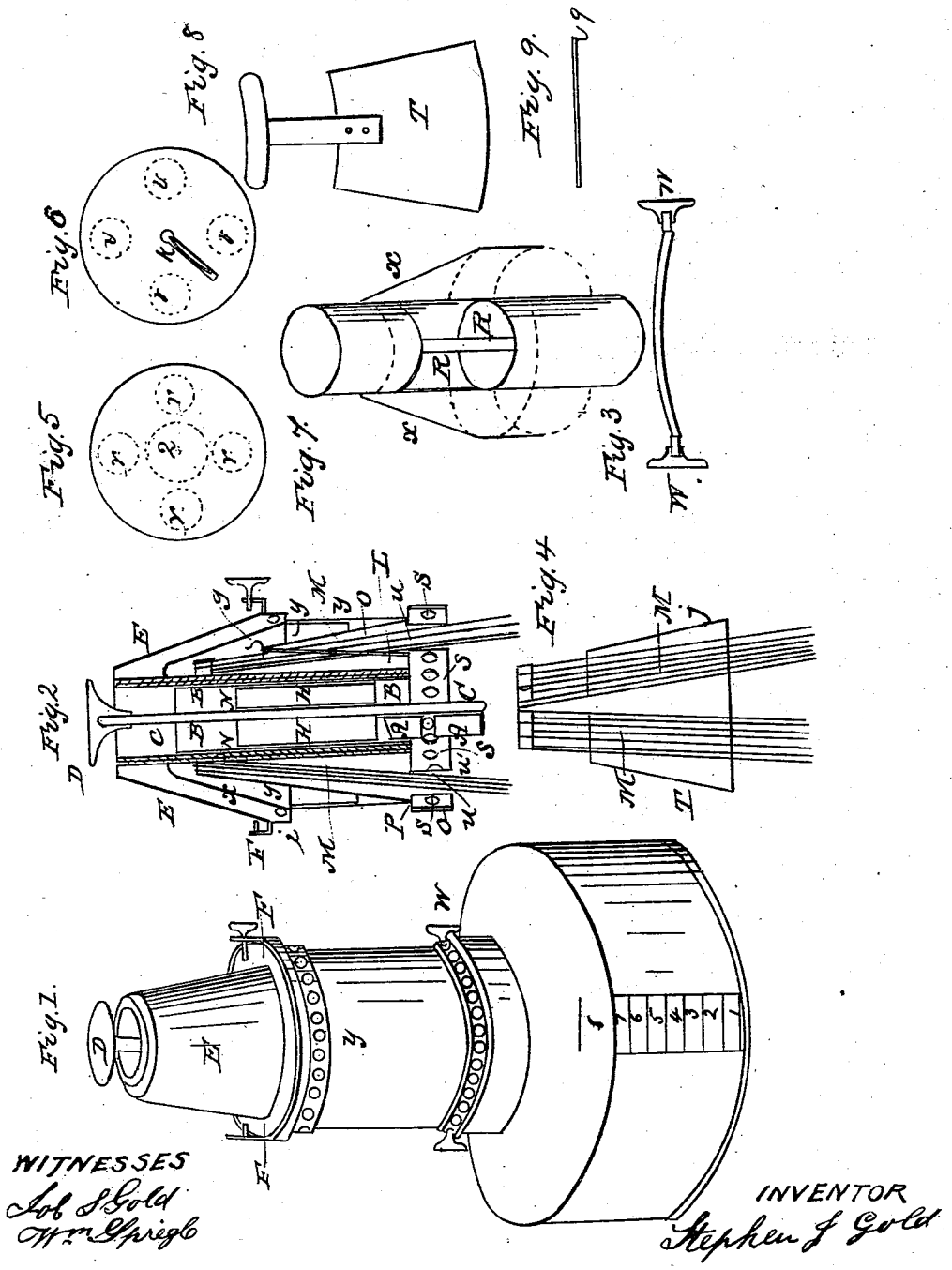
S. J. GOLD.

Lamp.

No. 3,073. Patented May 8, 1843.



UNITED STATES PATENT OFFICE.

STEPHEN J. GOLD, OF CORNWALL, CONNECTICUT.

LAMP.

Specification of Letters Patent No. 3,073, dated May 8, 1843.

To all whom it may concern:

Be it known that I, STEPHEN J. GOLD, of Cornwall, county of Litchfield, and State of Connecticut, have invented new and useful Improvements in Argand Lamps for Burning Volatile Oil of Turpentine, which is now called "Pine-Oil." To distinguish this improvement from that patented by me July 16, 1841, and from others, I call it, the "Argand Regulator," for burning volatile oils.

The object of my former improvement was to give facility of management and durability to the lamp, and particularly to make the flame steady and uniform, and prevent the degree of heat, which, by causing too rapid a flow of the oil to the flame, produces smoke, in the form of lamp black. Although my improvement referred to, removed, in a great measure this evil, and others that were exceedingly objectionable and calculated to prevent the successful use of this valuable oil for the production of light, yet it did not secure in that perfect manner desired, the entire remedy for the evil-experienced in burning this kind of volatile oil—but, by the improvements now made, in connection with my former one—upon the Argand burner—the most perfect result is obtained, so that pine oil for the production of light will surpass any other now known.

My improvement consists in the particular application of two wicks, the Argand wick, and the common tube wick. The Argand wick being elevated above the fountain of oil and consumed by use, while the tube-wick, secured in contact with the Argand wick, (externally and near its top,) extends down through tubes into the fountain of oil and is never consumed, its entire use being to supply the Argand wick with oil by capillary attraction. This application of wick I call the Argand Regulator which, with the parts and application I now fully describe, reference being had to the annexed drawing making a part of this specification, in which—

Figure 1, is a perspective view; Fig. 2, a sectional view; Fig. 3, the rocking bar, by which I raise or depress the button rod—Fig. 4, the wick cone—Fig. 5, the plates that supports the Argand burner and its fixtures.—Fig. 6, the plate that covers the orifice of the fountain; Fig. 7, the exterior wick tube—Fig. 8, one-third of the wick cone. Fig. 9, the spring that fastens the wick cone.

Construct a fountain of any desirable size, shape, or material, with an opening at the top, of two inches. Close the top with the plate Fig. 6, the plate being in Fig. 2, at O—and is secured by a screw or otherwise. This plate has a flange upon it ½ inch high, and on the top of this flange is put and secured the plate Fig. 5, at P. The four holes V, that are in the two plates, are for the four short tubes, *u*, which are soldered tight in the plate Fig. 5, and pass down through the plate Fig. 6. Through these tubes the common tube wick, (as seen at M) is drawn, This wick reaches from the bottom of the fountain to the top of the cone T, to which it is attached, as seen in Fig. 4, and brought in contact with the Argand wick N; by this contact of the two wicks, the burning fluid is brought by capillary attraction, to the point of combustion, or top of the Argand wick. The cone that supports the wick, may be made of tin; two inches diameter at the bottom two and one half inches high, and such size at the top, that the which which is drawn over it, will be gently pressed against the Argand wick, see Fig. 2.

The top of the cone may be made as shown by a section Fig. 4, with three T's. Fig. 8 represents one third of the cone, and a T, lying flat. This third of the wick cone, shows that the three T's will lap, and form an entire elastic ring, over which the tube wick passes and by which it is held in contact with the Argand wick. The wick cone T, as seen in Fig. 2, is held down by two tin springs, Fig. 9. In Fig. 2 this spring is seen; soldered to the plate P, at L, with its top sprung over the lower part of the cone, at *g*. The Argand wick N, is supported between two cylindrical tubes, called inner and outer wick tubes; (described in my patent dated July 16, 1841.) The inner tube is three and a half inches long, ¾ inch diameter, and may be made of common tin. The outer tube is the same in length, as the inner, 15/16 of an inch in diameter, and has openings letter R, Fig. 7—commencing one inch from the top. The two wicks are brought in contact through these openings, see Fig. 2. These wick tubes with the Argand wick are supported by the cone *f*, attached to the outer tube and hereafter described. The center air tube B, stands upon

the plate Fig. 5, at Q, and is soldered to it. Inside this air tube, $\frac{1}{4}$ inch above the bottom, is fastened the guiding cross bar H, for the button rod C. The cross bar is made fast to the tube, and should extend about $\frac{2}{3}$ the length of the tube. This cross bar will keep perpendicular and central the button rod, which supports the button D. At A, is a wing on the button rod, with a slot cut in it, through which is put the rocking bar Fig. 3. (See dot in the slot). The bearings of the rocking bar, are in the rim that separates the plates O and P. This bar causes the button rod and button to rise and fall, as it is rocked up and down, by taking hold of the thumb piece W. The wing A Fig. 2, passes through the plate Fig. 6, and being bent, as seen in the opening *k*, operates as a spring, to stay the button rod, see Fig. 2, plate O, and Fig. 6. Through the radial holes S, between the plates O and P, is received the draft air, that passes up through the center tube B. I now inclose the fixtures thus described by cylinder Y Fig. 2,—a glass holder F—and a cone *f* (see Fig. 7). The cylinder and glass holder are attached and made fast at P Fig. 2. The cone, *f* rests upon a seat in the glass holder, below the radical holes for the external draft and has a rim, entering the cylinder Y. This cone, is to lengthen the wick chamber, that the Argand wick, when very nearly consumed, may still reach the tube-wick, and be supplied with oil. The external draft which is received through the radial holes in the glass holder, is directed to the point of combustion by the cone E. The fountain of the model lamp which I have herein described is made of glass—$4\frac{1}{4}$ inches diameter—perpendicular heighth, $1\frac{1}{2}$ inch, and then screwed up—making the fountain $2\frac{1}{2}$ inches high—to the collar as in Fig. 1. The glass should be $\frac{1}{8}$ inch thick. A fountain, of this size, will contain oil sufficient to burn eight hours. It is important, that lamps in which this oil, is used, should be burned dry occasionally—that they may be kept pure—and it is a matter of consequence, many times, to put such a quantity of oil in the lamp, as will burn a given time only—particularly when the lamp is used but seldom. In order therefore to obtain the above desiderata, and to secure many other conveniences, (such as determining how long the oil that may be in the lamp at any time will burn,—the time that the lamp has been burning &c,) I put upon the fountain a scale of hours, see Fig. 1, so that should the lamp be wanted but one hour, then fill to the first mark, two, to the 2d, three, to the 3d, &c, the marks being at such distance from each other, that the quantity contained between any two, will burn one hour. The distance between the marks, should always be in proportion, to the diameter of the fountain.

What I claim as my invention, and desire to secure by Letters Patent is—

1. The mode herein described of supplying the Argand wick by means of the combined wicks M, M, conducting the oil past the inner draft, when this draft is admitted from above, instead of through the bottom of the fountain.

2. I also claim in combination therewith, the movable burner and cone arranged and constructed substantially as described.

3. I also claim the wick cone Fig. 4 for supporting the wick M, M.

STEPHEN J. GOLD.

Witnesses:
JOB S. GOLD,
WM. SPIEGLE.