

PATENT SPECIFICATION (11)

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(54) CINE CAMERAS

(71) We, AGFA-GEVAERT AKTIEN-GESELLSCHAFT, a body corporate recognised under the laws of the Federal Republic of Germany, of Leverkusen, Federal Republic of 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:—

This invention relates to cine cameras.

It is known to provide both sound film and film without any sound recording facility in cartridges, the cartridges of the former kind being larger than those of the latter kind. It is also known to provide dissolve means in cine cameras, but the dissolve presents difficulties when using sound film.

The invention provides a cine camera having a chamber capable of accommodating sound-film cartridges and also capable of accommodating the smaller film cartridges with no sound recording facilities, dissolve means, and a feeler arranged to sense only the larger sound-film cartridges and, in response to such sensing, to render the dissolve means inoperative.

The feeler is so positioned that it responds only when the larger, sound-film, cartridge is inserted. The arrangement according to the invention ensures that the dissolve means cannot be employed when sound-film cartridges are being used, thereby preventing the unsatisfactory effect which would result on the recorded sound if a dissolve operation was carried out with a sound-film cartridge, while permitting dissolves when using cine film without sound recording facility. In general, the camera will be so designed that both the cartridges (with and without sound recording facility) must be of the same picture format.

Advantageously, the dissolve means is automatic such that, when a dissolve has been set, the fade-out takes place in response to operating the camera release and fade-in takes place in response to further operation of the camera release; alternatively, the dissolve means may be such that a separate setting of the dissolve means is necessary for fade-in. The dissolve means may, for

example, be of the form found in the commercially available Agfa Movexoom (Trade Mark) camera.

The dissolve means may be rendered inoperative by being switched off in the normal way or the mechanism may be rendered inoperative even though a dissolve control remains in the on position.

The camera is preferably suitable for cartridges with film of substandard gauge, preferably Super-8 gauge (with and without a sound track). The sound recording may be of the magnetic or the optical kind.

The dissolve means may be rendered inoperative, in operation, by the feeler co-operating with driving means of the dissolve means. The co-operation may be direct or via an intermediate transmission. In cameras with rotary programme means for controlling dissolve means and with a reciprocatory pawl (which is or may be coupled to the camera motor) for driving the programme means, the pawl may be arranged in the path of a slider which is coupled to the feeler.

Instead the feeler may co-operate with a dissolve control which can be set to switch the dissolve means on, to render the dissolve means inoperative.

Advantageously, a portion of the feeler projects into the chamber in a region which is occupied only if the camera is loaded with a sound-film cartridge, and that portion has an inclined surface to facilitate deflection of the feeler from the chamber when a sound-film cartridge is introduced.

A cine camera constructed in accordance with the invention will now be described, by way of example, with reference to the accompanying drawing, which shows the camera partially broken away.

A cine camera 1 has a lens 2 and a cartridge chamber 5 closed by a cover 4 which pivots at the hinge 3. This chamber is capable of accommodating cartridges 6 containing film of the Super-8 format without sound recording facility and is also capable of accommodating sound film cartridges 7 (illustrated in broken line) in which the film is also the Super-8 format. A position fixing mark 8 is provided in the cartridge

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chamber for alignment of the cartridges. Both the cartridge 6 and the cartridge 7 are provided with corresponding recesses which, when the cartridge 6 or the cartridge 7 is introduced in the correct position in the chamber engage with the mark 8 so that each cassette with its film roll (not illustrated) is correctly co-ordinated with the lens 2 and the film advance mechanism (not illustrated). The substandard gauge film cartridge 6 and the sound-film cartridge 7 differ from one another in that the sound-film cartridge 7 is broader (in a direction in the plane of the drawing) because of the necessary apertures for the sound-recording members: the cartridges may have the same thickness.

There is provided in the camera 1 automatic dissolve means (which is not illustrated in detail). This operates by means of rotary programme means in the form of a programme wheel or disc 9, which is rotatably mounted about an axis 10 and makes a rotation of 360° for each dissolve process. This programme wheel 9 is associated with teeth 9a.

When set for a dissolve, the programme means 9, 9a, is driven by a pawl 11 which is mounted on a pivot 12 on an eccentric rod 13 and is resiliently coupled with the rod 13 by means of a spring 14. The rod 13 is eccentrically mounted on an axis 16 on a toothed wheel 15; the toothed wheel 15 is engaged with a worm 17. Rotation of the worm 17 causes the pawl 11 to execute reciprocatory movement which in turn causes step-wise advancement of the programme wheel 9. The worm 17 is coupled, rigidly or otherwise, in a manner not illustrated, to the shaft of the camera drive motor. A dissolve control 18 for switching on the dissolve means is provided, and is in the form of an angled slider guided in a straight line by pin-slot guides 1a, 18a. The slider has a stop 18b, against which a stop 11a of the pawl 11 is urged under the action of the spring 14. The slider also has a control arm 18c with a stop 18d and an inclined surface 18e. Automatic dissolve means wherein the dissolve operation is controlled by a rotary programme wheel which is advanced step-wise by a reciprocating pawl are known *per se* and so the automatic dissolve means is not described in detail herein.

To effect a dissolve, the dissolve control 18 is pushed in the direction of the arrow 19 into the position shown in the Figure. This causes the pawl 11 to engage the programme wheel 9 so that, on operating the camera release, the programme wheel is turned and a dissolve is effected. The pin 9b moves anti-clockwise away from the stop 18d. Fade-out is followed by backward film transport. The camera release must be operated a

second time for the fade-in phase of the dissolve operation to take place. After a rotation of approximately 360°, that is, at the end of the dissolve operation, the pin 9b strikes against the inclined surface 18e and pushes the dissolve control 18 in the opposite direction to that of the arrow 19, so that the pawl 11 is swung out of engagement with the programme wheel 9 by the stop 18b. If the shutter release is now operated again, the programme wheel 9 is not driven so that a normal film run proceeds.

Dissolve arrangements of this kind are customary in cameras for cartridges with normal substandard gauge film without sound track. In cameras for sound-film cartridges a particular problem presents itself. In the case of dissolves with sound-film, the sound would also be "dissolved" and would therefore be incomprehensible to a greater or lesser extent if no special provisions were made for the sound dissolve. Such special provisions would, however, prove to be expensive. According to the present invention, dissolves are to be automatically prevented when using a sound-film cartridge 7.

For this purpose, a two-armed lever 20 is pivotally mounted about an axis 1b in the camera housing 1, a curved end 20a of which lever projects into the cartridge chamber 5 in a region which customary substandard film cartridges 6 do not occupy, but which is occupied by sound-film cartridges 7 when these are inserted in the camera. The end 20a has an inclined surface 20b running in the direction of the cartridge axis, that is, perpendicular to the plane of the drawing. The other end 20c is mounted in the groove 21a of a slider 21 which is displaceable along the pin-slot-guides 1c, 21b in the housing 1. In the region of movement of the free end 21c of the slider 21 there is a further lug 11b of the pawl 11. A spring 22 acting on the lever 20 draws the lever 20 into the position shown in the Figure in which the end 20a projects into cartridge chamber and the slider 21 is drawn free of the pawl 11. If a sound-film cartridge 7 is now introduced into the cartridge chamber 5, it presses against the inclined surface 20b and pushes the lever 20 away from the cartridge chamber 5 in an anti-clockwise direction. In this movement the slider 21 is pushed in the opposite direction to that of the arrow 19. The end 21c of the slider 21 tilts the pawl 11, by means of the lug 11b, into the non-dissolve position should it have been in the dissolve position. If, however, the dissolve control 18 is already in the non-dissolve position when a sound-film cartridge is introduced, the pawl 11 is locked in that position by the end 21c, so that a user, although he can operate the dissolve control 18 when a sound-film cartridge is being used, cannot pivot the pawl 130

11 into engagement with the programme wheel 9. Consequently dissolves are not possible when using sound-film cartridges.

Other arrangements for rendering the dissolve means inoperative when sound film cartridges are used are of course possible. For example, the slider 21 could, instead of acting on the pawl 11, act directly on the dissolve control 18 and lock this in the non-dissolve position on the introduction of a sound-film cartridge. It would then be impossible for a user to operate the dissolve control 18 if a sound-film cartridge were being used. Furthermore, in principle, any known drive may be used for the programme wheel 9. Also, switching off or arresting the automatic dissolve means could be effected, for example, by uncoupling the toothed wheel 15 from the worm 17.

20 WHAT WE CLAIM IS:—

1. Cine camera having a chamber capable of accommodating sound-film cartridges and also capable of accommodating the smaller film cartridges with a no sound recording facility, dissolve means, and a feeler arranged to sense only the larger sound-film cartridges and, in response to such sensing, to render the dissolve means inoperative.

2. Cine camera as claimed in claim 1, wherein the dissolves means has driving means, and the feeler co-operates with the driving means to render the dissolve means inoperative.

3. Cine camera as claimed in claim 2, wherein the dissolve means has rotary programme means for controlling the dissolve operation, and the driving means includes a pawl for rotating the programme means.

4. Cine camera as claimed in claim 3, wherein the pawl is arranged in the path of a slider which is coupled to the feeler.

5. Cine camera as claimed in claim 3 or claim 4, wherein the pawl is to be driven by the camera motor.

6. Cine camera as claimed in claim 1, wherein the feeler co-operates with a dissolve control which can be set to switch the dissolve means on, to render the dissolve means inoperative.

7. Cine camera as claimed in any one of claims 1 to 6, wherein a portion of the feeler projects into the chamber in a region which is occupied only if the camera is loaded with a sound-film cartridge, and that portion has an inclined surface to facilitate deflection of the feeler from the chamber when a sound-film cartridge is introduced.

3. Cine camera as claimed in claim 2, before described with reference to, and as shown in, the accompanying drawing.

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