(No Model.) 2 Sheets—Sheet 1.

S. A. JOHNSON.

SELF EXTINGUISHING HYDROCARBON LAMP.

No. 485,041. Patented Oct. 25, 1892.

FIG. 1.

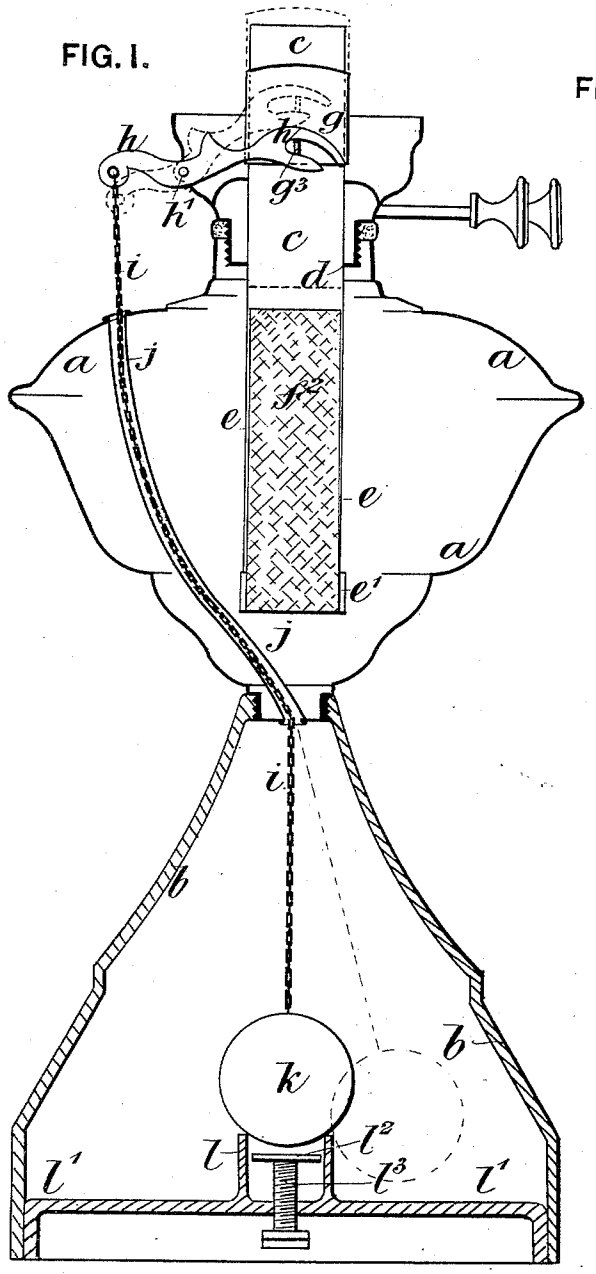
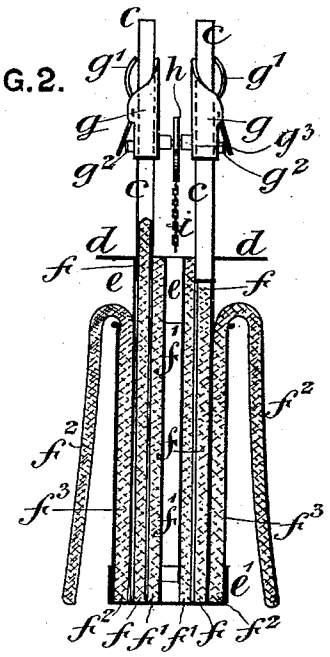


FIG. 2.



Attest:
George E. Bruce
Harry D. Robertson.

Inventor:
Samuel A. Johnson,
By. Knight Bros
Attorneys.

(No Model.) 2 Sheets—Sheet 2.

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SELF EXTINGUISHING HYDROCARBON LAMP.

No. 485,041. Patented Oct. 25, 1892.

FIG. 3.

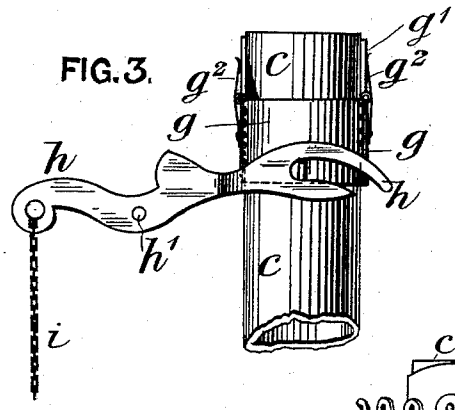


FIG. 4.

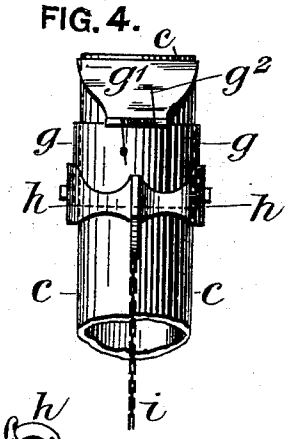
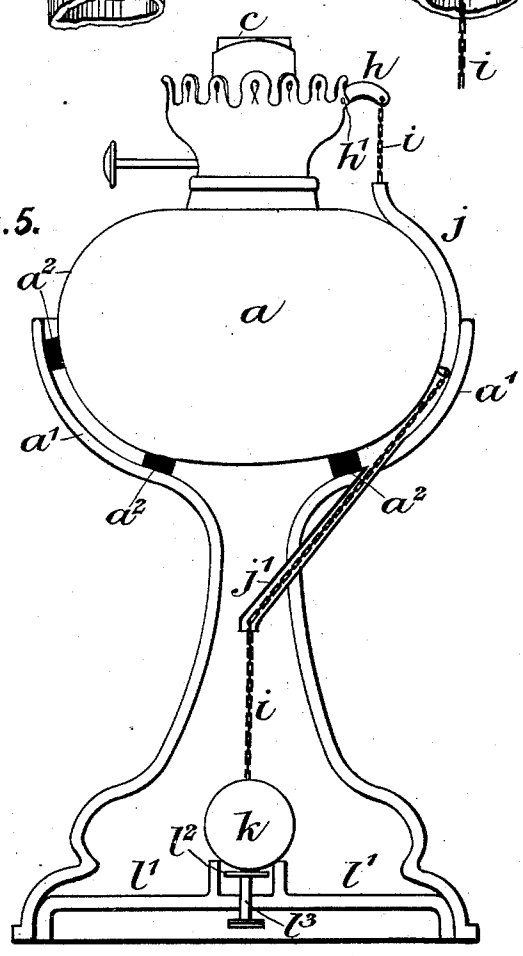


FIG. 5.



Attest:
George E. Cruse,
Harry S. Rohrer.

Inventor:
Samuel A. Johnson.
By Knight Bros
Attorneys.

UNITED STATES PATENT OFFICE.

SAMUEL A. JOHNSON, OF LONDON, ENGLAND.

SELF-EXTINGUISHING HYDROCARBON-LAMP.

SPECIFICATION forming part of Letters Patent No. 485,041, dated October 25, 1892.

Application filed February 25, 1892. Serial No. 422,791. (No model.) Patented in England June 6, 1891, No. 9,621; in Germany August 21, 1891, No. 64,425; in France August 22, 1891, No. 215,682, and in Belgium August 22, 1891, No. 96,129.

To all whom it may concern:

Be it known that I, SAMUEL ALBERT JOHNSON, a subject of the Queen of Great Britain, residing at Poplar, London, in the county of Middlesex, England, have invented certain new and useful Improvements in Hydrocarbon-Lamps, of which the following is a specification.

These improvements are embodied in patents in the following countries: Great Britain, No. 9,621, dated June 6, 1891; Germany, No. 64,425, dated August 21, 1891; France, No. 215,682, dated August 22, 1891, and Belgium, No. 96,129, dated August 22, 1891.

The invention relates to improvements in self-extinguishing hydrocarbon-lamps. For this purpose I mount on the burner-tube a short sliding tube, either flat or round, as required, and I hinge to one or to both sides of the sliding tube a flap or cover which when the sliding tube is in its lowered position fits against the side of the tube, but which when the sliding tube is raised is acted upon by a spring to cause it to close over the top of the wick-tube, which when of a flat form will be covered by a single flap and when of a circular form will be covered by two flaps meeting together at the center line. A lever is connected to the sliding tube, and to the outer end of such lever is attached a cord or chain which passes through an inclined or curved tube fixed in the reservoir and which tube is open at top and bottom, the inclination of said tube being such as to lead the cord or chain to the center of the bottom of the reservoir, or in the case of glass reservoirs such cord or chain may pass outside of the same. The lower end of the cord or chain is attached to a weight which when the lamp is in use is seated on a central seat or cup in the base, but which when the lamp is upset falls off such seat or cup and by means of the cord or chain acts upon the lever to raise the sliding tube and thereby extinguish the flame. The raising of the lever, while uncovering the wick-tube, also at the same time raises the weight and causes it to become seated on its seat or cup.

My improvement consists in novel features of construction hereinafter described and claimed.

In order that my said invention may be more clearly understood and readily carried into effect, I will proceed, aided by the accompanying drawings, more fully to describe the same.

In the drawings, Figure 1 is a vertical section of a duplex lamp with my improvements applied thereto. Fig. 2 is a sectional view of parts drawn at right angles to Fig. 1. Figs. 3 and 4 are elevations, drawn at right angles to each other, of a circular wick-holder and extinguisher to which my invention can be applied, and Fig. 5 represents my invention applied to a lamp having a glass reservoir.

With reference to Figs. 1 and 2, a is the reservoir of the lamp. b is its base. $c\ c$ are the ordinary wick-tubes, which are fixed in the bottom d of the burner-fitting. $e\ e$ are tubes fixed to the under side of the plate or bottom d, which receive the ordinary wicks f f and additional fixed capillary wicks f' f'. f^2 f^2 are other capillary or siphon wicks placed in siphon-tubes f^3 f^3, attached to the tubes e e. These wicks f^2 hang over the tops of the tubes f^3 and extend nearly to the bottom of the reservoir a. The bottoms of the tubes $e\ e$ f^3 f^3 are inclosed within a small chamber e', so as to allow of the free passage of oil to the various wicks. The chamber e' is closed against the oil in the reservoir a, except so far as such is introduced therein by the capillary attraction of the wicks f^2 f^2.

Ordinary extinguishers are employed, consisting of sliding tubes g g, mounted on the wick-tubes c c, and flaps or covers g' g', hinged to the tubes g g and acted upon by springs g^2 g^2. g^3 is a cross-bar connecting such extinguishers. h is the ordinary extinguishing-lever, which is fulcrumed at h'. Instead, however, of operating such lever h as heretofore, I, according to my invention, attach to such lever a cord or chain i, which passes through a tube j, fixed in the reservoir and which extends from the top thereof and is open at top and bottom, the direction of such tube being such as to lead the cord or chain from a point adjacent to the lever out at the center of the bottom of the reservoir a. The cord or chain is there attached to a weight k, which when the lamp is in use is seated on the rim of a central seat or cup l,

but which when the lamp is upset falls off such seat or cup and, by means of the cord or chain *i*, acts upon the lever to raise the sliding extinguishers *g g*, and thereby extinguish the flame. The raising of the outer end of the lever *h* lowers the extinguishers *g g*, thereby uncovering the wick-tubes *c c*, and at the same time raises the weight *k* and causes it to become seated on its seat or cup *l*. I prefer to form the seat or cup *l* as a cylinder attached to a cross-bar *l'*, and in order that the extinguishing apparatus may be rendered more sensitive when the lamp is in a room with children I fit such seat with a disk l^2, fixed to the top of a screw l^3, so that by raising such disk the weight *k* may be raised above the edge of the tube *l*, and thereby rendered so sensitive that a slight inclination of the lamp will cause it to fall off the seat, and thereby extinguish the lamp.

It will be evident that my invention is equally applicable to lamps provided with a single wick-tube.

At Figs. 3 and 4 I have shown how my invention may be applied to a circular wick-tube. *g* is a short sliding tube. *g' g'* are flaps or covers hinged thereto, and g^2 g^2 are springs which act to close the said covers or flaps over the top of the wick-tube when the lever *h* has raised the sliding tube *g* to a level with the top of the wick-tube. *i* is the cord or chain which connects the lever *h* with a weight *k*, arranged as shown in Fig. 1.

In cases where it is desired to apply my invention to lamps having glass reservoirs I surround the reservoir *a*, as shown at Fig. 5, with a metal cup or casing *a'*, perforated or otherwise ornamented, and leaving a free space between the two. The upper and lower part of the cup or casing is lined with cork or other yielding material a^2 to protect the glass reservoir, and it is fitted internally with a length of tube *j*, which extends upward and preferably follows very nearly the contour of the glass reservoir and terminates at a suitable point to allow the chain or cord *i* from the extinguishing-lever freely to enter the same and to pass between the glass reservoir *a* and the metal cup or casing *a'*, which latter has fixed at its lower part a short tube *j'*, extending into the lamp-base and terminating at the vertical axis of the lamp. The chain *i* is fitted at its lower end with a weight *k*, which can rest on a central support and operate the extinguisher, as above described.

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

1. The combination, with the extinguisher-lever, the reservoir, and the base, of a guide-tube extending from the top of the reservoir adjacent to the lever to a point beneath the center of the reservoir, a chain or cord extending from the lever through the guide-tube provided with a weight at its lower end, and a cross-bar having a cylindrical cup, the rim of which cup provides a seat for the weight beneath the lower end of the guide-tube, substantially as described.

2. The support for the operating-weight, consisting of a cylindrical cup and an adjusting-screw working through the cup, having a disk at the top thereof for supporting the weight, substantially as described.

3. An adjustable seat or cup for the operating-weight, formed of a cylinder *l*, containing a disk l^2, fixed to the top of an adjusting-screw l^3, substantially as described.

S. A. JOHNSON.

Witnesses:
B. J. B. MILLS,
CLAUDE K. MILLS,
23 *Southampton Buildings, London, W. C., Patent Agents.*