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RELOADABLE FILM CARTRIDGE

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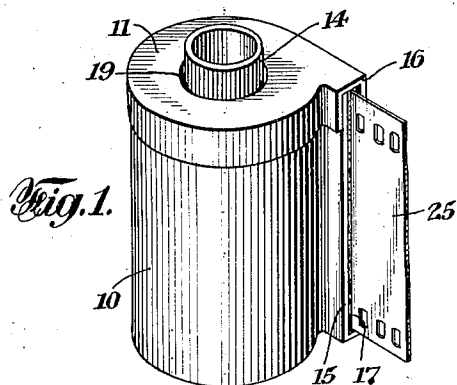
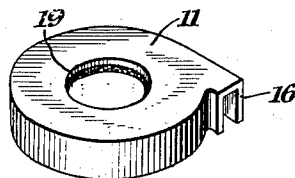
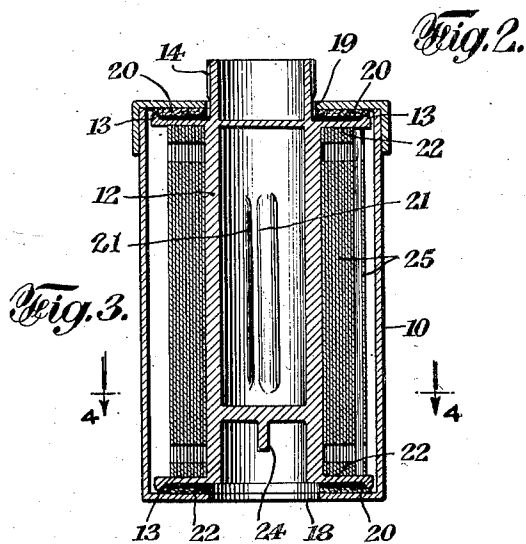
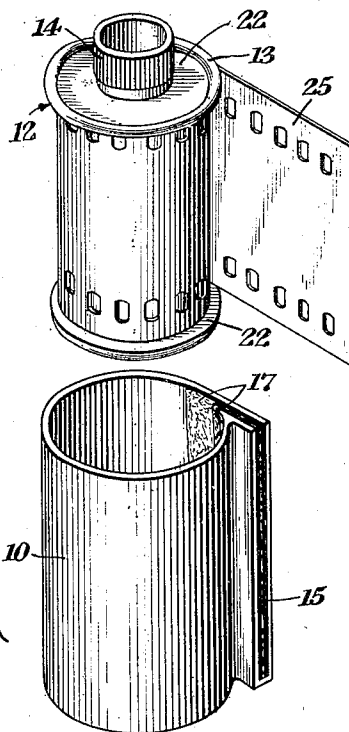
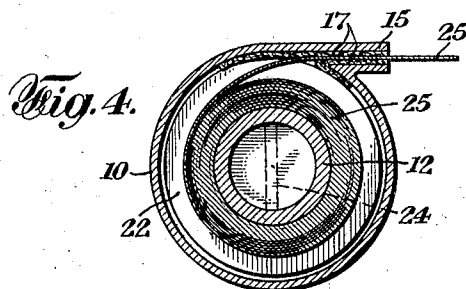
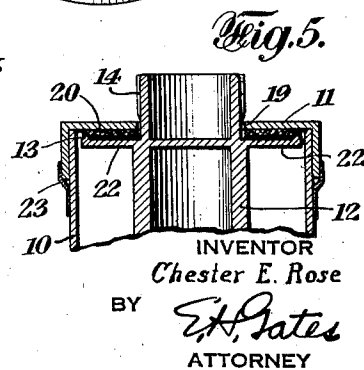


Fig. 2.



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RELOADABLE FILM CARTRIDGE

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1 Claim. (Cl. 242—71)

This invention relates to a reloadable cartridge for photographic film.

One object of this invention is to provide a simple and inexpensive cartridge that can be readily reloaded and adjusted in a darkroom by the amateur. Another object is to provide a casing that cannot accidentally spring open. Another object is to provide an improved light seal that acts also as a brake to prevent accidental unwinding of the film. Further objects will more plainly appear from the detailed specification and description hereinafter set forth.

While suited for other uses, this invention is particularly advantageous for use in diminutive or so-called "Candid Cameras" for taking still pictures on 35 mm. film. Increasing numbers of users of these cameras not only develop and print their own pictures but also hypersensitize their own films, which must be done a short time before exposure. This, of course, requires the user to load and reload his own cartridges in total darkness, which heretofore has been extremely difficult or impossible with the prior cartridges in which the film is sold.

To enable those skilled in the art to use my invention, I will as an illustration describe a preferred embodiment thereof with the understanding that modifications may be made without departing from its spirit and scope in its broader aspects.

The accompanying drawing shows diagrammatically in:—

Figure 1, a perspective view of the assembled cartridge;

Figure 2, an exploded view in perspective of the cartridge including the cap, spool and casing;

Figure 3, a longitudinal cross section taken on the vertical axis of the cartridge;

Figure 4, a transverse section taken on the line 4—4 in Figure 3;

Figure 5, a detail of Figure 3 showing means for removably sealing the cap on the casing.

The cartridge comprises a rigid cylindrical cup-shaped casing 10 open at one end and having a longitudinal slotted film guide 15 extending the length of the casing. The slotted film guide 15 is lined on both sides with suitable light-excluding material 17, such as velvet or felt ribbon. The walls of the casing 10 are unlined, but the bottom of the casing has fixed thereto an annular disc 20 of light-excluding material. The closed end of the casing 10 is provided with a circular perforation 18 to permit the engagement of the camera winding key with the spool key 24.

A rigid, cylindrical cup-shaped cap 11 has fixed to its underside an annular disc 20 of light excluding material, and is provided with a slotted portion 16 so that the cap 11 may be freely slidably fitted over the casing 10. The top of the cap 11 is provided with a circular perforation 19 to permit the projection therethrough of the thumb screw 14 of the film spool 12.

The spool 12 comprises the usual hollow shank member with the usual film slits 21 and the usual light seal at each end of the shank, as shown in Figure 3, to prevent the entrance of light through the film slits 21. The lower portion of the shank is provided with the usual spool key 24 counter-sunk with respect to the lower flange 22 and adapted to engage the rewind key in the camera (not shown). The upper portion of the shank is provided with a thumb screw 14 that projects upwardly from the upper flange 22. The spool 12 is provided with film retaining end flanges 22 having outwardly projecting ridges 13. The flanges 22 are so spaced apart that they will slidably engage the discs 20 when the cartridge is closed.

The spool 12 is adapted to slidably fit into the casing 10 and the cap 11 so that the flanges 22 may rotate in slidable contact with the discs 20 and so that the flange ridges 13 will have a compressing action on and around the discs 20, as shown in Figure 3, thereby forming an improved light seal at both the top and the bottom of the cartridge, and at the same time providing a braking action on the spool flanges 22 that prevents accidental unwinding of the film 25 in the cartridge.

To assemble the cartridge the reeled spool 12 is placed in the casing 10 and the film 25 drawn through the guide 15. The cap 11 is slipped over the open end of the casing 10, permitting the thumb screw 14 to project through the opening 19. The cap 11 is then sealed on the casing with the readily removable and resealable adhesive tape 23. When the cartridge is in the camera, the camera rewind key is engaged with the spool key 24, and the thumb screw 14 is used to advance or retract and adjust the film and draw it taut against the sprocket in the camera. After exposure the cartridge may be taken to the darkroom, the detachable seal 23 removed, the cap 11 slipped off and the reeled spool 12 slipped out of the casing 10 by gripping the thumb screw 14, and the film developed.

The cartridge may be readily reloaded in the darkroom with fresh or hypersensitized film in the following manner: A suitable length of film

25 is engaged with the spool slits 21 and reeled on the spool 12, no paper leader being needed. The reeled spool 12 is slipped into the cylindrical case 10 so that the free end of the film 25 will slide through the film guide 15. The cap 11 is slipped over the casing 10 and the cartridge may then be removed to white light, where the replaceable sealing tape 23 may be applied to hold the cap 11 in place on the casing 10. In working in the darkroom the thumb screw 14 affords readily accessible means for removing and inserting the spool 12 in the cartridge.

A wide choice of materials is available for the construction of my invention. Any cheap non-fogging sheet metal of sufficient rigidity to prevent accidental distortion or to prevent springing open of the casing 10 may be used, as no cumbersome retaining clamps are necessary with my improved cartridge. Preferred materials are lacquered brass sheeting, die cast aluminum, rigid cellulose derivative compositions and rigid plastics such as phenol condensation products of the type known as bakelite or the like. The lining of the slot 15 and the discs 20 may be of felt, velvet, plush or any other suitable non-fogging, light-excluding compressible fabric. The hereindescribed combined light-sealing and braking action of the flange ridges 13 and the discs 20 make it unnecessary to provide a lining for the casing 10, which in prior lined devices has a tendency to loosen and jam the film. A preferred cartridge structure inexpensive enough to be given away with the purchase of

the film may be made, according to my invention, from lacquered brass sheeting for the cap 11, casing 10 and spool 12, felt for the annular discs 20, and velvet ribbon for the lining of the slot 15.

While applicant has herein described his novel reloadable cartridge in detail, he does not contemplate limitation thereto but does include all forms and modifications within the language and scope of the appended claim.

I claim:

A light-proof reloadable film cartridge, made of rigid non-fogging metal, comprising in combination: a rigid, unlined cylindrical cup-shaped casing provided with a longitudinal co-extensive straight projecting slotted film guide lined with light-excluding material; a single rigid, readily removable and resealable cup-shaped cap adapted to slidably fit over the open end of said casing and said film guide; two annular discs of light-excluding material fixed to the inner side of each end of said cartridge; a roll of sensitized film carried by a spool provided with end flanges adapted to slidably fit into said cartridge and to slidably rotate in light-excluding contact with said discs; outwardly projecting ridges on said flanges adapted to exert sufficient compression on said discs to prevent accidental rotation of said spool; and combined means embodied in said spool for advancing and retracting said film, and for readily removing said spool from said casing.

CHESTER E. ROSE.