

PATENT SPECIFICATION

328,132

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Complete Accepted: April 24, 1930.

PROVISIONAL SPECIFICATION.



Improvements in and relating to Apparatus for Flash Light Photography.

I, JOSEPH ARTHUR SPEED, a British Subject, of 19, Harrison Road, Fulwood, Preston, in the County of Lancaster, do hereby declare the nature of this invention to be as follows:—

This invention has reference to photographic apparatus and has for its object to provide an improved means for synchronising the exposure of a photographic plate with the illumination of the object by a flash of light, whereby difficulties experienced at present in taking flash light photographs are overcome.

According to this invention the control member or device operating a camera shutter is automatically operated through the medium of a member which after having been set is released or is actuated by the heat or flame of a flash produced to illuminate the photographic subject.

According to one embodiment of the invention as applied to a camera having a press button and cable shutter releasing mechanism of the well known kind, the cable, which may be of any convenient length is carried to a piece of apparatus to be more fully described and the end is securely clamped in a holder from which the press button projects.

This holder itself is again securely mounted in a short fixed arm, wherein the holder is adjustable as by screwing to and fro, which fixed arm forms part of a device for holding a quantity of flash powder. Conveniently the flash powder is carried in a receptacle at the top or end of an arm sufficiently long to ensure that while the device as a whole may be hidden, as is necessary for taking certain kinds of photographs, the flash powder container can be clear of immediate obstructions such as leaves or grass.

Between the arm carrying the flash powder container and the short fixed arm in which the press button holder is secured is a pivoted lever or trigger capable of movement between the two arms referred to. This trigger is normally urged toward the press button holder by a strong spring conveniently coiled around a hammer mounted in the trigger and passing through the long arm where an adjustable regulating stop such as a nut is

provided.

The top end of the trigger is in alignment with a snug or projection on the far side of the flash powder container, and the end of the trigger and the snug have each a hole, hook or other device to which a fuse can be secured so as to span the flash powder container.

When it is desired to use the apparatus for taking a photograph the camera is set at the desired position and is focussed on the subject, or on the place where the subject will be when the exposure is made. The press button is secured in the holder and the latter is mounted in the short fixed arm of the flash device which as already stated may be placed in any convenient position and if need be, some distance from the camera.

The trigger spring is charged by moving the trigger toward the powder container, and the trigger is held in the charged position by a fuse spanning the container from the top of the trigger to the snug or projection referred to. This fuse may be a length of cotton, thread, or a thin piece of wire, or two pieces of wire soldered lightly together. The exact form or material of the fuse may be according to requirements but it is essential that it shall be of such a nature that it will be severed by the heat or flame from the flash powder.

Before or after setting the trigger the flash powder is placed in the container, and this powder should be of a slow burning kind which maintains a flame for a comparatively long period of time as compared with the sudden vivid flash often used. By using such a slow burning powder the startling explosion which often takes place when some powders are used is avoided, consequently there is less danger of damaging the apparatus, and if a "set" camera should be found and interfered with the likelihood of injury to anyone firing the apparatus is very remote; moreover by this method a better illumination of the subject is provided and a more effective exposure is made.

The flash powder may be ignited by any suitable or convenient means such as by a trip wire laid in the path of the photo-

{Price 1/-}

graphic subject, or by the closing of an electric circuit, and as soon as the powder is ignited the fuse will be severed thus releasing the trigger and allowing the hammer to hit and operate the press button, so making the necessary exposure.

It is to be understood that while the invention has been described with reference to the operation of a press button photographic shutter, it is not confined to such a means of operating the shutter, as it may be applied by making suitable variations which do not affect the principle of the invention, to any form of shutter operating device.

It may also be desirable to vary or modify the construction of the device so as to provide that the severing of the fuse may actuate an electrical device instead of the mechanical device described.

It is an advantage to have the whole device made of non-rusting or non-corroding metal and the device is conveniently provided with means for securing or mounting it in place as desired.

Dated this 13th day of May, 1929.

For the Applicant,
BARLOW, GILLETT & PERCIVAL,
20, St. Ann's Square, Manchester.

COMPLETE SPECIFICATION.

Improvements in and relating to Apparatus for Flash Light Photography.

I, JOSEPH ARTHUR SPEED, a British Subject, of 19, Harrison Road, Fulwood, Preston, in the County of Lancaster, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention has reference to photographic apparatus and has for its object to provide an improved means for synchronising the exposure of a photographic plate with the illumination of the object by a flash of light, whereby difficulties experienced at present in taking flash light photographs are overcome.

According to this invention the control member or device operating a camera shutter is automatically operated through the medium of a member which after having been set is released or is disconnected by the heat or flame of a flash produced to illuminate the photographic subject.

The invention is more particularly set forth with reference to the accompanying drawings wherein—

Fig. 1 is a side elevation of releasing apparatus according to the invention partly in section and with the side of the box removed.

Fig. 2 is a front view.

Fig. 3 is a plan and

Fig. 4 is a partial sectional plan showing the fitting of the antinous release.

As shown in the drawings the apparatus comprises a standard or support 5 rising from a box 6 and carrying at the top a flash powder container 7. The box being provided with screw holes whereby it may be secured in any convenient position as required. These screw holes in addition to their use in fixing the apparatus to a

support such as a post, are also used for securing a separate metal box with a holding handle at the base for "hand work" such as a press photographer would require for holding over his head. The separate metal box contains a dry battery safety device and press button for operating.

The flash powder container 7 has an opening in the side through which a wire 8 from an electric circuit is passed to a fuse, conveniently placed in a cardboard box along with the flash powder. This box is waterproofed when required to remain out of doors for any length of time and drain holes 8^a are provided to carry off water. Fixed on one side of the container is a knob 9 placed opposite to a similar knob 10 on a lever 11 pivoted at 12 in the box 6, and moving in a slot 6^a on the top of the box, by which slot the movement of the lever is limited. This lever 11 has a catch 13 engaging a pin 14 whereby the lever 11 is securely held in the position shown in the drawings, the lever 11 has also an arm 15 with a hammer head 16 which hammer head when the apparatus is ready for use presses against the bolt 17 slidable in a mounting 18 in the box 6 and normally urged outward by a spring 19, which spring is compressed and charged when the lever 11 is pulled into the operative position.

The bottom of the box 6 is provided with an opening 20 through which a fitting 21 is screwed the screwing providing an adjustment for the height with reference to the hammer head 16, this fitting 21 has a central hole and a slot 22 through which the antinous release 23 connected to the camera is inserted, the antinous release when in position being in the line of the

descending hammer head 16 when it is forced downward by the expansion of the spring 19 actuating the bolt 17.

When it is desired to use the apparatus for taking a photograph the camera is set at the desired position and is focused on the subject or on the place where the subject will be when the exposure is made, the antinous release 23 is secured in the holder 21 and the latter is mounted in the opening 20 in the box 6 and the lever 11 is pulled into the position shown in the drawings and is secured by the catch and pin 13 and 14. The electric fuse and flash powder is placed in the flash powder container 7 and by means of the wire 8 the controlling switch is arranged at the desired position. A piece of cotton, thread or fuse wire or other light material which can quickly be severed by heat or flame is bound round two posts 9 and 10 and is of sufficient strength to hold the lever 11 in the operative position after which the catch 13 is gently disengaged from the pin 14 and the device is ready for action.

The flash powder used should be of a slow burning kind which maintains a steady flame for a comparatively long period of time as compared with the sudden vivid flash often used. By using such a slow burning powder the startling explosion which often takes place when some powders are used is avoided, consequently there is less danger of damaging the apparatus, and if a "set" camera should be found and interfered with the likelihood of serious injury to anyone firing the apparatus is more remote; moreover by this method a better illumination of the subject is provided and a more effective exposure is made.

The flash powder is not necessarily ignited by some person operating the switch as the subject to be photographed such as an animal may be used by means of a trip wire or other arrangement to close the circuit. When the circuit is closed and the flash powder is ignited the flame and heat will immediately sever the cotton, thread or other material 24 holding the lever 11 in position and immediately this severance takes place the bolt 17 will be shot outward by the force of the expanding spring 19 and will force the hammer 16 on to the antinous release and thus expose the plate in the camera.

While the invention has been described

with reference to the actuation of an antinous release a camera fitted with other forms of release either mechanical or electrical which can be connected by the hammer 16 may be used. Suitable modifications only being required in the fitting of such release in the box 6.

Apparatus is preferably made of non-rusting or non-corroding metal to prevent injury by exposure.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—

1. An improved apparatus for flash light photography wherein the control member or device operating a camera shutter is automatically operated through the medium of a member which after having been set is released or is disconnected by the heat or flame of a flash produced to illuminate the subject to be photographed.

2. An improved apparatus for flash light photography according to the preceding claim wherein the camera shutter is automatically operated by a hammer on an arm of a lever urged outwardly by a spring compressed by raising the other arm of the lever to the operative position and securing it in such position by a piece of cotton, thread or other material lying across the top of a flash powder container which is severed by the ignition of the powder thus allowing the charged spring to force the hammer on to the device operating the camera shutter.

3. In a photographic apparatus for flash light photography according to claim 2 a securing hook and pin whereby the lever is retained in the operative position but is prevented from operation until the cotton, thread or other material sufficient to hold the lever is secured to the posts at opposite sides of the flash powder container.

4. The improved apparatus for flash light photography whereby the flash of light and the photographic exposure are synchronised, constructed and adapted to operate substantially as set forth and as shown in the accompanying drawings.

Dated this 11th day of February, 1930.

For the Applicant,
BARLOW, GILLETT & PERCIVAL,
Chartered Patent Agents.

[This Drawing is a reproduction of the Original on a reduced scale.]

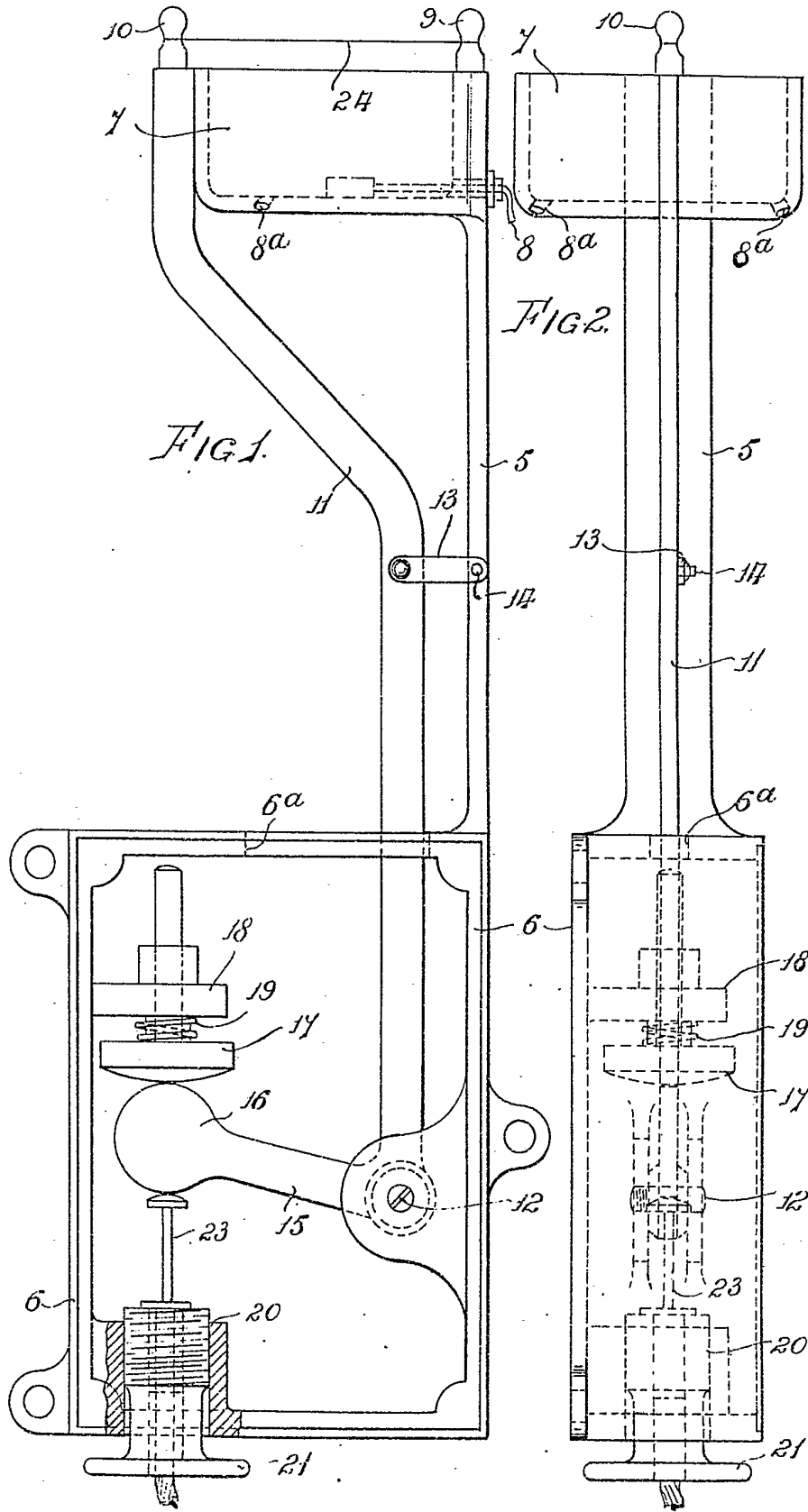


FIG 3.

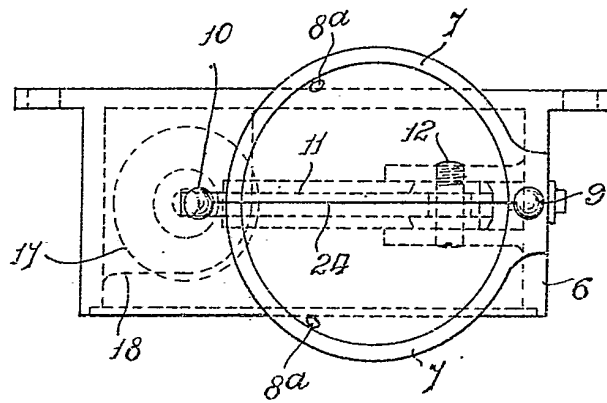
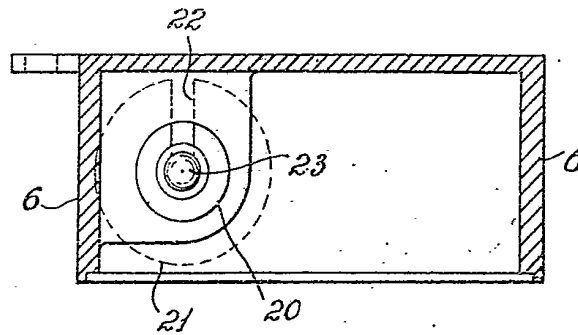
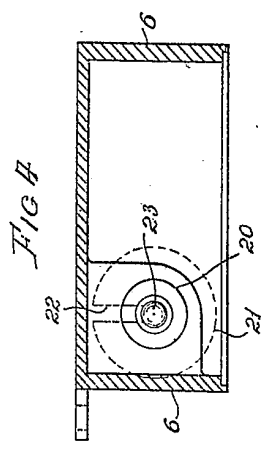
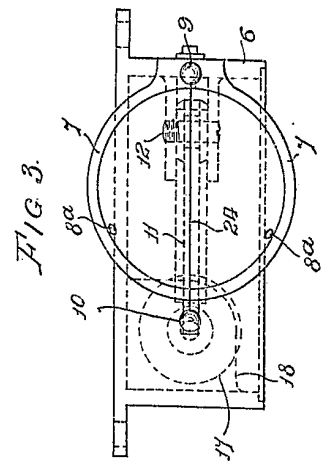
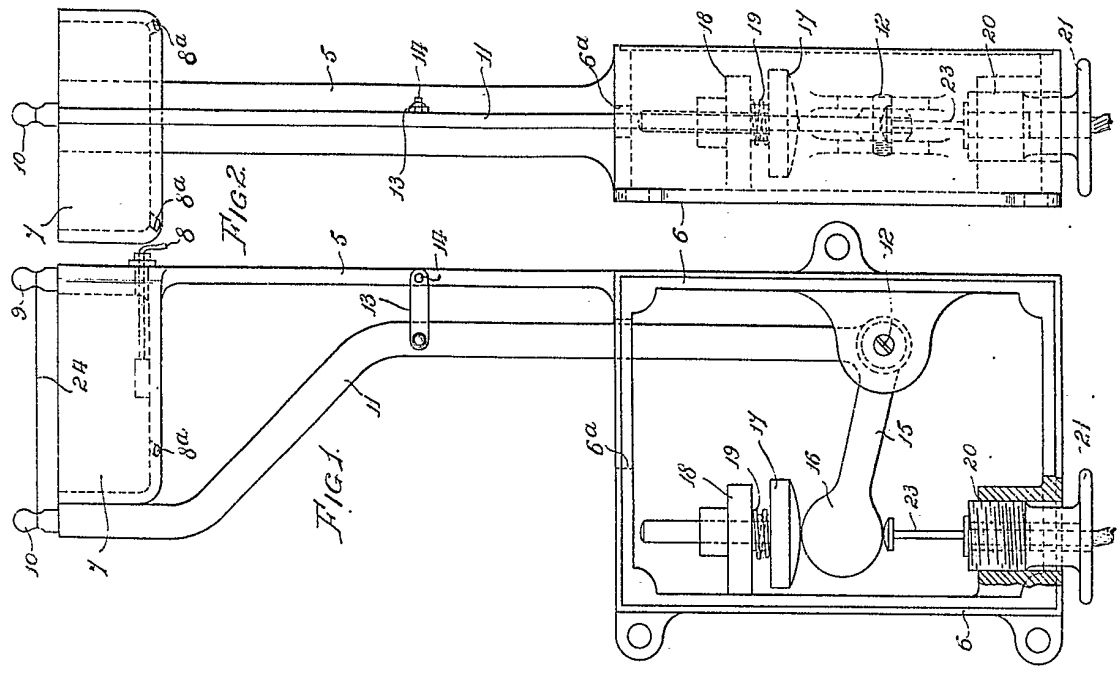


FIG 4.





[This Drawing is a reproduction of the Original on a reduced scale.]