

PATENT SPECIFICATION

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(54) IMPROVEMENTS IN AND RELATING TO CAMERAS

(71) We, AGFA-GEVAERT AKTIENGESSELLSCHAFT, a body corporate organised according to the laws of Germany, of Leverkusen, Germany, 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 invention relates to a camera for use with impact ignited flashlamps and having a shutter, an ignition member for the flashlamps and a drive member for the ignition member, the drive member being disengaged from the ignition member when no flashlamp is inserted in the camera.

In previously proposed cameras of this type, when no flashlamps are inserted and the ignition member is disengaged from the drive member, the drive member is subjected to no braking corresponding to the ignition impact, so that it runs with full force against an end stop. This can cause camera-shake during long exposures. It is an object of the invention to avoid this.

The invention provides a camera for use with impact ignited flashlamps which comprises a shutter, an ignition member for the flash and a drive member for the shutter and ignition member, the drive member being arranged to be brought into a position under tension from which it can be released by a shutter release member and there is provided control means arranged, when no flashlamp is inserted in the camera, to disengage the ignition member from the drive member and to bring into engagement with the drive member means for retarding its movement.

Advantageously, the control means is arranged to pivot either a retarding member or the ignition member into the path of movement of an extension on the drive member. The control means, preferably comprises a control member that is arranged, on insertion of a flashlamp into the camera, to be moved from a first end position to a second end position, the control member being so coupled to the ignition member and the retarding member, that movement of the control member from the first end position

to the second end position brings the retarding member out of the path of movement of the extension on the drive member and brings the ignition member into the path of movement of the said extension. The ignition member and the retarding member may be acted on by resilient means that tend to urge the ignition member and retarding member into cooperation with the control member.

One form of camera constructed in accordance with the invention will now be described, by way of example, with reference to the accompanying drawings, in which:

Fig. 1 is a diagrammatic view of the internal mechanism of the camera, showing the arrangement when no flashlamp is inserted;

Fig. 2 shows the arrangement shown in Fig. 1 with a flashlamp inserted.

Referring to Fig. 1 of the accompanying drawings, a central member 1 of a still camera is held in a tensioned position by a release member 2. By way of a radial cam 1a a thrower member 3 is held by a pin 3a, in the position shown in Fig. 1, under the action of a spring 4. A pawl 5 is rotatably supported on the thrower member 3. A flash-cube socket 6 is rotatably supported in the camera in a plate 7. An ignition lever 8 is coupled with a control lever 10 by a spring 9. The control lever 10, by means of a spring 11, engages a stop 12a and holds a switch-rod 12 upwards. An indicator tab 13 and a pawl lever 14 co-operates in a known manner with a finger 8a of the ignition lever. Furthermore, a known arrangement is provided for tensioning a spring 15 which drives the central member 1.

The method of operation of the arrangement is as follows:

When the camera release member 2 is operated, the spring 15 drives the central member 11 in a clockwise direction as shown in the drawings, and as the central member runs down it drives a pin 1b past a lug 8b of the ignition lever 8, and the pin 3a rests against the cam section 1a, so that the thrower member 3 does not move. Not until it reaches a corner 1h of the central member

1 can the pin 3a come off the cam 1a and the thrower member 3 can rotate in a clockwise direction under the action of the spring 4. The pin 5a thereby spins a shutter blade 16 by a lug 16a in a known manner.

If a flash-cube 50 is inserted in the socket 6, when the central member 1 runs down the pin 1b strikes the ignition lever 8 and drives it upwards by the lug 8b as lever 8 has been moved upwards to scan an ignition wire of the flash-cube and thus at the same time the lug 8b has been pivoted into the running-down range of the pin 1b by the switch-rod 12 and its pin 12a. When the central member 1 rests against the stop 20 in the run-down position, the pin 1b disengages from the lug 8b.

Apparatuses of this type have already been proposed. In these there is the risk that when a flash-cube 50 is not inserted the central member 1 will bounce with its full force against the stop 20, thus causing camera-shake with long exposures. This impact is caused by the fact that the central member 1 is not braked by the actuation of the ignition lever 8, since the ignition lever is pivoted out of the path of movement of the pin 1b. To avoid this impact, according to the present invention a retarding mechanism 51, 52 and 53 is provided, which in the present example consists of an anchor escapment comprising a lever 51, an anchor 52 and a spring 53, but may equally well consist of a retarding mass with spring or other known retarding means. The lever 51 is supported about a common axis with the ignition lever 8 on the spindle 54.

When the flash-cube 50 is not inserted, the lever 51 rests under the action of the spring 53 against a stop 10a on the control lever 10, and due to the position of the control lever 10 and of the pin 12a an end 51b of the lever 51 lies in the path movement of the pin 1b of the central member 1 instead of the end 8b of the ignition lever 8. As it runs down after the shutter release is actuated, the central member 1 meets the retarding mechanism 51b, 51, 52 and 53 and drives the retarding mechanism tensioning the spring 53, and is thereby braked.

When the flash-cube 50 is inserted, however, as shown in Fig. 2, the end 8b of the ignition lever 8 is pivoted into the path of movement of the pin 1b of the central member 1, as already described. The insertion of the flash-cube 50 pushes the rod 12 downwards from its position as shown in Figure 1, and the stop 12a on the rod 12 therefore pushes against the control lever 10, causing it to move against the action of the spring 11 and into the position shown in Figure 2. The stop 10a on the control lever 10 is

thereby also moved, allowing the lever 51 to pivot, under the influence of the spring 53, into the position shown in Figure 2, in which the end 51b of the anchor lever 51 lies outside the path of movement of the pin 1b by the pin 10a on the control lever 10. Since the central member 1 is braked by the actuation of the ignition lever 8, it is not now braked by means of the retarding mechanism 51, 52 and 53.

Other forms of camera, which for the sake of simplicity are not shown in the accompanying drawings, are of course possible. Thus it is not essential for the ignition lever 8 and the retarding lever 51 to have a common axis. The shapes of the levers may also be different. In particular, the central member 1 may be of a different shape, may assume a different position in the camera, and if required may also control a double exposure preventing means. In addition, the invention is still practicable if, instead of a flash-cube 50, only a single, impact-ignited flashlamp is inserted in the camera in each case.

WHAT WE CLAIM IS:—

1. A camera for use with impact ignited flashlamps which comprises a shutter, an ignition member for the flash and a drive member for the shutter and ignition member, the drive member being arranged to be brought into a position under tension from which it can be released by a shutter release member and there is provided control means arranged, when no flashlamp is inserted in the camera, to disengage the ignition member from the drive member and to bring into engagement with the drive member means for retarding its movement.

2. A camera as claimed in claim 1, wherein the control means is arranged to pivot either a retarding member or the ignition member into the path of movement of an extension on the drive member.

3. A camera as claimed in claim 2, wherein the control means comprises a control member that is arranged, on insertion of a flashlamp into the camera, to be moved from a first end position to a second end position, the control member being so coupled to the ignition member and the retarding member, that movement of the control member from the first end position to the second end position brings the retarding member out of the path of movement of the extension on the drive member and brings the ignition member into the path of movement of the said extension.

4. A camera as claimed in claim 3, wherein the ignition member and the retarding member are acted on by resilient means that tend to urge the ignition member and



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4. A camera as claimed in claim 3, wherein the ignition member and the retarding member are acted on by resilient means that tend to urge the ignition member and



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retarding member into cooperation with the control member.

- 5 5. A camera substantially as herein-
before described, with reference to, and as
shown in the accompanying drawings.

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