No. 619,009. Patented Feb. 7, 1899.

J. E. BLACKMORE.

FLASH LIGHT CARTRIDGE.

(Application filed Sept. 20, 1897.)

(No Model.)

Fig. 1.

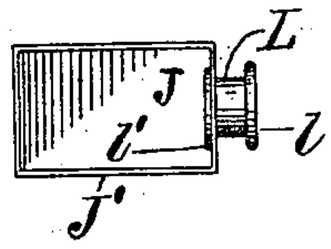


Fig. 4.

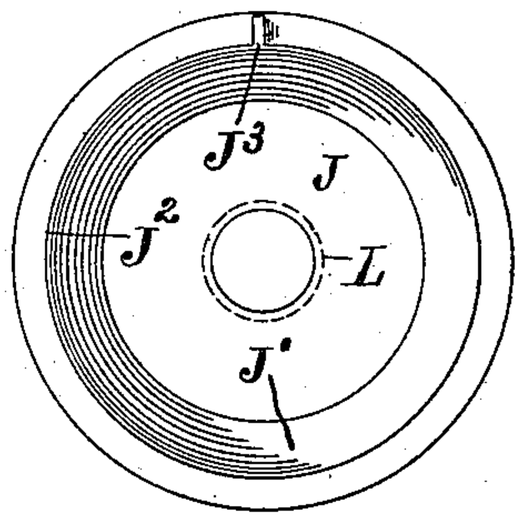


Fig. 2.

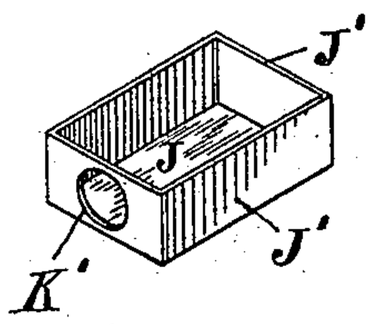


Fig. 6.

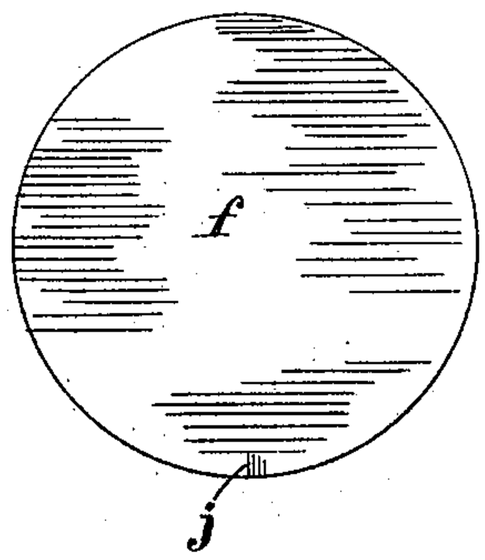


Fig. 5.

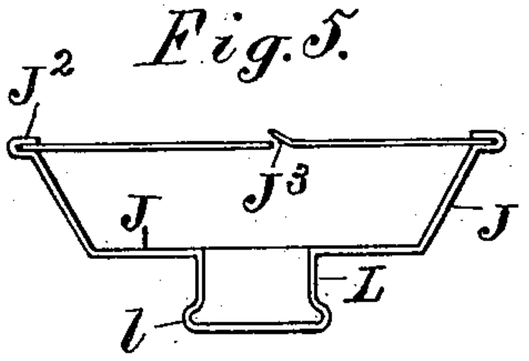


Fig. 3.

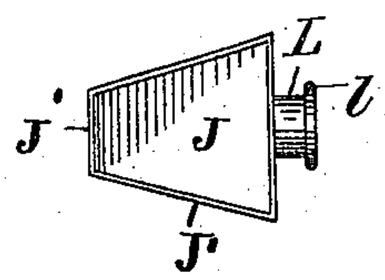
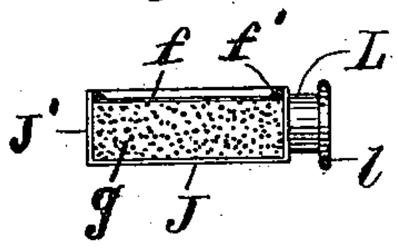


Fig. 7.

Fig. 3a.



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UNITED STATES PATENT OFFICE.

JAMES EDWARD BLACKMORE, OF NEWARK, NEW JERSEY.

FLASH-LIGHT CARTRIDGE.

SPECIFICATION forming part of Letters Patent No. 619,009, dated February 7, 1899.

Application filed September 20, 1897. Serial No. 652,237. (No model.)

To all whom it may concern:

Be it known that I, JAMES EDWARD BLACKMORE, a citizen of the United States, residing at Newark, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Flash-Light Cartridges and Pistols, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The cartridges claimed herein are designed primarily for use in a species of flash-light revolver, in which a series of the cartridges may be supported upon the side or edge of a carrier-disk, and the same fired in succession (as in a self-cocking revolver-pistol) by merely pulling a trigger.

If a cartridge is charged with flash-light powder and fired from an ordinary revolver, the light is dissipated before the exploded gases escape from the pistol-barrel and the desired flash is not obtained, and the cartridge in the present construction is designed especially to hold the powder contiguous to the atmosphere, so that when the charge is exploded the products of combustion may pass directly into the air.

To protect the flash-light cartridges from deterioration through access of the atmosphere when in transportation or held in storage, I protect the surface of the powder in the cartridge-shell by a thin fibrous wad, which may be sealed at the margin by a waterproof material, as wax or tallow. Such a wad and the sealing agent will be fused or burned at the temperature of the exploded powder, and the cartridge is thus adapted for firing within any apartment where a wad, not consumed in the pistol, might cause a conflagration.

In the present invention the cartridge is made with a flat pan-like shell having a flat bottom J with upturned edge forming sides around its periphery to retain a comparatively shallow charge of the flash-light powder, and wholly open upon the side opposite to the bottom, which side is wholly exposed to the atmosphere when the bottom of the shell is supported upon the carrier-disk of the pistol, so that the flash from the powder may pass directly into the air. The periphery of the pan-like shell may be made oblong or circular in its outline, provided it is of flat shape and open upon the side opposite to the bottom. The end or bottom of the shell is provided with an exploder having a neck and collar to engage the periphery of the rotary carrier-disk, so that a series of the cartridges may be discharged in succession by the firing mechanism of an ordinary revolver-pistol.

Three forms of the cartridges are shown in the annexed drawings, Figure 1 showing a plan of an oblong cartridge with exploder secured in a hole at one end of the same. Fig. 2 is a perspective view of the shell without the exploder, showing the hole to receive the same. Fig. 3 is a plan of a cartridge with periphery of segmental shape. Fig. 3ª is a longitudinal section of the cartridge, taken at one side of the hole K′ shown in Fig. 2. Fig. 4 is a plan, and Fig. 5 a central cross-section, of a cartridge with circular periphery. Fig. 6 is a plan, and Fig. 7 an edge view, of the disk-shaped wad of fibrous material for the cartridge shown in Fig. 4.

The cartridge-shell is shown in Figs. 1 and 2 as a rectangular pan with flat bottom J and margin bent up to form four sides J′ at the periphery. A circular hole K′ is formed in one of the sides, in which a short cylindrical cap or exploder L is secured by its flange *l′* or by other suitable means. The exploder is conveniently formed of a short round blank pistol-cartridge of ordinary commercial make, with fulminate in the outer collar *l*, and such exploder, with collar at the outer end, forms a neck by which the cartridge may be held upon the firing-disk. Fig. 3 shows the sides bent up from the bottom to form a pan of segmental shape. The shapes illustrated in Figs. 1 and 3 adapt a series of such cartridges for arrangement in pockets around the center of a flat disk upon its flat surface, the disk being suitably mounted with firing attachments to constitute a flash-light pistol.

Fig. 3ª shows a longitudinal section of the cartridge at one edge of the hole K′, with a thin fibrous waterproof wad *f* pressed upon the surface of the flash-light powder *g* to protect the same from the atmosphere. The wad is preferably made of thin waxed or paraffin paper to resist moisture, and the joint of such wad with the shell is sealed by pouring or pressing wax, tallow, or paraffin *f′* into contact with the shell at the margin of the wad.

The heat generated by the explosion readily

melts a substance like wax or paraffin and wholly consumes the thin film of paper, while the force of the explosion is sufficient to disintegrate the paper, if not consumed, and thus prevents it from conveying fire to surrounding objects.

Flash-light powder is rapidly affected by exposure to the atmosphere and is deteriorated thereby, so as to lose its value; but by the means described it is wholly protected from atmospheric influences without interfering with the discharge of the flash into the atmosphere from the open side of the pan.

Figs. 4 and 5 show the pan-shaped shell with periphery of flaring circular form, the sides being recurved at the top edge to form a grooved flange J^2, in which a disk-like wad *f* (shown in Figs. 6 and 7) is secured. A notch J^3 is formed at one side of the grooved flange J^2, as shown in Fig. 4, and the paper wad *f* is shown notched at one side with the edge *j* of the notch curved in opposite directions, which permits it to be screwed into the notch J^3 until the entire wad is inserted within the groove J^2. The edge of the paper wad may be sealed by melted wax or paraffin or the flange about the grooved flange J^2 may be compressed by suitable tools upon the edge of the paper to hold the same air-tight in its place.

By using such cartridges in a pistol having a suitable firing apparatus and provided with a carrier adapted to retain a series of the cartridges they may be discharged in succession directly into the open air. By such construction the most effective light is obtained from the explosion, and where it is necessary to produce more than one flash in taking a photographic picture the mere cocking of the hammer suffices to prepare another cartridge for explosion, so that it may be discharged immediately, which is not possible with any apparatus that requires to be separately charged after firing each load.

Having thus set forth the invention, what I claim herein is—

1. The flash-light pistol-cartridge having a pan-like shell with flat bottom and sides extended upwardly around its periphery, and wholly open upon the side opposite to the bottom, and containing a charge of flash-light powder and percussion fulminate to explode the same, substantially as herein set forth.

2. The flash-light pistol-cartridge having a pan-like shell with flat bottom and sides extended upwardly around its periphery and wholly open upon the side opposite to the bottom, the shell having a cylindrical aperture with small cylindrical exploder secured therein, to furnish a neck upon the shell, substantially as herein set forth.

3. The flash-light pistol-cartridge having a pan-like shell with flat bottom and sides extended upwardly around its periphery and wholly open upon the side opposite to the bottom, the bottom being provided in the center with an exploder having a neck to engage the periphery of a rotary carrier-disk, as and for the purpose set forth.

4. A flash-light pistol-cartridge having a shell of round pan form with the recurved flange J^2 at the top having notch J^3 in the side, and the paper wad *f* having notch *j* in the edge and adapted to screw into the flange J^2, as and for the purpose set forth.

5. The flash-light pistol-cartridge herein shown and described, comprising a pan-like shell with charge of flash-light powder covered by a thin fibrous waterproof wad *f* having at its margin a sealing *f'* of wax, tallow, or equivalent adhesive material easily fusible at the temperature of the exploded powder, substantially as herein set forth.

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

JAMES EDWARD BLACKMORE.

Witnesses:
WILLIAM SHURTE,
THOMAS S. CRANE.