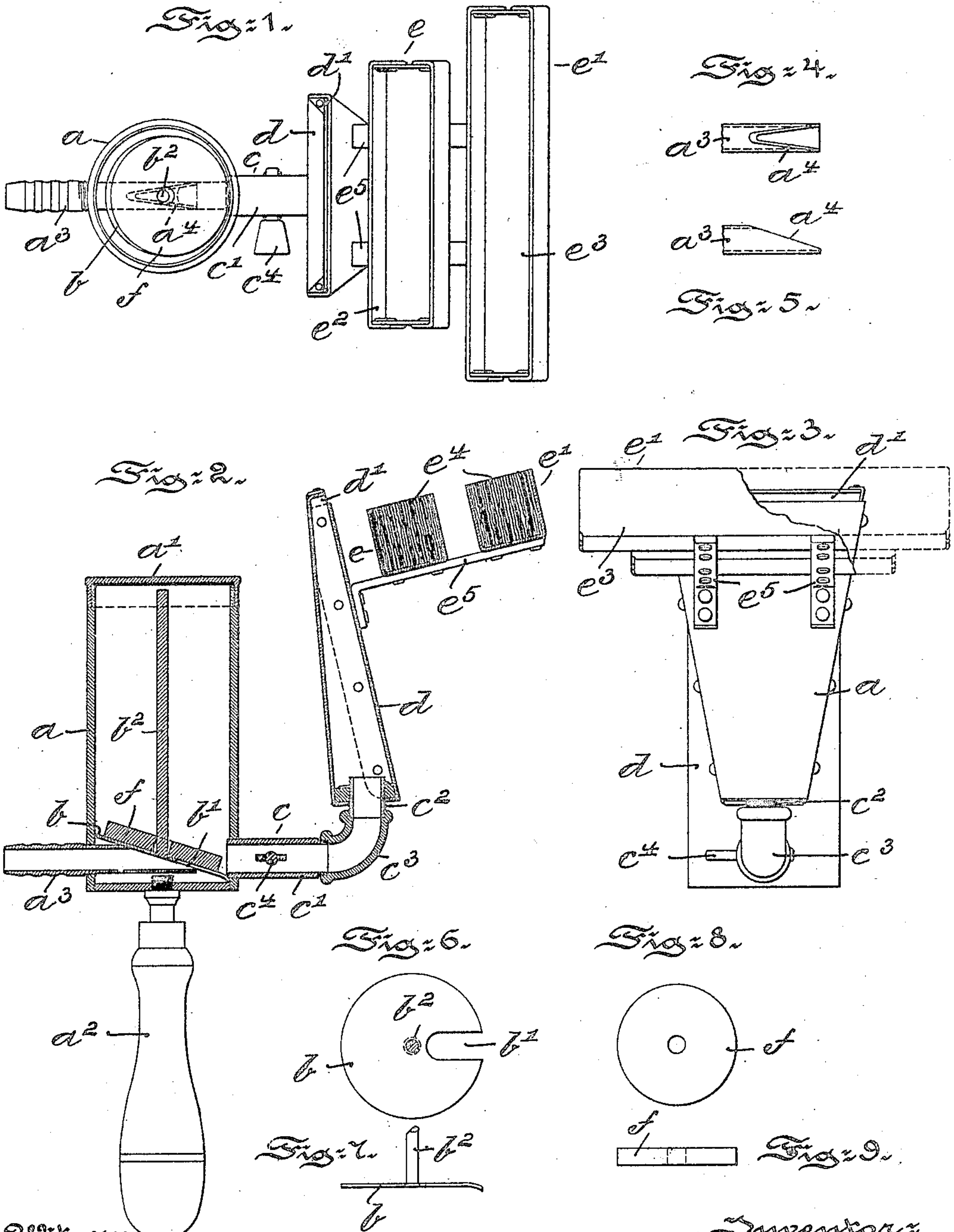


No. 813,148.

PATENTED FEB. 20, 1906.

E. F. HARRISON.  
MAGNESIUM FLASH LAMP.  
APPLICATION FILED NOV. 28, 1905.



Witnesses:  
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# UNITED STATES PATENT OFFICE.

EDWARD F. HARRISON, OF PHILADELPHIA, PENNSYLVANIA.

## MAGNESIUM FLASH-LAMP.

No. 813,148.

Specification of Letters Patent.

Patented Feb. 20, 1906.

Application filed November 28, 1905. Serial No. 289,405.

*To all whom it may concern:*

Be it known that I, EDWARD F. HARRISON, 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 Magnesium Flash-Lamps, of which the following is a specification.

My invention has relation to an efficient portable magnesium flash-light lamp for photographic purposes; and in such connection it relates particularly to the construction and arrangement thereof.

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

Figure 1 is a top or plan view of a lamp with the inclosing cap or cover of the magnesium-holder removed embodying main features of my invention. Fig. 2 is a vertical central sectional view of the lamp, showing the preferred detail construction and arrangement thereof. Fig. 3 is a front end view of the lamp. Figs. 4 and 5 are respectively top or plan and side elevational views of a section of the feeding-spout end of the blow pipe or tube extending through the holder of the apparatus, showing the detail arrangement thereof. Figs. 6 and 7 are respectively top or plan and side elevational views, the latter in broken section, of the recessed disk and rod for inserting in the magnesium-holder for preventing caking or packing of said flash-light material in the holder; and Figs. 8 and 9 are respectively top or plan and side elevational views of the circular weight adapted to engage the rod of said holder when filled with flash-light material to aid in the feeding of the same to the outlet of the blow pipe or tube of said holder.

Referring to the drawings,  $a$  represents the flash-light-material holder, preferably of cylindrical form, provided with a removable cap or cover  $a'$  and handhold  $a^2$ .  $a^3$  is a tube or pipe extending into the holder near the base of the same and to the outer end of which is adapted to be attached by rubber tubing (not shown) a suitable pneumatic device, such as a bellows. The inner end of the tube or pipe  $a^3$  is cut away, as at  $a^4$ , at an acute angle for a purpose to be presently described. The interior of the holder  $a$  is provided with a disk  $b$ , recessed or slitted at  $b'$  and having a stem  $b^2$  secured thereto, so that the disk will

occupy an acute angle to the vertical position of the stem in the holder and which disk normally rests on a portion of the cut-away portion of the tube or pipe  $a^3$  internally of the holder, as clearly shown in Fig. 2, so as to control the outlet of air from the tube or pipe  $a^3$  into contact with the flash-light material of the holder to impel the same and also to control the extent of material discharged through the pipe  $c$ . The pipe  $c$  consists of the sections  $c'$  and  $c^2$ , joined with each other by a curved elbow-union  $c^3$  to a tapered air and flash-light material commingling and distributing device  $d$ . This device is supported in a rigid position by the pipe connection  $c$ . The upper portion of the device  $d$  is preferably made wider than the lower portion and cut away at the top to form an oblong slit  $d'$ , through which the powdered flash-light material in sheet or film-like form under the influence of the pneumatic device is presented to the frames of torches or wick-burners  $e$  and  $e'$ , arranged adjacent thereto. In the section of pipe  $c'$  is provided a valve  $c^4$ , as clearly shown in Figs. 2 and 3, to check or control the air and material mixture to the device  $d$ , as well as to shut off the mixture or material, if it should become necessary so to do.

The torches or wick-burners consist of two or more oblong troughs  $e^2$  and  $e^3$ , filled with wicking  $e^4$ , secured to an inclined skeleton framework  $e^5$ , arranged, preferably, in the manner shown in Fig. 2. This wicking in the respective troughs  $e^2$  and  $e^3$  is adapted to be immersed with alcohol or other burning fluid for producing the desired character of flame for igniting the magnesium in powdered form or other flash-light material employed. On the stem  $b^2$  of the inclined slitted disk  $b$  is adapted to be mounted a circular weight  $f$ , which when the holder is filled with the flash-light material or powder bears thereon with sufficient pressure to permit of the forcing of the powder to the point of discharge from the holder  $a$ . This is necessary when the flash-light material is powdered magnesium, which has a tendency to cake or pack in a receptacle or container, and thus to interfere with the free discharge of the same under the influence of an air-pressure induced by a blowing or bellows-like device for the purpose. When the holder  $a$  is empty, the weight  $f$  will occupy a position on the stem  $b^2$  adjoining and resting upon the disk  $b$ , as shown in Fig. 2 of the drawings.



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

1. A magnesium flash-lamp, comprising a  
5 holder for ignitable material, a pipe leading into said holder, a disk in contact with the inner portion of said pipe and having a stem to permit of a weight to be slid along the same, a vertically-arranged tapering device located  
10 adjacent to said holder and in communication therewith by means of pipe-sections and provided in the upper end with an oblong slit, said device adapted to permit of a thorough commingling of admitted air and  
15 ignitable material therein prior to discharge of the same through the slit of said device, burners located in proximity to said device and supported therefrom and means for presenting air under pressure to said holder.
2. A magnesium flash-lamp, comprising a  
20 holder, a pipe leading into said holder having the inner end cut away, a recessed disk with a stem mounted in said holder and spanning the end of said pipe, said stem adapted to permit of a weight sliding thereon, a device with  
25 a slitted top connected with said holder by pipe-sections, in one of which sections is provided a check-valve, said device adapted to

permit of a thorough commingling of air and ignitable material therein prior to discharge 30 through the slitted top thereof, burners located adjacent to said device and supported therefrom, and means for presenting air under pressure to said holder.

3. A magnesium flash-lamp, comprising a 35 vertical holder, wherein air is admitted about the point of discharge of ignitable material, movable means in said holder to permit of the forcing of said ignitable material under pressure therefrom, a vertically-arranged tapering device provided with an oblong slit in 40 the top thereof, said device supported from said holder and wherein air and ignitable material from said holder under pressure therefrom is thoroughly commingled therein prior 45 to discharge from said device into the path of burners supported from said device, and means for presenting air to said holder.

In witness whereof I have hereunto set my signature in the presence of two subscribing 50 witnesses.

EDWARD F. HARRISON.

Witnesses:

J. WALTER DOUGLASS,  
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