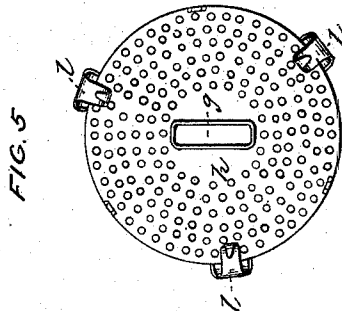
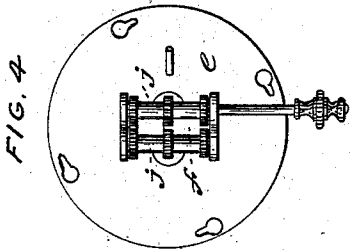
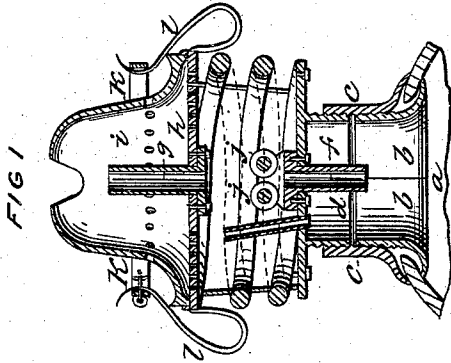
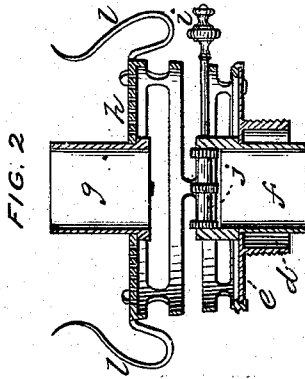
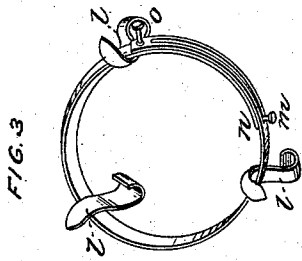


P. BAKER.
Lamp Burner.

No. 66,203.

Patented July 2, 1867.



WITNESSES:

2. Person
John S. Smith

INVENTOR:

Phelanden Baker

United States Patent Office

PHILANDER BAKER, OF CHICAGO, ILLINOIS.

Letters Patent No. 66,203, dated July 2, 1867.

IMPROVEMENT IN LAMP-BURNERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, PHILANDER BAKER, of the city of Chicago, in the county of Cook, and State of Illinois, have invented a new and useful Improvement in Lamp-Burners; and I do hereby declare and make known that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and the letters and figures marked thereon, which form part of this specification.

My said invention consists in constructing the wick-tubes of hydrocarbon lamp-burners in two sections, and connecting them in a peculiar manner, hereinafter described, so that a considerable space intervenes between the lower end of the upper section and the upper end of the lower section, to prevent the heat passing down to the lamp and vaporizing the fluid or oil, and thus engendering explosions of the same; and also in arranging at or upon the lower end of the upper section of the wick-tube, and above that part of the wick exposed between the two sections of the tube, a finely perforated disk or plate, or a gauze diaphragm, through which the air may freely ascend to the flame to support the combustion at that point, while it effectually prevents the flame from following down upon any ascending vapor which may possibly form, and igniting the exposed portion of the wick below said safety-plate or diaphragm, arranged as above mentioned. My invention also consists in a novel device for securing the lamp-chimney upon the burner and releasing it from the same, as hereinafter described.

To enable those skilled in the art to understand how to construct and use my invention, I will proceed to describe the same with particularity, making reference, in so doing, to the aforesaid drawings, in which—

Figure 1 represents a central vertical section of my invention.

Figure 2 is a similar view of another form of the same.

Figure 3 is a detached view of the device for securing the chimney.

Figure 4 is a top view of the plate upon the lower section of the wick-tube, upon which the upper section is supported, as hereinafter described; and

Figure 5 is a plan view of the safety-disk above mentioned.

Similar letters of reference in the different figures denote the same parts of my invention.

a represents the lamp or oil-cup on the upper part of the reservoir of the lamp; and *b b* represent a tube constructed in two vertical sections, as shown, for the purpose of enabling said tube to be inserted in the opening in the reservoir, which, on account of the enlargement or flange upon the lower end, which rests against the inside of the reservoir, would otherwise be impossible. *c* represents a tube screwing upon the said sectional tube, having a flange resting upon the outer surface of the reservoir, as shown, so that by screwing the tubes *b* and *c* together they are firmly clamped and secured upon the reservoir, as shown. A short tube, *d*, is screwed into the said tube *c*, upon the upper end of which the circular disk *e* is secured in any suitable manner, at the centre of which is secured the lower section of the wick-tube, marked *f*, as shown. A light, open framework, of any suitable form, either spiral, as seen in fig. 1, or with horizontal slots, as seen in fig. 2, is attached to the perimeter of the said disk or plate *e*, rising substantially in a vertical direction to any suitable distance, as shown, upon the top of which open frame, which is marked *s*, is secured a perforated disk or plate, *h*, as shown, to which the upper part of the wick-tube *g* is attached, so as to leave a vacant space in the tube between the lower disk *e* and the perforated safety-plate *h*, as already seen in figs. 1 and 2. Upon the top of said perforated plate is placed the ordinary cone *i*, enclosing the flame, which rises through its slotted apex, as shown.

The object of the construction and arrangement of the plate *e*, frame *s*, perforated plate *h*, and sections *f* *g* of the wick-tube, and the cone *i*, is to prevent the heat descending from the upper section of the wick-tube to the lower part and the metallic top of the oil reservoir, which would tend to heat the contents of the lamp and engender explosions. Where the wick is left exposed between the two sections of the tube it is obviously necessary to prevent the flame from coming in contact therewith; and as a considerable amount of hydrocarbon vapor is generated at that point by the heat of the upper section of the tube, the flame would, unless prevented, readily descend upon the rising vapor and ignite the exposed part of the wick. To prevent this effectually, and at the same time admit the requisite supply of air to the burner, I arrange at the lower end of the upper section of the wick-tube a finely perforated or gauze disk, *h*, through which the air freely ascends, as also the vapors may in a small degree, but through which, from well-known philosophic principles, the flame cannot

penetrate to the wick below. This result has never been secured practically by any of the forms of burners now known or in use.

k represents a hoop of spring steel, which is designed to pass around the lower end of the chimney, and also around the elastic arms *l*, which are secured in any suitable manner to the burner. The construction of this spring *k* is seen at fig. 3, the knob *m* passing through a slot, and being attached to the point *n* of the hoop, and the knob *o* is attached to the other end of the hoop, so that by pressing the knobs *m* and *o* together the diameter of the hoop is enlarged, but on being released the natural action of the said hoop is to contract so as to hold the chimney in place.

Instead of the open metallic frame connecting the disks *e* *h*, herein described, a wooden cylinder may be used as a non-conducting medium between the two sections of the wick-tube, points being arranged between its upper end and the plate *h* to prevent direct contact of the heated plate upon the wood.

Having described the construction and operation of my invention, I will now specify what I claim, and desire to secure by Letters Patent:

1. I claim the combination and arrangement of the disk *e* and safety-plate or diaphragm *h*, when connected at their perimeters by a spiral coil or its equivalent, as described, with the two sections of the wick-tube, arranged as specified with respect to each other, and the cone *i*, arranged and operating as and for the purposes set forth.

2. I claim, in combination with the elastic arms *l*, the arrangement of the spring-hoop *k*, constructed and applied so as to operate in the manner and for the purposes specified.

PHILANDER BAKER.

Witnesses:

J. PULVER,

P. A. HOYNE.