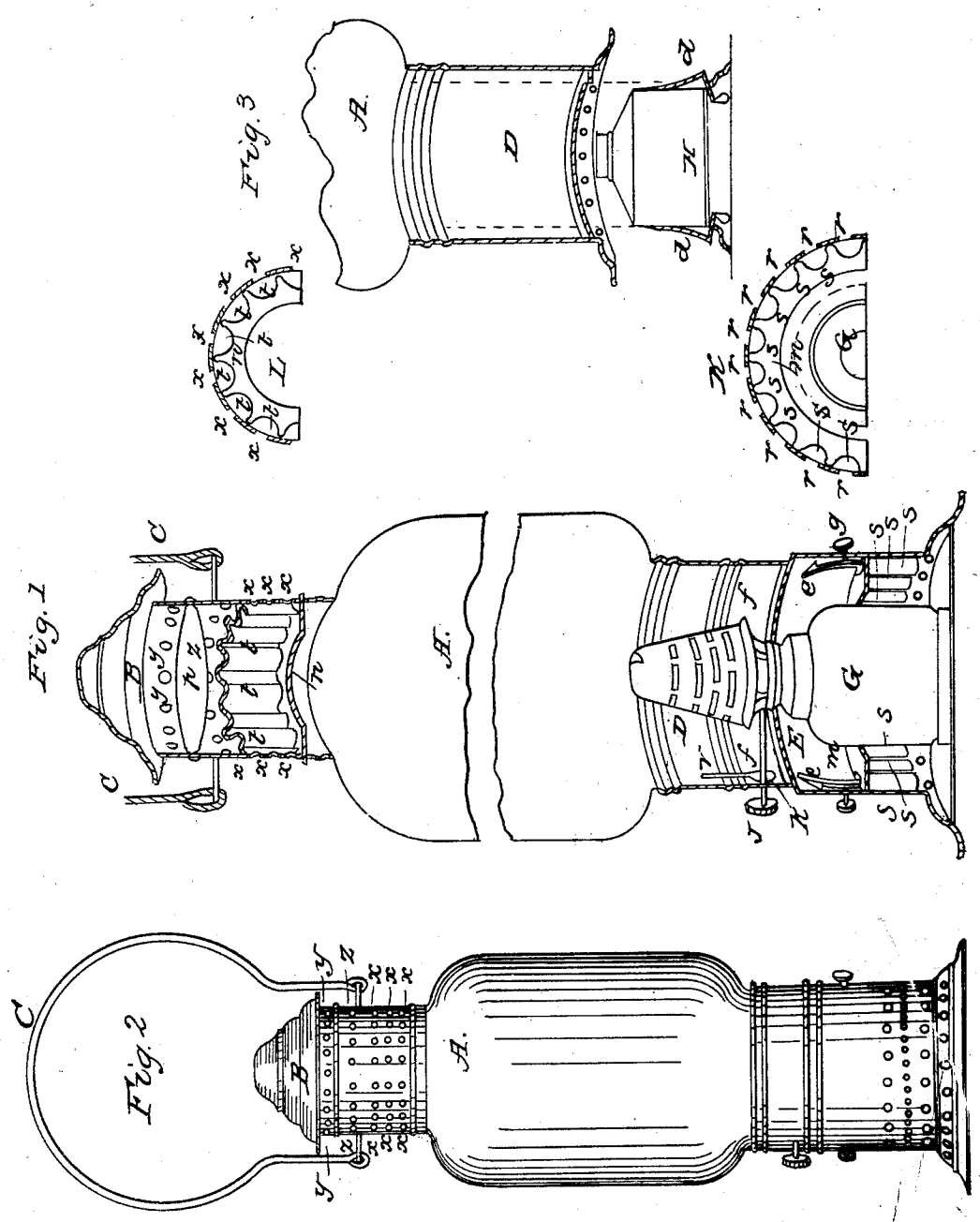
TUCKER & CRAWFOR.

Lantern.

No. 38.189. Patented April 14, 1863.



Witnesses

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UNITED STATES PATENT OFFICE.

FREDERICK G. TUCKER AND ARCHIBALD CRAWFORD, OF ALBANY, N. Y.

IMPROVEMENT IN LANTERNS.

Specification forming part of Letters Patent No. **38,189**, dated April 14, 1863.

To all whom it may concern:

Be it known that we, FREDERICK G. TUCKER and ARCHIBALD CRAWFORD, of the city of Albany, State of New York, have jointly invented certain Improvements in the Construction of Lanterns; and we declare the following specification, with the drawings forming part thereof, to be a full and complete description of our invention.

In the use of lanterns of the class commonly known as "globe" or "glass" lanterns great inconvenience has existed in the inability to regulate the wick of the lamp promptly and without withdrawing the lamp from the cylinder containing it—an inconvenient and sometimes a dangerous proceeding. Another inconvenience has been the danger of extinguishment to the light from currents of air whenever the lantern has been suspended in the open air or when swung by the hand rapidly for purposes of signaling. Plans have been invented to meet both these difficulties, but none that have met full success.

It is the object of our invention to remedy both these evils.

In the drawings, Figure 1 represents our improved lantern in vertical section through the middle; Fig. 2, an extended view of the same; Fig. 3, the lower or lamp section of lanterns as usually made.

Similar letters indicate the same parts of the apparatus.

A is the glass globe; B, the upper section or metal cylinder, with C (the handle of the lantern) attached to it; D, the lower cylinder, attached to the globe; E, the movable section containing the lamp G.

In lamps as usually made (see Fig. 3) the lower cylinder, D, is deep enough to hold the lamp G, which is attached to a disk or bottom piece, H, which is fitted to enter in at the open bottom of the cylinder, and when in place is held by spring catches *a a*, which snap over a ring of metal, *b b*, attached to the inner side of the cylinder. These catches are released by pressing together the finger-pieces at their lower ends.

In order to trim the wick the lamp has to be withdrawn, for if the usual wick-trimming wheel, as shown in Fig. 1, be used, it can only be used by awkward expedients not desirable in the appurtenances of a lantern.

In the use of fish or vegetable oils the wick does not require so much trimming as to make the wheel-trimmer important, but with kerosene or mineral oils it is necessary to regulate the wick so frequently that the wheel becomes an important aid to the successful operation of the lantern. To effect this, we construct the lower part of our lantern in two cylinders, the lowest or movable one, E, to hold the lamp G, which is attached to its bottom.

To the wick-tube of this lamp is attached the usual wheel wick-trimmer, whose shaft, *h*, projects over the upper edge of E so far as to carry the button J, by which it is to be worked, outside of the cylinder E. The cylinder D is fitted to enter within E a short distance, and when in its place, as shown in Fig. 2, is held there by spring-catches *e e*, which hold over projections *f f*, secured against the wall of D for that purpose. A finger-button, *g g*, attached to each spring, gives the means of relieving its hold. In the side of D, close to its lower edge, a circular opening, *k*, is made, just large enough to pass the button J, and from this a slot, *v*, which will just pass the shaft *h*, extends upward so far as to allow D to pass into E to its proper place, as shown in Fig. 2. This arrangement permits the cylinder D to be passed sidewise over the button till it arrives over E, when it can be dropped down to its place, where the catches hold it firmly, and when this is done the wick can be trimmed without disturbing the lamp. It will occur to any mechanic that this plan may be reversed—that is, the lower cylinder, E, may be made to enter D and the spring be so changed as to meet this alteration. As that is equivalent to the arrangement described, it is unnecessary to specify it particularly.

To protect the light from extinguishment from currents of air the following is our device: In the lowest part of section E there are a number of orifices, *d d*, supplying a part of the air needed for the combustion of the lamp. Above them are others, *r r*, supplying the principal part of the air required for that purpose. Directly opposite to them, on the inside of the metal and covering them, are a series of cells, *s s*, conveniently formed by corrugating the metal, as shown in the plan section K, and fastening the inner folds to the metal. An annular shelf, *m*, runs round the inside of the cylinder, closing the upper ends of these cells and projecting inward some dis-

tance toward the lamp. The effect of this arrangement is, that while it affords the access of air liberally and freely to the light while the lantern is quietly handled, any sudden and violent currents of air entering into the orifices are by the cells deflected downward, where, meeting with the air entering at *d d*, they form an eddy, preventing a rush upward strong enough to extinguish the light. A similar arrangement is provided in the top cylinder, B, in which, as shown in Fig. 1 and plan section L, cells *t t* are formed over the exit-holes *x x*, the shelf *n* being placed at the lower end of the cells, so that the hot air must pass into the upper part of B, and what cannot escape through the orifices *z z* must turn down into the cells to get out at *x x*. The practical effects of these arrangements are that the lamp at all times furnishes a clean light, and without smoking the globe.

A third improvement we have added for the protection from burns of the person using the lantern. The heat from the lamp is so great in the globe-lanterns that the metal of the top of cylinder B in ordinary lanterns will burn the hands of any one touching it, which the person carrying it is very liable to do. To prevent this, we interpose at T a partition of metal, *p*, across the top, and pierce a number of openings, *y*, above it for the circulation of air.

What we claim as our invention, and desire to secure by Letters Patent, are the following devices, substantially as set forth, and for the purposes described in the above specification:

1. The cells S S, with the shelf *m* in cylinder E, and the cells *t t* with the shelf *n* in the cylinder B, for the purposes set forth.

2. The partition P, with the openings Y in cylinder B, to shield the heat from the cap of the lantern.

3. The cylinder D, with its orifice *k* and slot V, arranged to slide within the cylinder E, so as to accommodate the shaft *k* of the wheel wick-trimmer, in combination with the cells, shelves, and partition aforesaid.

4. The springs *e e*, as arranged to secure the cylinders D and E to each other, in combination with said cylinders and with the cells, shelves, and partition aforesaid.

5. The combination of the whole lantern, as represented and set forth, embracing the said cells, shelves, partition, cylinders, orifice, and slot and springs, as applied to any of the lamps and burners now in common use, the whole to be made as represented, and for the purposes herein set forth.

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