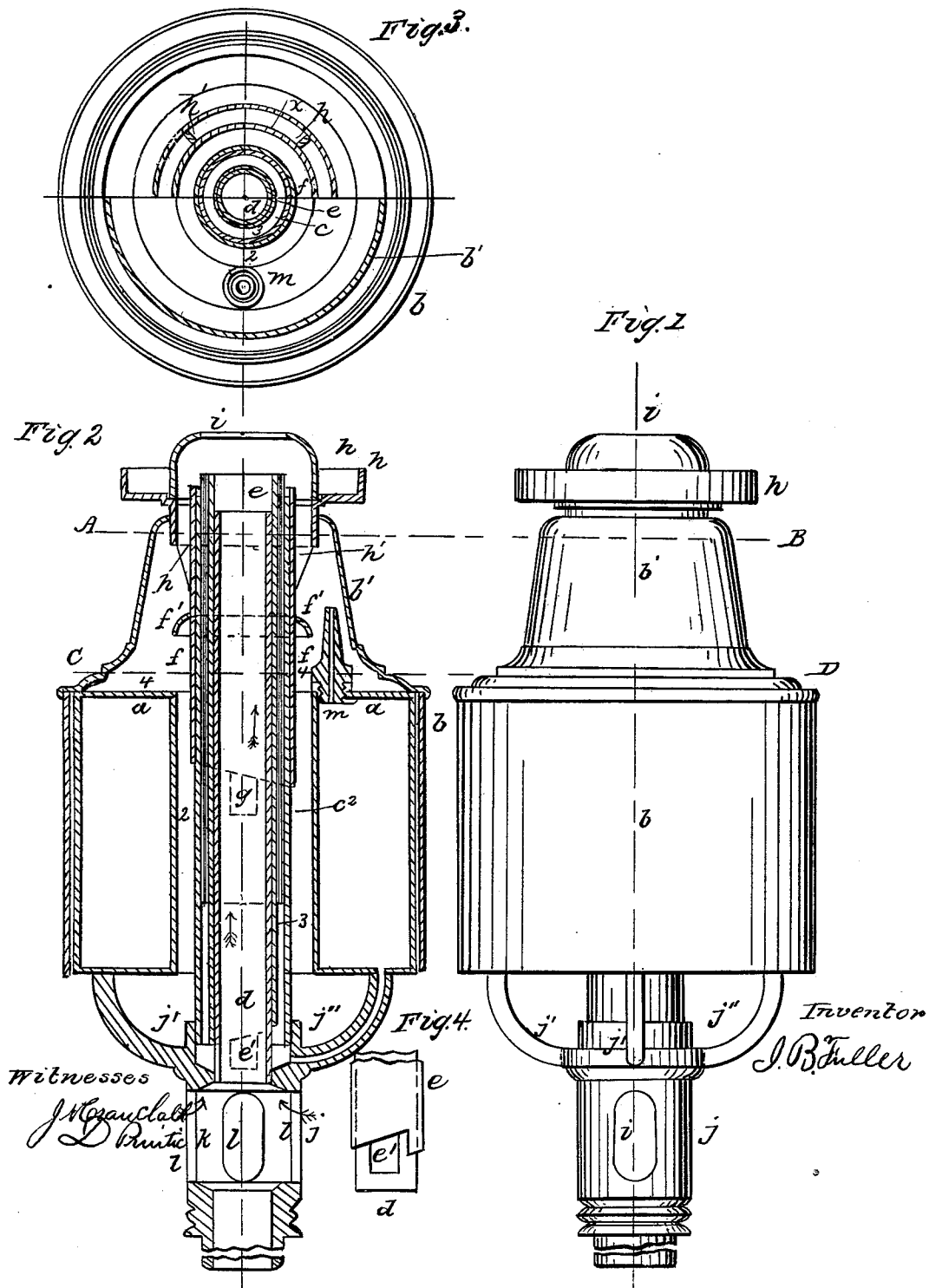


J. B. FULLER.

Lamp.

No. 91,325.

Patented June 15, 1869.



United States Patent Office.

JIM B. FULLER, OF NORWICH, CONNECTICUT.

Letters Patent No. 91,325, dated June 15, 1869.

IMPROVEMENT IN LAMPS.

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, JIM B. FULLER, of Norwich, in the county of New London, and State of Connecticut, have invented a new and useful Improvement in Lamps; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, making part of this specification, in which—

Figure 1 is an elevation.

Figure 2 is a vertical section.

Figure 3 is a horizontal section, part of which is taken through the line A B, and part through the line C D.

Figure 4 is a detached view, showing the mode of adjusting the tube *e*.

The same marks of reference indicate similar parts in each figure.

Heretofore lamps having cylindrical wicks have been so arranged that each side of the wick was equally exposed to the action of the flame, and also so arranged that in increasing the amount of light the wick was raised to the required point, and, in decreasing the amount of light, the wick was lowered.

My improvement consists in the construction, arrangement, and operation of the several parts, hereinafter more fully described and shown, whereby I am enabled to produce a safe, brilliant, and economical light from kerosene and other similar oils.

In the drawing—

a is the reservoir for holding the oil. This is usually made of sheet-metal, and soldered together at the joints.

There is a vertical tube through the centre of this reservoir, forming the annular space 2 around the tubes.

b is the outside case, which is also made of sheet-metal.

b' is the upper portion of this case, and is continued up, and contracted, so as to fit around the collar *x*.

c is a tube, which surrounds the wick, and is secured, at the bottom, in the stand *j*.

d is the central tube, secured also, at the bottom, in the stand *j*.

e is the wick-tube, and is placed over the tube *d*, its bottom reaching down to the projection *e'*. This tube is made long enough to project above the other tubes, to facilitate trimming the wick, by which it is surrounded. The lower end of this tube is made diagonal, and rests upon the projection *e'*, so that by turning it in different positions it is raised or lowered, for the purpose of adjusting the wick to the required height, which varies with different quality of oils. The projection *e'* is a piece of metal, secured to the tube *d* by soldering or otherwise.

f is the regulating-tube, for regulating the amount of flame required.

Its lower end is also made in diagonal form, and rests on the projection *g*, so that by turning the tube to the right or left it rises or falls, and thus varies the amount of exposure of the wick to the flame, and the consequent amount of light.

f' is a check-plate, which may be secured to the tube *f*, the reservoir *a*, or the case *b'*, and consists of a disk, so arranged around the tube *f* as to check any irregular current of air passing up the annular space 2.

h is the chimney-holder, the lower part of which forms the collar *x*.

h' *h'* are arms, set up edgewise, and secured to the tube *f* and chimney-holder *h*, so as to give, as nearly as possible, a clear space for the passage of air to the flame, and without the intervention of a perforated burner.

i is the deflector, of ordinary construction, and is held in position by any suitable means applied to the chimney-holder. The chimney may be of any ordinary construction, and may be held in position in any convenient manner.

j is the stand, which supports the whole structure.

The reservoir *a* is supported by the arms *j'* and *j''*, the latter of which is a tube, which conveys the oil from the reservoir *a* to the tubes and wick.

k is a chamber, from which air, passing through the opening, *l*, in the direction indicated by the arrows, flows up through the central tube, *d*.

m is a perforated plug or tube, fitted to the aperture for supplying oil to the reservoir, or it may be located in any other place, near the edge of the annular space 2, having a small hole through its entire length, for the admission of air, but too long and small to admit the passage of any flame into the reservoir.

The upper portion of the stand *j* is bored of a size to fit the bottom of the tube *c*, and a little lower it is bored to fit the bottom of the tube *d* just above the chamber *k*, and the lower ends of the tubes *c* and *d* are secured to the stand, bored to receive them, by soldering or otherwise. Thus the stand forms the bottom of the chamber 3 by connecting the bottom of the tubes *c* and *d*, as shown in fig. 2.

The operation of my invention is as follows:

The wick, being drawn over the wick-tube *e*, and cut off even with the top, is placed in the position shown in fig. 2. The reservoir is filled with oil through the aperture at *m*, and, passing through the tube *j''*, rises into the annular space 3, saturating the wick. The tube *f* is turned down, and the wick is ignited at the top. The tube *f* is then turned up, so as to reduce the flame, and the chimney is placed in its proper position. The tube *f*, by means of the chimney-holder *h*, is gradually turned down until the required amount of flame and light is obtained.

The air passing up the annular space 2 and cham

ber 4, to the outside of the wick, causes a distillation, and partial combustion of gas from the oil, while the air passing up the central tube *d*, strikes the flame above the wick, producing instantaneous and complete combustion, and an intensely-brilliant flame.

The heat generated causes a rapid current of cold air to ascend the annular spaces 2 and 4, keeping the parts cool, especially the plug *m*, so as to more effectually prevent the passage of flame into the reservoir. The check-plate *f'* will check and equalize any irregular current of air in its passage through the annular space 2 to the flame.

Different kinds of oil require, for perfect combustion, that the top of the wick shall be properly adjusted to the deflector. These adjustments will soon be understood by those who use the improvement, and can be readily adjusted by setting the tube *e* in the proper position relative to the projection *e'*.

Having described in detail the construction, operation, and object of the several devices,

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

The tubes *c*, *d*, *e*, and *f*, the projections *g* and *e'*, the chimney-holder *h*, with the arms *h'* and collar *x*, the deflector *i*, the check-plate *f'*, the annular spaces 2 and 4, the reservoir *a*, the plug *m*, and the stand *j*, or its equivalent, the whole being constructed, arranged, and operated substantially as shown and described, and for the purposes specified.

Norwich, Connecticut, May 10, 1869.

JIM B. FULLER.

Witnesses:

J. N. CRANDALL,
D. PRENTICE.