

C. W. T. KRAUSCH.

Lamp Burner.

No. 37,868.

Patented March 10, 1863.

Fig: 1.

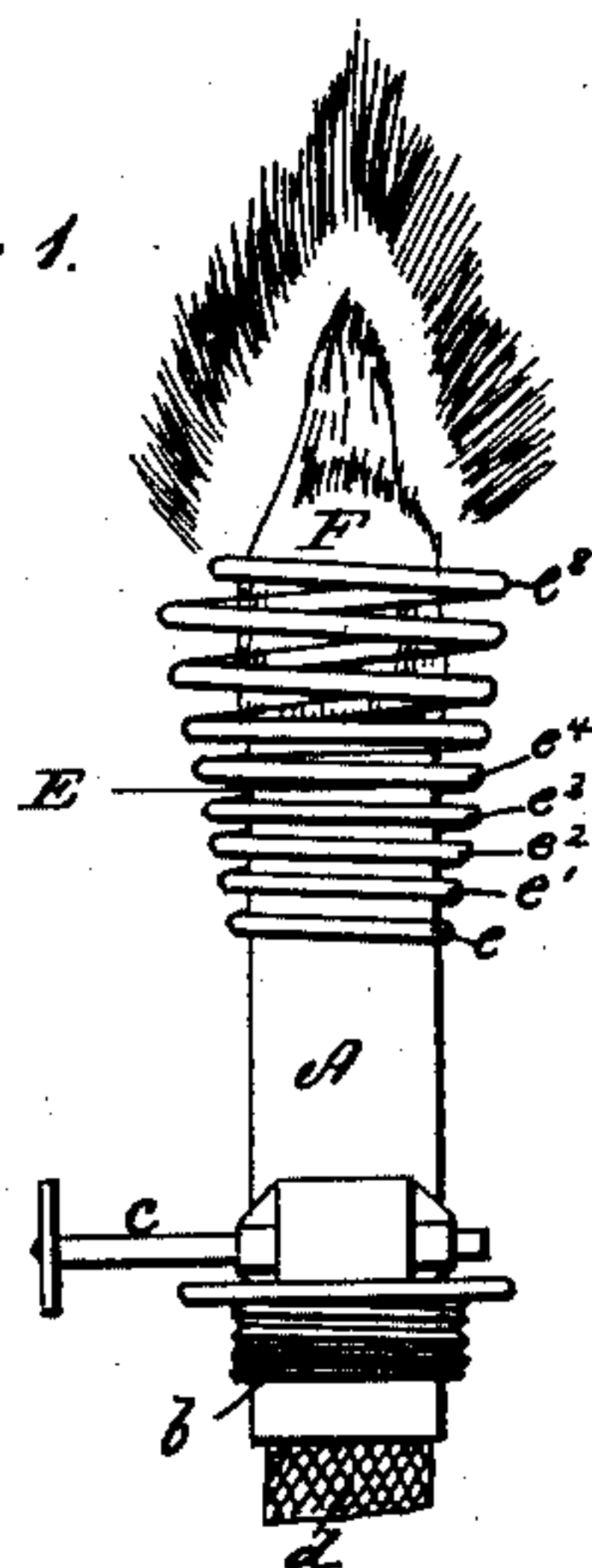


Fig: 2.

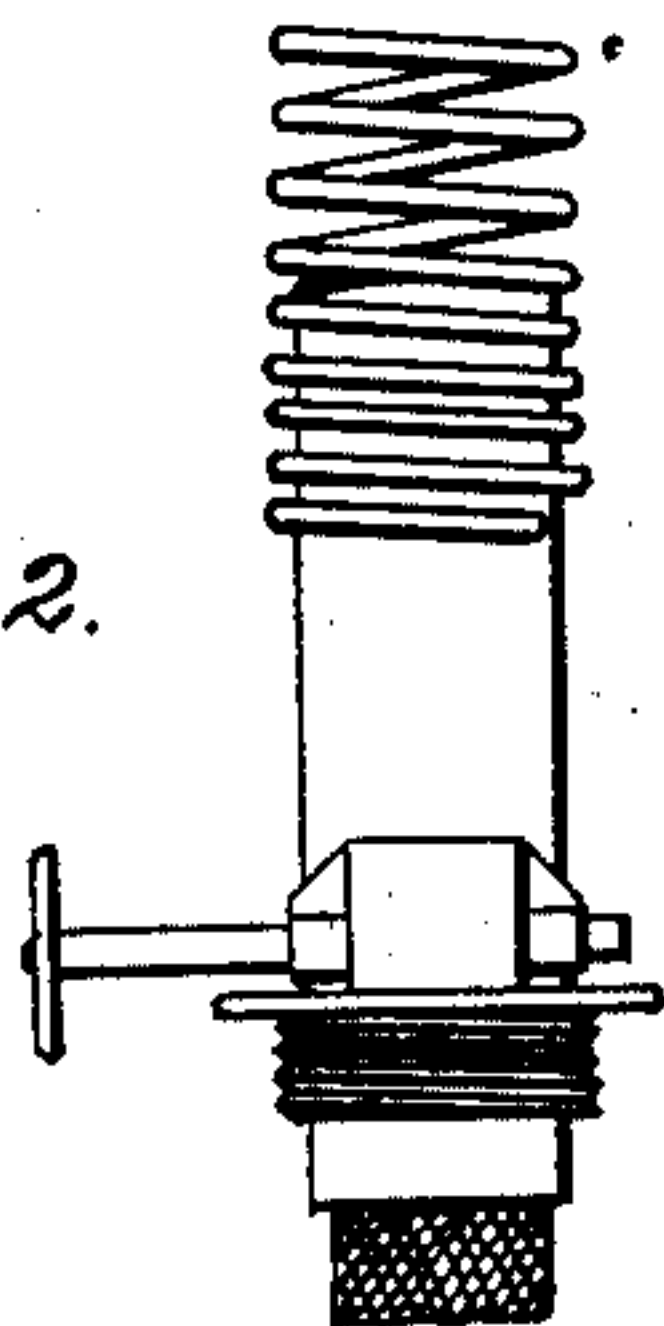


Fig: 4.

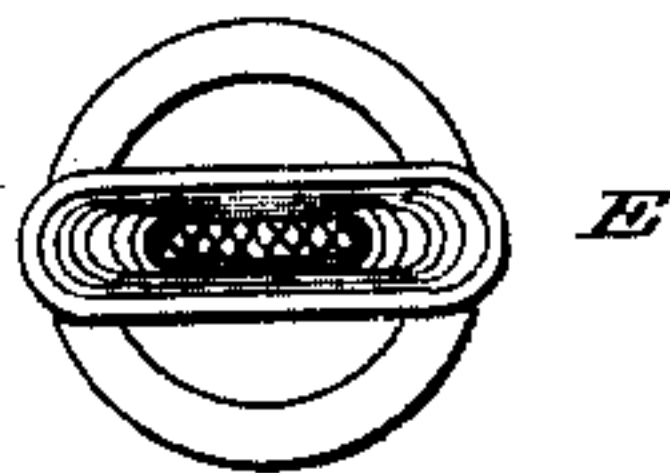


Fig: 5.

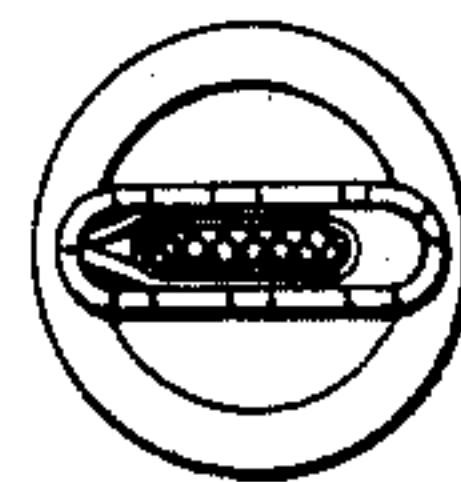
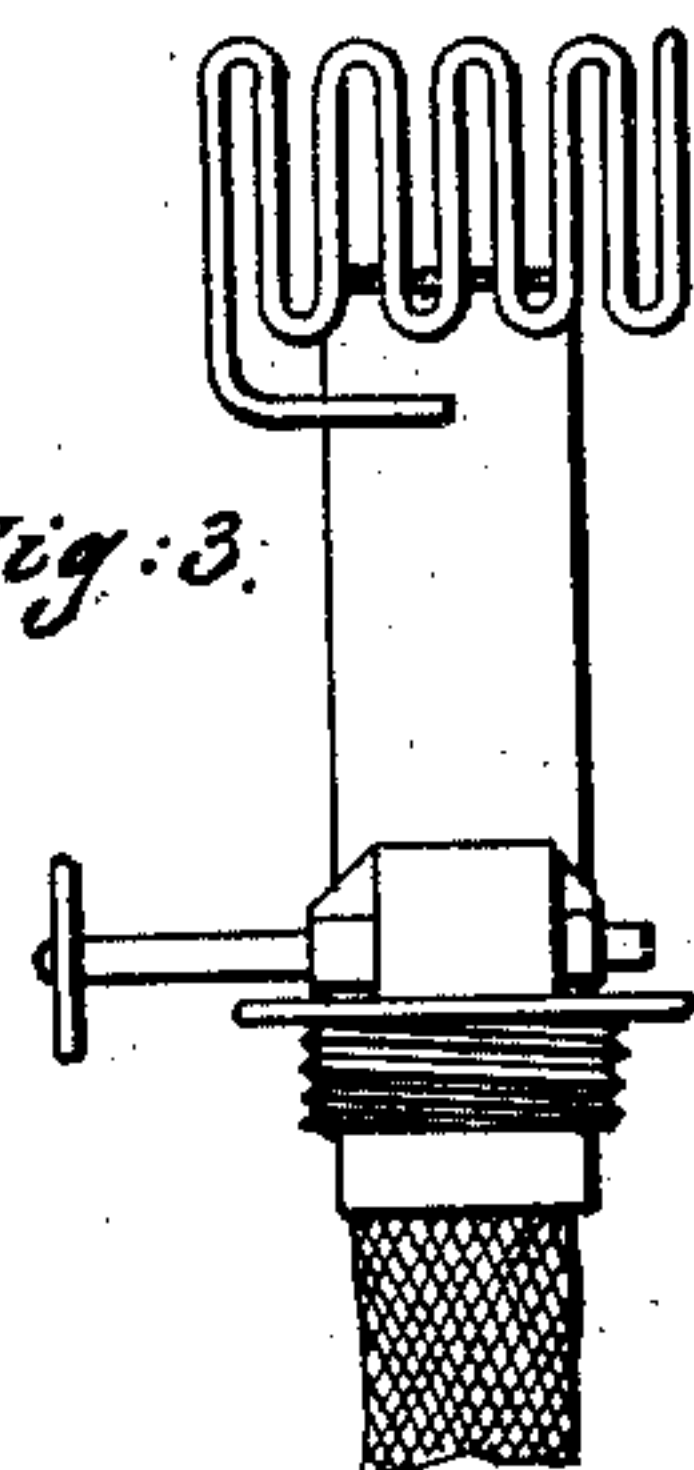


Fig: 3.



Witnesses:

Gustav Dittmerich
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Inventor:

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UNITED STATES PATENT OFFICE.

C. W. THEODORE KRAUSCH, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN LAMP AND LANTERN BURNERS.

Specification forming part of Letters Patent No. 37,868, dated March 10, 1863.

To all whom it may concern:

Be it known that I, C. W. THEODORE KRAUSCH, of the city of Chicago, county of Cook, and State of Illinois, have invented a new and useful flame-promoter for coal-oil lamps and lanterns particularly, but which is applicable to all classes of lamps and lanterns; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and in which drawings—

Figure 1 is a view in elevation of my improvement. Fig. 2 is a like view, showing a modification of a spiral coil applied to a wick-tube, as in Fig. 1. Fig. 3 is a view which indicates a continuous coil around the wick and tube, but with the lengths of the coil vertical instead of in a horizontal direction, as in Figs. 1 and 2. Fig. 4 shows a plan view of my improvement illustrated in Fig. 1, and Fig. 5 a plan view of Fig. 3.

The object of my invention is, first, to promote the combustion of the oil or other material employed for illumination; second, to prevent the languishing of the flame and, consequent partial extinguishment of light, which occurs upon a sudden movement of an ordinary lamp or lantern; and, third, to so expand the flame as to increase its illuminating portions. And I would here state that while my invention is particularly applicable to lanterns, and is especially beneficial in the use of coal and other like oils, which under ordinary circumstances in burning give off a large volume of smoke, it may be applied to all classes of lamps and lanterns, and whether used with coal or other oil or combustible material.

In Figs. 1, 2, and 3 of the drawings I have shown a wick-tube, A, with a screw-cap, b, ready to be inserted in the top of the oil-reservoir of a lamp or lantern, and also provided with the ordinary thumb-screw appliance, c, for elevating and depressing the wick d.

Having reference to Figs. 1 and 4, I will now proceed to particularly describe my invention, which consists of a coil of wire, E, applied to the tube A, as clearly shown in said figures. The base of this coil is contracted so as to hug or clasp the tube and be held in position thereon by the spring-tension of the coil, and from the lower section or "turn," e, of the coil it will be observed that each succeeding section or

turn increases its diameter in one direction over the diameter of the immediately preceding section or turn of the coil, as at e' , e^2 , e^3 , e^4 , and so on to e^8 , thus producing a coil of wire, E, which in one view of it is in the likeness of an inverted cone. In other words, having reference to Fig. 4, this coil E is in the form of a flattened funnel, and "open-mouthed," so to speak, for the free and unobstructed exit of the flame from within. This coil is also so formed that the spaces between the turns of the wire shall gradually increase in width from e to e^8 , so that the wire, as it increases in heat from base to top, will permit of an increased supply of air to promote combustion through such spaces. The metal wire composing the coil E, for which copper is probably the best among the baser metals, rises from bottom to top in a gradual increasing spiral line around the flame F, so that the combustible portions of the flame which ordinarily pass off in the shape of smoke are brought, as they rise in the flame, in successive contact with the increasing heat of the successive sections or turns of the coil, and thus, before they reach the "tip" of the flame, are consumed and utilized for illumination. The coil E, expanding as it rises from the section e , also allows of a heated air-space between the interior of the coil and the circumference of the flame, thus admitting of a gradual heating of the cold air before it actually commingles with the flame, and as the circumference of the flame is attracted and drawn toward the interior surface of the inclosing coil, the body of the flame becomes expanded laterally in the direction of the greatest diameter of the coil, thus flattening the body of the flame and drawing it down, as it were, within the coil, at the same time expanding the yellow tip of the flame, as well as the yellow edge upon its main body, and so greatly increasing its illuminating quality. The coil E being more and more heated from bottom to top, and the current of air necessary to combustion rising in the same direction and following the volution of the wire, the increased ascending velocity of the current of air is compensated for by the increasing volume of the coil, and thus the steadiness of the flame is not interfered with by the draft, at the same time it is properly supplied with air at all points of its circumference.

As shown in the drawing Fig. 1, my inven-

tion is applied to what is known as a "flat wick-tube;" but it is evident that it may be applied to round as well as flat tubes, as well as be modified in its application, as illustrated in the views shown by Figs. 2 and 3.

A lamp or lantern constructed with a burner as I have described will prevent "smoking" when the wick is depressed to give but little light, will obviate the languishing of the flame under ordinary sudden movement, and also afford a greatly-increased illuminating power over the ordinary lamp or lantern.

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

Heating and supplying air to the flame of a lamp or lantern in a space included within a spiral coil, substantially as and for the purpose described.

C. W. THEODORE KRAUSCH.

Witnesses:

C. D. WOLF,

E. A. RUCKER.