Feb. 9, 1932. L. CLERGY 1,844,006

FLASH LIGHT GUN

Filed July 15, 1929

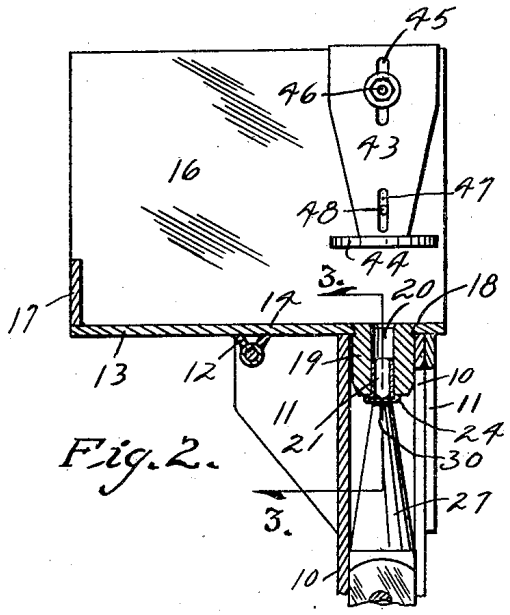


Fig. 2.

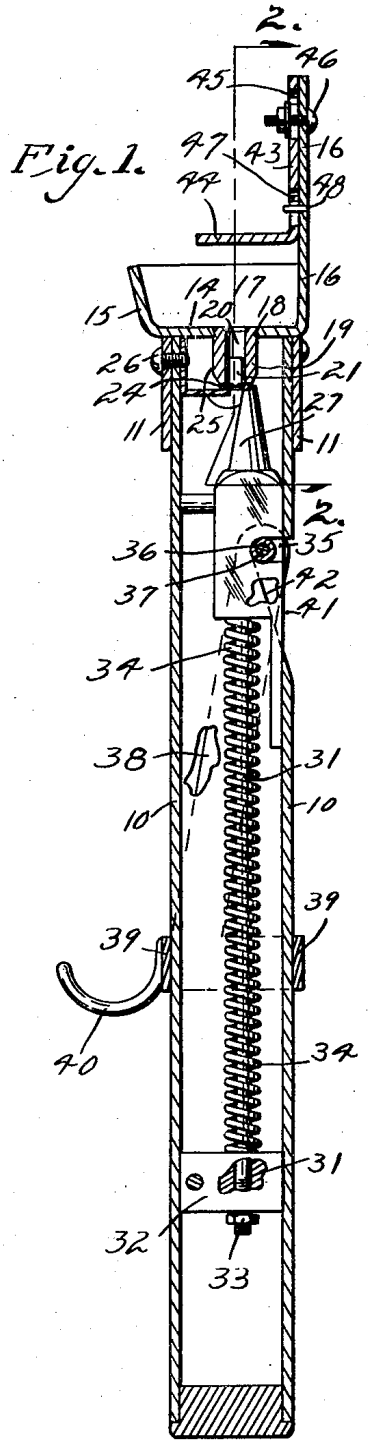
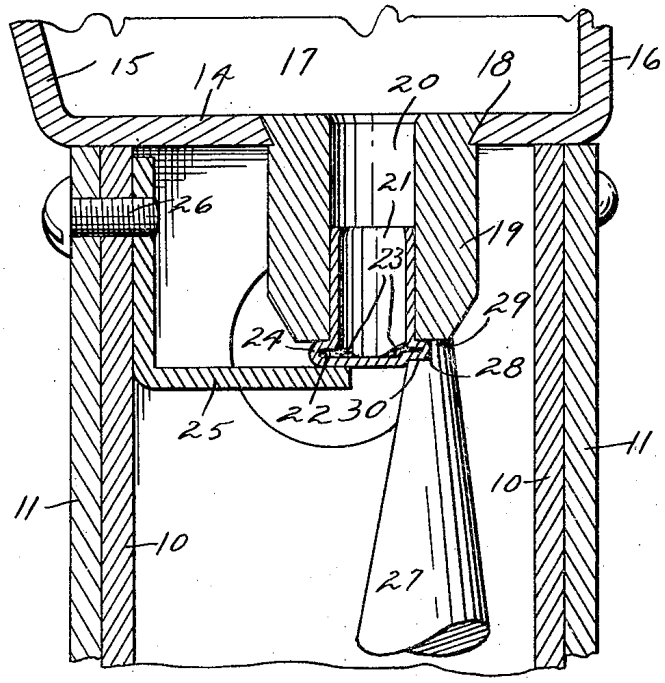


Fig. 1.

Fig. 3.



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UNITED STATES PATENT OFFICE

LOUIS CLERGY, OF DES MOINES, IOWA

FLASH LIGHT GUN

Application filed July 15, 1929. Serial No. 378,295.

This invention relates to improvements in flash light guns for use in photography of the type employing an open pan for receiving flash light powder, and a percussion cap or shell for igniting the powder when in the pan, and also employing a spring actuated hammer device for firing the cap, and particularly relating to that type of flash light guns designed to use the rim fire type of shell. One of the objections to this type of shells lies in the fact that a sharp report or noise is produced by the cap, which is very objectionable.

It is, therefore, one of the objects of my invention to provide improved means for firing the cap, whereby the noise will be greatly reduced.

A further difficulty experienced in flash light guns, having a firing cap or shell located in the bottom of the pan, lies in the fact that certain kinds of slow burning powder will not properly ignite, that portion of the powder immediately above the cap igniting first, and the expansion and explosion of the comparatively small portion of the powder lying above the cap being thrown upwardly and through the remaining portion of the powder without igniting the same.

It is, therefore, a further object of my invention to provide improved means whereby either slow burning or rapidly burning powder may be successfully used in this type of instrument.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claims, and illustrated in the accompanying drawings, in which:

Figure 1 is a longitudinal sectional view of my improved gun, said section being taken transversely through the powder pan.

Figure 2 is a detail sectional view taken on the line 2—2 of Figure 1.

Figure 3 is an enlarged, detail, sectional view taken on the line 3—3 of Figure 2.

My improved gun comprises a handle member 10 preferably formed of sheet metal and rectangular in cross section. The upper end of the handle member 10 has a pair of flanges 11 between which is mounted a pivot member 12, to which the powder pan 13 is secured. The pivot member 12 is located near one end of the pan with the central portion of the bottom of the pan resting on top of the handle 10 by gravity. Suitable latching means is provided for locking the pan in position. This locking means is not illustrated, inasmuch as it forms no part of my present invention.

The pan 13 comprises a bottom member 14 and side members 15 and 16 and end members 17. The bottom of the pan 13 is provided with an opening 18 in which is mounted a downwardly extending sleeve or casing 19, which I shall term a primer casing. Said casing is provided with a priming opening 20 for receiving in its lower end the primer cap or shell 21 of the type commonly known as the rim fire.

The closed end of the shell is provided with an annular groove 22 in which the priming composition 23 is supported. The groove 22 is mounted in a flange 24 which rests against the lower end of the primer casing 19 and is held against downward movement by resting on top of the free end of a bracket 25 secured to one wall of the upper end of the handle 10 by means of a suitable rivet 26.

The pan 13 is adapted to be swung to a vertical position about the hinge member 12, which will cause the casing 19 to be withdrawn from the upper end of the handle 10 where it may be conveniently filled with a primer, after which the pan may then be swung to its horizontal or closed position.

For firing the primer, I have provided a hammer member 27, the upper end of which is in conical formation and provided with a

notch or recess 28 at the extreme end, forming a flange 29 and a shoulder 30. The shoulder 30 is designed to strike the flange 24, while the flange 29 passes outside of the flange and strikes the lower face of the primer casing 19, and thereby provides means for limiting the upward movement of the hammer member 27.

I have found by actual experience that if the flange 29 is of the proper length, then the outer wall member of the flange 24 will be forced inwardly by the shoulder 30, so that a considerable amount of friction is created in the priming material within the primer sufficiently to cause ignition of the material without undesirable noise; while if the member 29 were omitted, the walls of the flange 24 will be brought together with great violence, causing a very sharp and undesirable report from the primer.

The hammer 27 is provided with a downwardly extending shaft 31, the lower end of which is slidably mounted in a suitable bracket 32. A nut 33 is provided for limiting the outward movement of the hammer, at the time the pan 13 is moved to its open position, by means of the expandable spring 34 wound about the shaft 31. However, the nut 33 is so adjusted that when the hammer is in contact with the primer, a small amount of space is provided between the nut 33 and the bracket 32, so that the nut 33 in no way hinders the striking movement of the hammer.

The hammer has one face provided with a slot 35 for receiving a roller 36 mounted on a shaft 37 carried by links 38, illustrated by dotted lines in Figure 1. The free ends of the links are fixed to a member 39, slidably mounted on the handle member 10. The member 39 is provided with a finger piece 40 for actuating the slide member.

One side of the handle 10 is provided with an opening or notch 41, while the adjacent side members are provided with substantially V-shaped notches, so that inclined edges 42 are formed on which the roller 36 is designed to travel.

It will be seen that downward movement of the member 39 will cause the roller 36 to be moved downwardly and with it the hammer 27. The roller 36 is moved outwardly by the inclined edges of the side members until it engages the notch 35, after which the hammer 27 is rapidly moved upwardly by the spring 34, causing the primer to be fired. The mechanism for actuating the hammer is illustrated in my Patent No. 1,671,406, issued May 29, 1928, and a further description of this mechanism is deemed unnecessary.

Adjustably mounted on the side plate 16 is a bar 43 having at its lower end what I shall term a baffle plate 44 mounted immediately above the primer opening 20, so that when the pan is filled with powder, a portion of which will be beneath the plate 44 and the primer cap ignited, that portion of the powder immediately above the primer casing 19 will be thrown violently upwardly against the lower face of the baffle plate 44, causing a large portion of the ignited powder striking said plate to be again reflected downwardly, and other portions to be thrown violently outwardly in such a manner that the entire amount of powder within the pan will be ignited, even if it is the slow burning type. It is sometimes desirable to adjust the plate 44 toward and from the bottom of the pan 13, due to the fact that different makes of powder possess different ignition properties.

The bar 43 is provided with a slot 45 for receiving a bolt 46 mounted in the plate 16. Said bolt 46 provides means for locking the bar in its adjusted position. The bar 43 is also provided with a slot 47 for receiving a pin 48 also mounted in the plate 16. Said pin 48 acts as a guide for the bar 43 to retain the plate 44 in a substantially parallel position relative to the bottom of the pan.

Thus it will be seen that I have provided a flash light gun having a firing mechanism so constructed that the noise of the rim fire cap will be greatly reduced, and further provides means whereby the slow firing power will be ignited whether the pan is completely full or a small amount of powder used therein. Both of these features are very desirable in a flash light gun of the type above referred to.

One of the most essential requirements of a flash light gun is that it must be positive in its action, as it will be readily seen that valuable pictures may be missed due to the inability of the gun to operate at the proper time, as it is often impossible to retake the picture.

It is also desirable to eliminate the noise as the excessive noise caused by the gun causes the subjects to become irritated and nervous. This is especially true where a series of pictures must be taken of the same subjects.

I claim as my invention:

1. In a flash light gun, a pan for receiving flash light powder having a bottom, sides and end members with its top open, the bottom of said pan having an ignition device, a baffle plate supported above said ignition device and above powder supported on the bottom of said pan, and means for adjusting and fixing said baffle plate to a number of positions toward and from said ignition device.

2. In a flash light gun, a pan for receiving flash light powder having a bottom, sides and end members with its top open, the bottom of said pan having an ignition device, a baffle plate supported parallel with said bottom and spaced above said ignition device and above powder supported on said bottom, said baffle

plate being supported in fixed relation with said bottom, whereby ignition of the powder beneath said baffle will be caused to spread laterally to ignite powder supported on said bottom and adjacent to one side of said ignition device.

3. In a flash light gun, a pan for receiving flash light powder having a bottom and an upright back, a baffle plate having an upright member secured to one edge, said members having a pair of vertical slots, a pin carried by said upright back and for entering one of said slots, a bolt carried by said upright and entering the other slot, and a nut for said bolt.

Des Moines, Iowa, July 12, 1929.

LOUIS CLERGY.