

PATENT SPECIFICATION

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(54) APPARATUS HAVING A LID FOR A CAVITY THEREIN

(71) We, EASTMAN KODAK COMPANY, a Company organized under the Laws of the State of New Jersey, United States of America of 343 State Street, Rochester, New York 14650, United States of America, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to apparatus having a lid for closing a cavity therein.

In accordance with the present invention there is provided an apparatus having a lid for closing a cavity therein, wherein the lid is moulded integrally with a spring element from a resilient plastics material, the junction between the lid and element being of reduced thickness to form an integral hinge, and the free end of the spring element is mounted in a groove in a wall of the cavity, the spring element acting in a direction to cause engagement of cooperating latching elements on the free end of the lid and the adjacent wall of the cavity, and the integral hinge being biased, in a closed position of the lid, so that upon sliding movement of the lid in a direction to disengage the cooperating latch elements, the lid springs open.

In the accompanying drawings:—

Fig. 1 is a section through part of a photographic camera having a battery chamber with a lid constructed in accordance with one form of the present invention closing a cavity therein;

Fig. 2 is a view similar to Fig. 1 but showing the lid in the unlatched position;

Fig. 3 is a section through part of a photographic camera having a battery chamber with a lid constructed in accordance with a further form of the present invention closing a cavity therein; and

Fig. 4 is a view similar to Fig. 3 but showing the lid in the unlatched position.

Figure 1 shows a part of a photographic

camera 1 with a cavity 1c, here a battery chamber, which is closed by a lid 2. Formed on the lid 2, such as by moulding integrally therewith, is a spring element 2a which, in the closed position of the lid, extends substantially perpendicularly to the lid, the free end of the spring element being mounted in a groove 1a in a wall of the cavity 1c. The spring element 2a is provided with pins 2b, which engage in grooves 1b in the camera 1. The lid 2 is held by a frame 3, which covers the grooves 1b. The frame 3 includes a projection 3a, which cooperates with a detent groove 2c on the free end of the lid 2 for latching purposes.

The lid 2 with the spring element 2a formed thereon consists of a torsionally resistant synthetic plastics material. The junction of the lid 2 and spring element 2a is reduced in thickness to form a hinge joint 2f which is under a bending stress upon closing the lid 2.

Formed integrally with the spring element 2a is a finger-piece 2d, which serves for opening the lid 2. Knurling 2k in the lid 2 serves the same purpose.

The spring element 2a is in the form of a frame having frame bars 2e acting in a direction to engage the detent groove 2c with the projection 3a. Projecting through an opening 2h of the spring element 2a and into the cavity 1c is a spring 4, which bears against a step 2g of the spring element 2a. The spring 4 serves as one electrical contact for engagement by a battery inserted in cavity 1c and urges the other pole of the battery against a second contact 5.

For opening the lid 2, the finger-piece 2d is moved in the direction of the arrow "A" against the action of the spring element 2a so that the projection 3a is disengaged from the detent groove 2c (see Figure 2) and the lid 2 springs into the position shown in chain-dotted lines in Figure 1 by the release of the bending tension in the hinge joint 2f.

During the unlatching operation, the contact spring 4 is moved by means of the step 2g also in the direction of the arrow "A", so that a battery clamped in the cavity 1c of the apparatus 1 between the contact means 4, 5 can be removed from the cavity 1c or drops out of said cavity by its own weight.

Upon closing the lid 2, a bevelled surface 2i thereof slides over the projection 3a until the projection 3a snaps into the detent groove 2c of the lid 2.

The mounting of this device is very simple. The spring element 2a is fitted into the grooves 1a, 1b on the apparatus and is thereafter secured in position by fitting the frame 3.

The constructional example according to Figures 3 and 4 differs in the following respect from the example previously described:

A spring element 8a moulded integrally with a lid 8 has two pins 8d on which the element is pivotally mounted in a groove 7a of the apparatus 7. A cam 8b is moulded integrally with the spring element 8a and projects into a recess 8c therein. The cam 8b is resilient and bears against a surface of the groove 7a so as to urge the lid in a direction to cause engagement of a projection 8g of the lid with a groove 7b in the adjacent wall of the cavity. In order to open the lid 8, the operator applies pressure at a recess 8f in the direction of the arrow "D" until the projection 8g of the lid 8 is disengaged from the groove 7b, as can be seen in Figure 4. Thereafter, the lid 8, as already described in connection with Figure 1, springs out into the position shown in chain-dotted lines. During the opening and closing of the lid 8, the cam 8b is bent and forced into the recess 8c.

In order to achieve a particularly effective opening of the lid 8, the lid 8 can additionally be provided with a projection 8i, which,

when the lid is closed, bears against a shoulder on the apparatus and places the lid under a pretension which is freed with the opening of the lid 8.

The closing of the lid 8 is effected as in Figure 1, bevelled surfaces 7c and 8h facilitating the closing.

WHAT WE CLAIM IS:—

1. An apparatus having a lid for closing a cavity therein, wherein the lid is moulded integrally with a spring element from a resilient plastics material, the junction between the lid and element being of reduced thickness to form an integral hinge, and the free end of the spring element is mounted in a groove in a wall of the cavity, the spring element acting in a direction to cause engagement of cooperating latching elements on the free end of the lid and the adjacent wall of the cavity, and the integral hinge being biased, in a closed position of the lid, so that upon sliding movement of the lid in a direction to disengage the cooperating latch elements, the lid springs open.

2. An apparatus according to claim 1, wherein the spring element is in the form of a frame which, in the closed position of the lid, extends substantially perpendicularly to the lid.

3. An apparatus according to claim 1, wherein the spring element includes a resilient cam element which is moulded integrally therewith and bears against a wall of the groove to bias the lid in a direction to cause engagement of the cooperating latching elements.

4. An apparatus according to claim 1, constructed substantially as hereinbefore described with reference to, and as shown in, Figs. 1 and 2, or Figs. 3 and 4 of the accompanying drawings.

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