

(No Model.)

J. B. LAWSON.  
FLASH LIGHT APPARATUS.

No. 486,831.

Patented Nov. 22, 1892.

Fig. 1.

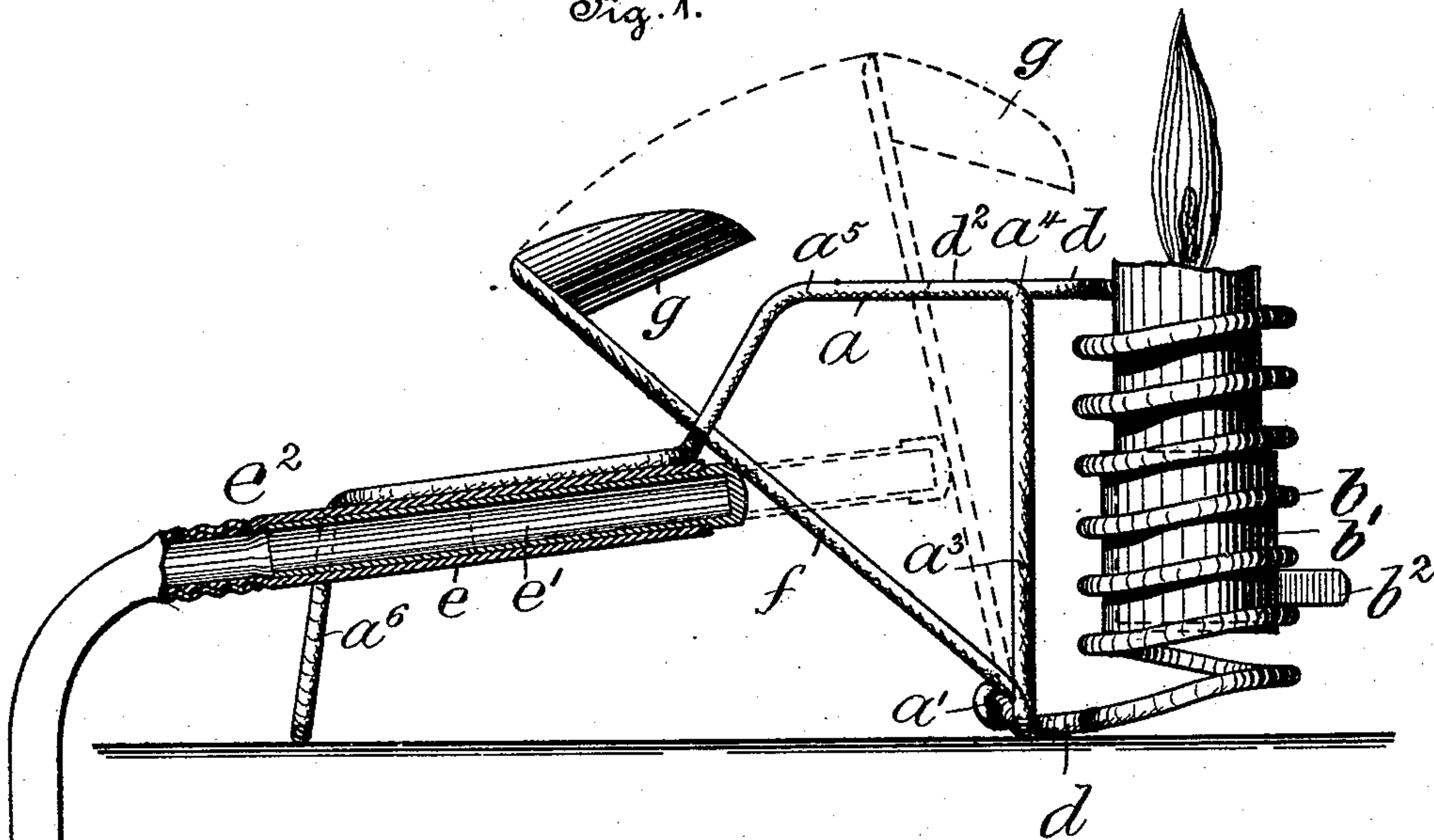


Fig. 2.

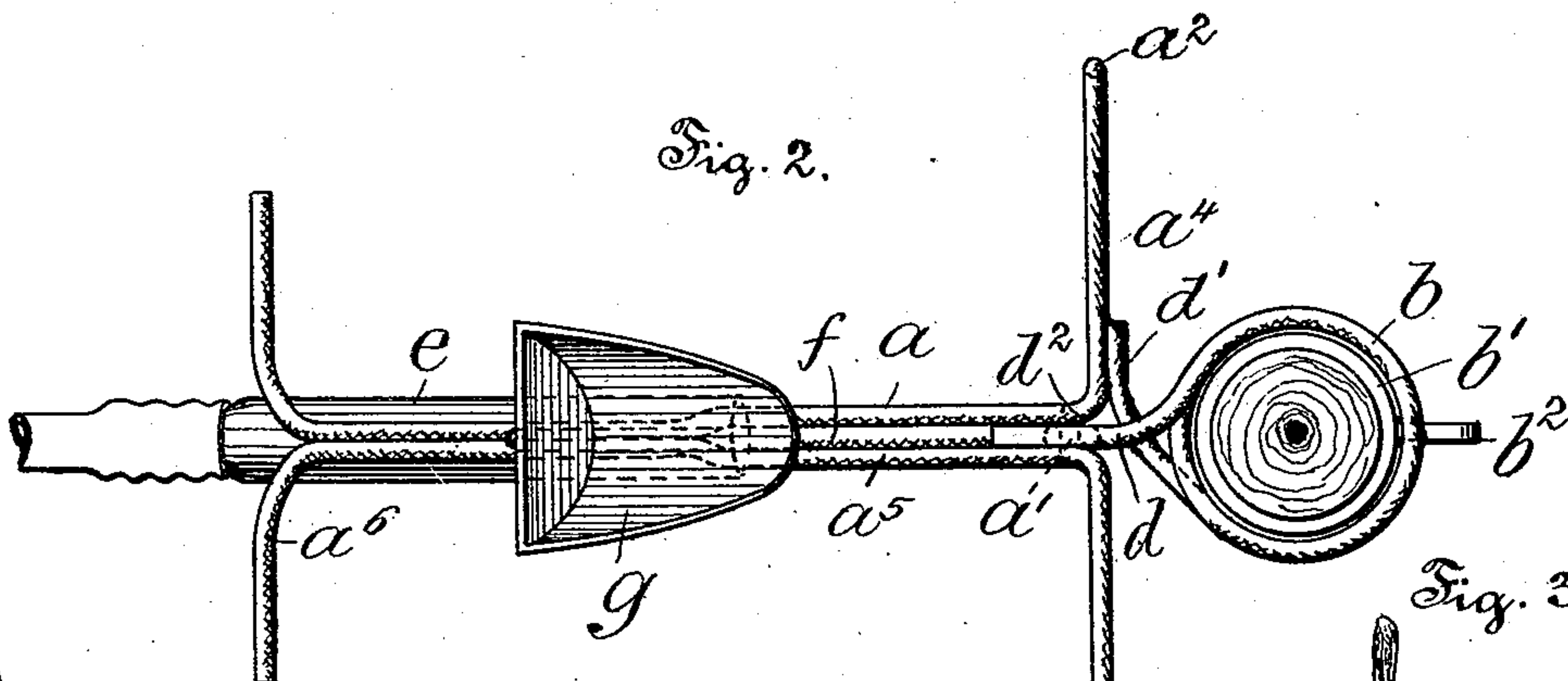
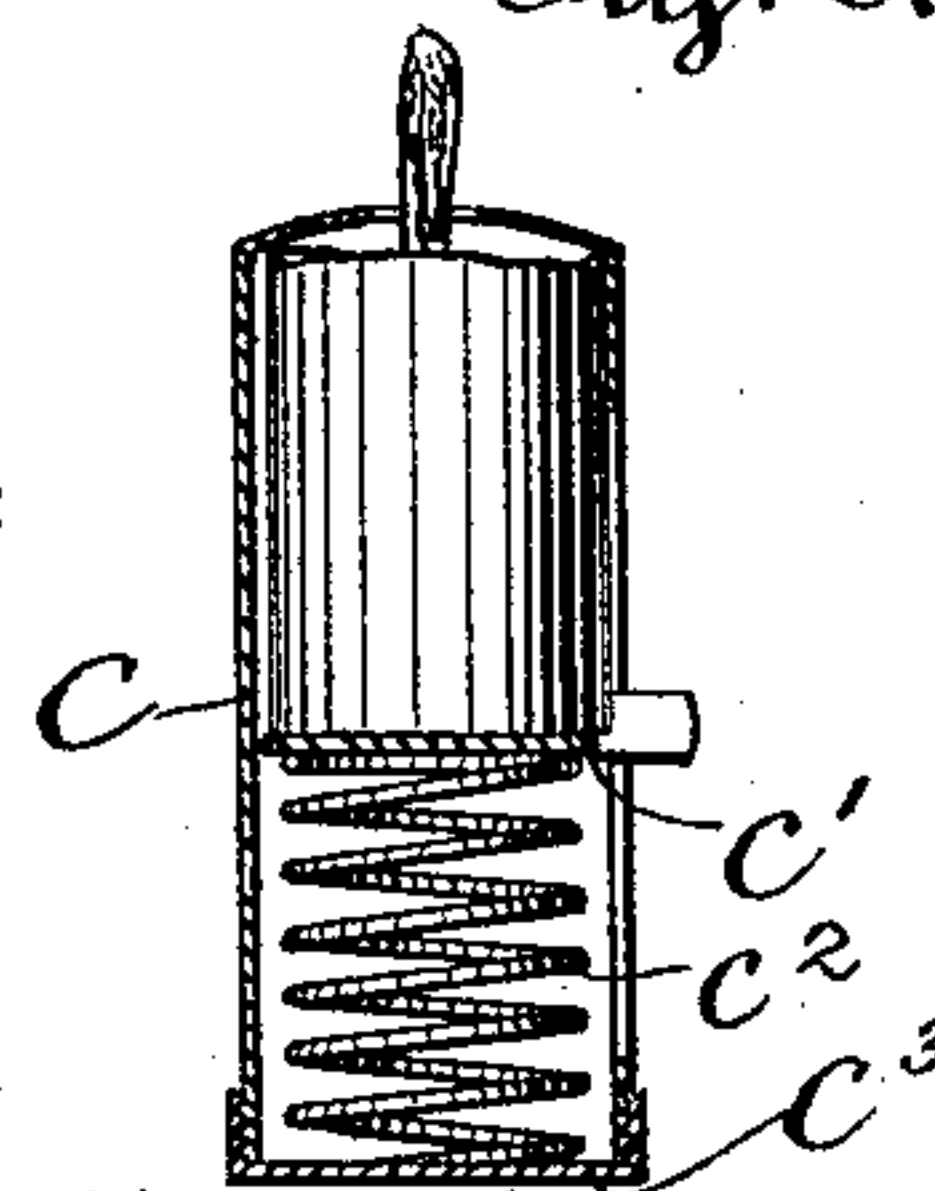


Fig. 3.



Witnesses:  
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Richard C. Maxwell.

Inventor,  
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att'y.



# UNITED STATES PATENT OFFICE.

JOSEPH B. LAWSON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO ALEXANDER HEMSLEY, OF SAME PLACE.

## FLASH-LIGHT APPARATUS.

SPECIFICATION forming part of Letters Patent No. 486,831, dated November 22, 1892.

Application filed March 22, 1892. Serial No. 425,983. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH B. LAWSON, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Flash-Light Apparatus, of which the following is a specification.

The principal object of my present invention is to provide an efficient, compact, and comparatively-inexpensive flash-light apparatus especially adapted for photographers' purposes.

My invention consists of the improvements in flash-light apparatus hereinafter described and claimed.

The nature and object of my invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, and in which—

Figure 1 is an elevation, partly in section, of a flash-light apparatus embodying features of my invention. Fig. 2 is a top or plan view of the same, and Fig. 3 is a detached view showing a modified form of the candle holder or stick illustrated in Figs. 1 and 2.

In the drawings,  $a$  is a main frame constructed, preferably, of a single piece of wire offset at the center thereof to form a trunnion  $a'$  and having the respective ends  $a^2$  and  $a^3$  thereof bent upward to form a front support  $a^4$  and then rearward to form a bifurcated backbone  $a^5$ , and then downward and outward to form rear feet  $a^6$ . The front support  $a^4$  is provided with a candle stick or holder. This candle-stick may comprise a spiral wire  $b$  and a candle-socket  $b'$ , provided with a handle  $b^2$ , engaging the spirals of the wire  $b$ , Figs. 1 and 2, or it may comprise a cylindrical casing  $c$ , a candle-socket  $c'$ , and a spring interposed between the detachable bottom cap  $c^3$  of the casing  $c$  and socket  $c'$ , Fig. 3. In either case the candle support or stick is connected with the front support  $a^4$  by means of arms  $d$  and  $d'$ , of which the former is interposed between bifurcations of the backbone  $a^5$ , as shown at  $d^2$  in Fig. 2, for a purpose to be presently described. The cylinder  $e$  and its complementary piston  $e'$  of the pneumatic

engine or appliance  $e^2$  are connected with the backbone  $a^5$  in such manner that the piston  $e'$  reciprocates in line therewith.

$f$  is a rocker-arm pivotally connected at one end with the trunnion  $a'$  and afforded a range of play in the bifurcated portion of the backbone  $a^5$ , it being understood that the play of the rocker-arm  $f$  is limited in one direction by the arm  $d$  and in the other direction by the piston  $e'$ .

$g$  is a scoop connected with the free extremity of the rocker-arm  $f$  and adapted to receive a charge of powder or other material, which when thrown suddenly into or upon a flame produces a so-called "flash-light."

The mode of operation of the hereinabove-described apparatus is as follows: The candle is lighted and a charge of flash-light producing material or powder is placed in the scoop  $g$ , whereupon the piston  $e'$  is propelled forward by the ordinary operation of the pneumatic engine or appliance due to compression of the bulb  $x$ . This motion of the piston  $e'$  causes the rocker-arm  $f$  to be shifted forward until it contacts with the stop  $d$ , as indicated by dotted lines in Fig. 1, whereupon the contents of the scoop  $g$  are thrown suddenly into or upon the flame of the candle and thus produce the required flash-light. As soon as the piston  $e'$  recedes in the cylinder  $e$  by the release of the bulb  $x$ , the rocker-arm  $f$  returns automatically by gravity to its normal position, as shown by the full lines in Fig. 1. It is of course important to feed the candle upward as it is consumed, in order to insure the proper delivery of the flash-light material into or upon the flame. This object is attained manually by the construction, as shown in Figs. 1 and 2, by the simple operation of turning the handle  $b^2$  in one direction or the other, as may be required, and automatically by the action of the spring  $c^3$ , as shown in Fig. 3.

It will be obvious to those skilled in the art to which my invention appertains that modifications may be made in the details of the invention without departing from the spirit thereof, and hence I do not limit myself to the exact construction and arrangement of the parts in an apparatus hereinabove explained; but,

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, in a flash-light apparatus, of light-producing means, a pneumatic cylinder and its complemental piston, a rocker-arm in range of said piston and provided with a scoop, and a stop for limiting the travel of said rocker-arm, substantially as and for the purposes set forth.

2. A flash-light apparatus comprising a main frame, consisting of a single piece of wire offset at the center to form a trunnion and having its ends bent upward to form a front support and rearward to form a bifurcated backbone and downward and outward

to form rear feet, a candle holder or stick attached to said front support, a pneumatic engine and its complemental cylinder connected with the backbone, a rocker-arm journaled to said trunnion and working in the bifurcation of said support, and a scoop attached to said rocker-arm, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my signature in the presence of two subscribing witnesses.

JOSEPH B. LAWSON.

Witnesses:

RICHARD C. MAXWELL,  
THOMAS M. SMITH.