This invention relates generally to a pistol grip for operating the starting lever of an apparatus arranged to be mounted on the pistol grip, and more particularly, to an improved pistol grip for portable motion picture cameras.

Pistol grips for use with cameras have been known heretofore, but such devices have been relatively complicated employing many moving parts and thus subject to mechanical failure after prolonged use. In addition, presently known pistol grips are expensive to manufacture and in the absence of a suitable safety catch, are subject to inadvertent operation. In some prior art devices, there is no convenient means for mounting the camera or other apparatus to be operated without affecting various structural modifications of the device.

Bearing the foregoing in mind, it is a primary object of the present invention to provide an improved pistol grip for operating apparatus mounted thereon which involves a total of only two moving parts in addition to a safety catch.

More particularly, it is an object to provide a pistol grip meeting the foregoing object which is adapted for operating a motion picture camera having a starting lever located on a side of the camera.

Other objects of the invention are to provide a pistol grip for motion picture cameras which is neat and attractive in appearance, reliable and rugged as a consequence of the relatively few moving parts employed, and one which can be economically manufactured.

Briefly, these and many other objects and advantages of the invention are attained by providing a pistol body having a downwardly extending grip handle and suitable mounting means in the form of a small hole or bore on its top surface for mounting a conventional portable type motion picture camera. The pistol body itself includes a laterally and upwardly extending supporting structure arranged to terminate adjacent a side of the camera when mounted on the body. This structure together with the pistol body includes recessed areas within which there is disposed a trigger plate rotatably mounted about a pivot pin for small arcuate movement. The trigger plate includes a trigger portion extending out the lower end of the pistol body for simple actuation by the finger of the user and another extending portion terminating in a laterally extending arm passing into the supporting structure from the forward portion of the pistol body. The entire trigger plate as described constitutes an integral piece and actuation of the trigger portion will result in a small arcuate movement of the forwardly extending portion and lateral arm.

The end of the lateral arm within the supporting structure is pivoted to a vertically extending link passing up the vertical portion of the supporting structure and terminating in a small finger arranged to operate the lever of the camera when the link is urged downwardly upon arcuate movement of the trigger plate. This link and actuating finger constitutes the second moving part of the mechanism. By pivoting this link to the end of the arm on the trigger plate, the upper finger portion of the link can move in a straight line direction when the trigger plate is rotated through a small arc.

Also included in the pistol body is a safety catch in the form of a small latch member arranged to be received in a notch cut in a rear portion of the trigger plate to block arcuate movement of the trigger plate. The latch itself is manually operable from the exterior of the pistol body and is arranged to remain in any manually set position so that positive action is required to either set or release the safety catch.

A better understanding of the preferred embodiment of the invention will be had by referring to the accompanying drawings in which:

Figure 1 is a side elevational view partly cut away to expose the trigger mechanism of the pistol grip of the present invention;

Figure 2 is a fragmentary view partly in cross section taken in the direction of the arrows 2—2 of Figure 1; and,

Figure 3 is a plan view partly cut away to expose the trigger mechanism taken generally in the direction of the arrows 3—3 of Figure 1.

Referring first to Figure 1, there is shown a pistol body 10 including a grip handle 11 extending downwardly therefrom. The handle 11 may if desired be formed integrally with the pistol body 10. The upper surface 12 of the pistol body 10 is provided with a small bore or hole 13 through which a conventional screw may be inserted for mounting a camera on the top surface 12.

The forward portion of the pistol body 10, as best seen in Figures 2 and 3, includes a laterally and upwardly extending support structure 14 provided with a small slot or window 15 at its upper end from which a finger 16 projects. The finger 16 is arranged to be juxta posed to the driving lever of a motion picture camera when properly mounted on the top surface 12 of the pistol body 10 so that downward movement of the finger 16 will actuate the operating lever of the camera and upward movement of the finger 16 will release the operating lever of the camera.

For effecting the above described movement of the finger 16, the interior of the pistol body 10, as shown in Figure 1, is recessed as indicated generally by the numeral 17. Within the recessed portion there is provided a trigger plate 18 including a trigger portion 18' extending downwardly from the bottom of the pistol body 10 adjacent the grip handle 11 and in a position to be readily actuated by the user's finger. As shown, the trigger plate 18 is pivoted by a transverse pivot pin 19 to the pistol body 10 for small arcuate movements from a first to a second position as indicated by the dotted lines. Any accidental movement of the trigger portion 18' is prevented by the provision of a conventional trigger guard 20.

The trigger plate 18 includes a forwardly extending member 21 terminating in a horizontally laterally extending arm 22. The arm 22 can best be seen in Figure 2 and preferably constitutes an integral portion of the forwardly extending member 21 to define therewith a generally L-shaped stem when viewed in plan as shown clearly in Figure 3. The free end of the arm 22 is coupled to a vertically extending link 23 as by means of a pivot pin 24. As shown in both Figures 2 and 3, the link 23 extends upwardly within a recessed area 25 in the supporting structure 14 to terminate in the small finger 16. Up and down movement of the link 23 is guided by abutment of the sides of the finger 16 with the sides of the slot or window 15. Extreme downward movement of the link 23, however, is limited by a cross pin 26 which checks downward movement of the trigger plate member 21 as shown best in Figures 1 and 3. This pin will positively prevent further arcuate movement of...
the trigger plate 18 about the pivot point 19 in a counter clockwise direction after the trigger plate has been moved to the dotted line position illustrated in Figure 1.

The trigger plate 18 is biased to the solid line position shown in Figure 1 wherein the finger 16 in the supporting structure 14 is in its uppermost position and the camera or other mechanism mounted on the pistol 10 is in an off condition. This bias is provided by a downwardly and rearwardly extending portion 27 forming an integral part of the trigger plate 18 and terminating within the lower portion of the recessed portions 17, and a pair of compression springs 28. The springs 28 are positioned between the portion 27 and the rear wall of the recessed portion 17 in the handle grip 11 as clearly shown in Figure 1 thus urging the trigger plate to its solid line position.

From the above description it will be evident that upon gripping of the handle 11 a simple pressure on the trigger portion 18 by the user's finger is all that is needed to depress the actuating finger 16 projecting from the window in the supporting structure 14 to operate the movie camera. Release of the trigger portion 18 by the user will result in the trigger plate being immediately rotated back to its solid line position by the pressure of the springs 23 thus releasing the camera lever and stopping the operation of the camera. It will be noted that the action as described is wholly accomplished by only two movable members: first, the trigger plate 18; and, second, the simple link 23 pivoted to the free end of the arm 22 of the trigger plate.

An important feature of the present invention resides in the provision of a safety catch. Referring once again to Figure 1, this safety catch takes the form of a circular disc 29 mounted for rotation as by a pin 30. This disc co-operates with an actuating latch 31 having one end pivoted to the disc in an off center position as indicated at 32. The latch 31 is positioned to be received in a notch 33 in the trigger plate 18 when the disc 29 is rotated in a counter clockwise direction a given distance as indicated by the dotted line position of the latch 31. In order that the latch be properly guided, the disc may include a curved cam surface portion 34 against which the lower edge of the latch 31 rests.

In order that the disc 29 and latch 31 will remain in any set position, a brake shoe 35 is arranged to be biased as by springs 36 against a peripheral edge of the disc 29. By this arrangement, the disc will be firmly held in any set position.

In Figure 3, there is illustrated a manually operable means 37 for rotating the pivot pin 30 and disc 29 between the solid and dotted line positions as illustrated in Figure 1. Because of the biased brake shoe which frictionally retains the disc in any set position as heretofore described, a positive manual operation is required to set or release the safety catch mechanism. It will be evident from the dotted line position of the safety latch 31 of Figure 1 that the trigger plate 18 will be completely blocked from any movement in a counter clockwise direction around the pivot pin 19; that is, movement from the solid to the dotted line position illustrated.

It will be noted in Figure 3 that the trigger plate 18 includes a semi-circular shaped vertical groove 38 substantially concentric with the upper opening 13 illustrated in Figure 1 and shown in dotted lines in Figure 3.

This semicircular vertical groove extends out the bottom adjacent the trigger portion 18' and is sufficient in size to enable a simple screw to be inserted up from the bottom of the pistol body 10 through the opening 13 to engage the camera or other apparatus (not shown) to be mounted on the surface 12 of the pistol body.

From the foregoing description, it will be readily appreciated that the pistol grip of this invention is not only attractive in appearance and convenient to use but employs a minimum number of movable parts whereby it is reliable in operation and can be manufactured relatively economically. Various modifications that fall within the scope and spirit of the present invention will, of course, occur to those skilled in the art. The pistol grip is, therefore, not to be thought of as limited to the exact embodiment set forth for illustrative purposes.

What is claimed is:

1. A pistol grip for use with a motion picture camera, comprising, in combination: a pistol body having a grip handle extending downwardly therefrom and a mounting means for securing said motion picture camera to the upper surface of said body; said body including an interior recessed portion; a trigger plate disposed in said recessed portion; a transverse pivot pin mounting said trigger plate for small arcuate movement within said recessed portion, said trigger plate including a trigger portion extending out the lower portion of said pistol body adjacent said grip handle for actuation by the finger of a user to effect said arcuate movement, said trigger plate including a forwardly extending member terminating in a horizontal laterally extending arm to define an L-shaped stem as viewed from above; a vertical link pivotally connected to the free end of said arm and extending upwardly; a supporting structure extending laterally from the forward portion of said pistol body and therewith vertically upwardly, said structure including a recessed area for receiving said laterally extending arm and vertical link, the upper end of said vertical link terminating in a finger adapted to engage the starting lever of said motion picture camera when the latter is mounted on said mounting means; and biasing means within said recessed portion biasing said trigger plate to a first aracuate position, whereby movement of said trigger portion by the user effects said arcuate movement of said pivot plate in opposition to said biasing means to lower said forwardly extending portion and arm, said arm thereby pulling said link and finger downwardly to actuate said motion picture camera.

2. The subject matter of claim 1, in which a rear portion of said trigger plate includes a notch; and safety catch means mounted within said pistol body and positioned, upon actuation, to engage said notch to block arcuate movement of said trigger plate.

3. The subject matter of claim 2, in which said safety catch means includes a rotatably mounted disc; manually operable means on a lateral side of said pistol body connected to rotate said disc; a safety latch pivotally mounted at one end to an off center point on said disc; and friction means beating against said disc whereby rotation of said disc urges said safety latch into said notch, said friction means retaining said disc in a set position.

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