

PATENT SPECIFICATION

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DRAWINGS ATTACHED

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(54) FILM CAMERA

(71) We, ERNST LEITZ G.M.B.H., of 6330 Wetzlar, 210/211 Postfach Germany, a joint stock company organised under the laws of the 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:—

10 The present invention relates to a film camera with a roller blind shutter.

Bevel gears have been used in control gear for roller blind shutters, in constructions having a very considerable overall height.

According to the present invention, there is provided a film camera comprising a housing fitted with a roller blind shutter, the shutter comprising two blinds arranged to move—upon the shutter being released—in a direction perpendicular to the direction of transport and parallel to the plane of transport of a film across the image space of the camera from respective supply rollers to respective take-up rollers, and a plurality of shafts mounting the rollers to be rotatable relatively to the housing, the longitudinal axes of the shafts extending in a direction parallel to said film transport direction, the housing being provided with a receiving space, which is laterally offset from the optical axis of the camera and into which a film spool may be fitted, a flat partition wall perpendicular to the plane of the film transport, and drive means which are couplable to the shutter and which are disposed between the receiving space and the image space, the drive means comprising a plurality of drive cam discs and flat lever cam followers, the cam discs and cam followers each being parallel to the partition wall.

The camera may comprise a shutter time setter mounted in a wall of the housing, the time setter comprising a rotary cam disc

actuable from the outside of the housing, and urging means to urge one of the cam followers into contact with the rotary cam disc, said one cam follower upon said actuation being movable in a direction perpendicular to said film transport direction and parallel to the partition wall.

Conveniently, the camera lens is mounted in said wall of the housing.

An embodiment of the present invention will now be more particularly described with reference to the accompanying drawing, in which:—

Fig. 1 shows a schematic rear elevation of the camera, partly cut away; and

Fig. 2 shows a schematic top plan view of the camera, likewise partly cut away.

In Fig. 1 a camera 1 is shown which has a rear housing wall 2. An image aperture plate 3 is provided with an image aperture 4 and ends laterally in a flat partition wall 5. The partition wall 5 laterally bounds a light-guiding space A in the image space behind a camera lens 7. In addition a further partition wall 5a is present, which bounds a spool-receiving space B, and between these two partition walls shutter drive means are disposed.

Above and below the image aperture 4 (Fig. 1), supply rollers and take-up rollers of a roller blind focal plane shutter are disposed, only the rollers provided above the image aperture 4 being shown, for the sake of clarity. The rollers 9 are each mounted on a respective shaft having its longitudinal axis extending in a direction parallel to the film transport direction. Upon release of the shutter movement of the blinds takes place in a direction perpendicular to the direction of transport and parallel to the plane of transport of the film. A set of drive cam discs 10 is fitted to one side of the blinds, on an axle 9a supporting the blind rollers 9 and thus directly beside and parallel to the partition wall 5. Flat lever cam followers 11

[Price 25p]

co-operate with the cam discs 10, and the function of the cam followers will not be explained in full. However, the upward and downward adjustment of the cam followers governs the chronological moment of the release of the second shutter blind after that of the first blind. The cam followers 11 are likewise positioned beside and parallel to the partition wall 5. The illustrated positioning both of the cam discs 10 and also of the cam followers 11 in the space between the partition walls 5 and 5a represents an advantageous construction. It makes it possible, in a particularly striking way, to diminish the external dimensions of the camera while maintaining for example the normal small image size of 24×36 mm. The construction is also usable if only one of the two partition walls is present.

One of the cam followers 11 possesses a bent arm 11a, which lies against a rotary cam disc 12. The latter is mounted fast on an axle reaching through the front side of the camera, together with a time setting knob 13 which is actuable from outside the housing of the camera. Urging means in the form of a spring 14 on the other end of the cam follower 11 holds the arm 11a of the cam follower in engagement with the cam disc 12.

With the illustrated construction drive means are used, which consist of a small set of cam discs and flat lever cam followers, which require only a small thickness and hence not only permit the construction of a camera having a particularly small overall height, but also allow the camera to have a very small width. The last is particularly true in that the set of cam discs and lever cam followers fits in favourably between the partition wall bounding the space behind the camera lens and the neighbouring space for receiving a film spool. Both advantages taken together are important in making possible the production of a camera which in relation to the former small image cameras with their relatively large dimensions is compact in its external dimensions and particularly handy in shape. The last applies in particular to the frequently used negative size of 24×36 mm.

WHAT WE CLAIM IS:—

1. A film camera comprising a housing fitted with a roller blind shutter, the shutter comprising two blinds arranged to move—upon the shutter being released—in a direction perpendicular to the direction of transport and parallel to the plane of transport of a film across the image space of the camera from respective supply rollers to respective take-up rollers, and a plurality of shafts mounting the rollers to be rotatable relatively to the housing, the longitudinal axes of the shafts extending in a direction parallel to said film transport direction, the housing being provided with a receiving space, which is laterally offset from the optical axis of the camera and into which a film spool may be fitted, a flat partition wall perpendicular to the plane of the film transport, and drive means which are couplable to the shutter and which are disposed between the receiving space and the image space, the drive means comprising a plurality of drive cam discs and flat lever cam followers, the cam discs and cam followers each being parallel to the partition wall.

2. A camera as claimed in claim 1, comprising a shutter time setter mounted in a wall of the housing, the time setter comprising a rotary cam disc actuable from the outside of the housing, and urging means to urge one of the cam followers into contact with the rotary cam disc, said one cam follower upon said actuation being movable in a direction perpendicular to said film transport direction and parallel to the partition wall.

3. A camera as claimed in claim 2, wherein the camera lens is mounted in said wall of the housing.

4. A film camera substantially as hereinbefore described with reference to the accompanying drawing.

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