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(54) PHOTOGRAPHIC CAMERA

(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 cameras, and particularly to a camera having means for preventing an exposure if the operator's finger or other object is resting against the camera in a position where it might extend into the field of view of the camera's taking lens.

An object of the present invention is the provision of a mechanism for preventing operation of a camera and/or for alerting the operator if an object such as the operator's finger is in a position where it might protrude into the camera's field of view.

In accordance with the present invention there is provided a photographic camera having a taking lens with a field of view, a shutter mechanism, a shutter release means, sensing means for detecting the presence of an object resting against the camera in a position where it might extend into at least a portion of the field of view of the taking lens, and disabling means responsive to the detection of such an object by the sensing means for preventing operation of the shutter release means.

The invention will be described further, by way of example, with reference to the accompanying drawings, in which:

Fig. 1 is a schematic top view of a portion of a camera in accordance with the present invention;

Fig. 2 is a view similar to Fig. 1 showing an operator's finger in the field of view of the camera's optical system;

Fig. 3 is a sectional view to an enlarged scale, taken along line III-III in Fig. 1; and

Fig. 4 is a schematic top view of a portion of a camera in accordance with a second embodiment to the present invention.

Because cameras are well known, the present description is directed in particular to elements forming a part of, or cooperating directly with, apparatus in accordance with the present invention. It is to be understood that camera elements not specifically shown or described may take various forms well known to those skilled in the art. Although the illustrated embodiments are still cameras it will be understood that the present invention is equally applicable to motion picture cameras.

Referring to Fig. 1, the illustrated camera has a housing 10 in which a lens system, represented by element 12, is mounted. When a shutter mechanism 16 is opened the lens system forms an image of objects in its field of view on the image area of film 14 receivable in the camera.

A shutter release button, or trigger means, 18 is operatively connected to shutter mechanism 16 in a known manner (represented by dashed line 19) so that depression of the release button operates the shutter to effect exposure of the film.

A lens cover 20 is slidably carried in opposed notches 22 and 23, respectively. The cover is manually slidable, by a portion 24 which extends beyond housing 10, between a closed position covering lens 12 and an opened position. In the drawings, the lens cover is shown opened.

In the opened position, cover 20 is in enlarged portions 22' and 23', of notches 22 and 23 and is held forward by a leaf spring 28. Shutter release button 18 can be depressed to make an exposure.

Referring now to Fig. 2, it is seen that the operator's finger may, if he is inattentive, extend into the field of view of the taking lens. Should a picture then be taken, it will be ruined by the presence of the operator's finger. However, it will be noted that in Fig. 2, the operator's finger has moved into engagement with portion 24 of cover 20, pushing the cover rearwardly in cavities 22' and 23' until a portion of the cover underlies a tab 30 on shutter release button 18. In that position, the cover prevents depression of the shutter release button so that the operator cannot take a picture which would be ruined by the presence of his finger.

In another embodiment shown in Fig. 4, there is provided a mechanism for alerting the operator to the presence of his finger in the camera's field of view before he acts to take a picture. It will be recognized that in some photography situations, subjects are fleeting and that if the operator does not take a picture of these subjects when the opportunity arises, the picture-taking opportunity will be lost. Therefore, it is desirable to alert the operator to the fact that something is wrong before he acts to take the picture, rather than waiting until he attempts to depress the shutter release button.

In the embodiment of Fig. 4, when the operator's finger contacts portion 24, and thereby moves cover 20 rearwardly in cavities 22' and 23' to underlie tab 30 of shutter release button 18, the movement of to cover causes a lever 32 to rotate in a clockwise direction about a pivot pin 34 and against the force of a spring 36 so that a flag 38 on lever 32 moves into the cavity of a viewfinder 40. Now, when the operator looks into the viewfinder, he immediately sees that there is something wrong and he will accordingly check the operation of the camera.

It will be noted that when cover 20 is open, portion 24 is adjacent only one side of the lens, and that the operator's finger may come into the camera's field of view from above, below or the other side of the lens. It will be understood that in most practical situations, should an operator's finger protrude into the camera's ray path, it will come from the side of the camera opposite the viewfinder because a finger coming from the other side would be

visible in the viewfinder. However, if desired, portion 24 may be constructed to extend entirely or partially around the lens opening to detect the presence of a finger or other foreign object contacting the camera in a position where it might come into the field of view from any angle.

The invention has been described in detail with particular reference to preferred embodiments thereof, but it will be understood that variations and modifications can be effected within the scope of the invention as defined in the appended claims.

WHAT WE CLAIM IS:—

1. A photographic camera having a taking lens with a field of view, a shutter mechanism, a shutter release means, sensing means for detecting the presence of an object resting against the camera in a position where it might extend into at least a portion of the field of view of the taking lens, and disabling means responsive to the detection of such an object by the sensing means for preventing operation of the shutter release means.

2. A camera as claimed in Claim 1 wherein the disabling means includes a member movable between an inactive position in which the shutter release means may be operated and an active position preventing operation of the shutter release means.

3. A camera as claimed in Claim 2 further comprising spring means for urging the disabling means toward its inactive position.

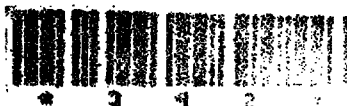
4. A camera in Claim 1, 2 or 3 wherein the sensing means includes a portion extending from the camera housing adjacent the field of view of the taking lens such that a foreign object, resting against the portion in a position where it might extend into the field of view, would activate the disabling means.

5. A camera as claimed in any preceding Claim comprising means, associated with the sensing means, for visually indicating the detection of an object resting against the camera and extending into the field of view of the taking lens.

6. A photographic camera substantially as hereinbefore described with reference to and as illustrated in Figs. 1 to 3 or Fig. 4 of the accompanying drawings.

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2. A camera as claimed in Claim 1 wherein the disabling means includes a member movable between an inactive position in which the shutter release means may be operated and an active position preventing operation of the shutter release means.

3. A camera as claimed in Claim 2 further comprising spring means for urging the disabling means toward its inactive position.

4. A camera in Claim 1, 2 or 3 wherein the sensing means includes a portion extending from the camera housing adjacent the field of view of the taking lens such that a foreign object, resting against the portion in a position where it might extend into the field of view, would activate the disabling means.

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