(No Model.)

2 Sheets—Sheet 1.

J. & J. HINKS.

Mechanism for Lighting Lamps.

No. 233,855. **Patented Nov. 2, 1880.**

FIG I

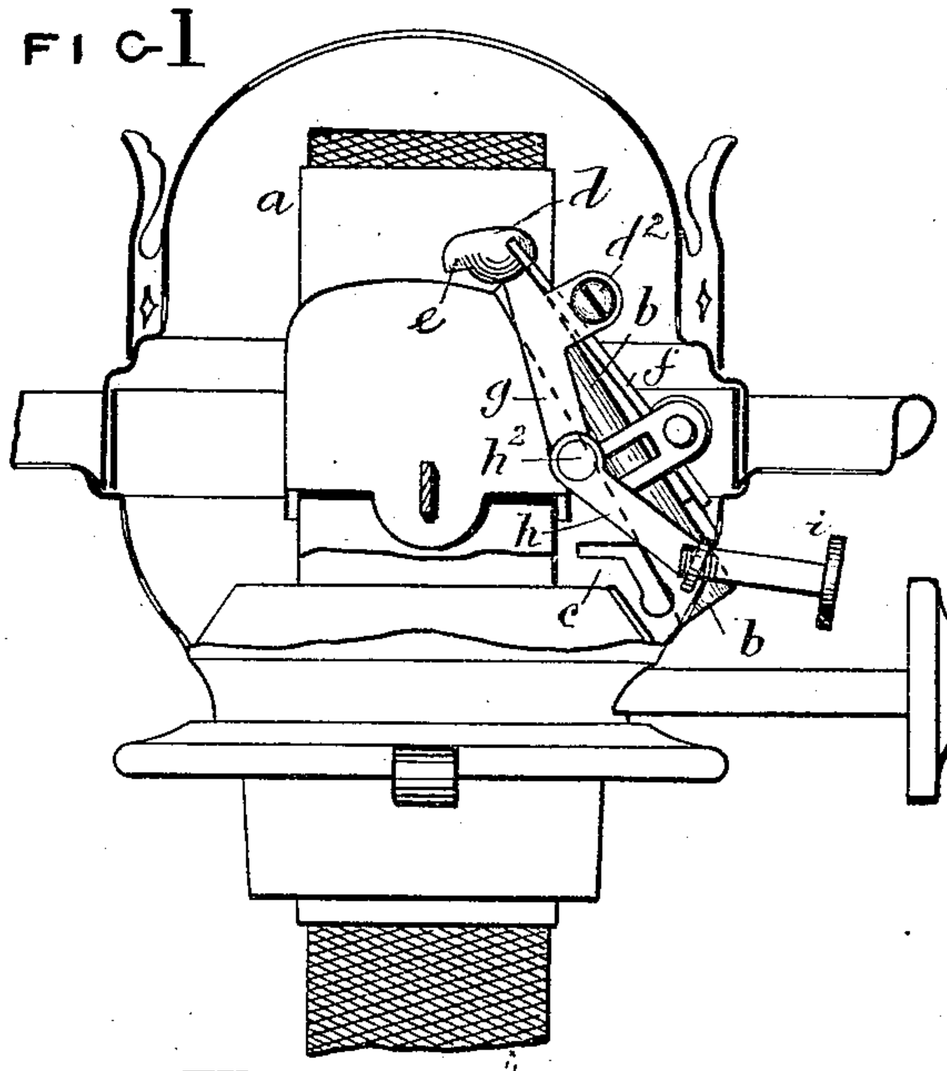


FIG II

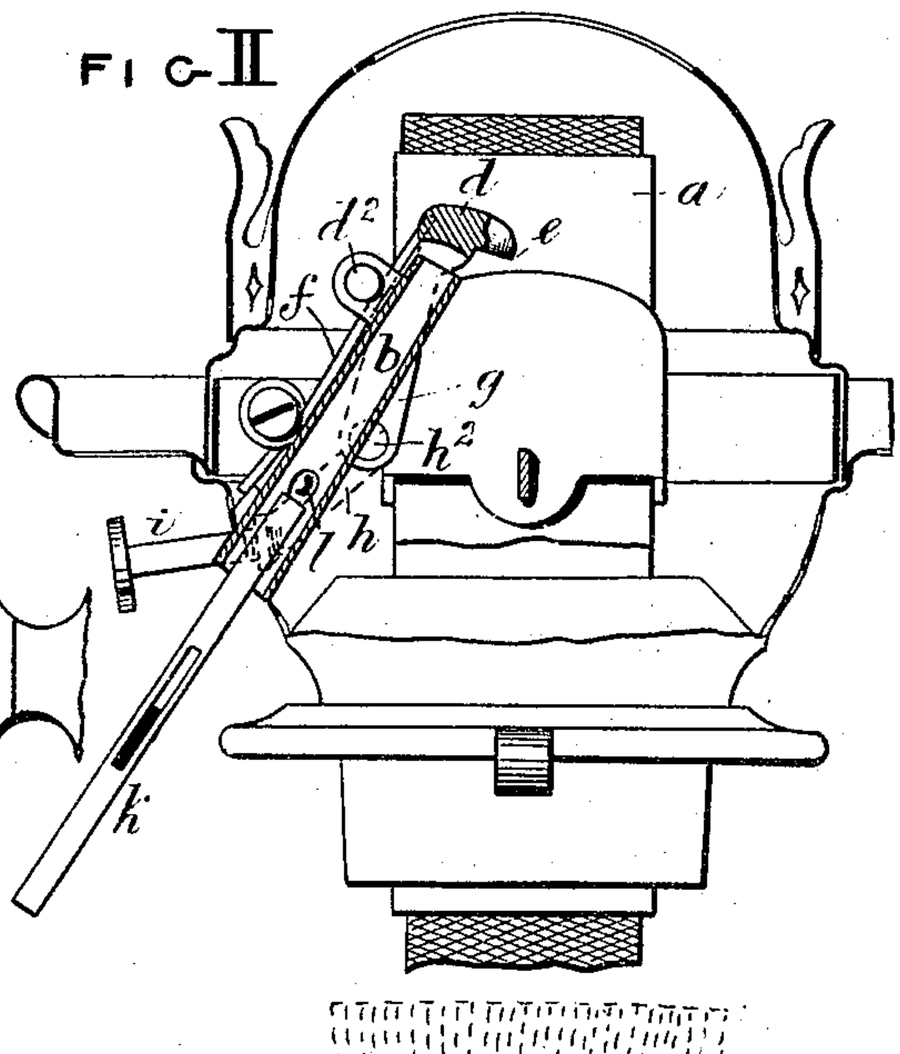


FIG III

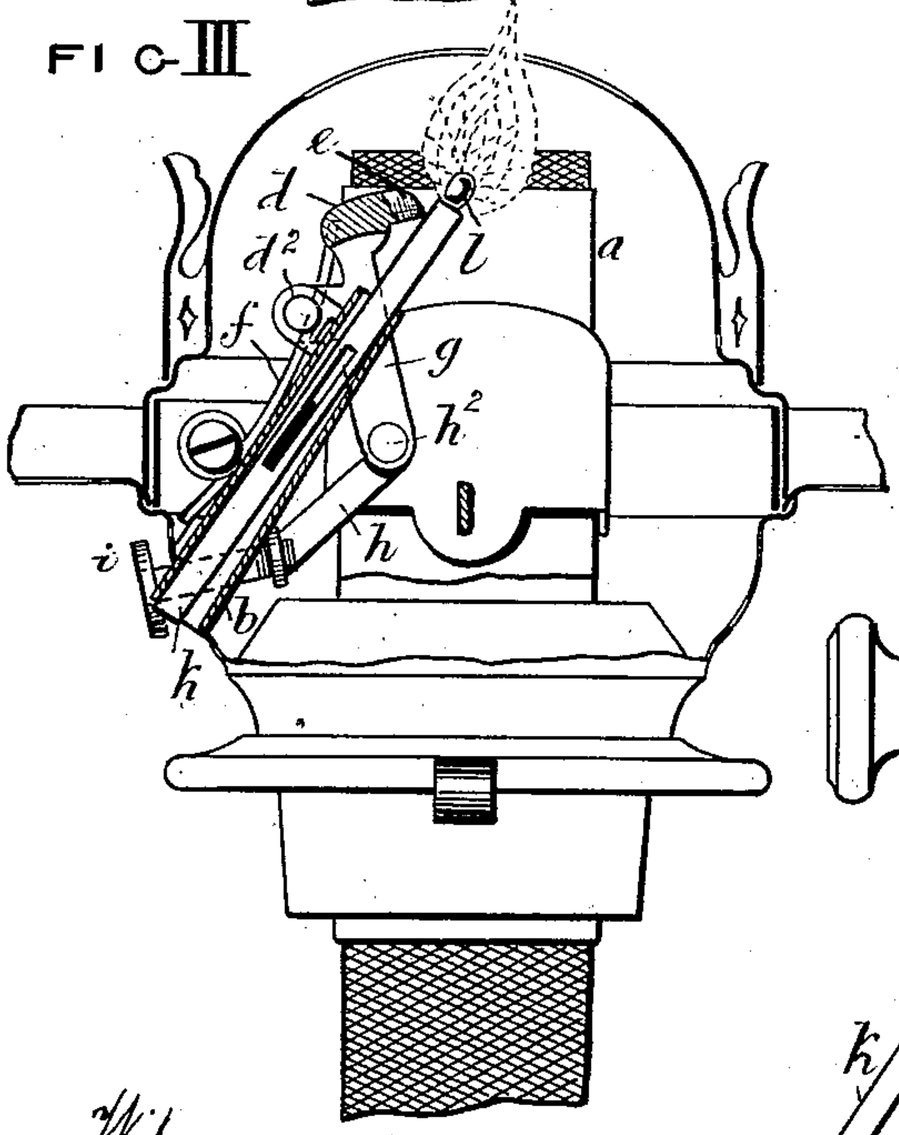
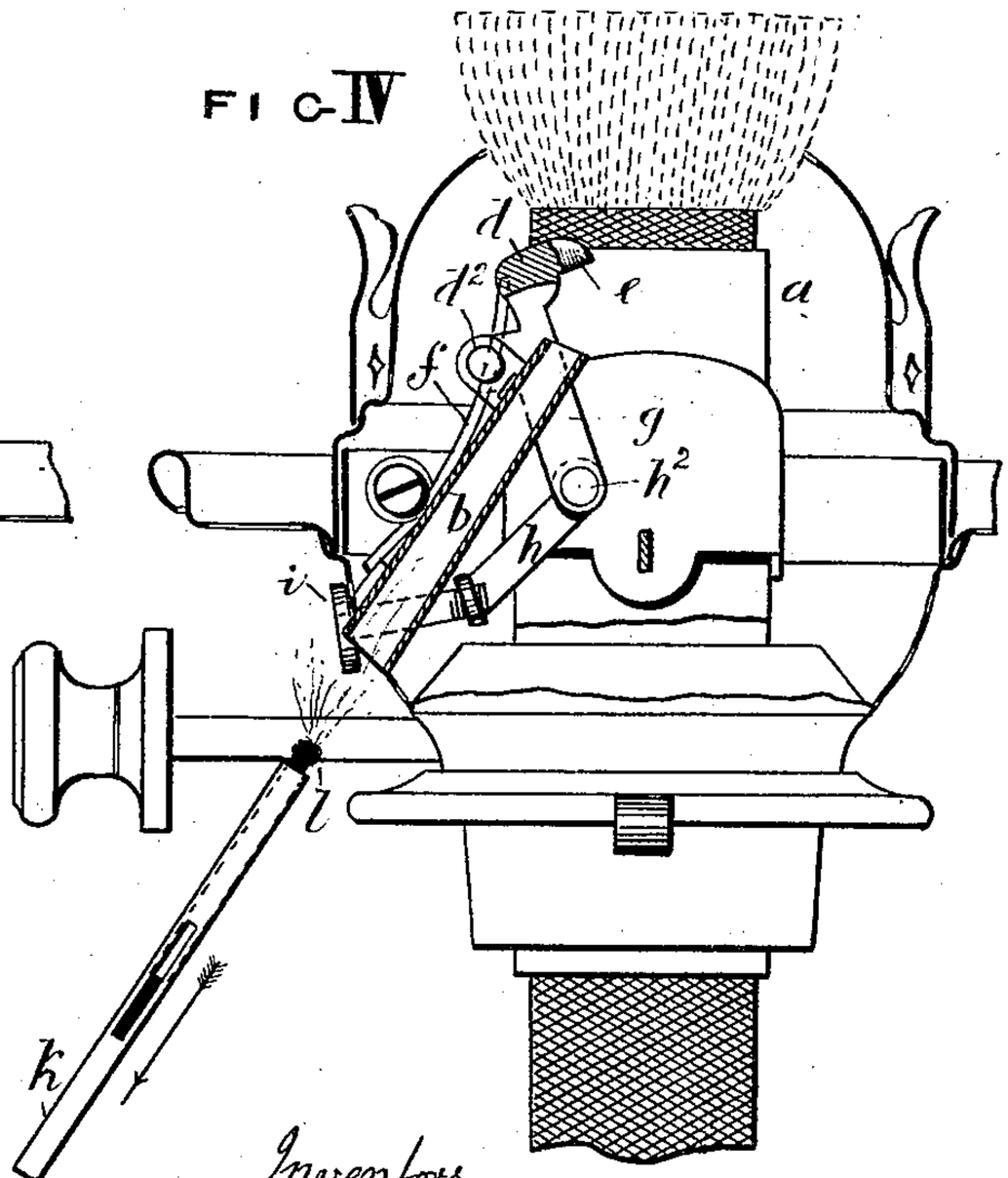


FIG IV



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(No Model.) 2 Sheets—Sheet 2.

J. & J. HINKS.

Mechanism for Lighting Lamps.

No. 233,855. **Patented Nov. 2, 1880.**

FIG V

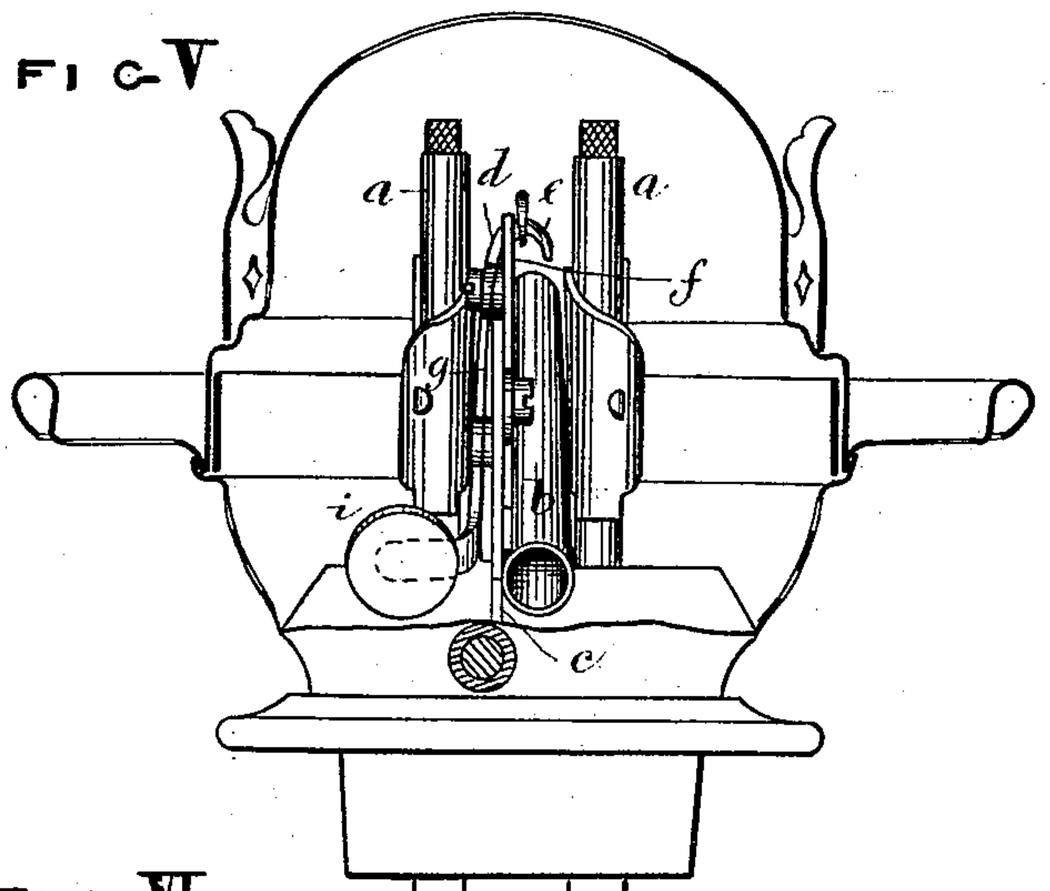
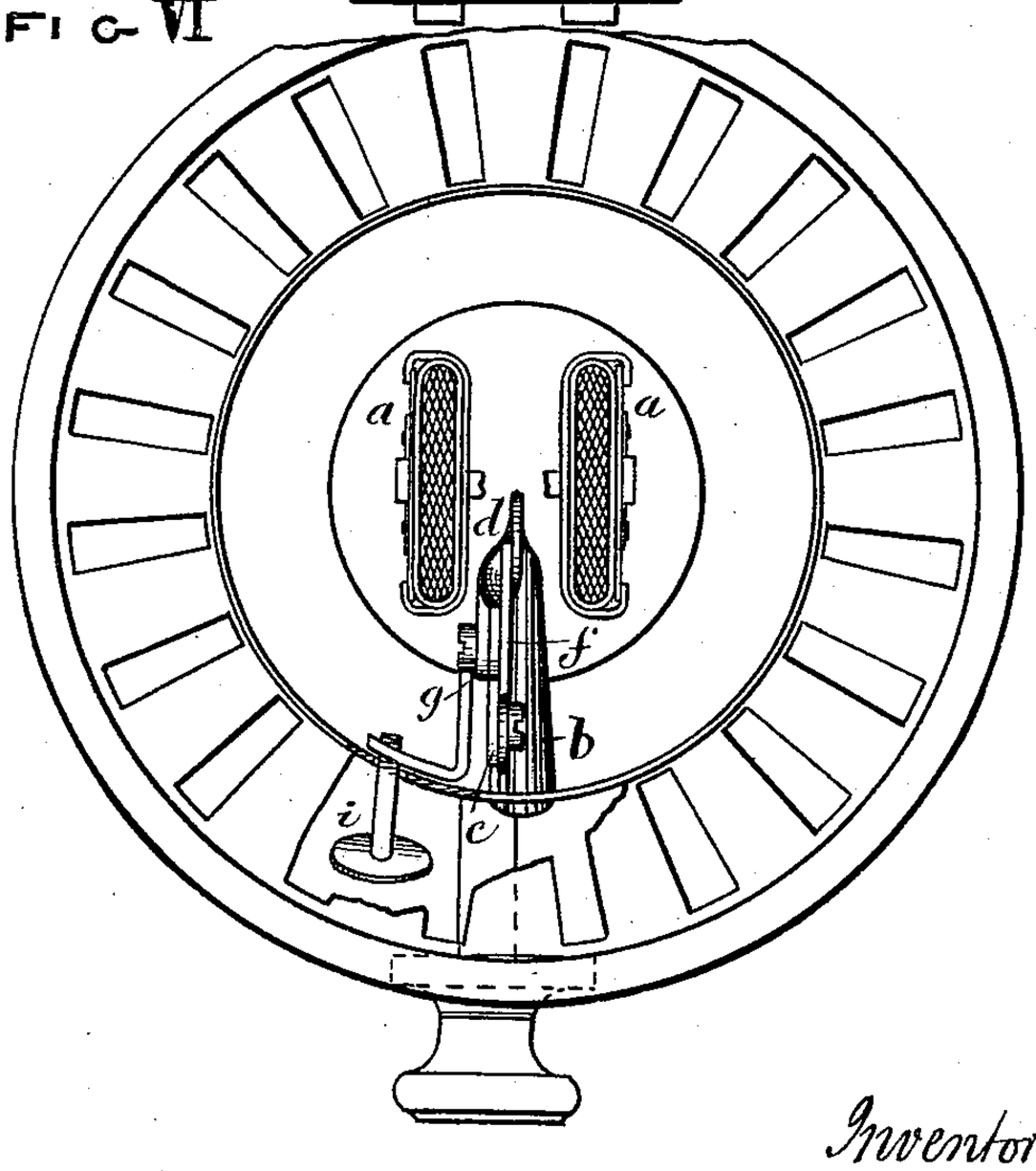


FIG VI



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UNITED STATES PATENT OFFICE.

JAMES HINKS AND JOSEPH HINKS, OF BIRMINGHAM, ENGLAND.

MECHANISM FOR LIGHTING LAMPS.

SPECIFICATION forming part of Letters Patent No. 233,855, dated November 2, 1880.

Application filed August 26, 1880. (No model.) Patented in England April 6, 1880.

To all whom it may concern:

Be it known that we, JAMES HINKS and JOSEPH HINKS, subjects of the Queen of Great Britain, residing at Birmingham, in the county of Warwick, England, lamp-manufacturers, have invented certain new and useful Improvements in Mechanism for Lighting Hydrocarbon and other Lamps, (for which we have received Letters Patent in England, No. 1,396, dated 6th April, 1880,) of which the following is a specification.

Our invention is applicable to hydrocarbon and other lamps carrying burners having one, two, or more wicks, and also to gas-lamps; and our said invention consists of the mechanism hereinafter described, to be used for lighting the said lamps.

We will describe our invention as applied to a lamp burning volatile hydrocarbon and having one or more wicks.

The said mechanism consists of a tube or channel fixed at the side of or between the wick-cases, up which tube or channel the match to light the lamp is forced, the said tube or channel passing through the body of the burner and inclining toward the wick or wicks. This tube or channel is covered at its upper end by a hinged cap kept in position by a spring. The under side of the cap carries a knife-edge or roughened surface.

To light the lamp a match is placed within the tube, and is forced upward by pressure from the thumb, so as to cause the head of the match to come in contact with the knife-edge or roughened surface and ignite it. At the same time the cap or cover is forced open and the ignited match passed up to the wick or wicks, the spring of the said cover causing the latter to press upon the match and hold it in position.

To release the match a lever thumb-piece is attached to the back of the cap or cover, so that pressure upon this thumb-piece raises the cover and permits the match to fall out of the tube.

We will now proceed to describe, with reference to the accompanying drawings, the manner in which our invention may be performed.

Figures I and II represent vertical sections, partly in elevation, of opposite sides of a duplex burner of a volatile-hydrocarbon lamp containing mechanism for lighting, by means of matches, the wicks of the said lamp-burner. In Fig. II the guide-tube and jointed or hinged cap or cover are shown in section, and a match is represented in the act of being forced up the guide-tube preparatory to the igniting of the said match. Fig. III represents the mechanism after the match has been ignited and has been carried up to the wicks for lighting them and held in that position. Fig. IV represents the mechanism after the spent match has been released and has fallen from the guide-tube. Fig. V represents a sectional side elevation of the lighting mechanism, taken in a direction at right angles to that in which the lighting mechanism in Figs. I, II, III, and IV is taken; and Fig. VI is a plan of the same.

The same letters indicate the same parts in the several figures of the drawings.

a a are the two wick cases or holders of the duplex burner, and *b* is the fixed guide tube or channel situated between the two wick-cases *a a*. The said guide-tube *b* is conical, its widest end being lowest. The said guide-tube *b* and the several parts of the lighting mechanism hereinafter described are carried by the plate *c*, fixed to the body of the lamp-burner.

d is the hinged or jointed cap or cover of the guide-tube *b*, the said cap or cover, when in its closed or normal position, Figs. I and II, covering and nearly closing the upper small end of the said guide-tube. The jointed cap or cover *d* is jointed at d^2 to the plate *c*, supporting the lighting mechanism, and that end of the cap or cover *d* which is turned inward is furnished with a knife-edge, *e*. The jointed cap or cover is pressed into the closed or normal position, Figs. I and II, by a wire (or other) spring, *f*, bearing upon the said cap at its back. The said cap is prolonged downward, or is furnished with a tail or stem, *g*, to the bottom of which tail or stem the link *h* is jointed at h^2. To the outer end of the link *h* the pusher or thumb-plate *i* is connected, the head of the said pusher being external to the body of the burner, and being situated at the side of and near to the guide-tube *b*. (See the plan, Fig. VI, and side elevation, Fig. V.)

When short wax matches of the kind commonly called "Vesta" matches are to be used

for lighting the lamp, we employ with the wax matches a tubular metallic holder of the kind represented in the drawings and marked *k*; but when ordinary wooden matches are employed the use of the said holder is unnecessary, for the bodies of the matches are of sufficient length and sufficiently rigid to be forced by hand up the guide-tube *b*.

In lighting the lamp provided with the mechanism constituting our invention, the wax or Vesta match *l* is placed in one end of the tubular metallic holder *k*, and the match and its holder are forced by hand up the fixed guide-tube *b*, in the manner represented in Fig. II. As soon as the head of the match comes in contact with the jointed cap or cover *d*, it lifts or forces open the said cap or cover and deflects the spring *f*. On the further motion of the match it comes in contact with and travels against the knife-edge *e*, by which the match is ignited, the ignited match being carried up near to the exposed parts of the wicks in the cases *a a*, in the manner illustrated in Fig. III, and the lighting of the lamp is thereby effected. As the metallic holder *k* travels against the knife-edge *e* of the spring-cover *d* it is pressed upon by the said knife-edge, and as soon as the match reaches the position represented in Fig. III it is held in that position by the pressure of the said knife-edge while the match lights the wicks. After the lamp has been lighted the spent match and its holder are released and removed from the burner by pressing inward the pusher or thumb-plate *i* at one side of the guide-tube *b*. By pressing upon the pusher *i* it operates, through the link *h* and the tail or stem *g* of the jointed cap *d*, upon the said cap and turns the latter outward upon its joint. The knife-edge *e* is thereby lifted from the match-holder, and the match-holder is released and falls with the spent match from the guide-tube *b*, the several parts occupying the respective positions represented in Fig. IV. Thus in order to light the lamp it is only necessary to force the match (with or without a holder) up the guide-tube *b*, so as to ignite it by its traveling against the knife-edge *e*, the act of igniting the match carrying it forward into a position proper to light the wicks, in which position it is held by the mechanism, the removal of the spent match being effected by pushing inward the pusher or thumb-piece *i*.

Instead of the knife-edge *e*, the under side of the jointed spring cap or cover *d* may be roughened for igniting the match, as the latter forces the said cap open and travels against it.

By our invention great simplicity combined with great cleanliness in the lighting of lamps is effected, and the removal of the chimney or shade for lighting the lamp is rendered unnecessary.

In lamps carrying an extinguisher we extend the inner side of the extinguisher next to the match-tube up to the top of the wick-case, so as to form a shield, and thereby prevent the wick-case from being corroded and injured by the ignition of the match. The shield referred to can readily be scraped from adhering dirt and kept clean.

Although we have represented our invention in combination with a duplex burner of a volatile hydrocarbon-lamp, yet our invention is equally applicable to volatile hydrocarbon-lamps having burners with one or more than two wicks, and to lamps burning fixed oils.

Our invention may also be applied to the lighting of gas and spirit lamps. In applying our invention to these lamps the lighting mechanism differs in no essential respect from that used in conjunction with the duplex burners of volatile-hydrocarbon lamps hereinbefore described, and illustrated in the drawings.

Having now described the nature of our invention, and the manner in which the same is to be performed, we wish it to be understood that we claim as our invention—

An apparatus for lighting hydrocarbon and other lamps by means of matches, comprising a guide tube or channel, a spring cap or device for igniting and clamping the match in position, and means for releasing the match, substantially as described.

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