

PATENT SPECIFICATION

1,163,056

DRAWINGS ATTACHED.

1,163,056



Date of Application (No. 37512/67) and filing Complete Specification: 15 Aug., 1967.

Application made in Germany (No. R44110 IXa/57a) on 14 Sept., 1966.

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Index at acceptance:—G2 A(12A4, 12A6).

International Classification:—G 03 b 3/00.

COMPLETE SPECIFICATION.

Monocular Mirror-Reflex Camera.

We, FRANKE & HEIDECHE G.m.b.H., a German Body Corporate, trading as ROLLEI-WERKE FRANKE & HEIDECHE, of 196 Salz-dahlumerstrasse, Braunschweig, 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 monocular mirror-reflex cameras.

According to the present invention there is provided a monocular mirror-reflex camera having an objective carrier which is guided for displacement in the direction of the optical axis by being mounted on slide rails slidable on rail guides mounted on the camera housing, wherein the rail guides are pivotable on the camera housing transversely of the optical axis. So that the camera can be used for the so-called "Scheimpflug" picture-taking method, the pivot is placed in or nearly in the picture plane.

A constructional embodiment of the invention will now be described, by way of example, with reference to the accompanying drawing, wherein:—

The objective carrier 1 is rigidly connected with the slide rails 2. These slide rails slide by means of slots 3 on slide blocks 4 forming rail guides. These slide blocks are mounted for rotation about journals 5 on the camera housing. The axes of the journals 5 are placed as close as possible to the film plane, so that an extensive approximation to the theoretical "Scheimpflug" conditions is maintained in the pivoting of the objective carrier. The pivotable slide blocks carry toothed segments 6 in which there engage pinions 7 which are mounted on a shaft 8, which can be operated externally by means of a setting knob. By rotation of this knob and the shaft 8 the blocks 4 and thus the

objective carrier can be pivoted by a certain distance upwards or downwards and thus the optical axis can be inclined accordingly. It is obvious that the blocks 4 can also be provided, in simplified manner, with a handle conducted to the exterior by means of which they can be pivoted and possibly clamped fast. The slide rails 2 laterally carry racks 9 in which there engage ribs 10 (being parts of an archimedes spiral) of a disc 11 which is seated on a focussing shaft 12 and can be actuated from the exterior of the camera by means of a knob. Due to this rack and rib connection the pivoting of the objective carrier is not hindered at any desired extension length. Due to the relatively small pitch of the ribs 10 the influence of the pivoting upon the distance setting remains very small. Furthermore, a very great transmission ratio of the distance setting, that is to say from the shaft 12 to the advance of the objective, is obtained. If the shaft 12 is arranged coaxially with the pivot axis 5, the angle of engagement between the ribs 10 and the teeth of the rack 9 also practically does not change in the pivoting of the objective carrier.

The influence of the pivoting of the objective carrier on the focussing is itself very small but is smaller the smaller the curvature of the ribs 10. This influence reaches a minimum when the shaft 12 is co-axial with the axis 5.

WHAT WE CLAIM IS:—

1. A monocular mirror-reflex camera having an objective carrier which is guided for displacement in the direction of the optical axis by being mounted on slide rails slidable on rail guides mounted on the camera housing, wherein the rail guides are pivotable on the camera housing transversely of the optical axis.

2. A monocular mirror-reflex camera as

[Price 4s. 6d.]

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ing statement:—

The invention relates to monocular mirror-reflex cameras.

According to the present invention there is provided a monocular mirror-reflex camera having an objective carrier which is guided for displacement in the direction of the optical axis by being mounted on slide rails slidable on rail guides mounted on the camera hous-
ing, wherein the rail guides are pivotable on the camera housing transversely of the optical axis. So that the camera can be used for the so - called "Scheimpflug" picture - taking method, the pivot is placed in or nearly in the picture plane.

A constructional embodiment of the inven-
tion will now be described, by way of example, with reference to the accompanying drawing, wherein:—

The objective carrier 1 is rigidly connected with the slide rails 2. These slide rails slide by means of slots 3 on slide blocks 4 forming rail guides. These slide blocks are mounted for rotation about journals 5 on the camera housing. The axes of the journals 5 are placed as close as possible to the film plane, so that an extensive approximation to the theoretical "Scheimpflug" conditions is maintained in the pivoting of the objective carrier. The pivotable slide blocks carry toothed segments 6 in which there engage pinions 7 which are mounted on a shaft 8, which can be operated externally by means of a setting knob. By rotation of this knob and the shaft 8 the blocks 4 and thus the

objective carrier can be pivoted by a certain distance upwards or downwards and thus the optical axis can be inclined accordingly. It is obvious that the blocks 4 can also be provided, in simplified manner, with a handle conducted to the exterior by means of which they can be pivoted and possibly clamped fast. The slide rails 2 laterally carry racks 9 in which there engage ribs 10 (being parts of an archimedes spiral) of a disc 11 which is seated on a focussing shaft 12 and can be actuated from the exterior of the camera by means of a knob. Due to this rack and rib connection the pivoting of the objective carrier is not hindered at any desired extension length. Due to the relatively small pitch of the ribs 10 the influence of the pivoting upon the distance setting remains very small. Furthermore, a very great transmission ratio of the distance setting, that is to say from the shaft 12 to the advance of the objective, is obtained. If the shaft 12 is arranged coaxially with the pivot axis 5, the angle of engagement between the ribs 10 and the teeth of the rack 9 also practically does not change in the pivoting of the objective carrier.

The influence of the pivoting of the objec-
tive carrier on the focussing is itself very small but is smaller the smaller the curvature of the ribs 10. This influence reaches a minimum when the shaft 12 is co-axial with the axis 5.

WHAT WE CLAIM IS:—

1. A monocular mirror-reflex camera having an objective carrier which is guided for displacement in the direction of the optical axis by being mounted on slide rails slidable on rail guides mounted on the camera housing, wherein the rail guides are pivotable on the camera housing transversely of the optical axis.

2. A monocular mirror-reflex camera as



claimed in claim 1, wherein the pivot axis lies in or nearly in the picture plane.

3. A monocular mirror-reflex camera as claimed in claim 1 or 2, wherein the pivotable rail guides are provided with an adjusting handle.

4. A monocular mirror-reflex camera as claimed in claim 3, wherein the pivotable rail guides are coupled by means of a toothed segment and pinion with a shaft for adjusting the inclination of the optical axis.

5. A monocular mirror-reflex camera as claimed in any one of claims 1 to 4, wherein a focussing shaft for the displacement of the objective carrier slide rails is co-axial with the pivot axis.

6. A monocular mirror-reflex camera as

claimed in claim 5, wherein the coupling of the focussing shaft with the slide rails is formed by a disc having eccentric ribs and mounted on the focussing shaft, the ribs engaging a rack on the slide rails.

7. A monocular mirror-reflex camera objective mounting substantially as described with reference to and as illustrated in the accompanying drawing.

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