

(No Model.)

N. H. BROWN.  
FLASH LAMP.

No. 501,556.

Patented July 18, 1893.

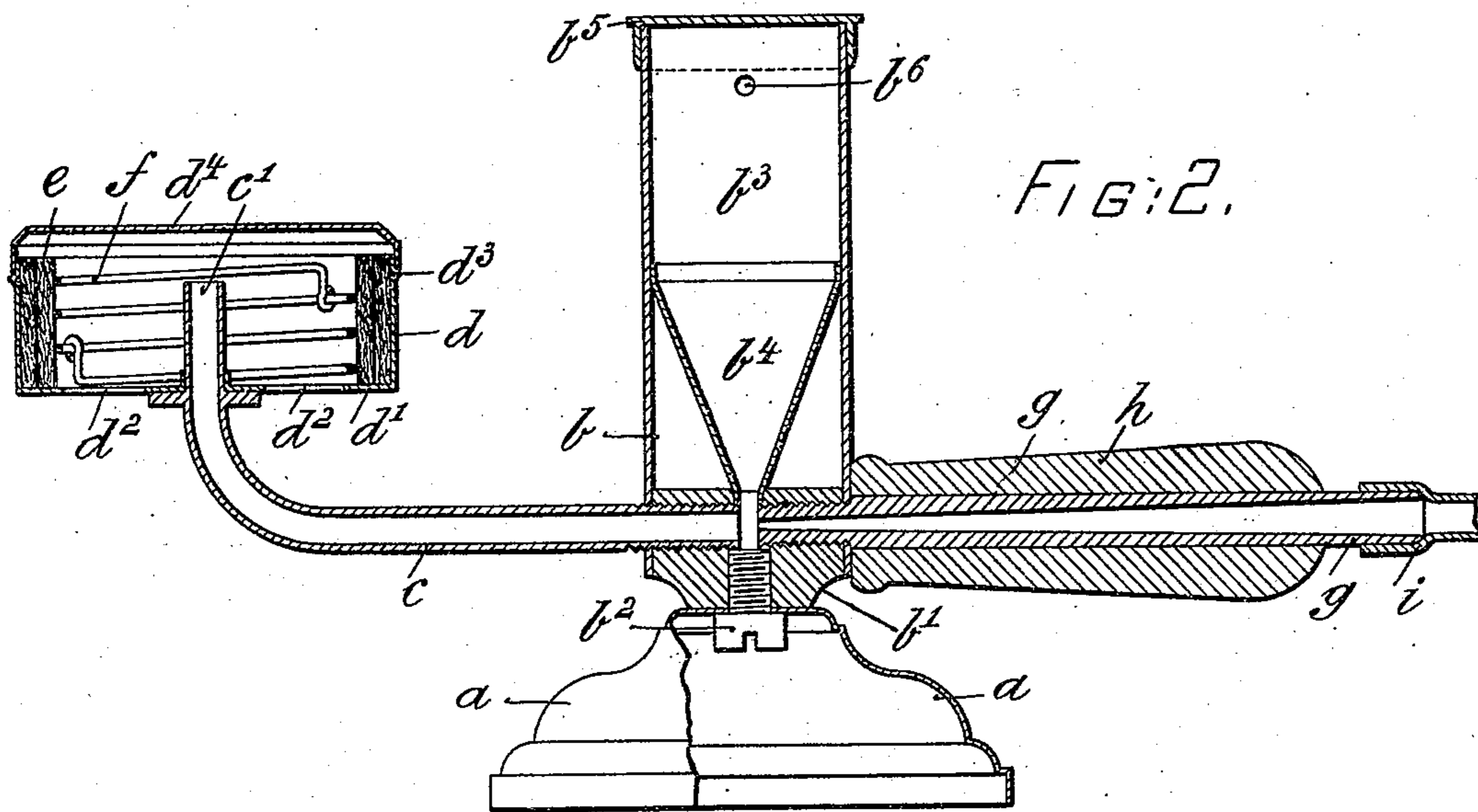
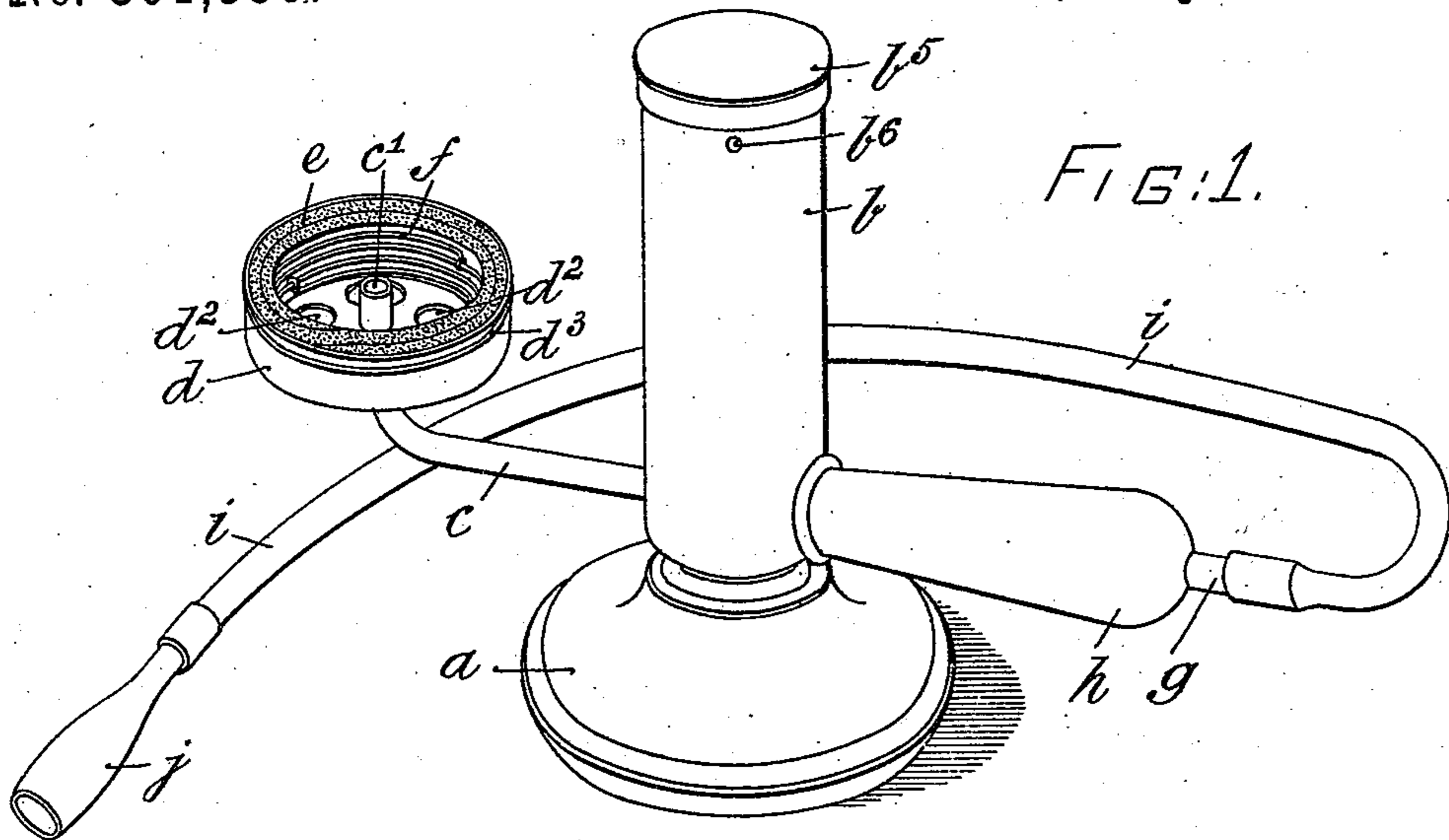
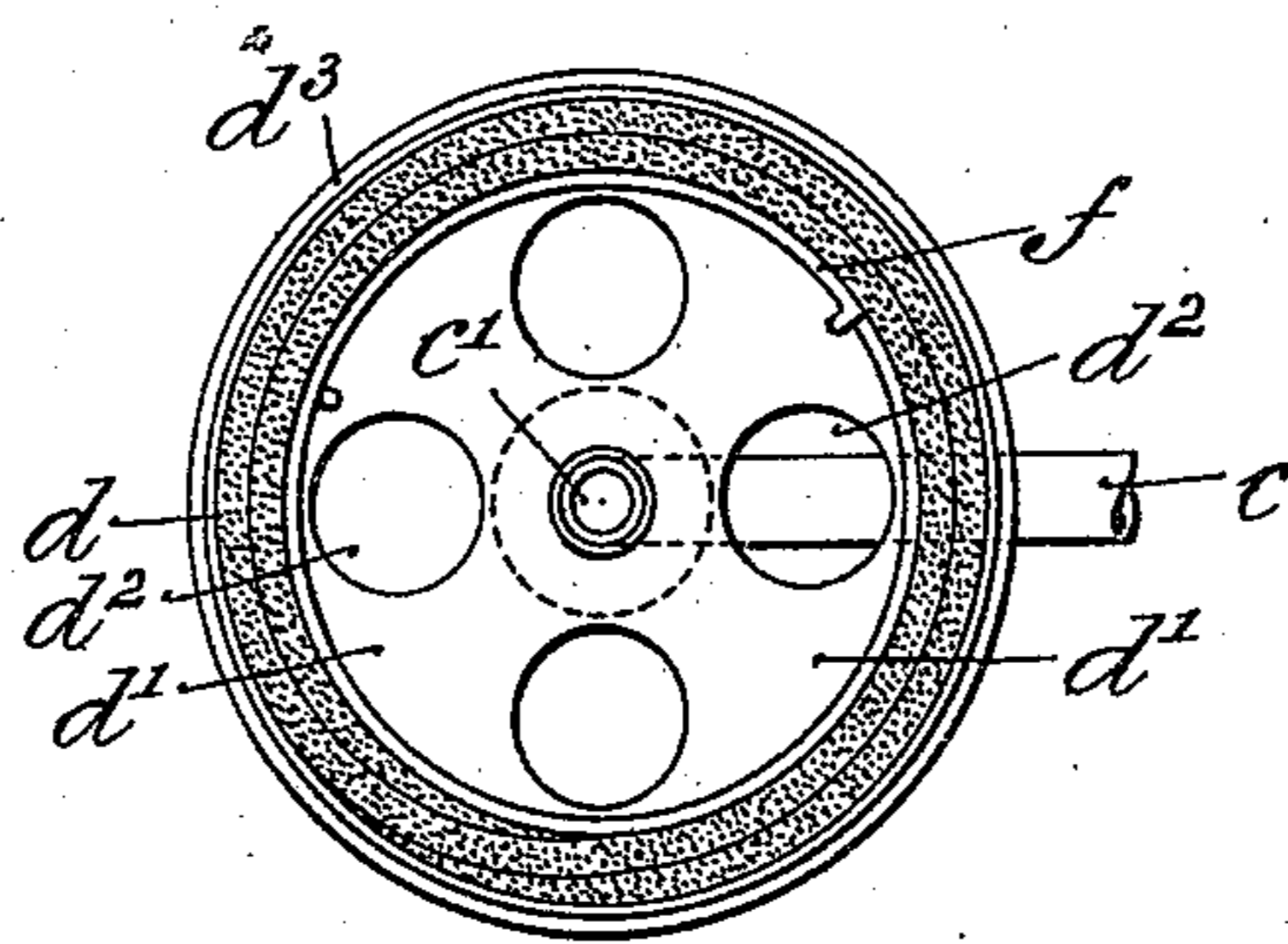


FIG. 3.



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# UNITED STATES PATENT OFFICE.

NATHANIEL H. BROWN, OF NORRISTOWN, PENNSYLVANIA.

## FLASH-LAMP.

SPECIFICATION forming part of Letters Patent No. 501,556, dated July 18, 1893.

Application filed April 8, 1893. Serial No. 469,504. (No model.)

*To all whom it may concern:*

Be it known that I, NATHANIEL H. BROWN, a citizen of the United States, residing at Norristown, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Flash-Lamps, of which the following is a specification.

My invention has relation to lamps for producing an intense or flash light especially for photographic purposes; and it relates more particularly to the general construction and arrangement of the parts of such a lamp.

The principal objects of my invention are first, to provide an attractive, simple, strong, durable, effective and comparatively inexpensive lamp for flashing powdered or granulated magnesium and other substances or materials for producing an intense or instantaneous flame or light for use more particularly in photography; second, to provide a flash lamp so arranged as that the powdered or granulated ignitable or consumable material is automatically fed into the presence of the flame of a wick; third, to provide a flash-lamp in which the consumable or ignitable material of a magazine is automatically fed therefrom by air pressure presented thereto and delivered from an orifice in the middle of an annular flame or torch in mist or cloud form in order to produce an intense light about the same for a varying period of time; fourth, to provide a flash-lamp in which the ignitable material having a gravity fall in a magazine is conveyed therefrom in regulated quantity by means of air forced against the same for presenting the same at the exposed end of the conveyer in the form of a mist or cloud to the annular flame of a torch; and fifth, to provide a flash lamp having the several parts detachably connected with one another in order to permit of repairs and cleaning, and for permitting of the handy shipment thereof.

My invention consists of the improvements in flash lamps hereinafter described and claimed.

The nature and general features 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 a perspective view of a flash-

lamp embodying the features of my invention. Fig. 2, is a vertical longitudinal section through the flash lamp embodying the features of my invention as illustrated in Fig. 1; and Fig. 3, is a top or plan view of the perforated wick-holder thereof.

Referring to the drawings *a*, is a vertical and ribbed conical-shaped standard.

*b*, is a tube having the lower portion thereof contracted as at *b'*, and detachably secured to the standard *a*, by means of a screw or stud *b<sup>2</sup>*. This tube *b'*, forming the magazine of the lamp, is provided with an upper reservoir *b<sup>3</sup>*, and with a funnel or conical-shaped device *b<sup>4</sup>*, for a purpose to be presently described.

The magazine *b*, is provided with a removable-cap *b<sup>5</sup>*, and with an air-vent *b<sup>6</sup>*, in the wall or surface thereof.

*c*, is a curved pipe threaded at one extremity and secured in the wall of the magazine so as to be in direct communication with the lower part of the magazine *b*, and formed integral with or secured to this pipe *c*, is an annular fluid wick holder *d*, provided with a bottom *d'*, having a series of perforations *d<sup>2</sup>*, therein of preferably the character illustrated in Figs. 1 and 3; and this pipe *c*, extends centrally through the bottom *d'*, to a point at or about flush with the top surface of the wick holder, which is provided with a ribbed and recessed peripheral surface *d<sup>3</sup>*, for the reception of a removable cap *d<sup>4</sup>*.

*e*, is a wick or other substance or material formed into coils or otherwise mounted in the holder *d*, and held to position therein by means of a coiled or helical spring *f*.

*g*, is a tapering air injector tube having a threaded extremity adapted to engage in the lower part of the magazine *b*, and at a point opposite the end of the ignitable material conveying tube *c*. On the tapering air injector tube *g*, is mounted a handle *h*, and at the exposed end of this tube *g*, is detachably secured a flexible or rubber tube *i*, provided with a detachable mouth-piece *j*. The air introduced and conducted in volume through the mouth-piece and flexible tube *i*, upon reaching the injector tube passes into the lower contracted chamber of the magazine *b*, in jet-like form, thereby conveying the ignitable material falling in the path thereof by

gravity and in regulated quantity through the funnel or conical-shaped device of the magazine in contact with the jets of air, through the conveying tube *c*, and discharging the same in a vertical direction from the middle of the wick holder in a mist or cloud form in the presence of the annular flame produced by the lighting of the spring supported fluid-wick contained in the holder *d*.

The flame of the fluid-wick in the holder *d*, is controlled by an upward draft continually passing through the series of perforations *d*<sup>2</sup>, in the bottom *d'*, thereof for controlling the same. The discharge of the ignitable material may be continued intermittently or successively until the quantity of ignitable material in the magazine *b*, is exhausted, when by removing the cap *b'*, an additional supply of such material may be charged therein.

The air vent in the wall of the tube or magazine *b*, permits of an air chamber being formed in the upper part of the magazine and which pressure thereby brought to bear on the material contained in the magazine permits of the regulated fall of the same by gravity through the central orifice or opening of the internal funnel-shaped device thereof, as the material is automatically by means of the jets of air removed from the contracted chamber *b*<sup>4</sup>, of the magazine *b*.

The operation of the flash-lamp hereinbefore described, is as follows:—The magazine *b*, is filled with an ignitable or consumable material and the cap *b'*, is seated thereto. The mouth-piece *j*, is then placed between the teeth and the handle *h*, is grasped by one of the hands. The wick is then lighted, producing an annular flame. By blowing into the mouth-piece *j*, the air is conveyed through

the flexible tube *i*, to the tapering injector tube *g*, and presented in jet-like form to the fine particles of ignitable material falling by gravity into the contracted chamber *b*<sup>4</sup>, and conveyed therefrom through the tube or pipe *c*, and discharged in the form of a mist or cloud at the exposed end of the orifice *c'*, in the presence of the annular wick flame, thereby producing an intense light for instantaneous photographic purposes and of a duration varying according as the blowing of air by the operator is continued and until the magazine has been exhausted of its contents.

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

The combination, in a flash lamp, of a magazine with a detachable cap, an air-vent in the surface thereof and a funnel-shaped device connected with the detachable base of the magazine and extending vertically into the interior of said magazine, a holder having a radially perforated bottom and central draft tube extended and connected with the detachable base of said magazine and said base extended and formed into a handle having an internal tapering air injector tube provided with a detachable flexible tube having a mouth piece, and a removable wick supported to position in said holder by means of a helical or coiled spring, all arranged as shown and for the purposes described.

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

NATHANIEL H. BROWN.

Witnesses:

THOMAS M. SMITH,  
RICHARD C. MAXWELL.