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T. S. BRISKIN

2,405,683

KNOB

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Fig. 1

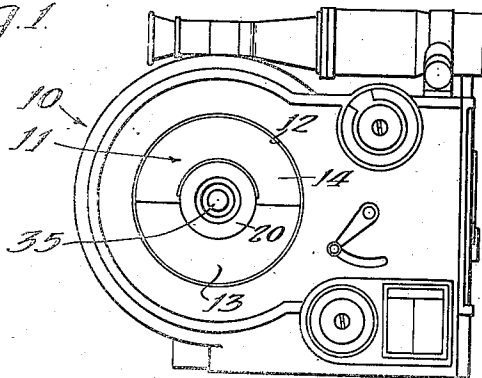


Fig. 4

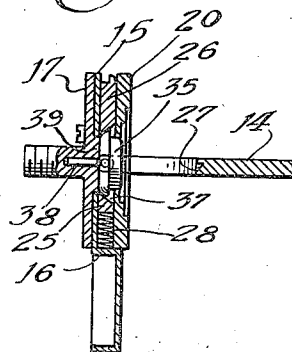


Fig. 2

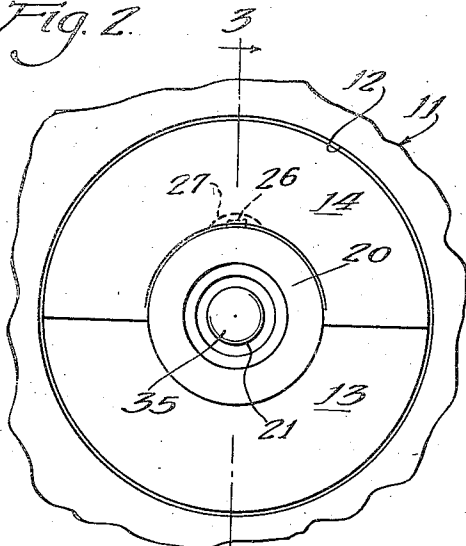


Fig. 3

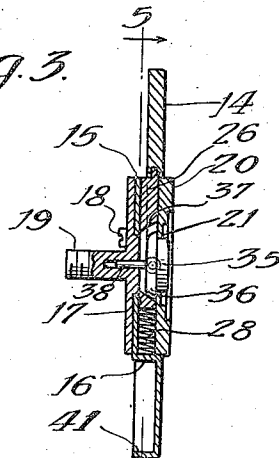


Fig. 5

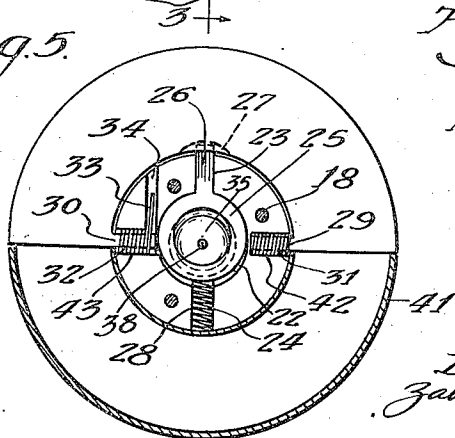


Fig. 6

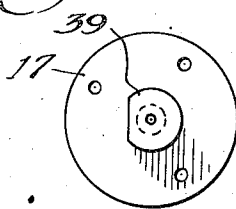
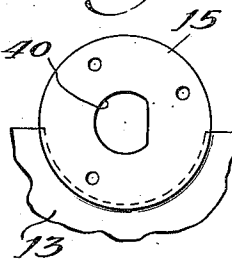


Fig. 7



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UNITED STATES PATENT OFFICE

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5 Claims. (Cl. 74—547)

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This invention relates to knobs, and in particular, to those adapted to be set flush with the wall or plate on which the knobs are mounted.

This invention has been found to be of particular utility in connection with a moving picture camera, although the invention is not to be limited to such use.

Moving picture cameras are provided with a spring motor, the spring being wound by a knob on the outside of the case of the camera. A knob has been provided in the form of a plate which is hingedly mounted with respect to the winding shaft so that it may be folded back against the wall of the camera. It is considered desirable to provide a recess in the wall of the camera so that no portion of the knob will project beyond the camera wall. The objection to this construction, however, is the difficulty in swinging the knob out from its flush position into operative position. This cannot be readily accomplished if the operator is wearing gloves, and even with bare hands, one is likely to break his finger nails, or to encounter other difficulties in attempting to pry the knob out of the recess. Even when the knob is not set into a recess, these objections are present to some degree.

It is an object of this invention to provide a knob of the type described which is easily released from its inoperative or flush position, and also to provide one which is spring biased into operative position, and which can be latched into its flush position.

A further object is to provide for a knob of this type an improved latch construction which can be easily actuated by a depressible button or the like.

Still another object is to provide an improved knob assembly of comparatively few parts, and which is simple to manufacture and assemble.

Other objects, advantages and features will become apparent as the description proceeds.

With reference now to the drawing, in which like reference numerals designate like parts—

Fig. 1 is an elevation of a moving picture camera embodying a preferred form of this invention;

Fig. 2 is an enlarged elevation of the knob;

Fig. 3 is a section taken along line 3—3 in Fig. 2;

Fig. 4 is a view similar to Fig. 3, but showing the parts in a changed position;

Fig. 5 is a sectional elevation taken along line 5—5 of Fig. 3; and

Figs. 6 and 7 are details of certain of the parts.

The reference numeral 10 designates a motion picture camera having a spring winding knob 11 which is set into a circular recess 12 formed in

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the wall of the camera. The parts of the knob and knob assembly which are visible to the observers are a semi-circular plate 13 which is positioned in the recess 12 and which rotates with the knob, the hinged plate 14 which constitutes the manually engaged portion of the knob, a hub plate 20, and a button 35 which projects through the hub plate and is centrally disposed with respect thereto.

Each of the plates 13 and 14 is in the shape of a half ring, the plate 13 being provided with an offset central portion 15 which is disposed beneath the hub plate 20. The central portion 15 and the exposed portion 13 are connected by a transverse portion 16.

Underneath the central portion 15 is provided a back plate 17 having a threaded extension 19 which may be screwed into the end of the winding shaft of the camera. The central portion of the knob assembly, which comprises the hub plate 20, the central portion 15 and the backing plate 17, are held together by screws 18.

The hub plate 20 is provided with an aperture 21 through which button 35 extends. The rear surface of the hub plate 20 is milled out to provide a centrally disposed circular recess 22, and slots 23 and 24 connected therewith. A ring-shaped latch member 25 is disposed in the recess 22, and is provided with a radially projecting tongue 26 which is disposed in the slot 23. The end of the projecting tongue 26 constitutes the latch proper and engages a hinged plate 14 in a recess 27, formed in the inner edge thereof. A small coiled spring 28 is disposed in slot 24 which serves to urge the latch member 25 outwardly into latched position.

The hinged plate 14 is provided with oppositely disposed and inwardly extending pivot members 29 and 30 which fit into slots 42 and 43, also milled in the rear surface of the hub plate 20. Thus the hinged plate 14 may be rotated from flush position into operative position, and vice versa, the torque applied manually to the hinged plate being transmitted to the hub plate 20 by means of the pivots 29 and 30.

Springs 31 and 32 surround the pivots 29 and 30 and serve to maintain the hinged plate centered with respect to the other parts. The spring 32 is provided with a tail 33 which extends into the slot 34 in the hub plate 20, the other end of the spring 32 being suitably anchored to the pivot 30. Thus the hinged plate 14 is urged into its operative position, but may be depressed against the bias of spring 32 into the flush position in which it is latched.

The button 35 is provided with a flange 36 which engages the rear surface of the central circular recess 22 which is milled into the hub plate 20. Thus the button is prevented from falling out. The outer and rearward surface of the flange 36 may be somewhat rounded as shown in Fig. 3, and it is adapted to engage a cam surface 37 formed by the tapering walls of the aperture in the ring-shaped latch member 25. Thus inward pressure on the button will cause the latch member to be displaced from the position shown in Fig. 3, into its released position as shown in Fig. 4. When the pressure on the button is released, the spring 28 causes the latch member 25 to return to its normal latched position, thereby displacing the button outwardly.

The button 35 is provided with a centering pin 38 which is received in a suitable bore in the backing plate 17 and the threaded extension 19. Thus the motion of the button 35 is confined to substantially rectilinear motion.

The backing plate 17 may be provided with a boss 39, as shown in Fig. 6, which fits into a correspondingly shaped aperture 40 in the central portion 15. The boss and aperture may be suitably shaped to prevent any relative rotation between the two, thereby facilitating the assembly of the parts.

It will be noted that whereas the hinged plate 14 is a solid piece, the plate 13 and the central portion 15 thereof, may be stamped from much thinner gauge sheet steel. In stamping the member 13 from such thin gauge metal it is considered preferable to provide the outer edge thereof with an inwardly extending flange 41, both for purposes of appearance, and to furnish a measure of support for that portion of the plate 13 which is spaced from the recessed camera wall. It will be noted that the transverse portion 16 closes the end of slot 24, so that the spring 28 is confined between said transverse portion and the displaceable latch member 25.

In operation, depression of the button 35 will release the latch 26, thereby permitting the hinged plate 14 to spring outwardly into the position shown in Fig. 4, wherein it may be readily grasped by the operator. Thus broken nails may be avoided and the operation may be effected even though the operator is wearing gloves. At the conclusion of the winding operation, the hinged plate 13 is merely folded back into flush position against the bias of spring 32, in which position the plate is latched.

Although only a preferred embodiment of this invention has been shown, it will be understood that various modifications and changes can be made therein without departing from the spirit of the invention.

I claim:

1. A knob of the class described comprising a rotatable hub member, a hinged plate mounted thereon for movement from an inoperative position, wherein it is disposed in a plane substantially perpendicular to the axis of rotation of said hub member, into a position wherein it is disposed in a plane substantially parallel to said axis so that said hinged plate may be easily grasped, a latch slidably mounted in said hub member and adapted to engage said hinged plate to latch the same in the inoperative position, and depressible means extending through said hub member, and engaging said latch for actuating the same.

2. A knob of the class described comprising a rotatable hub plate, a hinged plate mounted thereon, and adapted to be moved from an inoperative position, wherein it is disposed in a plane substantially perpendicular to the axis of rotation of said hub plate, into an operative position wherein it is disposed in a plane substantially parallel to said axis so that said hinged plate may be readily grasped, means for biasing said hinged plate into the latter position, a latch for locking said hinged plate in the inoperative position, means for biasing said latch into latched position, and a button mounted in said hub plate for axial displacement into engagement with said latch, said latch being provided with a cam surface which is engaged by said button to effect release of said latch when said button is depressed, thereby permitting said hinged plate to move into operative position.

3. In a knob assembly of the class described, a hub member, a hinged plate pivotally mounted with respect to said hub member, and having a semi-circular inner edge adapted to be disposed opposite the edge of said hub member when the hinged plate is in inoperative position, a ring-shaped latch member having a radially projecting latch adapted for engagement with said inner edge of said hinged plate to latch the same in inoperative position, the inner wall of said ring-shaped member being tapered, and a manually depressible member disposed within said ring-shaped latch member so that depression of said manually depressible member will cause displacement of said ring-shaped member.

4. In a knob assembly of the class described, a hinged plate, a ring-shaped latch member having a radially projecting latch adapted for engagement with said hinged plate, the inner wall of said ring-shaped member being tapered, and a manually depressible button disposed within said ring-shaped latch member so that depression of said manually depressible member will cause displacement of said ring-shaped latch member, an apertured plate through which said button extends, a backing plate cooperating therewith, and a rearwardly projecting pin secured to said button and extending into a bore in said backing plate for centering said button with respect to said ring shaped latch member, said hinged plate being pivotally mounted on said apertured plate.

5. In a knob assembly of the class described, a hinged plate, a ring-shaped latch member having a radially projecting latch adapted for engagement with said hinged plate, the inner wall of said ring-shaped member being tapered, and a manually depressible button disposed within said ring-shaped latch member so that depression of said manually depressible member will cause displacement of said ring-shaped latch member, an apertured plate through which said button extends and which is recessed to accommodate said latch member, a spring bearing against said latch member and disposed in a communicating recess in said plate, and a backing plate secured to said apertured plate to confine said latch member and said spring in said recesses, said hinged plate being pivotally mounted with respect to said apertured plate, and having an inner edge which is shaped to clear said apertured plate to permit said hinged plate to be pivoted into latched position.

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