Sacramento, and State of California, have invented an Improved Lamp; and I hereby declare the following to be a full and complete description of the same.

My invention relates to certain improvements in the construction of lamps; and it consists in a novel construction of an elongated reservoir for oil or burning-fluid of any kind, said reservoir being tubular in form, and coiled in a spiral of one or more coils, in any desirable manner, whereby a sufficient quantity of oil may be held in a compact, but at the same time separate and extended, form. This spiral may be made in a plane, or the form of a flat cone, or in any way to allow the oil to flow from the center to the outside.

The feed-cup and wick-cup are provided with interchangeable wire-gauze safety-cups or protectors, to prevent any ingress of foreign substances, and insure safety from explosions.

The exterior of the reservoir connects by an **S** or **V** curve or trap with the wick portion or chamber, which is situated preferably outside the spiral, so that the light will not be shaded by a large reservoir. The whole is mounted upon a suitable stand, and from the shape of the reservoir it will not be possible to spill any large quantity of the oil by upsetting or other accident. Being formed of gas-pipe or other strong tubing, it cannot explode.

An oil-receiver may be placed at the bottom of the curve to retain any overflow or drip.

The whole lamp, reservoir and all, may be made in a single piece, and in several different forms, as desired, as is more fully described in the accompanying drawings, in which—

Figure 1 is a perspective view, Figs. 2, 3, 4, and 5 show modifications of my invention. Fig. 6 is a view of the gauze safety-cup which may be used.

Upon a suitable stand I mount a coiled tube or pipe, B, which forms the reservoir for the oil. The central portion of this tube or pipe is turned upward, as shown at *a*, and in the upper end of this is screwed or otherwise secured the feed-cup C. This feed-cup I preferably make of about the same size and shape as that of the wick portion or chamber, for the purpose hereinafter described. The upper end of this cup is threaded, and upon an expander I secure a safety-cup, *b*, composed of perforated wire-gauze, which fits down into the feed-cup and prevents the ingress of any foreign substances, as hereinafter described. After the oil is poured in until the reservoir is filled, a cover or cap, *c*, is screwed on, so as to close the feed-cup.

The exterior or outer curve of the reservoir connects by an **S** or **V** curve, as shown at *d*, with the wick portion or tube D, which is placed outside the spiral, as shown. To form this wick portion of the pipe the tube may be expanded so as to form an enlargement; or the enlarged portion may be brazed onto the upper end of the **S**-curve. At the lower part of the curve may be placed a drip-cup, E, so that any oil drawn out of the reservoir by the capillarity of the wick, or "sweating," as it is usually called, may be caught in the drip-cup. Into this wick portion is screwed a wire-gauze safety-cup, of the same dimensions as that in the feed-cup, and any ordinary burner for carrying the wick is screwed on.

By making the wick bowl or chamber and the feed-cup of the same dimensions, and having the gauze safety-cups interchangeable, either of the openings may be used for feed-opening or burner, as desired; or a burner may be placed in both.

The spiral reservoir may be placed on a stand on a plane, as shown in Fig. 1, or in the form of a flat cone, as shown in Fig. 2, or may be shaped in various ways, as shown in my modifications, so as to be suitable for different purposes.

It will be seen that there will be no danger in the use of this lamp, since, from its peculiar construction, should it be overturned, no disastrous effects could follow, whatever might be the nature of the fluid used in it. If it fell over so that the outer burner lay upon the ground, only so much oil could flow out as would be in the **S** or **V** curve and that part of the spiral reaching to the top when the lamp was in that position. The rest of the oil would

remain in the reservoir, and if any oil escaped and caught fire there are no separate parts or pieces to be melted off and allow a further flow of oil, since no solder is used, either in the reservoir, feed-cup, or burner.

By making the whole lamp in one piece, cheapness and neatness of construction are accomplished.

In case the lamp were completely overturned and reversed, no oil could escape, as the V-curve will prevent any flow at the outer cup, and a buckskin washer under the cap of the inner cup will not allow any flow from that part of the lamp.

As previously stated, the position of burner and feed-cup may be reversed, or both cups used for burners.

It is well known that the usual cause of lamp-explosions is from the accumulation of gases on the surface of the oil. As in this lamp the oil is contained in the spiral tube instead of in a large bowl or reservoir, there is no large open space over the oil for gas to accumulate, even if formed. Moreover, the bulk of the oil is so far from the point of its combustion that it remains cool, and only becomes warmed when passing into the wick-chamber.

In both bowls or chambers I place the perforated gauze safety-cup, which acts on the well-known principle of the Davy lamp, and prevents any danger of explosion. It also has the effect of preventing the entrance of any foreign substances into the tube or reservoir. These safety-cups may be removed at any time for cleansing. The wick is then in the perforated chamber, and the gas, even if it accumulated, would not explode.

When the whole lamp is made of metal, and in one piece, as I prefer, without joint or solder, it is completely sweat-proof. The oil, being cool in the reservoir, does not generate gas, and the presence of oil in the S-trap would effectually prevent any passing into the wick-tube, even if it were generated. The curve then acts the same as an S-trap does in preventing the entrance of sewer-gas into houses.

I prefer to make both of my cups with large mouths, so that the lamp will be easy to fill, instead of having a small feed-orifice, in using which it is difficult to prevent the spilling of oil on the outside of the lamp.

In filling my lamp, by taking off both burners or the burner and cap when the lamp is being filled, any one can watch the orifice and see when enough oil is in the reservoir, and in this manner the oil need never be poured over the lamp by overfilling.

To cleanse the reservoir at any time, the burners and gauze cups may be taken off and water be forced through the tube.

Although I prefer to make my coil or reservoir of metal, I do not wish to confine myself to that alone, for it might be made of glass, porcelain, or other substance for fancy lamps.

One form I have shown in Fig. 5 is specially suitable for billiard-rooms, since, even if thrown down on the table, no flow of oil would occur to cause damage.

My metal safety-lamp is specially adapted for use in factories, machine-shops, mines, and such places where an explosion or fire would cause great damage. It can be made in any desired form or shape, and, being itself a tube through which fire cannot pass, is a preventive of fire, because, even if the oil in the wick-chamber caught when the lamp was overturned, the fire could not communicate to the mass of oil, as would be the case with an ordinary lamp with a large reservoir.

The coil need not be necessarily mounted on a stand, but may be formed for use on hand-lamps, for stands or brackets, or of any suitable size and shape. The coil can be made strong, and at the same time light, so that no ordinary accident could possibly break it.

The tubular form of the reservoir is indicative of its great strength, and the whole being formed, as it is, in one piece, makes the lamp much stronger than those of ordinary construction.

It will be seen that by the peculiar construction of this lamp and the curve combined with the reservoir, the oil-chamber is filled equally full at all times.

In ordinary bowl-lamps, as the oil gradually recedes from the top it gets lower down and leaves a space for gas to accumulate, and the lamp gradually burns worse and worse.

In my lamp an equal amount of light is given at all times, since the wick-chamber is always full and the whole length of the wick saturated with the oil.

A drip-cup, E, of any suitable construction, can be placed at the lower end of the central chamber as well as on the outer one.

In ordinary metal lamps, of whatever construction, solder of some kind is necessary, and leakage frequently occurs from this cause.

In my lamp, as hereinbefore described, there is no solder at all used, and there is, therefore, no chance for leakage or sweatage at any point.

If metal lamps are soldered, as is usually the case, a fall or sudden jar is apt to break them at the soldered point; and as articles of all kinds are only as strong as their weakest parts, these lamps are not as strong as they appear.

My lamp, however, has no solder, and could be placed over a fire or on a stove without danger of explosion. If this lamp be placed on a stove or other hot place, or be surrounded by fire, no explosion will occur, as any generation of gas will be prevented from coming out by the S-trap, and if any should come through, the wire-gauze would prevent explosion.

For use on ships the coiled tube forming the lamp may be mounted on double-working gimbals, so as to be kept upright no matter what position the vessel takes.

I am aware that coiled pipes for lamp-reservoirs are not new, and I do not claim such coiled pipes, broadly, as my invention.

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

1. The coiled tubular reservoir B, having the feed-opening C and the wick tube or chamber D formed at the center and outer end, respectively, substantially as herein described.

2. The coiled tubular reservoir B, having the feed and wick chambers C D, with their closing-caps and burners, made interchangeable, or so that two burners may be employed upon the same reservoir, substantially as herein described.

In witness whereof I have hereunto set my hand.

DAVID LUBIN.

Witnesses:
CHAS. G. YALE,
JOS. A. BAYLESS.