(19) Office de la propriété intellectuelle du Canada
Un organisme d'Industrie Canada
Canadian Intellectual Property Office
An Agency of Industry Canada

(11) Publication number: CA 62654
(13) Document type: A
(43) Publication date: 14.02.1899
(51) Int. Cl:

(12)

(21) Application number: 62654D
(22) Date of filing: 24.10.1898
(30) Priority:

(71) Applicant: ALTER SIMON DORAN (US)
YOUNG LEWIS TORRENCE (US)
(72) Inventor: ALTER SIMON DORAN (US)
YOUNG LEWIS TORRENCE (US)

(54) **FLASH LIGHT APPARATUS**
(54) **APPAREIL DE LUMIERE A ECLAT**

TO ALL WHOM IT MAY CONCERN:

Be it known that we, Simon Doran Alter, of Philadelphia, Pennsylvania, U. S. A., Book-keeper, and Lewis Torrence Young, also of said Philadelphia, Pennsylvania, U.S.A., Merchant, have invented certain Improvements in Flash Light Apparatus, of which the following is a specification:

One object of our invention is to so construct a flash light apparatus for photographers as to render the same perfectly safe from risk of premature or accidental ignition or explosion of the flash powder, a further object being to provide for the use of an electric igniter in such manner that the explosion of the powder will not destroy or injure the same.

These objects we attain in the manner hereinafter set forth reference being had to the accompanying drawings, in which- FIG. 1, is a sectional view of a flash light apparatus for photographers constructed in accordance with our invention; and FIGS 2,3 and 4, are views illustrating modifications of the invention.

1 represents a box or casing containing an electric battery 2 of any desired construction, either primary or secondary. In the present instance we have shown a two cell battery having its — pole connected to a socket 4 on the casing, and its + pole connected to a post 10 on a partition 12 in the casing.

Another post 11 on said partition is connected to another socket 5 on the casing, and said sockets 4 and 5 are adapted for the reception of plugs forming the terminals of wires 6 and 7 which lead to a push button 9 so that when the circuit is closed by the operation of said push button it will render incandescent a platinum wire 13 which connects the posts 10 and 11.

Mounted upon suitable supports in the casing 1 above the partition 12 is a plate 14 preferably of sheet metal and upon this plate the flash powder is placed, the plate having an opening for the reception of one end of a fuse 15, preferably of inflammable cotton or other available material, the opposite end of which is in contact with the platinum wire 13.

In preparing the apparatus for use the plate 14 is removed and the fuse 15 put in place and the plate then returned to its position within the casing and the fuse drawn through the opening in the plate so that the flash powder may be piled around the exposed end of the fuse, as shown in Fig.1.

All of this may be done before the plug terminals of the push button wires have been applied to the sockets 4 and 5 of the casing so that there is absolutely no risk of premature

or accidental explosion while the flash powder is being placed in position. The plug terminals of the push button wires being applied to the sockets 4 and 5, the powder can be exploded upon pressing the push button, which effects the heating of the wire 13 and the ignition of the fuse.

It will be observed that the mass of flash powder is separated from the electric igniter by the interposed plate 14 which prevents contact of said flash powder with the igniting device, so that the heat and shock caused by the explosion of said mass of powder will not destroy or injure the delicate platinum wire of said igniting device, thereby overcoming an objection to previous electrically-ignited flash light apparatus with which we are familiar, and in which the explosive powder was applied directly to the platinum wire, which thus received the full heat and force of the explosion and was almost invariably melted or ruptured thereby.

While we prefer in all cases to use the concussion plate 14 to prevent the shock of the explosion from reaching the igniting device, the separation of the igniting device and the powder may be effected without the use of the plate if desired by simply locating the mass of powder at a point remote from the igniter and connecting the two by means of the fuse, as shown in Fig.2.

A sparking device may, if desired, be employed instead of the incandescent wire as the igniting device, thus in Fig.3 we have shown a sparking device in which an elastic tongue 16 projects from the post 10, while the post 11 carries a lever 17 one arm of which normally projects over the outer end of the finger 16 while its other arm carries the armature of an electro magnet 19 and is acted upon by a spring 20 tending to retain the parts in the position shown in Fig.3.

The arm 17 may have a pocket 21 for receiving one end

of the fuse 15, the other end of said fuse projecting through the opening in the plate 14 when the latter is used so as to communicate with the mass of flash powder piled on said plate, or, if desired, the fuse may simply be laid upon the finger 16 and lever 17 so as to be ignited by the spark produced when, after having been depressed, by the swinging downward of the lever 17, the free end of the finger 16 is released and springs backward.

The operation of the lever 17 may be effected by energizing the magnet 19 by a current controlled by the push button, a suitable induction coil being connected to the posts 10 and 11 so as to produce the desired spark.

The fuse may consist of a small portion of the flash powder leading from the igniter to the main mass of powder, if the powder is such that the explosion of a limited quantity of the same at the igniter will not generate heat or shock sufficient to injure or destroy the igniter, but the use of the special fuse is preferred in all cases.

In order to prevent the accidental ignition of the flash powder such as might be caused by the handling of the push button by ignorant or mischievous persons after the wires 6 and 7 have been connected to the casing, we provide said push button with a cap 22 which must be removed before access to the movable terminal of the push button can be had, and to still further guard against accident we provide said push button with a slide 23 of insulating material which is inserted between the fixed and movable terminals and which must be removed before the push button can be operated, so that even if the cap 22 is removed, the push button cannot be operated until the slide 23 is also removed, and, as the presence of this slide is not likely to be known to anyone except the person in charge of the flash light apparatus,

there is practically no risk whatever of premature ignition of the powder.

The apparatus, moreover, is of compact form and of simple construction, hence it can be sold at a moderate price and is not liable to get out of order.

When the incandescing wire 13 is located above the plate 14 on which the mass of flash powder is deposited, said wire may if desired, be protected from the destructive effects of the explosion, by means of a plate 25, pivoted to suitable studs or posts 26, as shown in Fig.4, this plate being lifted in order to permit of the application of the fuse 15 to the wire, and being then lowered so as to rest upon the fuse as shown. When the fuse burns away from beneath the plate, the latter will, before the explosion of the powder, fall into contact with the plate 14 and will thus be interposed between the powder and the wire in order to prevent the shock of the explosion from reaching said wire.

C L A I M S.

First

A flash light apparatus in which are combined an electric igniter separated from and free from contact with the mass of flash powder, and a fuse connecting said electric igniting device with the powder, substantially as specified.

Second

A flash light apparatus in which are combined an electric igniter separated from and free from contact with the mass of flash powder, and a non-explosive fuse connecting said electric igniting device with the powder, substantially as specified.

Third

A flash light apparatus in which are combined an electric igniting device, a plate interposed between the same and the mass of flash powder and a fuse extending in both directions from said plate and connecting the electric igniting device with said mass of flash powder, substantially as specified.

Fourth

A flash light apparatus in which are combined an electric igniting device, a plate upon which the flash powder is deposited and which separates the flash powder from the igniting device and a fuse extending from the igniting device through an opening in said plate and into the mass of flash powder deposited thereupon, substantially as specified.

Fifth

A push button for an electrically ignited flash light apparatus, said push button having a detachable plug of insulating material interposed between the fixed and movable terminals thereof, substantially as specified.

IN TESTIMONY WHEREOF, we have hereunto set our hands, at Philadelphia, Pennsylvania, U.S.A., this *Fifteenth* day of *October* A.D.1896.

WITNESSES

Frank E. Beckhoff

Charles W. Hansen

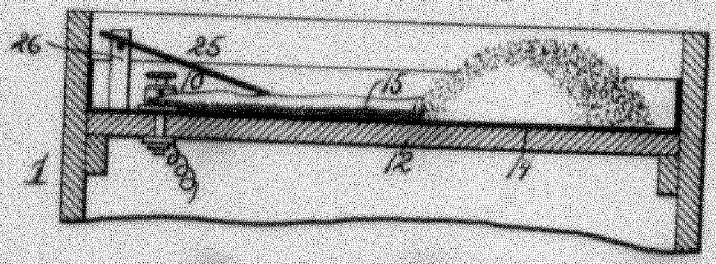
Simeon Doran Allen

Edward Torrence Young

"Improvements in Flash Light Apparatus."

626544

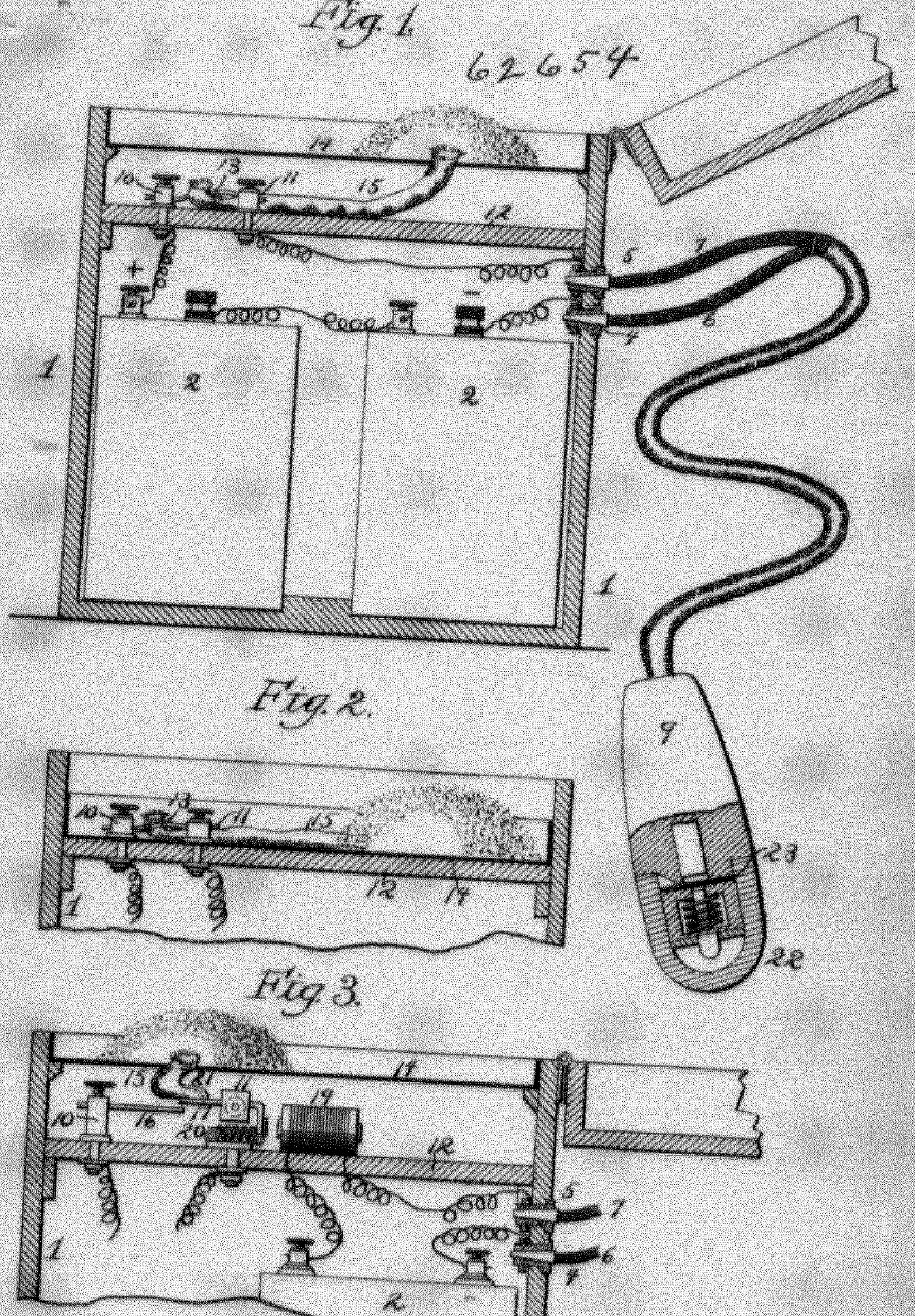
Fig. 4.



Certified to be the drawings referred to in the specification hereunto annexed.

Witnesses:- Robt S. Blake Philadelphia, Pa. October 15 AD 1898. Inventors:-
Chas. N. Nourse U.S.A. Simon Doran Alter
Lewis Torrence Young.
by their Attorney.
Henry Nourse

"Improvements in Flash Light Apparatus."



Certified to be the drawings referred to in the specification hereunto annexed.
Philadelphia, Pa., October 15 AD 1898.
U.S.A.

Witnesses-
Robt S. Blake
Charles N. Howson

Inventors:-
Simon Doran Alter
Louis Torrence Young.
by their Attorney.
Henry Howson