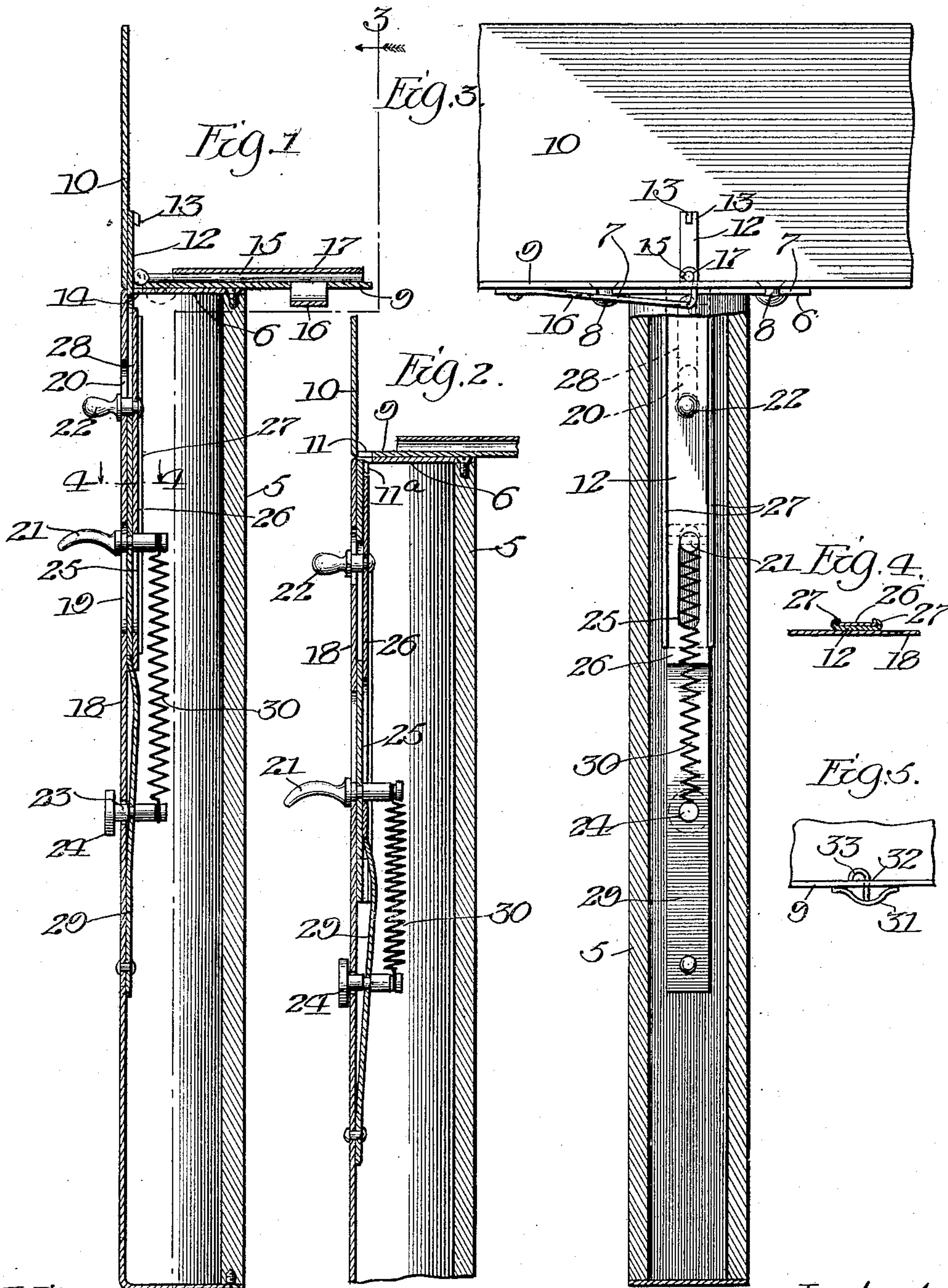


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 PHOTOGRAPHIC FLASH LIGHT APPARATUS.  
 APPLICATION FILED SEPT. 19, 1908.

916,894.

Patented Mar. 30, 1909.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## PHOTOGRAPHIC FLASH-LIGHT APPARATUS.

No. 916,894.

Specification of Letters Patent.

Patented March 30, 1909.

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*To all whom it may concern:*

Be it known that I, THOMAS C. SMITH, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Photographic Flash-Light Apparatus, of which the following is a specification.

This invention relates to improvements in an apparatus to be used by photographers for creating an instantaneous and brilliant light by the use of explosive powder, in order that good, clear and sharply-defined photographs may be produced; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The principal object of the invention is to provide a portable and manually-operated flash-light apparatus which shall be simple and inexpensive in construction, compact in form, strong, durable, efficient and safe in operation, with its parts so constructed and arranged that the inflammable powder employed for producing the light will be shielded in such a manner as to prevent the flame being flashed in the face of the operator, as well as against accidental ignition.

Another object is to provide a flash-light apparatus in which ordinary percussion matches may be used for igniting the powder.

Numerous other objects and advantages of the invention will be disclosed in the subjoined description and explanation.

In order to enable others skilled in the art to which my invention pertains, to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a central vertical sectional view of a flash-light apparatus embodying the invention with the parts in the positions they will occupy when ready for igniting the powder to produce the flash, but held in a safety position against accidental or premature operation; Fig. 2 is a similar view with the parts in their normal positions; Fig. 3 is a view partly in section and partly in elevation taken on line 3—3 of Fig. 1 looking in the direction indicated by the arrows; Fig. 4 is a plan sectional view taken on line 4—4 of Fig. 1; and Fig. 5 is a fragmental view of a portion of the powder pan

showing a modification in the construction of the match holder.

Like numerals of reference, refer to corresponding parts throughout the different views of the drawing.

The reference numeral 5 designates the handle which is hollow and may be made of any suitable size, form and material. Secured to the upper end of the handle is a plate 6 which is extended to each side of the handle and is provided in said extensions with slots 7 open at one of their ends to receive projections 8 on the bottom 9 of a pan 10 which is angular in cross section and preferably made of metal. The bottom 9 of the pan is provided at about its middle and just in front of the upright portion 10 thereof with an opening 11 for the reception and operation of the striking bar 12 which is provided on its upper end with a forwardly extending firing pin or projection 13 to engage the head 14 of an ordinary percussion match 15 which is located transversely on the upper surface of the bottom 9 of the pan at about the middle thereof, and is held in such position by means of a spring holder 16 which is secured at one of its ends to the lower surface of the pan bottom 9, and has its other end bent upwardly and extended through an opening in said bottom and formed with a hook 17 to engage the match. Secured to the handle 5 so as to close the cavity thereof is a plate 18 which is provided with slots 19 and 20 for the reception and operation of the cocking-pin 21 and safety-catch-pin 22, respectively, as well as with an opening 23 for the firing button 24 or push-pin. Located on the inner surface of the plate 18 is a striking-bar 12 which, as before stated, has at its upper end a firing-pin 13 to strike the head of the match. This bar has secured thereon so as to move therewith the cocking-pin 21 which, as shown, is extended through the slot 19 in the plate 18, and is also projected through a slot 25 in the safety bar or catch 26 which is held for independent movement with respect to the striking-bar 12 by means of flanges 27 on the side edges of the bar 12, which flanges overlap the edges of the bar 26, as is clearly shown in Figs. 3 and 4, and form a guide-way therefor. Secured to the upper portion of the safety bar 26 so as to move therewith is the pin 22 for the safety-bar or catch, which is extended through the slot 20 in the plate 18, as well as through a



slot 28 in the upper portion of the bar 12, so as to enable the bar 26 to be moved independently of the bar 12, or vice versa. Secured at its lower end to the inner surface of the plate 18 is a spring or member 29 which engages the firing-button 24 which is located at a suitable distance below the upper end of the spring 29, which end is adapted to engage the lower end of the striking-bar, as shown in Fig. 1 of the drawing, so as to hold it in its safety position, or against accidental operation.

The operation of the device is simple and as follows: The pan may be secured in place on the upper end of the handle 5 by placing the open ends of the slots 7 in the bottom of the pan so as to receive the projections 8 thereon, when by pushing the plate and handle forwardly it is evident that said slots will embrace the projections 8, and by reason of the heads on the latter will securely retain the pan in position. When thus placed the opening 11<sup>a</sup> with which the plate 6 on top of the handle is provided for the passage of the striking-bar 12 will register with the opening 11 in the bottom 9 of the pan, as is clearly shown in Figs. 1 and 3 of the drawing. By pressing the spring holder 16 upwardly a match 15 may be placed with its head near the upright portion 10 of the pan, when by releasing the pressure from the holder 16 it will be firmly held in such position across the plate, so that when its head is struck or scratched it will ignite the powder which should be placed on or around the same.

To cock or set the striking-bar 12 the same is moved upwardly by means of the cocking-pin 21 from the position shown in Fig. 2 to that shown in Fig. 1, and at the same time or afterward the safety-bar 26 may be moved upwardly by means of the pin 22 until its upper end strikes the plate 6 at the top of the handle, which operation will permit the safety spring 29 to engage with its upper end the lower end of the striking-bar 12, after which the safety-bar may be moved downward so as to assume the position shown in Fig. 1 where it will lock the spring or bar 29 against displacement from the striking-bar until it is desired to create a flash, when by moving the safety bar 26 upwardly by means of the pin 22 it is apparent that by pushing inwardly on the firing-button 24 the spring 29 will be released from the striking-bar, thus allowing the spring 30 which connects the cocking-pin and the firing-pin to exert itself and retract the striking-bar so that its pin or projection will strike the head of the match with great force in its downward movement, thus causing ignition of the powder and the desired flash.

From the above description and explanation it is obvious that the apparatus is sus-

ceptible of some modification without material departure from the principles and spirit of the invention, and for this reason I do not desire to be understood as limiting myself to the precise form and arrangement of the several parts of the device as herein set forth in carrying out my invention in practice, for example, in some cases the construction of the match-holder shown in Fig. 5 may be employed instead of that shown in Figs. 1 and 2. In the construction shown in Fig. 5 a bow-spring 31 with its ends resting against the lower surface of the pan bottom 9 and having an upward projection 32 extended through an opening in the bottom and provided with a hook 33 to engage the match is employed.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters-Patent, is—

1. A photographic flash-light apparatus consisting of a handle, a powder pan supported thereon, a spring-actuated match-holder on the lower portion of the powder pan, a striking-bar movable on the handle and adapted to be extended above the lower portion of the pan, means to hold said striking-bar in its extended position, and means to release and retract the striking-bar.

2. A photographic flash-light apparatus consisting of a handle, a powder pan supported thereon and having an opening in its rear lower portion, a spring-actuated match-holder mounted on the lower portion of the pan, a striking-bar movable on the handle and adapted to be extended through said opening in the pan, means to hold and lock the striking-bar in its extended position, means to unlock said bar, and means to release and retract the same.

3. A photographic flash-light apparatus consisting of a handle, a powder pan supported thereon and having an opening in the rear portion of its bottom, means to hold a match on the bottom of the pan, a striking-bar movable on the handle and adapted to be extended through said opening in the pan, means to hold said bar in its extended position, and means to release and retract the striking-bar.

4. In a photographic flash-light apparatus, the combination with a hollow handle, of a slotted and apertured plate secured thereto to close the cavity therein, a powder pan supported on the handle and having communication with the cavity of the latter, means to hold a match on the powder pan, a striking-bar movably mounted on the inner surface of said plate and carrying at its upper end a striking-pin and between its ends a cocking-pin extended through a slot in said plate, means to hold the striking-bar in its extended position, and means to release the striking-bar and to retract the same.

5. In a photographic flash-light appara-



tus, the combination with a hollow handle,  
of a plate having slots and an opening se-  
cured to the handle over the cavity therein,  
a powder pan supported on the handle and  
5 having an opening in its rear lower portion  
to communicate with the cavity of the han-  
dle, means to hold a match on the powder  
pan, a striking-bar movably mounted on the  
inner surface of said plate and carrying at  
10 its upper end a striking-pin and between its  
ends a cocking-pin extended through one of  
the slots in said plate, a safety-bar movably

mounted on the striking-bar and carrying a  
pin extended through a slot in the latter, a  
safety-member secured at one of its ends to 15  
said plate and adapted to engage with its  
other end the lower end of the striking-bar,  
a push-pin mounted on said member, and a  
retracting spring connecting the push-pin  
and cocking-pin.

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