

(No Model.)

A. HEMSLEY.
APPARATUS FOR PRODUCING FLASH LIGHTS FOR PHOTOGRAPHING
AND OTHER PURPOSES.

No. 442,224.

Patented Dec. 9, 1890.

Fig. 1.

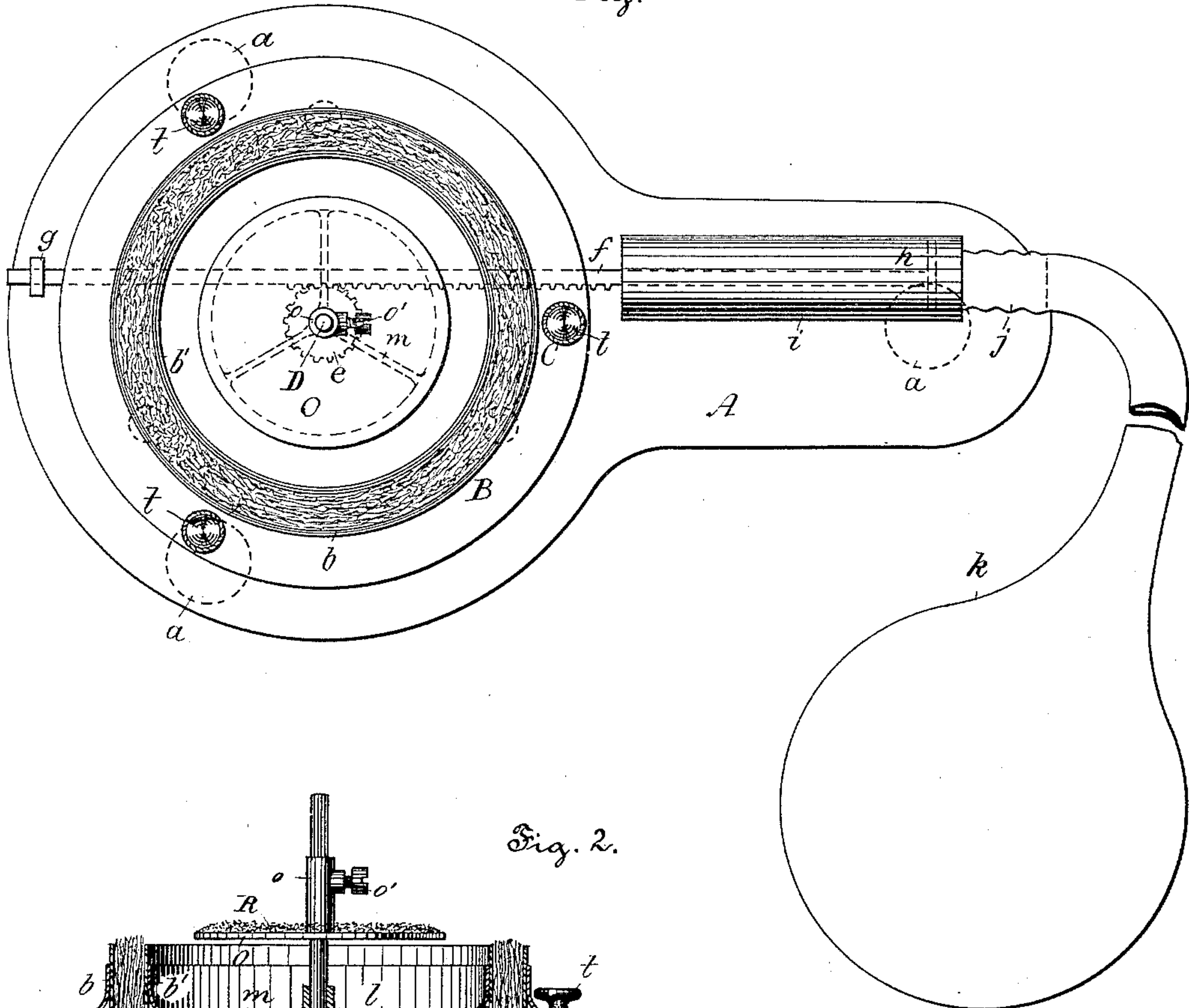
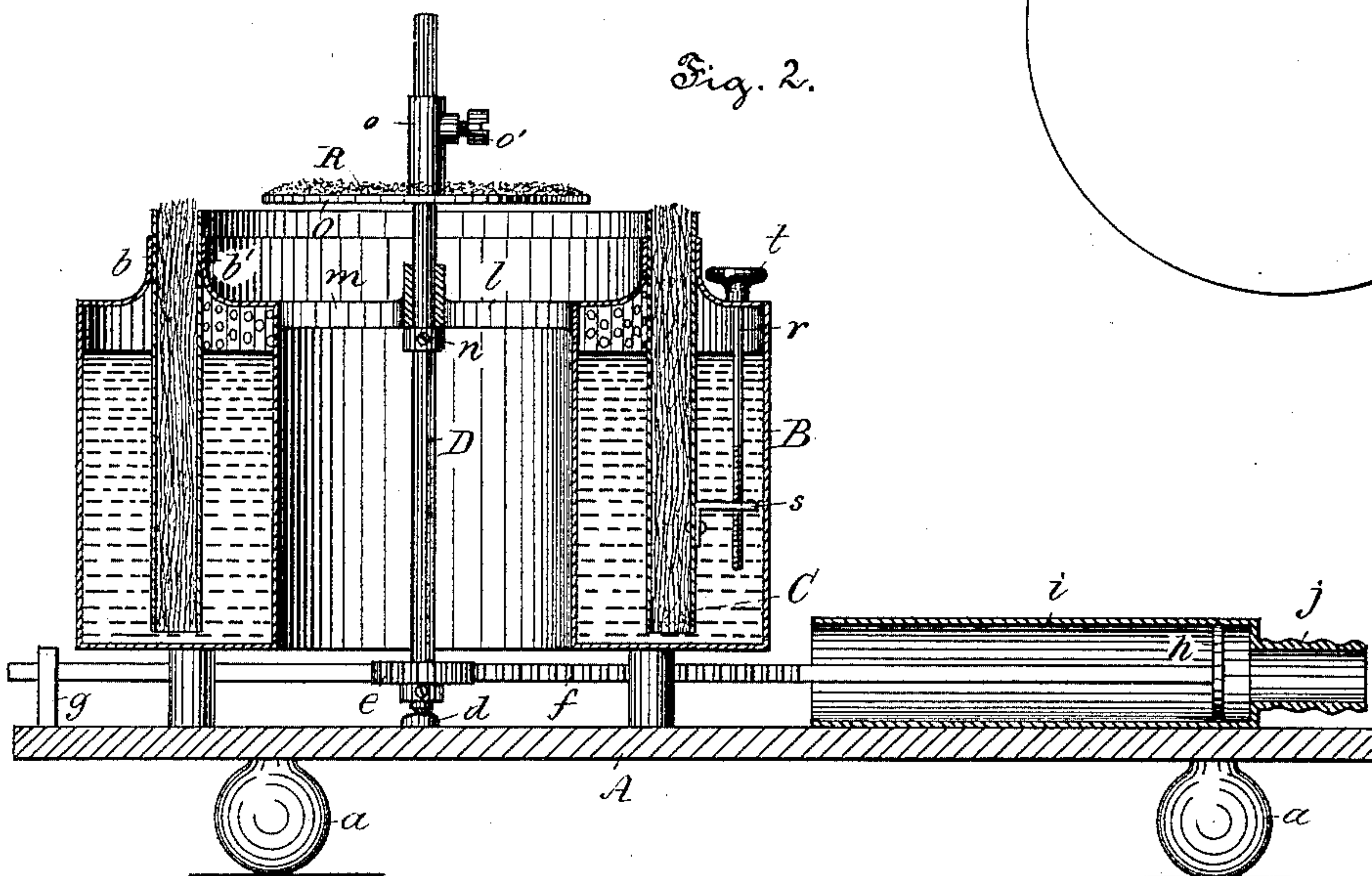


Fig. 2.



Witnesses:
Hermann Bornmann.
Richard C. Maxwell.

Inventor:
Alexander Hemsley.
by J. Walter Douglas.
Att'y.

UNITED STATES PATENT OFFICE.

ALEXANDER HEMSLEY, OF PHILADELPHIA, PENNSYLVANIA.

APPARATUS FOR PRODUCING FLASH-LIGHTS FOR PHOTOGRAPHING AND OTHER PURPOSES.

SPECIFICATION forming part of Letters Patent No. 442,224, dated December 9, 1890.

Application filed July 15, 1890. Serial No. 358,830. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER HEMSLEY, 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 Apparatus for Producing a Flash-Light for Photographic and other Purposes, of which the following is a specification.

My invention relates to a new and novel appliance for producing an intense or flash light, more particularly for photographic purposes.

The principal object of my invention is to provide an appliance comparatively simple, durable, economical, and effective for producing *ad libitum* an intense or flash light, more particularly for photographic purposes, and, second, to provide an appliance adapted to support a material, substance, or compound capable of being cast or brought automatically into contact with a flame disposed adjacent to or around about the supported material, substance, or compound, preferably of a readily-ignitable nature, whereby in the sudden ignition thereof a flame of a high degree of incandescence or intensity is produced for taking an instantaneous photograph.

My invention consists of an apparatus constructed and arranged for operation substantially in the manner hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a top or plan view of an apparatus embodying the characteristic features of my invention; and Fig. 2 is a vertical central section through the apparatus, showing the annular wick-container and disk mounted on a shaft revolved by a rack and pinion actuated by means of a piston by air or other gas under pressure, and the said disk adapted to cast or cause a readily-ignitable material, substance, or compound to be brought into contact with a flame adapted to be exposed from the annular wick-container of the appliance.

Referring to the drawings, A is a platform or table provided with legs *a* for supporting the feet of the flash-light appliance or apparatus.

B is an annular or other suitable shape or form of holder adapted to contain oil, alcohol, or other fluid.

C is an annular perforated wick-receptacle or container, mounted in the holder B and normally held in contact with curved strips *b* and *b'*, suitably secured to or formed integral with the holder B.

D is a vertical shaft mounted in a bearing *d*, secured to the platform or table A. This shaft D is provided with a pinion *e*, which meshes with the rack of a bar *f*, held in bearings *g*, supported on said platform or table, and said bar provided with a disk or annular plate, forming a piston-head *h*, mounted in a cylinder *i*, which is provided with an extension *j* for attaching a bulb *k* thereto to permit of the operation of the piston-head *h* to cause the rack of the bar *f*, meshing with the pinion *e*, to be moved back and forth, thereby rotating the vertical shaft D, extending through the circular bracket *l*, which is provided with arms *m* and a ring *m'*, suitably secured to or formed integral with the inner wall of the holder B.

n is a collar mounted on the vertical shaft D adjacent to the bracket *l*, for maintaining said shaft in its proper relative position.

O is a disk or circular plate provided with a sleeve *o* and an adjusting-screw *o'*, and said disk or plate mounted on the shaft D, adapted to contain or support a readily-ignitable material, substance, compound, or flash-light powder R, which, upon the actuation of the shaft D by means of the rack of the bar *f* through the pressure of air or gas against the piston-head *h*, causes the material, substance, compound, or flash-light powder to be cast tangentially, or substantially so, therefrom into the annular wick-flame, or caused to contact with said annular flame at the exposed end of the wick-container C, adjacent to the disk or plate O. Through one of the metal strips *b* of the holder B extend threaded bars or rods *r* into brackets *s*, suitably secured to the outer wall of the wick receptacle or container C, and to the upper ends of these threaded rods or bars *r* are secured nuts *t*, whereby the wick receptacle or container C may be readily adjusted to the required height with relation to the disk or circular container-plate O for securing the best results in the practical use of the appliance.

Prior to the present invention, as far as I am aware, in the apparatus designed for such

purposes, the material or flash-light compound was blown into a flame, instead of being cast, as it were, into the same, as in the present case; but in practice this was very unsatisfactory, because the effect desired could not be produced—that is to say, a momentary flash-light or flame of high incandescence or intensity—and hence such appliances have not been generally availed of; but in the use of the present appliance it will be observed that by discharging the material—as, for instance, powdered metallic magnesium—into the annular flame adjacent thereto the required effect, especially in its use in photography for taking instantaneously a negative, is in a marked degree always insured by having the parts of the appliance arranged substantially in the manner hereinbefore explained.

It is obvious that as to minor details modifications may be made in the apparatus without departing from the spirit of the invention.

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

1. A flash-light apparatus provided with a fluid-holder and a wick-container, a disk or plate mounted on a shaft, and means for rotating said shaft, substantially as and for the purposes set forth.
2. A flash-light apparatus having a fluid or oil holder and a perforated wick-container mounted therein, a shaft provided with a disk, and means for rotating said shaft, substantially as and for the purposes set forth.
3. A flash-light apparatus provided with a fluid or oil holder and a perforated adjustable wick-container, a vertical shaft, a disk adjustably mounted thereon, and means for rotating said shaft, substantially as and for the purposes set forth.
4. A flash-light apparatus provided with

an annular holder and adjustable wick-container, a shaft provided with an adjustable disk, and means adapted to be actuated by air or gas under pressure for rotating said shaft, substantially as and for the purposes set forth.

5. A flash-light apparatus provided with a fluid or oil holder, an adjustable annular perforated wick-container mounted therein, a shaft provided with an adjustable container, plate or disk, and pinion, a rack-bar meshing therewith, and means for actuating said bar, substantially as and for the purposes set forth.

6. A flash-light apparatus provided with a fluid or oil holder, an adjustable perforated wick-container, a vertical shaft, an adjustable disk or plate mounted thereon and adapted to support an ignitable material or compound, a pinion mounted on said shaft and meshing with a rack-bar provided with a piston mounted in a cylinder, and means for actuating said piston, substantially as and for the purposes set forth.

7. A flash-light apparatus provided with a fluid-holder, a perforated container and wick, said container supported in position therein by metal strips secured to or formed integral with said holder, and a shaft provided with a removable container-plate for rotating said shaft and presenting said ignitable material tangentially, or substantially so, to the wick-flame, substantially as and for the purposes set forth.

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

ALEXANDER HEMSLEY.

Witnesses:

GEO. W. REED,
THOMAS M. SMITH.