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H. NERWIN ET AL
ROLLFILM CAMERAS
Filed June 18, 1940

Serial No.
341,164
3 Sheets-Sheet 1

Fig. 1

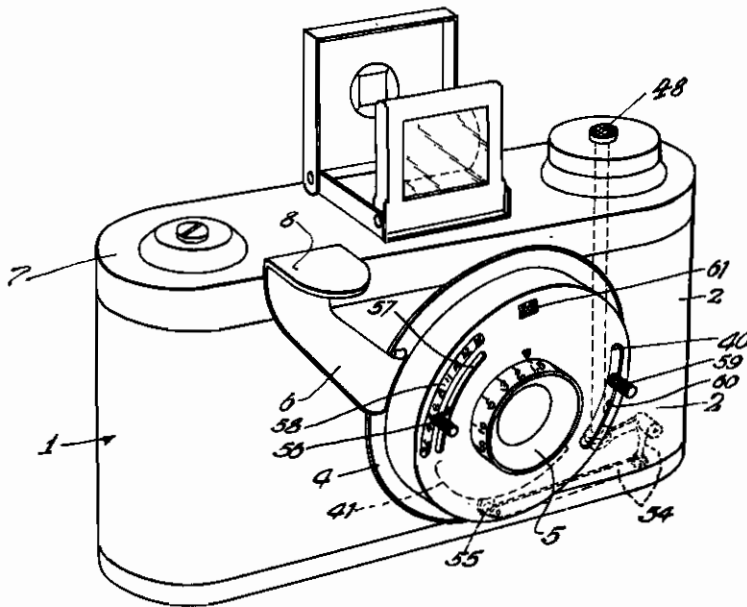
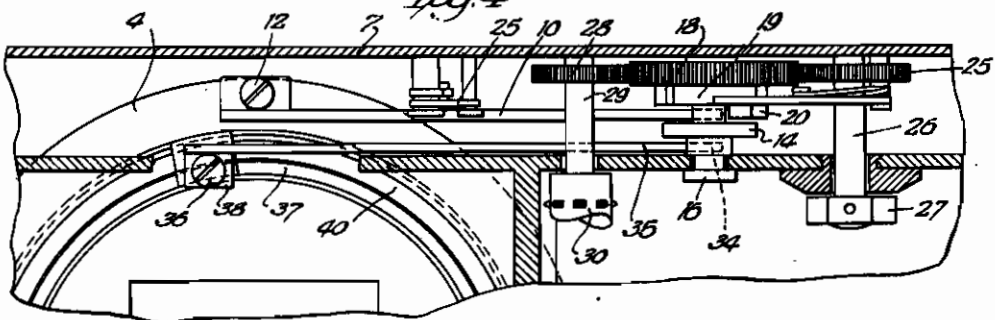


Fig. 4



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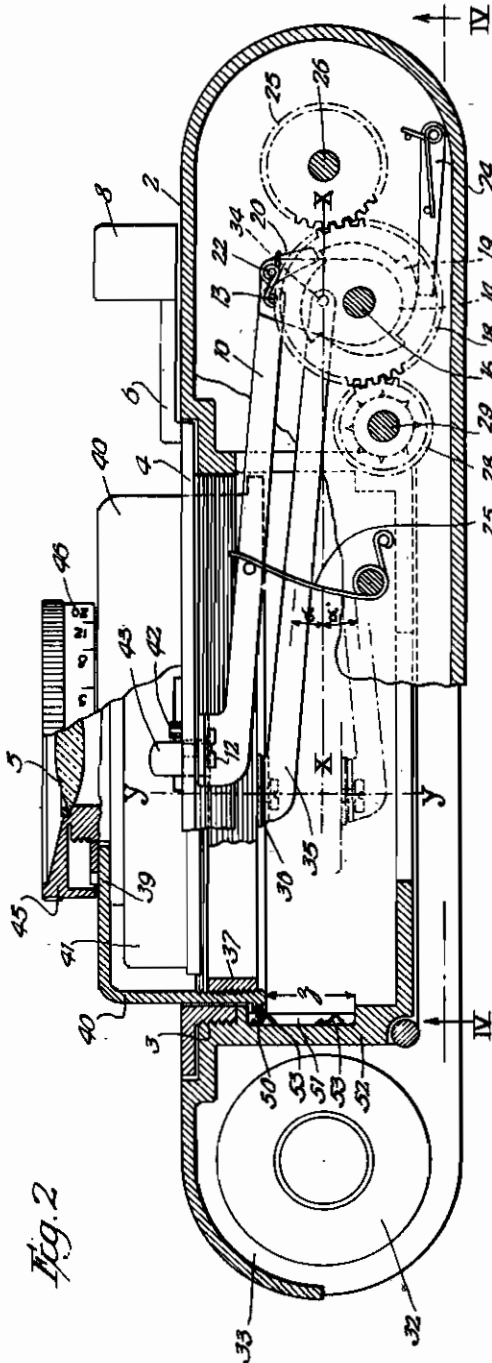


Fig. 2

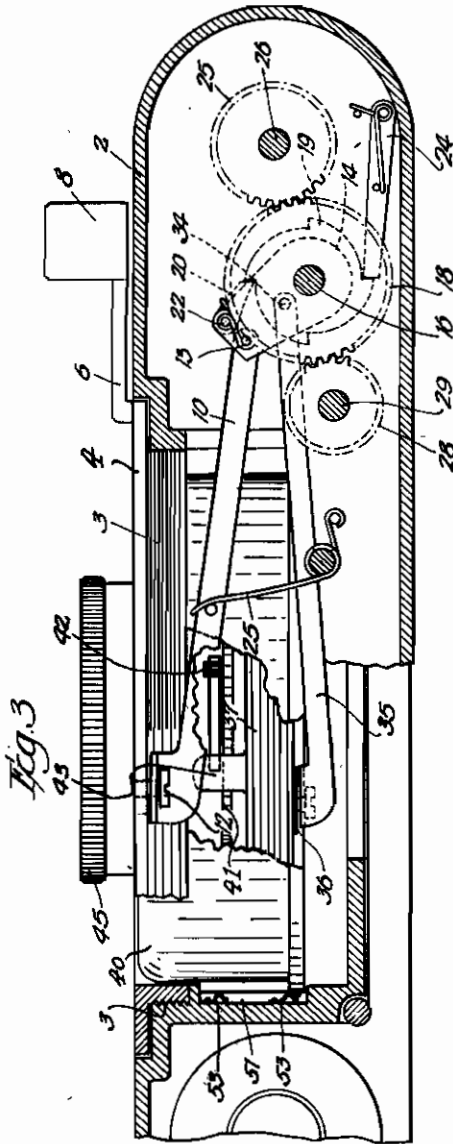


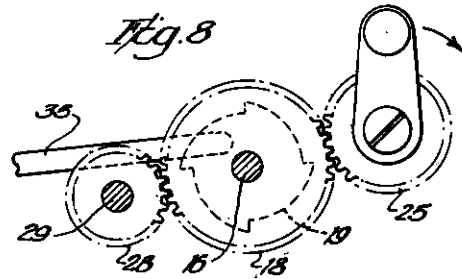
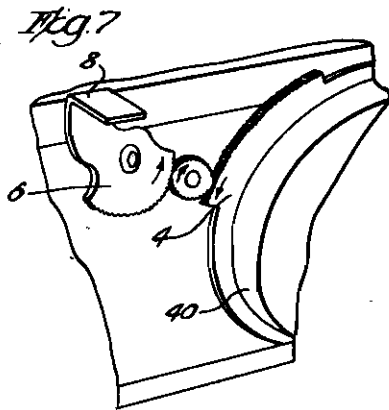
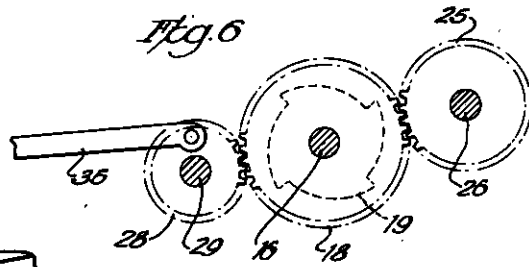
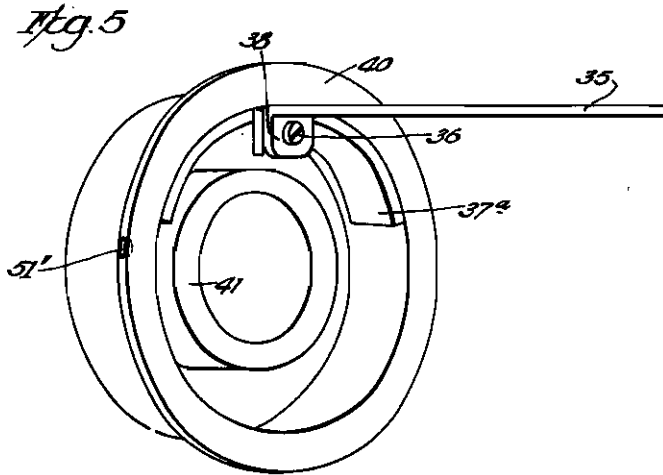
Fig. 3

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ALIEN PROPERTY CUSTODIAN

ROLLFILM CAMERAS

Hubert Nerwin and Karl Wunderlich, Dresden,
Germany; vested in the Alien Property Custodian

Application filed June 18, 1940

The invention relates to improvements in roll-film cameras, and particularly is directed to miniature cameras equipped with a central shutter. In cameras of this type the central shutter is combined with the photographic objective and is mounted with the latter on a support adapted to be moved in axial direction toward and away from the film in the focal plane.

It is an object of the invention to provide the rollfilm camera with a manually operable member on the front wall of the camera casing for simultaneously tensioning the central shutter and advancing the film for bringing the next unexposed film section in a position behind the photographic objective.

Another object of the invention is to rotatably mount the manually operable member on the front wall of the camera casing concentrically about an axially shiftable carrier which supports the camera objective and the central shutter.

It is also an object of the invention to mount the central shutter within an axially shiftable cup-shaped carrier which is provided with a tubular wall slidably passing through the annular manually operable member on the front wall of the camera casing.

Another object of the invention is to use said cup-shaped carrier as a support for a member which is operatively connected with the film advancing mechanism and actuates the customary shutter tensioning lever whenever the film is advanced.

Other objects of the invention will be apparent or will be specifically pointed out in the description forming a part of this specification, but the invention is not limited to the embodiment of the invention herein described, as various forms may be adopted within the scope of the claims.

In the drawings:

Fig. 1 is a perspective view of a rollfilm camera of the present invention.

Fig. 2 is a top plan view of the rollfilm camera in extended operative position, with parts in section.

Fig. 3 is a similar view as Fig. 2, except that the extensible part of the camera has been moved into the camera casing to its inoperative position, and

Fig. 4 is a vertical sectional view of a portion of the camera, substantially along the line IV—IV of Fig. 2 and looking in the direction of the arrows.

Referring to the drawings, the front wall 2 of the camera casing 1 has rotatably attached thereto, for instance by means of a fine thread 3, an

annular member 4 concentrically with respect to the axis of the photographic objective 5. An arm 6 extending outwardly from said annular member 4 terminates at a point just above the top wall 7 of the camera casing 1 in a finger piece 8 which is engaged by the user of the camera to be depressed when the film is to be advanced and the shutter is to be tensioned.

A bar 10, which according to Fig. 4 is positioned in the camera casing 1 spaced from and substantially parallel to the top wall 7 thereof, is pivotally connected at one end by a pin 12 to the upper portion of the annular member 4 and with its other end at 13 (Fig. 2 and 3) to an oscillatable member 14 which forms one element of the film advancing mechanism. The member 14 is rotatable on a shaft 16 which also supports a gear 18 fixedly attached to a ratchet wheel 19, the latter is adapted to be rotated step by step in clockwise direction by a spring influenced pawl 20 pivotally attached at 22 to the member 14. A holding pawl 24 prevents a return movement of the ratchet wheel 19 and gear 18, while a spring 25 acting on the bar 10 return the latter and therewith the annular member 4 and the oscillatable member 14 to their initial position after each manual depression of the finger piece 8.

The gear 18 meshes with a gear 25 on the shaft 28 carrying the film take-up spool engaging clutch member 27 and also meshes with a gear 28 on the shaft 29 carrying the customary film advancing sprocket 30. The film supply spool 32 or cartridge is mounted in a chamber 33 at the other end of the camera casing 1, as shown in Figs. 2 and 3.

The oscillatable member 14 is also connected at 34 with one end of a second bar 35, whose other end is pivotally attached at 30 to an inwardly bent lug 36 of a ring 37, which ring 37 is rotatably mounted by means of a thread of low pitch within the cup-shaped carrier 40 for the photographic objective 5 and the central shutter 41. The central shutter 41, which is fixedly attached to the inner face of the bottom wall 39 of the carrier 40, coaxially with the objective, is provided with an outwardly projecting tensioning lever 42 extending into the path of movement of an axially extending lug 43 of the ring 37 to be actuated by the latter each time the bar 35 rotates the ring in clockwise direction when the finger piece 8 is manually depressed.

It thus is apparent, that upon a depression of the finger piece 8 the annular member 4 is rotated clockwise, against the action of the spring

25, and thereby simultaneously advances the film one step—which step is equal the length of one picture—and tensions the shutter 41.

The photographic objective 5 is provided for focusing purposes with a rotatably adjustable front lens 5^a in a mount 45 extending outwardly from the wall 39 of the cup-shaped carrier 40. The outer circumference of the mount 45 is provided with a focusing scale 46. A depressible shutter release member 48 is preferably arranged on the top wall 7 of the camera casing 1.

The depression of the release member 48 during an exposure is transferred to the release lever 55 of the shutter 41 by a linkage 54. A lever 56 projecting over the front side of the carrier 40 through a slot 57 serves to set the diaphragm of the objective 5 by means of a scale 58. For the purpose of setting the exposure time of the shutter 41 there is provided a further lever 59 projecting through a slot 60 in front of the carrier 40. The correct setting of the exposure time is readable through a window 61 in the front side of the carrier 40.

The cup-shaped carrier 40, with the photographic objective 5 and central shutter 41 thereon, is mounted for axially slidable movement in the camera casing. The carrier 40 is guided in its mounting 52 in the camera housing 1 by means of a wedge 50 and a groove 51; it is held in the extended or unextended position by elastic stops 53. In Fig. 2 the carrier 40 is shown axially extended, in which position the camera is in operative condition. The film advancing mechanism is shown in a position in which the film is being advanced and the shutter being tensioned. Fig. 3 shows the inoperative position of the camera, in which the carrier 40 and the parts connected therewith have been retracted or pushed into the camera casing, thus reducing the space required for storing or carrying the camera in a pocket or the like to a minimum. The shutter is shown in tensioned position, ready to be released, while all other parts, as 4, 6, 10 are shown in their initial position.

In order to insure a faultless operation of the shutter tensioning mechanism 35, 37, 43, 42, even in the retracted inoperative position of the carrier 40, it is advisable and forms an object of the invention to make the angles α and α' (Fig. 2) approximately equal. These angles α and α' are formed between the line X—X, which passes through the pivot point 34 and which is perpendicular to the line Y—Y (Fig. 2), and the longitudinal axis of the bar 35 in the operative and inoperative position respectively of the camera. Or in other words, the line X—X bisects the angle $\alpha + \alpha'$ formed between the two end positions of the bar 35 in the extended and retracted position respectively of the cup-shaped carrier. It will also be noted that the line X—X is substantially parallel to the front wall 2 of the camera casing 1 and lies in a plane which intersects the optical axis of the objective 5 at a right angle. The distance which the cup-shaped carrier 40 may be axially moved into the camera casing as indicated with z in Fig. 2.

The ring 37 with its two lugs 38 and 43 may be substituted by an oscillating device having the form of a ring sector-shaped member 37a (see Fig. 5). The pivotal connection of the bar 35 with the film advancing mechanism does not have to be located directly on the oscillatable member 14, but may be located on an intermediate member, as for instance on a gear of a train of gears, which in turn is connected with the film advancing mechanism (see Fig. 6). It is also possible to provide a manually operable finger piece 6 which by means of a gear or a gearing actuates the annular member 4 (see Fig. 7). Furthermore, the rapid acting wind-up device consisting of the parts 4, 8, 12 and 25 may be substituted by a rotatable button or a lever which acts directly on the film advancing mechanism 16, 19, 25 and which at the same time operates the bar 35 of the shutter tensioning device (see Fig. 8).

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