

## PATENT SPECIFICATION

(11) 1 234 259

## DRAWINGS ATTACHED

- (21) Application No. 55118/68 (22) Filed 20 Nov. 1968  
 (31) Convention Application No. A 10460 (32) Filed 20 Nov. 1967 in  
 (33) Austria (OE)  
 (45) Complete Specification published 3 June 1971  
 (51) International Classification G 03 b 17/38  
 (52) Index at acceptance

G2E A20A1 A20B1 A20C1 A20C7 A20C8



(54) IMPROVEMENTS IN OR RELATING TO A  
 CINEMATOGRAPHIC CAMERA HAVING AN ELECTRIC  
 EXPOSURE CONTROL

(71) We, KARL VOCKENHUBER, of 118  
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 RAIMUND HAUSER of 2, Goldegg-Gasse,  
 Vienna 4, both Austria, both of Austrian  
 nationality, 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 cinematographic  
 camera having an electric exposure control.

In cinematographic cameras having electric  
 exposure control, the exposure control per-  
 manently consumes current of the camera  
 battery. Although the power required is very  
 small, a considerable discharge of the battery  
 occurs within a few weeks. Special switching  
 arrangements have already been provided in  
 the circuit of the exposure control to prevent  
 this undesired discharge when the camera is  
 not in use. Since the users of these cameras  
 frequently forget to operate these switches, it  
 has also been suggested to provide switching  
 arrangements which forcibly close the circuit  
 of the exposure control when the camera is  
 being used. These switches are controlled by  
 adjustable eye cups or by handles arranged  
 in the range of the camera grip which are  
 forcibly operated while holding the camera.  
 However, these arrangements are not very  
 satisfactory since when during filming, the  
 eye cup controlling the switch or the handle  
 arranged in the range of the camera grip is  
 released, the circuit of the exposure control  
 is interrupted. The exposure control became  
 inoperative and as a consequence faulty ex-  
 posures occurred.

In order to avoid switching-off the exposure  
 control when the camera motor is running,  
 it has also been suggested to interrupt, with  
 the above mentioned switch, not only the cir-  
 cuit of the exposure control, but also the cir-  
 cuit of the camera driving motor. However,  
 this is not satisfactory since while the release  
 is switched on and the circuit of the camera

motor is interrupted, the camera driving motor  
 and with it the film transport slow down and  
 the shutter does not necessarily cover the gate  
 when the motor stops. As a result, the last  
 picture of a shot is often over exposed and  
 of no use.

The invention provides a cinematographic  
 camera having an electric exposure control,  
 a switch operable by manually-operated dis-  
 placeable means to actuate the electric ex-  
 posure control, a manually-actuated release  
 mechanism for actuating a motor of the  
 camera, and movable means movable by the  
 displaceable means and interposed between  
 the displaceable means and the release mecha-  
 nism so that the release mechanism cannot  
 be operated until the switch is operated and  
 the switch cannot be rendered inoperative  
 until the release mechanism is first rendered  
 inoperative.

Preferably, the release mechanism is pro-  
 vided with a bar and the movable means  
 comprises a cam which is pivotable on actua-  
 tion of the displaceable means, the cam being  
 arranged so that the bar cannot be moved  
 to actuate the motor until the cam has pivoted  
 to actuate the switch, and the cam cannot  
 pivot back to render the switch inoperative  
 until the bar has been moved back to first  
 render the motor inoperative.

Preferably, the cam carries a contact of the  
 switch pivotable against the action of a return  
 spring to electrically connect two contacts of  
 the switch, wherein the cam has a bearing  
 surface restricting movement of the bar of  
 the release mechanism until the cam is pivoted  
 to operate the switch.

The invention will be further described  
 with reference to an embodiment shown by  
 way of example in the accompanying drawing,  
 wherein:

Fig. 1 is a side of an 8 mm cinemato-  
 graphic camera for sub-standard format film  
 showing the most essential components of the  
 invention schematically, and

Figs. 2 to 6 show in part section an enlarged detail in different positions of the camera shown in Fig. 1.

5 In Fig. 1, an 8 mm sub-standard format film camera 1 has an objective which consists of an auxiliary zoom lens 2 and a main lens 3. Between the auxiliary zoom lens 2 and the main lens a diaphragm vane 4 is provided, which is adjustable by means of a  
10 galvanometer 5 in accordance with the light conditions of the scene to be filmed. The galvanometer 5 is controlled by a photoelectric resistor or photoelectric semiconductor provided in the galvanometer circuit. As is already  
15 known, this photoelectric resistor or semiconductor may either be exposed to the light of the scene to be filmed by a special optical system, or this photoelectric resistor or semiconductor may be supplied with light derived  
20 from the path of rays through the objective.

A camera driving motor 6 transports the film arranged in a cartridge 8 by means of a schematically indicated gearing 7. The camera driving motor 6 and the galvanometer 5 of  
25 the exposure control are fed by batteries 9 arranged in a hand or pistol grip 10 of the camera. On the rear side of the grip 10 a trigger or yoke 11 is located, which controls a switch in the circuit of the batteries 9  
30 and which causes the batteries to be switched off when the camera is not in use. A camera release 12 closes a switch in the circuit of the camera motor 6 and simultaneously releases a mechanical lock for the gearing 7.  
35 When the release 12 is set free the gearing 7 is locked, so that the camera shutter covers the gate and simultaneously interrupts the motor circuit.

The release 12 is arranged on a slider 13 carrying a bar 14. In the position shown in  
40 Fig. 2, the slider 13 lies opposite the control surfaces of a cam 17 rotating about an axis 16. The cam 17 is urged against an extension 19 of the yoke 11 under the action of a return spring 18. The extension 19 has an  
45 elongated slot 23 in which the yoke 11 is guided by means of a stationary pin 24. The cam 17 is connected to a contact bridge 20, which acts against two stationary cooperating contacts 21, 22. The two cooperating contacts  
50 21, 22 are conductively connected by the contact bridge 20 as illustrated in the position shown in Figs. 3 to 6. The switch formed by contacts 20 to 22 connects the exposure control as well as the camera driving motor with  
55 the batteries 9.

When, starting from the position illustrated in Fig. 2, the release 12 is squeezed inwards, the bar 14 abuts the control surface 15 of  
60 the cam 17 which prevents further displacement of the release 12 and the camera drive remains locked. When the camera is seized by the hand grip as usual, the yoke 11 is pressed inwards by the surrounding hand (see Fig. 4). By means of the extension 19 of

the yoke 11 the cam 17 is turned about the axis 16 in an anticlockwise direction so that the control surface 15 moves out of the range of the bar 14 and simultaneously connects  
70 the contact bridge 20 with the cooperating contacts 21, 22. Fig. 3 shows an intermediate position, in which the switch formed from the contacts 20 to 22 is already closed. The cam 17 prevents a displacement of the bar 14 and therewith switching-on of the release.  
75 As soon as the yoke 11 takes the position as illustrated in Fig. 4, the release 12 can be operated (Fig. 5). When the operator releases the yoke while the release 12 is pressed in, the cam 17 and with it the contact  
80 bridge 20 can not yet return to the initial position. The return spring 18 endeavours to turn the cam 17 in a clockwise direction. However, the control surface 25 of the cam 17 abuts the bar 14 of the release 12 and consequently is prevented from further  
85 rotational movement (see Fig. 6). In this way the circuits of the exposure control and of the camera driving motor are kept closed as long as the release 12 is operated. Upon  
90 freeing the release 12, the cam 17 returns to its initial position (see Fig. 2) and opens the switch formed by the contacts 20 to 22.

In order to ensure that the circuit is also  
95 switched on when the camera is fixed on a tripod, the yoke 11 engages a slider 26 which is held and guided by a cover plate 27. The cover plate 27 is provided with an opening 28 (see Fig. 3) which corresponds  
100 with a connection bore 29 for a cable release 30. When the yoke 11 is not actuated, the connection bore 29 is completely or at least partially covered by the slider 26. In order to screw in the wire release 30, the yoke 11  
105 is first pressed in so that the connection bore 29 is opened by movement of the slider 27. When the yoke 11 is released, neither the slider 26 nor the yoke 11 can return to their initial position, since the slider 26  
110 knocks against a cylindrical case 31 of the wire release 30.

The above described arrangement ensures that the exposure control is always switched on before the camera driving motor, so that the diaphragm vane 4 has already reached a  
115 stationary position when the film is set free for exposure. On the other hand this arrangement prevents the film transport mechanism from stopping with the shutter open.

The structures of the cam 17 and the bar 14 may be modified in various ways.

#### WHAT WE CLAIM IS:—

1. A cinematographic camera having an electric exposure control, a switch operable  
125 by manually-actuated displaceable means to actuate the electric exposure control, a manually-operated release mechanism for actuating a motor of the camera, and movable means movable by the displaceable means and inter-

1. A cinematographic camera having an electric exposure control, a switch operable by manually-actuated displaceable means to actuate the electric exposure control, a manually-operated release mechanism for actuating a motor of the camera, and movable means movable by the displaceable means and inter-



posed between the displaceable means and the release mechanism so that the release mechanism cannot be operated until the switch is operated and the switch cannot be rendered inoperative until the release mechanism is first rendered inoperative.

- 5 2. A cinematographic camera as claimed in claim 1, wherein the release mechanism is provided with a bar and the movable means comprises a cam which is pivotable on actuation of the displaceable means, the cam being arranged so that the bar cannot be moved to actuate the motor until the cam has pivoted to actuate the switch, and the cam cannot pivot back to render the switch inoperative until the bar has been moved back to first render the motor inoperative.

- 10 3. A cinematographic camera as claimed in claim 2, wherein the cam carries a contact of the switch pivotable against the action of

a return spring to electrically connect two contacts of the switch, wherein the cam has a bearing surface restricting movement of the bar of the release mechanism until the cam is pivoted to operate the switch.

- 25 4. A cinematographic camera as claimed in claim 1, 2 or 3, wherein the release mechanism and displaceable means are mounted in a pistol grip of the camera.

- 30 5. A cinematographic camera as claimed in claim 4, wherein the displaceable means is a pivotable trigger member mounted along one side of the pistol grip of the camera.

- 35 6. A cinematographic camera substantially as herein described with reference to the accompanying drawing.

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Printed for Her Majesty's Stationery Office, by the Courier Press, Leamington Spa, 1971.  
Published by The Patent Office, 25 Southampton Buildings, London, WC2A 1AY, from which copies may be obtained.

