W. S. STEARNS.

DEVICE FOR WATERPROOFING CAMERAS.

APPLICATION FILED FEB. 12, 1915.

1,156,441. Patented Oct. 12, 1915.

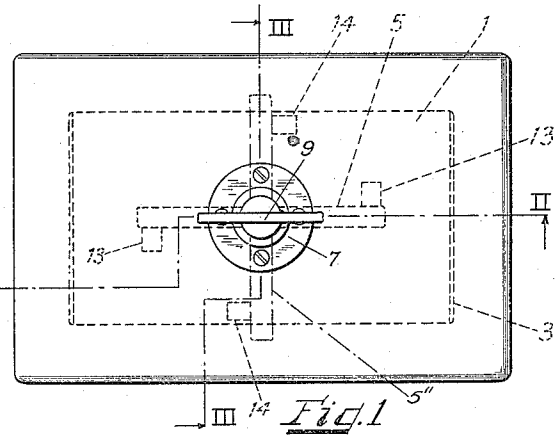

Fig. 1

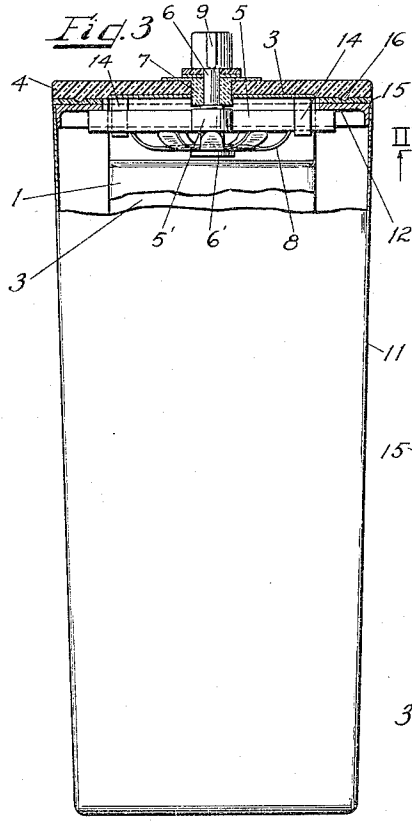

Fig. 3

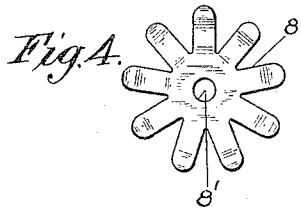

Fig. 4.

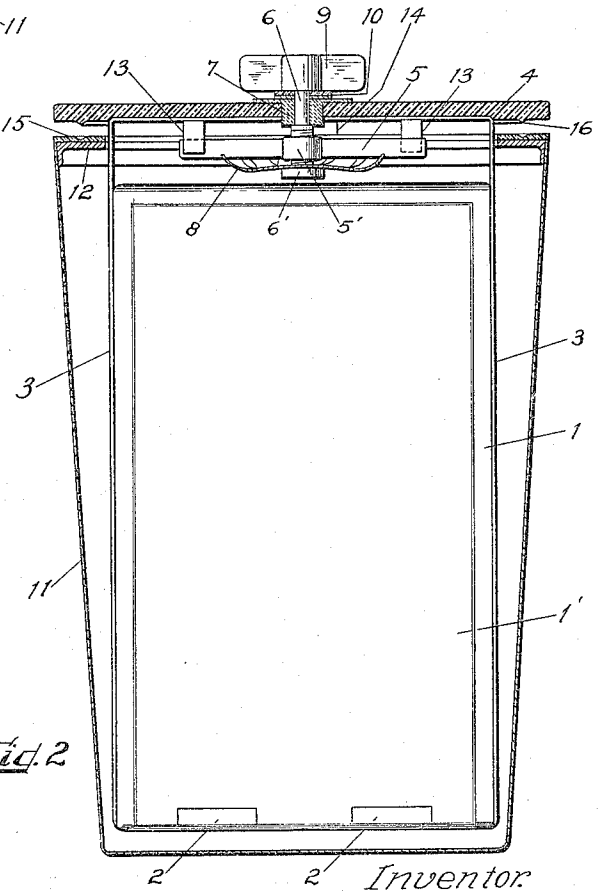

Fig. 2

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DEVICE FOR WATERPROOFING CAMERAS.

1,156,441. Specification of Letters Patent. Patented Oct. 12, 1915.

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To all whom it may concern:

Be it known that I, WILLIAM S. STEARNS, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Devices for Waterproofing Cameras, of which the following is a specification.

This invention relates to a combined support and closure for cameras and the like and more especially to an improved means for waterproofing folding cameras, to the end that such articles may be protected from dampness and even from injury resulting from actual immersion in water.

These and other objects of my invention will be hereinafter referred to and the novel means and combinations of elements whereby said objects may be attained will be more particularly pointed out in the claims appended hereto.

In the accompanying drawing which forms a part hereof and in which like reference characters designate like parts throughout the several views, I have exemplified a preferred embodiment of my invention; but as I am aware of various changes and modifications which may be made herein without departing from the spirit of my invention, I desire to be limited only by the scope of said claims.

Referring to the drawing: Figure 1 is a plan view of a combined support and closure for cameras. Fig. 2 is a section taken on line II—II of Fig. 1. Fig. 3 is an end view of the device shown in Figs. 1 and 2, partly broken away along the line III—III of Fig. 1. Fig. 4 is a detail bottom view of a spring used in connection with the cover lock hereinafter described.

The camera 1 may be of the usual folding type having a side 1′ hinged at 2 whereby said side may be lowered and the folded camera parts thereby be moved to their operative positions. Such cameras are customarily made somewhat longer one way than another and I have taken advantage of this fact in my preferred form of closure.

As best shown in Fig. 1, sides of the camera which extend parallel to the short edge of the paper are materially longer than are the sides which extend parallel to the longer edges of the paper, and these shorter sides may be engaged by and the camera received between the depending legs of a U-shaped frame 3. This latter may be of steel, aluminium, or even of fiber, or the like, and has affixed to its upper side a plate 4 of, for example, hard rubber.

As the frame 3 is preferably rigidly secured to the camera and as the plate 4 is correspondingly secured to said frame, the camera may be conveniently supported by the plate 4, the overhanging edges of which may be very conveniently grasped by the hand or one edge may be pressed against the body of the operator, when the camera is in use.

In the preferred form of my device the top of the camera is spaced from the under side of the middle portion of the U-shaped frame to provide room for a locking bar 5 and its associated parts. This bar may be of suitable metal and its centrally disposed hub 5′ is apertured and interiorly threaded so as to permit of a screw engagement between said bar and its supporting spindle 6. This latter is journaled in a bushing 7 of brass or the like and has an enlarged and threaded lower end which carries the bar 5, above described.

At its inner extremity the spindle 6 has fixedly connected thereto a cap or head 6′ to which is soldered or otherwise fastened a fingered spring element 8, the prongs or fingers of which are both resilient and upturned for engagement with the sides of the locking bar.

The element 8 is, of course, apertured as at 8′ for the reception of the shank of the stud or spindle 6 and by reason of its rigid connection with the latter, rotates therewith when the latter is turned by its handle 9. This latter may, if desired, be spaced up from the bushing 7 by suitable washers 10, whereby to make the closure water-tight at this point.

When the camera is withdrawn from its case 11, hereinafter described, the bar 5 may be rotated clockwise or counter-clockwise as desired through about ninety degrees by turning the handle 9 in one direction or the other because of the frictional engagement between said bar and the spindle 6 and because further of the normal tendency of the resilient fingers of the element 8 to spring up slightly past the lower edges of the bar 5, when the latter after having been screwed into firm engagement with the flange 12 of the casing 11 is thereafter freed from such engagement by rotating the handle counter-clockwise as viewed from above.

The bar 5 can be rotated but, let us say, ninety degrees in either direction owing to stops 13 and 14 on the under side of the central portion of the frame 3; and when it has been turned counter-clockwise, as viewed in Fig. 1, through the instrumentality of the spring fingers, to the limit of its travel in this direction, the ends thereof are well within the confines of the space provided between the top of the camera and its U-shaped frame 3. At such time, of course, the camera can be readily inserted into its protective casing and when lowered well down thereinto the projecting peripheral portions of the supporting plate are brought into engagement with a gasket 15 of soft rubber, leather, or the like, which is attached firmly to the upper side of the continuous flange 12 at the top of the casing.

If desired, the combined supporting and closure plate 4 may have a rib 16, or the like, therearound, to insure a more perfect sealing of the casing.

The operation of the device is as follows: The cover plate 4, as above stated, forms a very convenient support and handle for the camera when in use. At such time normally the locking bar 5, between this plate and the camera, will occupy the position in which it is shown in dotted lines, at 5, in Fig. 1. The camera, having been folded, may now be inserted into the casing 11, which it may be here noted may be of any suitable waterproof material, such as aluminium, and for convenience of manufacture, the flange 12 may be separately formed and sweated or riveted fast to the casing proper. When the plate 4 has been seated against the gasket, the handle 9 is turned clockwise, as viewed in Fig. 1 until the bar 5 strikes the lugs 14 and thus occupies the dash and dot line position designated 5″, whereupon continued rotation of the spindle 6 causes the spring fingers to successively snap lightly past the bar while the latter is being screwed up onto the spindle. If the spring fingers are properly bent, the latter clear the locking bar after a turn or two of the handle while at the same time the bar is clamped against the under side of the flange or flanges 12 and the cover plate is drawn firmly down against the gasket 15; sealing the camera so effectively that it may even be dropped overboard, as from a canoe, without likelihood of injury from the water. It may be here stated that for this reason the casing and its closure, which take the place of the usual leather camera case, are of especial value in touring, camping and the like.

To remove the camera from its casing, a reverse movement of the handle first releases the bar from its close frictional engagement with the flange 12, while at the same time winding said bar again into engagement with the tips of the rotating spring fingers until the latter are able to swing the bar around counter-clockwise and into engagement with the stops 13; whereupon the camera may be withdrawn from the casing, together with its supporting plate 4, and unfolded for use.

Having thus described my invention what I claim is:—

1. The combination of a camera with a combination supporting and closure plate therefor, a casing for said camera, and means to operatively hold said casing and closure plate in sealed relationship to protect said camera from moisture.

2. The combination of a camera with an apertured protective casing therefor, a cover for the aperture in said casing, means to support said camera from said cover, and means to fasten said cover to said casing when said camera is in position in the latter.

3. The combination of a camera with an apertured protective casing therefor, a cover for the aperture in said casing, means to support said camera from said cover, means to lock said cover to said casing when the camera is in postion in the latter, and means to actuate said locking means.

4. The combination of a camera which is longer one way than another, with a correspondingly shaped casing therefor, a cover for said casing, means to normally hold said camera and cover in spaced relationship, a locking device in the space between said camera and cover, and means to operatively engage said locking device and a part of said casing.

5. The combination of a camera with a casing therefor, a cover for said casing, means to connect said camera to said cover, said camera and at least a part of said cover having a space therebetween, a locking device in said space, and means to operatively engage said locking device with a part of said casing.

6. The combination of a camera with a U-shaped frame therefor, a cover plate connected to said frame, a casing for said camera, a locking device connected to said frame, and means for setting said device in its operative position to seal said camera in said casing.

In testimony whereof I have affixed my signature, in the presence of two witnesses.

WILLIAM S. STEARNS.

Witnesses:
CHARLES O. LAURIN,
E. M. JORDAN.