

PATENT SPECIFICATION

(11) 1 287 293

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DRAWINGS ATTACHED

- (21) Application No. 49434/69 (22) Filed 8 Oct. 1969
(31) Convention Application No. 765926 (32) Filed 8 Oct. 1968
(31) Convention Application No. 766751 (32) Filed 11 Oct. 1968 in
(33) United States of America (US)
(45) Complete Specification published 31 Aug. 1972
(51) International Classification G03B 15/04
(52) Index at acceptance

G2A 1G 1H 1K2A 1K2Y 1KY

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(54) PHOTOGRAPHIC FLASH LIGHT DEVICES

(71) We, EASTMAN KODAK COMPANY, a Company organized under the Laws of the State of New Jersey, United States of America of 343 State Street, Rochester, New York 14650, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to photographic flashlight devices, and to cameras incorporating such devices, for use with percussion-ignitable flash lamp units (hereinafter referred to as "of the kind defined") comprising one or more flashlamps, the or each flashlamp having a primer and a pre-energised striker which, upon being released from its energised condition, strikes the primary to activate the lamp.

Such flash lamp units have the advantage that they do not require a source of electricity for firing. Moreover, the provision of pre-energised strikers in the units has the advantage that it obviates the extra load placed on the normal movements of a photographic camera in energising a striker built into the camera.

In accordance with the present invention there is provided a photographic flashlight device comprising a holder for receiving a percussion-ignitable flash lamp unit of the kind defined and an actuating member movably mounted for movement towards the striker or one of the strikers of a flash lamp unit received in the holder to release the striker or one of the strikers from its energised condition.

According to the present invention there is also provided a photographic camera comprising a holder for receiving a percussion-ignitable flash lamp unit of the kind defined and an actuating member movably mounted for movement, under the control of a shutter release member, towards the striker, or one

of the strikers of a flash lamp unit received in the holder to release the striker or one of the strikers from its energised position.

In the accompanying drawings, Figures 1 to 14 show various forms of percussion-ignitable flash lamp units of the kind defined for use with a camera having a striker actuating mechanism according to one form of the present invention as shown in Figs. 15 to 19, and in particular:—

Fig. 1 is a front view of one form of flash lamp unit;

Fig. 2 is a bottom view of the unit shown in Fig. 1;

Fig. 3 is a section taken on the line III—III of Fig. 1;

Fig. 4 is a section taken on the line IV—IV of Fig. 2;

Fig. 5 is a view similar to Fig. 4 but showing the unit after activation of one lamp;

Fig. 6 is a perspective view, with portions removed for illustration, of a further form of flash lamp unit;

Fig. 7 is a partial section to an enlarged scale, of the unit shown in Fig. 6 and showing a manner of mounting the pre-energised striker elements of that unit;

Fig. 8 is a partial section similar to Fig. 7 but showing an alternative manner of mounting the pre-energised striker elements in that unit;

Fig. 9 is a perspective view of another form of flash lamp unit with portions removed for illustration;

Fig. 10 is a perspective view of still another form of flash lamp unit with portions removed for illustration;

Fig. 11 is a top view, to an enlarged scale, of the flash unit shown in Figure 6, having parts omitted for the purpose of illustration;

Fig. 12 is an elevation of one of the unstressed springs shown in Fig. 11;

Fig. 13 is a sectional view taken on the lines V—V of Fig. 11;

Fig. 14 is a fragmentary view of a portion

of the unit shown in Fig. 13 but showing the striker element in its released position;

Fig. 15 is a perspective view of a camera constructed in accordance with one form of the present invention;

Fig. 16 is a perspective view of the actuating elements shown in Fig. 15 when in a cocked position;

Fig. 17 is an elevation of a portion of the camera shown in Fig. 15 shows the socket rotating mechanism of the camera; and

Figs. 18 and 19 show a modification of the striker retaining element of the flash units shown in Figs. 6 to 14 and of the striker actuating member of the apparatus of the present invention.

In Figs. 1 and 2, the unit 1 includes a plurality of percussion-activatable flash lamps 2 which are mounted with their individual reflectors 3 on a base 4 of generally square cross-section to form an assemblage which is generally cubic in configuration. The base 4 can be moulded from a plastics material.

A hollow post 5 extends from the bottom of the base 4 to provide means for releasably mounting the unit on a photographic apparatus in a known manner. Transparent side-wall members 6 are provided around the unit 1 and a top member 7 completes the package enclosure and can be used to support the individual reflectors 3 in proper reflecting alignment with their respective flash lamps 2.

As shown in Fig. 4, the individual lamps 2 are formed with a hermetically sealed envelope 8 which contains combustible material, such as zirconium foil, and a combustion-supporting gas, such as oxygen. At the bottom of each lamp 2, a hollow primer tube 9 is provided, which may be formed of metal. The primer tube 9 is closed at its bottom end forming a percussion cap 10 of known construction. The primer tube contains a charge of percussion-sensitive material, such as zirconium fulminate, or other known ballistic primer charges and is actuated by deformation of the charge when the percussion cap 10 is struck with sufficient percussive energy. The tube 9 is open at its upper end 11 into the envelope 8 in a manner such that percussion activation of the powder charge in the primer tube will cause the combustible material in the envelope to ignite and thereby provide a photographic flash.

Referring now to Figs. 3 and 4, a plurality of spring members 20 are embedded at one end in cantilever fashion into the base 4 and extend in channels 21 formed in the base 4 so that the free end 22 of each of the members 20 is located beneath the percussion cap 10 of respective flash lamps 2, thereby providing an individual percussion striker for each lamp 2. It will be appreciated that the percussion cap 10 can be embedded rigidly in the base 4 or secured

rigidly to the base 4 by known methods and extend into the channels 22 at suitable locations for percussion impact by spring strikers 20.

The flash unit 1 is also provided with a plurality of striker holding members 23 each of which, in this embodiment, is formed as a latch lever pivotally mounted on a pin 24 and having a striker retaining notch 25. The members 23 are preferably constructed so that the centre of gravity of each member substantially corresponds to its pivot point. As can be seen most clearly in Fig. 4, the holding members 23 are located in channels 21 so as to be releasably engageable with the free end 22 of strikers 20 when the strikers have been stressed to an energised position like that shown in Fig. 4, this condition being referred to as "pre-energised".

Referring now to Figures 2 and 4, it can be seen that a plurality of access openings 27 are formed in the bottom of base 4, generally in alignment with actuating ends 28 of the holding members 23. The openings 27 extend into the channels 21 so that each holding member 23 can be contacted on its end 28 and pivoted in a clockwise direction, as viewed in Fig. 4, about its pin 24 when its access opening is in registry with an actuating member 72 and the actuating member is moved upwardly into the access opening.

The spring members 20 of the flash unit 1 are intended to be stressed to and preset in the pre-energised position until it is desired to activate their associated flash lamp 2. The strikers can be formed of spring wire or strips which can be of steel or other resilient materials having high restoring forces.

As shown in Figures 4 and 5, when the actuating member 72 is moved into an access opening 27 and pivots a holding member 23 in a clockwise direction, the notch 25 on that lever 23 moves downward and releases the energised striker 20 held by that member so that the restoring spring forces of the released striker cause its free end 22 to move into percussion contact with the cap 10 of the associated primer 9. Ignition of a lamp 2 associated with the released striker 23 is accomplished in the manner described above. It is to be pointed out that by suitable design of the co-operation of the holding member 23 and striker 20 such as is shown in Fig. 4, an additional energization can be provided to the striker 20 by providing for the holding member 23 to move the free end 22 of striker 20 downward before effecting release of the striker. Such an additional energization by the actuating member is not however required in order to achieve operable percussion.

In Fig. 5, the striker 20 and holding member 23 are shown in the released positions after activation of the percussion-ignitable flash lamp 2.

Each of the flush units shown in Figs. 9

to 13 includes a plurality of percussion-ignitable flash lamps 103 which are mounted with their individual reflectors 104 around the central axis of a base 105 to form an assemblage which is generally cubic in configuration. The base 105 may be moulded of a plastics material. By referring briefly to Fig. 13 it can be seen that each of the flash units shown in Figs. 6 to 10 has a downwardly extending hollow post 106 adapted to be mounted in a socket on a camera 102 in a known manner. The upright walls 107 of the unit are transparent and a top 108 is provided to complete the package enclosure. Each flash lamp 103 is provided with a hollow ignition tube 109 which opens at the top into the flash lamp envelope and contains a primer charge.

Referring now to Figures 6 and 11 to 14, the flash unit is provided with strikers 110 in the form of a unitary spring member having an inverted U-shaped upright portion 111 and two generally horizontal striker portions 112. The flash unit utilizes two of these strikers 110 so that with two striker portions 112 on each striker 110, each of the four flash lamps 103 is provided with an individual striker portion 112. The strikers 110 are mounted with the inverted U-shaped portions thereof in diagonally opposite corners of the unit and extending generally normally upward from the base 105. The U-shaped members 111 can be supported with respect to the unit by means of a hollow sleeve 113 as shown in Figs. 6 and 7 or, alternatively, clamped rigidly to the unit at their top by means of a web 113' as shown in Fig. 8, in a manner which substantially prevents transmission of torsional stress between the legs of the U-member 111.

The striking portions 112 of each striker 110 are generally perpendicular to the upright portions 111 so as to extend parallel with respect to the interior of the base 105. The striker 110 is formed so that the striker portions 112, in their unstressed condition, are generally parallel and formed as extensions of the upright portion bent to an angle of 90°. The unstressed configuration of a striker 110 can be seen in Fig. 12; however, the construction of the springs unstressed configuration can vary in accordance with characteristics of the material used and the energy desired for percussion.

When the strikers 110 have been mounted in a flash unit and the striker portions 112 have been stressed to the positions shown in Figs. 6 and 11, considerable torsional restoring forces in the portion 111 urge the striker portion 112 towards the ignition tubes 119 of the flash unit.

As shown in Fig. 13, the bottom ends of ignition tubes 109 can be embedded in the base 105 to obtain rigid support and a backup ring 105a can be moulded in the base

to further support the tubes during percussion. The base 105 is provided with upwardly extending posts or stops 114 which provide means for dislodgably restraining the free ends of striker portions 112 under stress so that the spring is in a pre-energized condition.

As mentioned above, the force urging the striker portions 112 towards ignition tubes 109 include a large torsional restoring force resulting from the twisting of the upright portion 111. Further, it can be seen that when the upright portion 111 is mounted by means of a sleeve 113, as shown in Figs. 6 and 7, the torsional forces acting to restore the strikers are derived from both legs of the upright portion 111. However, when the top of a striker 110 is clamped by means of a web 113', as shown in Fig. 8, the torsional restoring force for any one striker portion 112 is derived substantially from only one leg of the upright portions 111 of striker 110.

The base 105 also includes four openings 115 to the exterior of the flash unit. The openings 115 are in the illustrated embodiment located intermediate the posts 114 and mounted upright in portions 111 of the striker 110 and beneath the striker portions 112 when in their pre-energized positions shown in Figs. 6 and 13.

By referring to Figs. 11 to 14 it can be seen that when an actuating member such as 172 is moved upwardly from the exterior of the flash unit through one of the access sites defined by openings 115, the striker portion 112 associated with that opening will be moved upward to a position in which it is no longer restrained by its stop 114 and is free to be moved by the restoring forces of striker 110 in percussion contact with the ignition tube 109 located in its firing path.

It will of course be appreciated that in order to prevent accidental dislodging of the striker portions 112, the posts 114 can be slightly ramped over the striker portions 112 or that the striker portions 112 can be weakly secured to the posts as by embedding the wire ends partially in the posts 114 or base 105. Alternatively, the striker 110 can be formed so that the mounted striker portions 112 have a slight downward bias against the base 105 to prevent accidental firings.

Referring now to Fig. 9, the flash unit embodiment has wire strikers 120 formed as cantilever springs with fixed ends 121 embedded in the base 105 and free ends 122 dislodgably restrained by means of posts 123. A plurality of openings 124 provide access for an actuating member to dislodge the strikers 120 from the posts 123 in the manner described with respect to Fig. 6.

In Fig. 10, the springs 130 of the flash unit are similar to those shown in Fig. 6 in that torsional restoring forces are applied by upright members 131 to cause the striker portions 132 to move into percussion contact

with ignition tubes 109. However, in this instance, each striker portion 132 is provided with an individual inverted U-shaped member; and the four inverted-U members of the unit are mounted in the centre of the flash unit by means of a sleeve 133 which can be secured to the top of the flash unit. Again restraining posts 134 and access openings 135 are provided so that activation of ignition-tubes 109 can be effected in the same manner described with respect to the embodiments shown in Figs. 6 and 9.

It will be appreciated that individual striker elements need not take the specific forms illustrated but can include other biased elements which can be releasably or dislodgeably retained within the flash unit in a pre-energized condition and which, upon releasing or dislodging, will effect percussion activation of an associated flash lamp.

It also is to be noted that the striker and restraining elements need not be enclosed in the flash unit in the specific manner shown herein; however, it is very desirable that such elements be protected by the structures of the unit in such a fashion that accidental firing is not likely. For this purpose, an easily rupturable protective structure can be provided to prevent accidental activation of the holding elements. It is only necessary that the unit be provided with actuating sites with which an actuator member of a photographic apparatus can co-operate to release or dislodge a pre-energized striker element.

It will also be appreciated that the flash units may have a single flash lamp or any number of flash lamps provided a corresponding number of pre-energized striker elements are provided in the unit.

Referring now to Figs. 15 to 17 one embodiment of a photographic apparatus which, according to the present invention, is provided for selectively actuating release of pre-energized striker elements in a flash unit such as those in Figs. 1 to 14, will be described.

In Fig. 15, the actuating apparatus of the present invention is shown as it can be embodied in a photographic camera 40. Because photographic cameras having structure to receive and sequentially index electrically-ignitable multilamp photoflash units are generally known, the present description will be directed to particular elements of such cameras which co-operate more directly with the present invention, elements not specifically shown or described herein being understood to be selectable from those known in the art.

The camera 40 comprises an exterior housing 41 and an interior frame 42 on which various operating elements of the camera are mounted. A socket 43, of a known type adapted detachably to receive and support a flash unit with a base 3 such as is shown in Fig.

1, is provided in an opening on the top of housing 41.

The camera 40 has a film advance wheel 45 with an operating lever 46, the wheel 45 being connected to a film-drive shaft 47 which successively advances photographic film inserted in the camera in a known manner. The wheel 45 also has a lug 48 formed on its periphery, the purpose of which will be hereinafter described.

A shutter release lever 50 is slidably mounted on pins 51 for movement in a vertical direction and is urged upwardly by means of a shutter release spring 52. In Fig. 15 it can be seen that the shutter release lever 50 includes a lug 55 for actuation by the operator and has extending horizontally therefrom a retaining arm 53 which terminates in a shutter release latch 54.

A shutter driver 60 is mounted in the camera for rotation on a pin 61 in operative association with the shutter release latch 54 and the camera shutter (not shown). The shutter driver 60 is biased by means of a shutter driven spring 62 for rotation in a counterclockwise direction as viewed from the top in Fig. 15 and includes a cocking arm 63, shutter actuating arm 64 and retaining arm 65 which will be further described hereafter.

An actuating plunger 70 is slidably mounted in a bore in the frame 42 of the camera and urged upwardly by an actuating spring 71 so that, when released from its cocked position, an actuating pin 72 on the upper end of plunger 70 will pass through an actuating opening 73 in the camera top. The actuating opening 73 and plunger 70 are aligned with respect to socket 43 so that the access opening 27 associated with a forwardly facing lamp of a percussion-ignitable unit, such as disclosed in Figs. 1 to 14, will be aligned with these elements when such a unit is in the socket 43. The actuating plunger 70 has a cocking pin 76 and a retaining notch 75 formed on the bottom end thereof at a location for cocked engagement by the retaining arm 65 of the shutter driver 60.

A cocking slider 80 is mounted for horizontal movement in the camera by means not shown and has an opening 81 engaged by the lug 48 of the film advance wheel 45. The slider 80 includes a shutter driver cocking arm 82 and a ramped end 83 adapted contact the cocking pin 76 and move the plunger 70 downwardly against the action of the spring 71.

In Fig. 15 the parts of the camera are shown during a picture-taking operation with the shutter release lever 50 partially depressed; whereas in Fig. 16 the parts are shown in a cocked position after the film has been wound and ready for a picture-making operation.

By referring to Figs. 15 and 16 it can

be seen that when the camera is in the ready condition shown in Fig. 16 and the shutter release lever 50 is depressed, the shutter release latch 54 releases the shutter driver 60 so that arm 64 can move in a counterclockwise direction under the action of spring 62 to actuate the camera shutter (not shown) in a known manner. This movement of the released shutter driver 60 also causes the retaining arm 65 to release the actuating plunger 70 so that the actuating pin 72 is moved upwardly through the actuating opening 73 and into the aligned access opening of an inserted flash unit by means of the spring 71. This action releases the individual spring striker which is associated with the forwardly facing flash lamp and provides photoflash in synchronization with the camera shutter.

During film advance, the film advance wheel 45 is rotated in a counterclockwise direction causing the slider 80 to move to the right to the position indicated by the dotted lines in Fig. 16. Rightward movement of the slider 80 causes the ramped end 83 of the slider to contact the pin 76 and move the actuator plunger 70 downward. Also during this rightward movement, the shutter driver cocking arm 82 engages and moves the shutter driver 60 in a clockwise direction against the action of the spring 62 and over the top of the shutter release latch 54 to its cocked position. The final stages of clockwise rotation of the shutter driver 60 causes its retaining arm 65 to move into the notch 75 of the depressed plunger 70, thereby retaining the plunger in the cocked position. After the film advance wheel 45 has been returned to its original position shown in Fig. 15 the camera elements are cocked and ready for another picture-taking operation.

By referring to Figs. 15 and 17, the mechanism of the present invention which provides socket rotation in proper co-operation with film advance and the cocking of actuating plunger 70 can be seen.

As shown in Fig. 17, the slider 80 has formed thereon an upper arm 85 which is pinned to a socket rotating arm 86. As shown in Fig. 17, a spring 87 urges the socket rotating arm 86 towards the slider 80 and against a stop 88 on the upper arm 85. The arm 86 has a claw 89 formed on its forward end for engagement with ears 91 formed on the lower portion of socket 43.

It can be seen that during film advance the slider 80 first cocks the plunger 70 thereby withdrawing the pin 72 from an inserted flash unit and moves the arm 86 into contact with an ear 91 on the socket 43 as indicated by the dotted position *a* in Fig. 17. Further movement of the slider 80 to dotted position *b* effects rotation of the socket 43 with the pin 72 in its depressed position. The socket is indexed and held in the advanced

position by the engagement of a spring loaded detent 92 in one of a series of notches 93 in the socket 43.

It will also be appreciated that the actuating plunger of the present invention can be provided with an actuating surface which contacts and co-operates with the striker element to move the striker back slightly in a direction further stressing the spring. Such structure is useful in order to clear the striker of overlying retaining structure which can be provided on the restraining posts for safety, such as for example, the ramped surface described above. Such a modified plunger 70' with a ramped surface 72a co-operable with a striker element S and restraining lug L of a flash unit can be seen in Figs. 18 and 19.

WHAT WE CLAIM IS:—

1. A photographic flashlight device comprising a holder for receiving a percussion-ignitable flash lamp unit of the kind defined and an actuating member movably mounted for movement towards the striker or one of the strikers of a flash lamp unit received in the holder to release the striker or one of the strikers from its energized condition.

2. A photographic flashlight device according to Claim 1, wherein the actuating member comprises a slidably mounted rod.

3. A photographic flashlight device according to Claim 2, wherein the rod is retained in its inoperative position by means of a releasable latch member and is spring urged towards an aligned striker of a flash lamp unit received in the holder.

4. A photographic camera comprising a holder for receiving a percussion-ignitable flash lamp unit of the kind defined and an actuating member movably mounted for movement, under the control of a shutter release member, towards the striker, or one of the strikers of a flash lamp unit received in the holder to release the striker or one of the strikers from its energized position.

5. A photographic camera according to Claim 4, wherein the actuating member comprises a slidably mounted rod which is spring urged towards an aligned striker in a flash lamp unit received in the holder, and is releasably retained in a retracted position, against the action of the spring, by means of a latch which is releasable upon actuation of the shutter release member.

6. A photographic camera according to Claim 5, wherein the rod is moved to its retracted position, against the action of the spring, upon actuation of a film advancing mechanism.

7. A photographic camera according to Claim 6, wherein the film advancing mechanism comprises a manually operable wheel having a lug in engagement with an aperture in one end of a slide, the other end of



* C L M S *

be seen that when the camera is in the ready condition shown in Fig. 16 and the shutter release lever 50 is depressed, the shutter release latch 54 releases the shutter driver 60 so that arm 64 can move in a counterclockwise direction under the action of spring 62 to actuate the camera shutter (not shown) in a known manner. This movement of the released shutter driver 60 also causes the retaining arm 65 to release the actuating plunger 70 so that the actuating pin 72 is moved upwardly through the actuating opening 73 and into the aligned access opening of an inserted flash unit by means of the spring 71. This action releases the individual spring striker which is associated with the forwardly facing flash lamp and provides photoflash in synchronization with the camera shutter.

During film advance, the film advance wheel 45 is rotated in a counterclockwise direction causing the slider 80 to move to the right to the position indicated by the dotted lines in Fig. 16. Rightward movement of the slider 80 causes the ramped end 83 of the slider to contact the pin 76 and move the actuator plunger 70 downward. Also during this rightward movement, the shutter driver cocking arm 82 engages and moves the shutter driver 60 in a clockwise direction against the action of the spring 62 and over the top of the shutter release latch 54 to its cocked position. The final stages of clockwise rotation of the shutter driver 60 causes its retaining arm 65 to move into the notch 75 of the depressed plunger 70, thereby retaining the plunger in the cocked position. After the film advance wheel 45 has been returned to its original position shown in Fig. 15 the camera elements are cocked and ready for another picture-taking operation.

By referring to Figs. 15 and 17, the mechanism of the present invention which provides socket rotation in proper co-operation with film advance and the cocking of actuating plunger 70 can be seen.

As shown in Fig. 17, the slider 80 has formed thereon an upper arm 85 which is pinned to a socket rotating arm 86. As shown in Fig. 17, a spring 87 urges the socket rotating arm 86 towards the slider 80 and against a stop 88 on the upper arm 85. The arm 86 has a claw 89 formed on its forward end for engagement with ears 91 formed on the lower portion of socket 43.

It can be seen that during film advance the slider 80 first cocks the plunger 70 thereby withdrawing the pin 72 from an inserted flash unit and moves the arm 86 into contact with an ear 91 on the socket 43 as indicated by the dotted position *a* in Fig. 17. Further movement of the slider 80 to dotted position *b* effects rotation of the socket 43 with the pin 72 in its depressed position.

The socket is indexed and held in the advanced

position by the engagement of a spring loaded detent 92 in one of a series of notches 93 in the socket 43.

It will also be appreciated that the actuating plunger of the present invention can be provided with an actuating surface which contacts and co-operates with the striker element to move the striker back slightly in a direction further stressing the spring. Such structure is useful in order to clear the striker of overlying retaining structure which can be provided on the restraining posts for safety, such as for example, the ramped surface described above. Such a modified plunger 70' with a ramped surface 72a co-operable with a striker element S and restraining lug L of a flash unit can be seen in Figs. 18 and 19.

WHAT WE CLAIM IS:—

1. A photographic flashlight device comprising a holder for receiving a percussion-ignitable flash lamp unit of the kind defined and an actuating member movably mounted for movement towards the striker or one of the strikers of a flash lamp unit received in the holder to release the striker or one of the strikers from its energized condition.

2. A photographic flashlight device according to Claim 1, wherein the actuating member comprises a slidably mounted rod.

3. A photographic flashlight device according to Claim 2, wherein the rod is retained in its inoperative position by means of a releasable latch member and is spring urged towards an aligned striker of a flash lamp unit received in the holder.

4. A photographic camera comprising a holder for receiving a percussion-ignitable flash lamp unit of the kind defined and an actuating member movably mounted for movement, under the control of a shutter release member, towards the striker, or one of the strikers of a flash lamp unit received in the holder to release the striker or one of the strikers from its energized position.

5. A photographic camera according to Claim 4, wherein the actuating member comprises a slidably mounted rod which is spring urged towards an aligned striker in a flash lamp unit received in the holder, and is releasably retained in a retracted position, against the action of the spring, by means of a latch which is releasable upon actuation of the shutter release member.

6. A photographic camera according to Claim 5, wherein the rod is moved to its retracted position, against the action of the spring, upon actuation of a film advancing mechanism.

7. A photographic camera according to Claim 6, wherein the film advancing mechanism comprises a manually operable wheel having a lug in engagement with an aperture in one end of a slide, the other end of



which is ramped and engageable with a projection carried by the rod to retract the rod, upon actuation of the wheel, to its latched position.

- 5 8. A photographic camera according to Claim 7, wherein the latch comprises a pivotally mounted three-armed lever having one arm engageable with the rod to retain it in its retracted position, a second arm engageable by a lug on the slide to urge the first arm into its rod latching position when the wheel is rotated and a third arm engageable by a ramped lug on the shutter release member to retain the first arm in the latching position against the action of a spring, the three-armed lever being rotated by the spring to release the first arm from latching engagement with the rod upon actuation of the shutter release member.

- 10 20 9. A photographic camera according to any one of the preceding claims, wherein the holder is adapted to receive a multi-lamp, percussion-ignitable flash lamp unit of the

kind defined, the lamps being equi-spaced about an axis of rotation, and wherein the holder is mounted for rotation of successively aligning the strikers in a flash lamp unit received by the holder with the actuating member.

10. A photographic camera according to Claim 9, as appendant to Claim 7 or 8, wherein the holder is intermittently rotated upon actuation of the manually operable wheel by the successive engagement of an arm carried by the slide with a plurality of lugs carried by the holder.

11. A photographic camera according to Claim 4, constructed substantially as hereinbefore described with reference to Figs. 15 to 17, or Figs. 15 to 17 as modified by Figs. 18 and 19 of the accompanying drawings.

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Printed for Her Majesty's Stationery Office, by the Courier Press, Leamington Spa, 1972.
Published by The Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.