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DRAWINGS ATTACHED



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(54) PHOTOFLASH SOCKETS AND PHOTOGRAPHIC CAMERAS AND FLASHLIGHT DEVICES INCORPORATING THE SAME

(71) We, EASTMAN KODAK COMPANY,
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the State of New Jersey, United States of
America of 343 State Street, Rochester,
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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 per-
formed, to be particularly described in and
by the following statement:—

The present invention relates to a photo-
flash socket and to photographic flash-light
devices and cameras incorporating such de-
vices, for receiving a multi-lamp percussion-
ignitable flashlamp unit (hereinafter referred
to as "of the kind defined") in which each
flashlamp has a primer which is deformed
and/or displaced upon being struck by a
striker to ignite the flashlamp, the striker
forming a part of the unit or a part of
the socket; the term deformable or dis-
placeable firing element of a flashlamp as
used herein refers to the primer where the
striker forms part of the socket and to
the primer and/or striker where the striker
forms a part of the flashlamp unit.

In accordance with the present invention
there is provided a photoflash socket for
receiving a multi-lamp, percussion-ignitable
flashlamp unit of the kind defined, compris-
ing a plurality of independently operable
firing members and means for releasably
retaining a flashlamp unit with each firing
element thereof located for firing engage-
ment by one of the firing members.

According to the present invention there
is also provided a photographic flashlight
device having such a socket and an ignition
hammer and wherein the socket is rotat-
ably mounted for successively indexing the
firing elements of an inserted flashlamp unit
to a firing position and for locating the
associated firing member in the path of
movement of the ignition hammer.

In accordance with the present invention
there is further provided a photographic
camera having a rotatable socket for re-
ceiving a multilamp, percussion-ignitable
flashlamp unit of the kind defined, a separ-
ate, individually operable firing member ex-
tending through the socket for firing each
firing element of a flashlamp unit inserted
in the socket, means for releasably retain-
ing a flashlamp unit with each firing element
thereof located for firing engagement by one
of the firing members, and an ignition ham-
mer which is actuated in synchronism with
shutter operation to actuate the firing mem-
ber which is located in the firing position.

In the accompanying drawings:—

Fig. 1 is a perspective view of a camera
of a type adapted to employ a photoflash
socket constructed in accordance with one
form of the present invention;

Fig. 2 is a perspective view of the base
of a percussion-ignitable flashcube and of
a camera socket member according to the
present invention adapted to receive the
same;

Fig. 3 is a perspective fragmentary view
of a percussion-ignitable flashcube, parti-
ally depicting one of the flashbulbs therein
and showing the percussive ignition means
associated with that bulb;

Fig. 4 is a schematic plan of the drive
mechanism of a camera comprising a
preferred embodiment of the present inven-
tion;

Fig. 5 is a front elevation of the mecha-
nism depicted in Fig. 4;

Fig. 6 is a perspective view of the flash-
cube socket shown in Fig. 2, depicting the
operative elements associated therewith in
accordance with the present invention;

Fig. 7 is a plan of Fig. 6;

Fig. 8 is an end view of the structure
shown in Figs. 6 and 7, illustrating the
means by which a signal is provided in the
camera viewfinder to indicate the presence

or absence of a usable bulb firing position; and

5 Figs. 9—12 are schematic front elevations of the shutter and ignition actuating means incorporated in the subject camera, illustrating the relative positions of the depicted components during successive stages of operation as the shutter operating member is actuated and as the film is thereafter
10 wound to prepare the camera for the next exposure.

Referring to Fig. 1, the camera 11 comprised a boxlike housing 12, an objective lens assembly 13, a shutter operating member 14, a handle 15 of a film-winding lever, and a viewfinder 16. As shown in Fig. 2, a socket member 17 is located within the camera housing and is accessible through a circular opening 18 in the top housing wall
20 19 to receive a percussion-ignitable flashcube 21.

As described more specifically in our co-pending Application No. 39284/70 (Serial No. 1,323,941), the flashcube comprises four
25 flashbulbs 22, which are supported by their respective ignition tubes 23 as shown in Fig. 3 on a generally square base member 24. A reflector member 25 provides a concave reflecting surface behind each respective flashbulb, all of which are enclosed in a transparent housing 26 attached to the base member. As best shown in Fig. 3, each of the flashbulbs includes a glass envelope 27, which is partially filled with fine zirconium
30 wire or some other combustible material adapted to provide illumination when ignited. The ignition tube 23 of each flashbulb is hollow and relatively thin and contains a percussion sensitive primer material coated on a central anvil pin within the bore of the tube. As is also shown in Fig. 3, each of the flashbulbs is associated with a firing element comprising a resilient wire 28, one end of which is supported on the base member 24 and projects upwardly to provide a stop pin 29. The opposite free end of the wire is disposed horizontally to form a
40 striker 31, which is biased toward the ignition tube of the corresponding flashbulb by the torsional influence of the upwardly extending central loop 32 of the wire. Initially, the free end of the striker 31 is trapped in a cocked position behind stop pin 29 above a corresponding arcuate slot 33 in the flashcube base member. If the free end of the striker 31 is lifted beyond its stop pin 29, however, it will snap into percussive contact with the ignition tube of the corresponding bulb. The impact of the
50 striker against the ignition tube locally pinches the tube against the anvil pin, causing the primer material to be exploded and thrown upwardly into the glass envelope to effect ignition of the combustible material
65 within the bulb envelope.

The flashcube socket member 17 comprises a cylindrical body member 34 to which a cover ring 35 is secured by means of screws 36. The outer periphery of ring 35 is of smaller diameter than the body member 34 to provide an annular shoulder 37 which fits in opening 18 in the top wall of the camera. A similar shoulder 38 at the lower end of the body member is received in the same manner in a corresponding opening in a support plate 39. Accordingly, the socket member is supported for rotation about its vertical axis with the top surface of ring 35 substantially flush with the surrounding upper surface of the camera housing.
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As disclosed in greater detail in our aforementioned Application No. 39284/70 (Serial No. 1,323,941), the socket member 17 is provided with a central opening 41 adapted to receive a generally rectangular base post 42 of a percussion-ignitable flashcube to rotationally align the flashcube with the socket member. When the flashcube is thus installed in the socket member, four resilient pawl fingers 43 in the socket member engage corresponding openings 44 in the flashcube base post 42 to hold the flashcube in its loaded position. Although the flashcube can be manually withdrawn from the socket in opposition to the resilient pawl fingers, the latter are of sufficient strength to prevent the flashcube from being dislodged by the upward pressure exerted on the ignition wires to fire the flashbulbs.
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For purposes hereinafter described, a sensing pin 45 is received in the tubular central stud 46 of the socket member with its opposed wings 47 extending outwardly through stud slots 48 into socket opening 41. The sensing pin is urged upwardly by means of a leaf spring 49 (see Fig. 8) whereby the pin 45 assumes a raised position when the socket is empty but is depressed by the base post of a flashcube loaded into the socket member.
105 110

Directly below the position assumed by each cocked striker wire of a flashcube mounted in the socket member, the latter is provided with a firing member 51 aligned with the corresponding flashcube base slot 33. As shown in Fig. 2 each firing member 51 includes a central cylindrical flange 52 slidably mounted in a vertical hole 53 in the socket member 34. A rod 54 of smaller diameter than flange 52 extends below the socket member 34 through a hole 55 of smaller diameter than hole 53; a tongue 56 is received in a mating rectangular slot 57 in ring 35; and a radial pin 58 projects beyond the socket member through a corresponding vertical slot 59 intersecting hole 53. A relatively weak coil spring 61 encircles each tongue 56 and is slightly compressed between the cover ring 35 and the
115 120 125 130

corresponding firing member flange 52 to bias tongue 56 downwardly to the position shown in Fig. 2, in which the upper tip of the tongue is flush with the top surface of the cover ring. By compressing spring 61, the firing member can therefore move upwardly, as later explained in detail, to bring the upper end of its tongue into engagement with the cocked firing wire aligned therewith.

Referring now to Figs. 4 and 5, a film-winding mechanism comprises a winding lever 62 carried by a rotatably supported vertical shaft 63 and biased in a clockwise direction (as viewed in Fig. 4) against a stop pin 64 by means of a spring 65. The lower end of shaft 63 is connected to a film take-up spool 66 within the camera through a unidirectional clutch 67, thereby causing film to be wound onto the take-up spool in response to reciprocatory movements of the winding lever.

A transmission lever 68 is rotatably supported on a vertical stud 69 and is provided with a radial arm 71 which overlaps the adjacent edge of the winding lever in the path of movement of a drive lug 72 projecting upwardly therefrom. A slide member 73 is slidably supported by means of rivets 74 extending through a slot 75 and is biased toward the winding lever 62 by means of a relatively strong spring 76. A vertical ear 77 at the end of the slide member 73 adjacent the transmission lever 68 engages the tip of a second arm 78 extending outwardly from the lever 68, thereby biasing lever 68 in a counterclockwise direction (as viewed in Fig. 4) against a stop pin 79 as shown in solid lines in Fig. 4.

A generally square socket drive member 81, provided with corner ears 82, depends from the socket member 17 as shown in Figs. 4 and 5. A leaf-type positioning spring 83 laterally engages the socket drive member 81 and thereby tends to orientate the socket member so that the flashcube therein is parallel to the camera with its forwardly facing flashbulb in a firing position. A similar leaf-type drive spring 84 is secured to the slide member 73 and is also laterally engaged with the socket drive member 81. Whenever the slide member 73 is in the position shown in solid lines in Fig. 4, a shoulder 85 near the free end of spring 84 is positioned beyond the socket drive member 81; thus relieving the tension of that spring sufficiently to prevent it from interfering with the flashcube orientation established by positioning spring 83. Upon manual movement of winding lever 62 into contact with a stop pin 86, as shown in broken lines in Fig. 4, the drive lug 72 engages the arm 71 of the transmission lever 68 and rotates the latter in a clockwise direction to the position likewise shown in broken lines.

Consequently, the tip of transmission lever arm 78 moves the slide member 73 and drive spring 84 to their respective similarly depicted positions in opposition to the resistance of spring 76. As the drive spring 84 is so moved, its shoulder 85 encounters the adjacent corner ear 82 of the socket drive member 81 and rotates the latter through a ninety degree angle in a clockwise direction by temporarily overpowering the influence of positioning spring 83. When the winding lever is released and is restored by the spring 65 to its initial position, spring 76 likewise returns the slide member 73, drive spring 84 and transmission lever 68 to their respective former positions. During this return movement of the drive spring, however, it does not rotate the socket drive member 81, which is prevented from turning in a direction by the positioning spring 83.

A drive lever 87 is rotatably supported on the stud 69 below the transmission lever 68 with its forwardly extending arm 88 biased both downwardly and in a counterclockwise direction by means of a spring 89. A sloped edge 91 of a depending lug 92 on the transmission lever 68 engages the drive lever 87 and rotates the latter in a clockwise direction in opposition to the spring 89 as the transmission lever 68 is driven in the same direction by the winding lever 62. As will be described later, the end of an arm 88 connected to spring 89 is held upwardly until it reaches the cocked position shown in broken lines in Fig. 4. Whereupon it drops out of engagement with lug 92 and is latched in that position by means of a latch bar 93. Consequently, during the return movement of the winding lever 62 to its former position by means of spring 65, arm 88 remains in its cocked position. Preferably the camera is provided with a film metering mechanism which arrests movement of the winding lever each time a film frame is moved into exposure position. Regardless of the manner in which the film winding is controlled, however, each successive winding operation requires at least one complete movement of the winding lever and not more than a subsequent partial movement of that lever through an angle less than that required to move drive stud 72 into engagement with arm 71 of the transmission lever. Thus, each successive film winding operation will cause the flashcube to be rotated only once, in the manner just described.

A signal lever 94 (see Figs. 6-8) provided with a translucent signal vane 95 is supported for rocking movement on a pivot stud 96 and is biased downwardly by means of a weak coil spring 97. An arm 98 extends from the signal lever 94 beneath the socket member and is provided with a cam

nose 99 (see Fig. 8). As previously mentioned, in the absence of a flashcube in the socket member 17, sensing pin 45 is located in its raised position by the leaf spring 49. Consequently, a cam disc 101 on the bottom end of the sensing pin 45 is likewise raised to the position shown in broken lines in Fig. 8, in which it engages cam nose 99 and holds the signal lever 94 in the position shown in solid lines in Figs. 6 and 8 to maintain the signal vane above the field of view of a viewfinder comprising lenses 102 and 103. When a flashcube is installed in the socket member, its base post depresses the sensing pin 45 so that the cam disc is located below the path of movement of cam nose 99, as shown in solid lines in Fig. 8, thus preventing cam disc 101 from influencing the position of the signal vane.

An arcuate shaped cam arm 104 is carried by the lever 94 laterally adjacent the socket member 17, and is adapted to be engaged by the pin 58 of the firing member associated with the flashbulb at the firing position. When a flashbulb has been moved into its firing position, the firing member associated with that flashbulb is urged upwardly by the cam arm 104 under the influence of spring 97, which is strong enough to overcome the downward force of the corresponding firing member spring 61 but not strong enough to dislodge a cocked striker 31 engaged by the tongue 56 of the firing member. Therefore, if a usable bulb is present at the firing position, the cam arm 104 will assume its intermediate position shown in broken lines in Fig. 8 and will maintain the signal vane beyond the field of view of the viewfinder as shown in the same manner in that Figure. If the bulb at the firing position has already been fired, the failure of the firing member tongue 56 to encounter the corresponding cocked striker 31 will allow the pin 58 to be raised to its uppermost position by the cam arm 104 as shown in dotted lines in Fig. 8; thus allowing the signal vane to move downwardly into view as likewise depicted in dotted lines. Accordingly, whenever a flashcube is mounted on the camera, the signal vane will remain in view only if an unusable bulb is located at the firing position.

The mechanism employed to operate the camera shutter and to fire the forwardly facing flashbulb in synchronism therewith is schematically illustrated in Figs. 9-12, but it will be understood that analogous previously devised firing and signal mechanisms for use with percussion-ignitable flashcubes are likewise compatible with the present invention; e.g., the mechanism disclosed in our aforementioned Application No. 39284/70 and our Application No.

41934/70 (Serial Nos. 1,323,941 and 1,324,705).

In the mechanism shown in Figs. 9-12, the latch bar 93 is shown pivotally supported by a stud 105 and is urged upwardly towards a stop pin 106 by means of a relatively strong spring 107. After the film winding and bulb positioning operation has been completed, the latch bar 93 and the shutter operating member 14 extending therefrom are located, as shown in Fig. 9, with the tip of the cocked driving arm 88 trapped by a shoulder 108 of the latch bar 93 and resting on a horizontal top surface 109 of a stationary guide rail 110.

Above the tip of driving arm 88, a horizontal drive pin 111 also shown in Figs. 4 and 5, is supported by a vertical segment 112 of that arm. An igniter hammer 113 is carried by the free end of a resilient blade 114, rigidly supported at its opposite end by means of a mounting ear 115. A cam member 116 is carried by the blade 114 and includes a rearwardly facing sloped upper lip 117 and a shorter rearwardly facing lower lip 118. When the camera is in the condition represented in Fig. 9, the lower lip 118 of the cam member 116 is trapped below the drive pin 111, thereby maintaining the blade 114 in its depicted position in which the hammer 113 is located directly below the firing member associated with the forwardly facing flashbulb. As previously explained, the relatively strong spring 89 urges the tip of driving arm 88 both laterally and also downwardly, thus maintaining that arm temporarily in contact with guide rail 110 in opposition to the weaker upward force exerted on drive pin 111 by the resiliency of the blade 114.

The camera shutter, which is of the well-known impact type, comprises a shutter blade 119 pivotally mounted on a pivot stud 121 and is biased toward a pin 122 by a weak spring 123 to maintain the blade normally in alignment with the objective lens aperture shown at 124. A drive lug 125 projects upwardly from the shutter blade 119 beyond the top surface 109 of guide rail 110 and is adapted to be struck by the tip of the driving arm 88, thereby momentarily opening the shutter as explained below.

Upon manual depression of the shutter operating member 14 to the position shown in Figs. 10 and 11, in opposition to spring 107, shoulder 108 of the latch bar 93 disengages the tip of driving arm 88, causing that arm to be driven rapidly along the top surface 109 of guide rail 110 by the spring 89. During such movement of the driving arm 88, drive pin 111 passes below the sloped upper lip 117 of cam member 116 and cams the blade 114 upwardly as shown in Fig. 10, supplementing the resili-

ent upward force of the blade itself. Consequently, igniter hammer 113 strikes the lower end of the firing member aligned therewith and drives it upwardly to effect
 5 ignition of the operatively positioned flashbulb by dislodging the corresponding cocked striker. Concurrently, the tip of the driving
 10 arm 88 strikes shutter blade drive lug 125 and pivots the shutter blade out of alignment with the objective lens aperture 124 to expose the camera film. Since both the
 15 operation of the blade 114 and the firing of the bulb are effected in response to the movement of the driving arm 88, the bulb therefore flashes in predetermined timed
 20 relation to the opening of the shutter. By the time the tip of driving arm 88 abuts against a shoulder 126 of the guide rail 110 as shown in Fig. 11, it has passed be-
 25 yond engagement with the shutter blade, which is then returned to its initial position as soon as spring 123 overcomes the inertia of the blade. Also, it will be seen from
 30 Fig. 11 that the arrival of the driving arm 88 at the end of its movement path is accompanied by the movement of driven pin 111 beyond the cam member 116 carried
 35 by the blade 114, which remains temporarily in its uppermost position.

Upon the release of the shutter operating member, the latch bar 93 is returned to its raised position shown in Figs. 9 and 12, thereby lifting the tip of the driving arm
 40 88 above guide rail 110 to reengage that arm with the transmission lever 68. This upward movement of the tip of the driving arm 88 also raises drive pin 111 to a position in horizontal alignment with the top
 45 sloped surface of the cam member 116. When the winding lever is again operated, the resulting cocking movement of the driving arm 88 therefore causes drive pin 111 to cam the blade 114 downwardly while the
 50 tip of arm 88 rides along the upper edge surface 127 of the latch bar 110 past drive lug 125 of the shutter blade, as illustrated in Fig. 12. As it approaches its initial cocked position, the tip of arm 88 drops past
 55 shoulder 108 at the end of latch bar surface 127, thus disengaging the driver arm 88 from the transmission lever 68 and restoring the various components to their inoperative positions shown in Fig. 9.

55 WHAT WE CLAIM IS:—

1. A photoflash socket for receiving a multilamp, percussion-ignitable flashlamp unit of the kind defined, comprising a plurality of independently operable firing members and means for releasably retaining a
 60 flashlamp unit with each firing element thereof located for firing engagement by one of the firing members.

65 2. A photoflash socket according to

Claim 1, wherein each firing member is spring urged to an inoperative position relative to the adjacent firing element of a flashlamp unit inserted in the socket.

3. A photographic flashlight device having a photoflash socket according to Claim 1 or 2 and an ignition hammer, wherein the socket is rotatably mounted for successively indexing the firing elements of an inserted
 75 flashlamp unit to a firing position and for locating the associated firing member in the path of movement of the ignition hammer.

4. A photographic flashlight device according to Claims 2 and 3, wherein each firing member comprises a tongue which is
 80 slidably mounted in the socket and spring urged to an inoperative retracted position, and wherein each tongue on being indexed to the firing position is cammed to an extended position by means of a pivotally
 85 mounted member which is urged against the tongue by means of a spring which is stronger than the spring urging the tongue to the inoperative position but is insufficiently strong to cause the tongue to fire a
 90 firing element.

5. A photographic flashlight device according to Claim 4, including a signal device which is actuated by the movement of the pivotally mounted member in cam-
 95 ming a tongue to its extended position to indicate the fired or unfired condition of a firing element located in the firing position.

6. A photographic flashlight device according to Claim 5, wherein a sensing
 100 pin is slidably mounted in the socket and is spring urged to a position in which it blocks movement of the pivotally mounted member into engagement with a tongue, the sensing pin being displaced from such
 105 blocking position upon inserting a flashlamp unit in the socket.

7. A photographic camera having a rotatable socket for receiving a multilamp, percussion-ignitable flashlamp unit of the
 110 kind defined, a separate, individually operable firing member extending through the socket for firing each firing element of a flashlamp unit inserted in the socket, means for releasably retaining a flashlamp unit with
 115 each firing element thereof located for firing engagement by one of the firing members, and an ignition hammer which is actuated in synchronism with shutter operation to actuate the firing member which is located
 120 in a firing position.

8. A photographic camera according to Claim 7, wherein the firing members comprise tongues which are slidably mounted in the socket and are spring urged to a
 125 position in which the portions of the tongues cooperable with the firing elements of a flashlamp unit inserted in the socket are retracted into the socket.

9. A photographic camera according to 130

ent upward force of the blade itself. Consequently, igniter hammer 113 strikes the lower end of the firing member aligned therewith and drives it upwardly to effect ignition of the operatively positioned flashbulb by dislodging the corresponding cocked striker. Concurrently, the tip of the driving arm 88 strikes shutter blade drive lug 125 and pivots the shutter blade out of alignment with the objective lens aperture 124 to expose the camera film. Since both the operation of the blade 114 and the firing of the bulb are effected in response to the movement of the driving arm 88, the bulb therefore flashes in predetermined timed relation to the opening of the shutter. By the time the tip of driving arm 88 abuts against a shoulder 126 of the guide rail 110 as shown in Fig. 11, it has passed beyond engagement with the shutter blade, which is then returned to its initial position as soon as spring 123 overcomes the inertia of the blade. Also, it will be seen from Fig. 11 that the arrival of the driving arm 88 at the end of its movement path is accompanied by the movement of driven pin 111 beyond the cam member 116 carried by the blade 114, which remains temporarily in its uppermost position.

Upon the release of the shutter operating member, the latch bar 93 is returned to its raised position shown in Figs. 9 and 12, thereby lifting the tip of the driving arm 88 above guide rail 110 to reengage that arm with the transmission lever 68. This upward movement of the tip of the driving arm 88 also raises drive pin 111 to a position in horizontal alignment with the top sloped surface of the cam member 116. When the winding lever is again operated, the resulting cocking movement of the driving arm 88 therefore causes drive pin 111 to cam the blade 114 downwardly while the tip of arm 88 rides along the upper edge surface 127 of the latch bar 110 past drive lug 125 of the shutter blade, as illustrated in Fig. 12. As it approaches its initial cocked position, the tip of arm 88 drops past shoulder 108 at the end of latch bar surface 127, thus disengaging the driver arm 88 from the transmission lever 68 and restoring the various components to their inoperative positions shown in Fig. 9.

55 WHAT WE CLAIM IS:—

1. A photoflash socket for receiving a multilamp, percussion-ignitable flashlamp unit of the kind defined, comprising a plurality of independently operable firing members and means for releasably retaining a flashlamp unit with each firing element thereof located for firing engagement by one of the firing members.
2. A photoflash socket according to

Claim 1, wherein each firing member is spring urged to an inoperative position relative to the adjacent firing element of a flashlamp unit inserted in the socket.

3. A photographic flashlight device having a photoflash socket according to Claim 1 or 2 and an ignition hammer, wherein the socket is rotatably mounted for successively indexing the firing elements of an inserted flashlamp unit to a firing position and for locating the associated firing member in the path of movement of the ignition hammer.

4. A photographic flashlight device according to Claims 2 and 3, wherein each firing member comprises a tongue which is slidably mounted in the socket and spring urged to an inoperative retracted position, and wherein each tongue on being indexed to the firing position is cammed to an extended position by means of a pivotally mounted member which is urged against the tongue by means of a spring which is stronger than the spring urging the tongue to the inoperative position but is insufficiently strong to cause the tongue to fire a firing element.

5. A photographic flashlight device according to Claim 4, including a signal device which is actuated by the movement of the pivotally mounted member in camming a tongue to its extended position to indicate the fired or unfired condition of a firing element located in the firing position.

6. A photographic flashlight device according to Claim 5, wherein a sensing pin is slidably mounted in the socket and is spring urged to a position in which it blocks movement of the pivotally mounted member into engagement with a tongue, the sensing pin being displaced from such blocking position upon inserting a flashlamp unit in the socket.

7. A photographic camera having a rotatable socket for receiving a multilamp, percussion-ignitable flashlamp unit of the kind defined, a separate, individually operable firing member extending through the socket for firing each firing element of a flashlamp unit inserted in the socket, means for releasably retaining a flashlamp unit with each firing element thereof located for firing engagement by one of the firing members, and an ignition hammer which is actuated in synchronism with shutter operation to actuate the firing member which is located in a firing position.

8. A photographic camera according to Claim 7, wherein the firing members comprise tongues which are slidably mounted in the socket and are spring urged to a position in which the portions of the tongues cooperable with the firing elements of a flashlamp unit inserted in the socket are retracted into the socket.

9. A photographic camera according to



Claim 8, wherein each tongue on being indexed to the firing position is cammed to an extended position by means of a pivotally mounted member which is urged against the tongue by means of a spring which is stronger than the spring urging the tongue to the retracted position but is insufficiently strong to cause the tongue to fire a firing element and wherein a signal device is actuated by the movement of the member in camming a tongue to its extended position to indicate the fired or unfired condition of a firing element located in the firing position.

10. A photographic camera according to

Claim 9, wherein a sensing pin is slidably mounted in the socket and is spring urged to a position in which it blocks movement of the pivotally mounted member into engagement with a firing member, the sensing pin being displaced from such blocking position upon inserting a flashlamp unit in the socket.

11. A photographic camera according to Claim 7, constructed substantially as hereinbefore described with reference to, and as shown in, the accompanying drawings.

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