C. & C. Richman,

Lamp.

No. 2,129. Patented June 11, 1841.

UNITED STATES PATENT OFFICE.

CHRISTIAN RICHMAN AND CHARLES RICHMAN, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN THE CONSTRUCTION OF LAMPS.

Specification forming part of Letters Patent No. **2,129**, dated June 11, 1841.

To all whom it may concern:

Be it known that we, CHRISTIAN RICHMAN and CHARLES RICHMAN, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new, improved, and useful Mode of Manufacturing Oil and Camphene Lamps; and we do hereby declare that the following is a full and exact description.

Among the many kinds of spirits and camphene lamps now sold and used there are but very few which satisfy the expectations of the buyer, particularly as there is hardly any one of the great number which may conveniently and safely be used as a table-lamp. We therefore invented a new and very useful burner to be called "Richman's patent improved oil and camphene lamp," which may be used by the inexpert with great ease and safety.

Our invention is applicable to any kind of hanging or side lamps, and is particularly adapted to table-lamps.

In outward appearance our lamps resemble a common astral lamp, and the reservoir, the shade, and the glass cylinder are the same as on such a one.

The nature of our invention consists in several improvements of the burner, in consequence of which our lamp can be used with equal facility and propriety for burning camphene as well as any kind of lamp-oil.

Figure 12 of the accompanying duplicate drawings shows the form of an entire lamp, and Figs. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 11 the several parts of the same.

Our burner like all other burners has the oil-conductors (see Figs. 1 and 2) *b b*, and a screw *c*, by which it is fastened to the pedestal, but it differs from that of a common astral lamp in this respect that our outermost cylinder A, Fig. 1, of the burner has the upper part turned down to a shoulder or step *a a*, upon which the glass-holder B rests and turns.

The glass-holder or circular hoop B, Figs. 3 and 5, is connected with a short cylinder C by means of three small horizontal arms *d d d*, (seen in Fig. 5,) upon which the glass rests, and is fastened by a screw *e*, as on other lamps. This mode of connecting the glass-holder with the cylinder C instead of wires used on common astral lamps is an important improvement, as it lessens the appendages for fastening and allows the air a free access to the flame. To the top of the short cylinder C is soldered one end of another cylinder called the "runner D," Fig. 4, leaving a small space between them, for a purpose presently to be shown. This other cylinder D is much longer than C, and has a spiral extending the whole length formed by cutting out a portion, according to the width of the spiral required, from the metal composing the cylinder of the runner D, leaving an open spiral space traversing the length of said runner D. When the cylinders C and D are connected in the above-described manner, they are placed so that the cylinder C covers the outermost cylinder A, Fig. 1, whereby the glass-holder B comes to rest upon the step *a a*, (see section, Fig. 2,) and gives room for the cylinder A to play between cylinders C and B.

Our improved runner D differs from that of common ordinary lamps in this, that it has the open spiral already described, by means of which and the vertical groove *h*, Fig. 6, to be described, the wick-holder cannot deviate from its upward or downward course. The wick-holder E, Fig. 7, is another cylinder as long as the runner D within said runner, and is provided for this effect with a knob *g* near the bottom of said cylinder, which protrudes the sixteenth part of an inch, outside as well as inside, and serves to guide the tube or wick-holder up or down. That portion of the knob *g* which projects within the cylinder E or wick-holder (see Fig. 2) works in the vertical groove *h* of the inward and permanent cylinder F, (see Figs. 6 and 2,) which is soldered to the bottom of the outer cylinder A, Figs. 2 and 1. This is a great improvement, because it will be perceived that it makes the cylinder E, containing the wick *g*, ascend or descend in a vertical position, while in the common astral-lamp burners, instead of the open spiral space in the runner, above described, a spiral groove is cut out of the inner stationary cylinder F, which groove causes the wick to ascend or descend in a spiral or screwing direction as the wick-tube revolves with the runner, instead of being stationary as in our lamp, and often contorts the wick and hinders it from ascending or descending, and it often happens that the little knob which pro-

trudes from the wick-holder misses its way and creates many inconveniences.

Our wick-holder differs from others in this, that it forms a cylinder which has the full length of the wick, and is also provided with clasps H H, which embrace the wick below the flame, as shown in Fig. 8. These clasps are secured by rods or prolongations *m m* to the lower part of the wick-holder E by hinges or springs at *n n*, so as to open when required. The clasps prevent the flame communicating with the camphene-oil, and prevent explosion. Besides this, the flame would smoke greatly if this separation could not be effected. In using lamp-oil a common or short wick-holder, with our improvement of a double-acting knob *g*, may be substituted. When the wick is to be pushed up, the clasps H H are opened and the wick pushed up with the pinchers made for that purpose. (See Fig. 9.)

We invented, further, a material improvement in the lamp for burning camphene-oil in making the button conical and of glass instead of metal, because the flame in burning camphene-oil is short but brilliant, and when a flat button of metal as in ordinary lamps is introduced the flame is obscured and only one side of it can be seen. In making the button of glass the rays of light pass through the glass button and the inside of the flame seems one mass of light, whereby the brilliancy of the light is greatly increased. This button may also be applied in lamps for common oil. This open inverted cone I, Fig. 10, is screwed to the main wire K, which is at the other end soldered to the bottom of the cylinder A, Fig. 2, section. This cone is also preferable to the commonly-used flat button, because it does conduct the air to the flame regularly, while the button very often hinders it from ascending and makes the flame burn irregular and flickering. Our cone is immovable and the light is regulated by screwing the wick up or down. This glass cone can be made hollow or cast solid, with figures in them, as stars, fluted.

The accompanying drawings show at section, Fig. 2—A, the outermost cylinder of the burner A; *a a*, the step; *b' b*, oil-conductors; *c*, the screw. Fig. 1 is a side view of the burner—B, the glass-holder, with the horizontal small arms *d d d*, the screw *e*, the short cylinder C, and the runner D. Fig. 5 is a perspective view of B, C, and D, and Fig. 3 a side view of it—E, the wick-holder, with its knob *g*, the clasps H H, the prolongations *m m*, hinges *n n*, and wick G. Fig. 7 is a perspective view of the wick-holder, and Fig. 8 a view of it when provided with a wick and the clasps closed—F, the inner cylinder with its groove *h*. Fig. 6 shows this part in perspective—K, the cone-holder; I, the cone; Fig. 10, a perspective view of it; Fig. 10ª, a perspective view of the glass cone; Fig. 9, the pinchers; Fig. 11, a wooden cone to facilitate the putting on the wick over the wick-holder E—This is a new invention; Fig. 12, a whole lamp.

What we claim as our invention, and desire to secure, is—

1. The manner in which we have combined the wick-tube E with the runner D and internal cylinder F—which is to say, we claim constructing the runner D with a spiral, as set forth, in combination with the internal cylinder F, having a vertical groove, and the wick-tube E, arranged between them, by the combined action of which revolving spiral and stationary groove the wick-tube and wick are raised without being turned as in the ordinary astral lamps.

2. The manner in which we have combined the clasps H H with the tube E by forming it into two parts and connecting them by hinges to the bottom of the tube, as set forth.

3. The employment of a conical glass button in lamps for burning camphene and other oils.

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