SAFETY CLOSURE ASSEMBLY FOR CAPPING A DISPENSING CONTAINER

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References Cited
UNITED STATES PATENTS
3,158,292 11/1964 O'Donnell 222/402.11 X
3,827,605 8/1974 Knickerbocker 222/402.11 X

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ABSTRACT
A safety closure assembly is disclosed for capping a container equipped with reciprocating dispensing means including an actuating stem projecting out of one end of the container, and for operating the dispensing means. Performance of multiple functions is a requisite to operation of the dispensing means by this closure assembly which includes an overcap, an actuator associated with the overcap and having a keying element, a locking member in the overcap and urged to a locking position, a cam adapted to be non-rotatively mounted on the container for operating the locking member, and a collar having complementary keying element. The locking member, the actuator and the collar cooperate to render the assembly inoperative until the locking member is moved radially outwardly away from its locking position by coaction with the cam and, subsequently, until the overcap is rotated relative to the container until the collar and actuator keying elements are aligned. The locking member is cocked in a non-locking position by a latch and catch arrangement upon relative rotation of the cap and container, but is restored to its locking position each time the actuator is operated.

9 Claims, 13 Drawing Figures
SAFETY CLOSURE ASSEMBLY FOR CAPPING A DISPENSING CONTAINER

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention is directed more particularly to a safety closure assembly for capping an aerosol container that is equipped with a vertical action dispensing valve having a valve stem projecting from one end of the container. This safety closure is further intended to operate the dispensing valve through the valve stem. Aerosol containers are commonly used to store liquid consumer products for use in the home and are readily available at supermarkets and other retail stores. However, some contents such as pesticides, paints, disinfectants, lubricants, and household cleaners frequently packaged in such containers may be corrosive or poisonous and are, therefore, dangerous to human health if misused. Injury could result if these types of products are ingested or sprayed on the skin or in the eyes. Since aerosol containers holding liquids of the general types described above are used in the home, small children often have or can gain access to them.

Therefore, it is desirable to provide aerosol containers or products potentially dangerous if misused with a closure assembly which deters or prevents dispensing of the contents by small children. However, such a closure assembly should be easily operable by an adult to dispense the contents when actually needed.

Frequently, an authorized operator of an aerosol container having a safety closure device will forget to reset the device after use and thereby facilitate subsequent unauthorized operation. Thus, it is also desirable that such a closure assembly automatically reset itself to prevent unauthorized dispensing after each use.

It is frequently desirable to package pharmaceutical products in aerosol containers equipped with a metering valve to measure the amount of product dispensed on each valve actuation. In such cases it would be of advantage to incorporate means that would require the user consciously to perform an unlocking operation after each valve actuation, whereby to minimize inadvertent over-dosage of the pharmaceutical product.

2. Description of the Prior Art

Closure assemblies for aerosol containers of fluid products which include provision to render the closure assemblies inoperative to dispense the container’s contents are presently known. One such closure assembly, disclosed in U.S. Pat. No. 3,240,397, employs a temporary breakable protective cover initially mounted over the actuator tab. A second assembly disclosed in U.S. Pat. No. 3,539,078 incorporates breakable tie-strips interconnecting the valve actuator tab and adjacent portions of the overcap. However, once such breakable components are fractured, no further protection against unauthorized or unintentional operation of the dispenser valve is provided.

Other closure assemblies intended to prohibit unauthorized operation of an aerosol dispenser valve require manual positioning and securing of actuating members in order to render the valve operative. Generally, such arrangements require the user to manually move an actuating member from an inoperative to an operative position, for example, by rotating the actuating member between fixed stops carried by some relatively stationary member such as an overcap. Examples of such an arrangement are disclosed in U.S. Pat. No. 3,050,219 and 3,484,023. A sliding or reciprocating valve actuating member, such as that shown in U.S. Pat. Nos. 3,386,631 and 3,610,479 has also been employed to deactivate the actuator. However, by simply playing with such devices, a child may accidentally condition them in an operative position.

A removable and replaceable locking member is illustrated in U.S. Pat. No. 3,158,292. However, such a locking member may be lost or forgotten to be re-placed.

U.S. Pat. No. 3,722,748 discloses a child safe actuator overcap including a collar having a keying element and a valve actuator member having a complementary keying element which must be visually aligned to render the dispenser valve operative. In this device, unless the authorized user consciously resets the keying elements in “safe” relation after each use, continued operation of the dispenser is possible.


SUMMARY OF THE INVENTION

In the preferred embodiment of the present invention, to be described below in detail, the safety closure assembly is designed to close an aerosol container equipped with a vertical action dispensing valve having a valve actuating stem projecting from one end of the container, and is further designed to operate the dispensing valve through the valve stem. Performance of a multistep sequence of functions is a requisite to operation of the dispensing valve by this closure assembly. The assembly includes a collar adapted to be non-rotationally mounted about the valve stem on the valved end of the container. This collar is provided with a first keying element. An overcap member is adapted to be rotationally mounted on the valved end of the container to enclose that end, and is equipped with a valve actuator forming part of the overcap. The valve actuator has a discharge orifice and a socket opening, adapted to receive the projecting end of the valve stem, interconnected to the discharge orifice. This actuator also has a depending stop and a second keying element which is complementary to the first keying element disposed on the collar.

A locking member in the form of an elongate, resilient, flexible finger is cantilevered in the interior of the overcap and has a cam follower which is operatively engaged, upon rotating the overcap, by a cam installed in non-rotative condition on the container. This resilient locking finger is formed with an upwardly latching pin adapted to engage a depending catch partition in the overcap to hold the locking finger in an unlocked or cocked position. The natural resilience of the locking finger urges it between the depending valve actuator stop and the collar when the latching pin is disengaged from the catch partition, thereby limiting depression of the valve actuator in an attempt to prevent operative engagement with the valve stem.

Rotation of the overcap relative to the aerosol container, and hence relative to the collar and cam, moves the locking tab radially outwardly to engage the latching pin on the catch partition to retract the locking finger from between the collar and the stop. Further rotation in either direction of the overcap permits alignment of
the complementary keying elements to allow depression of the valve actuator to operate the dispensing valve through the valve stem. The valve actuator may be formed with a sighting aperture and the collar may be provided with a complementary visual index to facilitate alignment of the keying elements.

The valve actuator is also provided with a boss which contacts the resilient locking finger, whenever the valve is operated, to disengage its latch pin from the catch partition. This operation automatically resets the locking finger after each use, permitting it to again be urged to its locked position between the valve actuator stop and the collar, preventing subsequent depression of the valve actuator and, hence, operation of the dispensing valve until the proper steps are taken to recondition the closure assembly.

The safety closure assembly of the present invention provides several advantages. Since a multistep sequence of functions must be performed before this safety closure assembly is capable of operating the dispensing valve, chances of a child or other unauthorized user gaining access to the container's contents are minimized. Mechanical and visual functions, difficult for a small child to recognize, are combined and must be coordinated to render this safety closure operable. In particular, the locking finger can only be operated by rotating the overcap, moving this finger relative to the container to produce interaction of the cam and cam lobe. An audible click is produced when the finger is retracted from its locking position and its latch pin is engaged on the catch partition in the overcap. In addition, completion of this mechanical function may be sensed by "feel" when rotating the overcap. Nevertheless, mere performance of this first mechanical function still will not permit access to the contents of the aerosol container. The further function, completion of which is indicated visually, must then be performed to provide access. In particular, the overcap must be further rotated until the index is visually sighted through the aperture in the valve actuator to align the complementary keying elements on the collar and valve actuator. Thus, only after both the mechanically and visually indicated functions are performed can the valve actuator be operated to dispense the contents of the container.

Though small children have difficulty recognizing and then coordinating the functions necessary to operate the safety enclosure assembly of the present invention, adults may do so with relative ease.

The closure assembly of the present invention automatically resets to locked condition after each use of the valve actuator. Thus, an adult user cannot forget to reset this safety closure, and cannot leave it in an operative condition after he has used it. Additionally, all operative components of this safety closure assembly are contained inside or are covered by the overcap so as not to be readily accessible. No separate removable blocking members are employed. Therefore, no components may be lost or neglected to be replaced.

Accordingly, it is an object of the present invention to provide a unique and novel safety closure assembly for closing an aerosol container equipped with a dispensing valve having a valve actuating stem projecting from one end of the container whereby to operate the valve by reciprocation of its stem, performance of a multistep sequence of functions being a prerequisite to operation of the dispensing valve by the closure assembly.

Other objects, aspects, and advantages of the present invention will be pointed out in, or will be understood from, the detailed description of the preferred embodiment provided below, considered together with the following drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a fragmentary perspective view of the safety closure assembly of the present invention installed on an aerosol container equipped with a dispensing valve and valve actuating stem projecting from one end of that container;

FIG. 2 is a top plan view of the valve actuator-overcap assembly;

FIG. 3 is a vertical cross-sectional view taken on discontinuous plane 3—3 of FIG. 2, illustrating the valve actuator hinged on the overcap and the locking finger mounted in cantilever fashion from the interior wall of the overcap;

FIG. 4 is a bottom plan view of the valve actuator-overcap assembly;

FIG. 5 is a sectional view taken on plane 5—5 of FIG. 3;

FIG. 6 is a vertical cross-sectional view taken on plane 6—6 in FIG. 2, looking in the direction of the arrows, illustrating the locking finger in its unlocked position and, in phantom lines, a portion of the container and collar;

FIG. 7 is a horizontal cross-sectional view taken on plane 7—7 in FIG. 6 looking in the direction of the arrows, parts being broken away or omitted for greater clarity of illustration of the operative relationship of the locking finger, cam and cam lobe;

FIGS. 8 through 10 are enlarged fragmentary views similar to that of FIG. 7, showing parts in different operated positions; and

FIGS. 11 through 13 are enlarged fragmentary views similar to that of FIG. 6, showing in elevation the parts in different operated positions.

DESCRIPTION OF THE PREFERRED EMBODIMENT

FIG. 1 illustrates the preferred embodiment of the safety closure assembly of the present invention, generally indicated at 10, installed on an aerosol container 12 which stores liquid contents under pressure to be dispensed as needed by the intended user.

Aerosol container 12 is generally designed to be hand held and the closure assembly is designed to be hand operated to dispense the liquid contents as will be described in greater detail below. The container is equipped with any standard type of vertically actuated aerosol valve assembly which includes a valve stem 14 which when depressed operates a dispensing valve mounted inside the container to allow dispensing of the pressurized contents in well known manner. This valve assembly is supported by a standard ferrule or cup installed in the mouth of the container to close the latter by crimping the lip of the cup to the margin of the container mouth, forming an upstanding annular rim. As hereafter explained, this rim is used as a convenient means of mounting the closure assembly of this invention, although other arrangements are possible.

An injection molded actuator-overcap assembly 16 is snap-fitted to this mounting cup rim and substantially encloses the valved end of the aerosol container. As shown in FIGS. 1 and 2, this assembly 16 includes an overcap portion 18 and valve actuator member 20 inte-
3,924,782

grally formed with the overcap as a tab hinged to a side wall of the overcap. The overcap is also formed on its top with a curved depression 22 in which a finger of the human hand may be comfortably rested and guided to the valve actuator. A curved recess 24 is formed in the front face of the overcap 18 to provide an open path for liquid dispensed from the discharge nozzle of the closure assembly. As seen in FIG. 2, the overcap is slotted at 26 to define the resiliently hinged valve actuator tab 20, the hing being located at the tab juncture 28 with the side wall of the overcap and the tab being thus biased to assume a slightly elevated position. As set forth in FIG. 1 and in greater detail in FIGS. 4 and 11 through 13, the valve actuator tab 20 has a front face 30 which is formed with a discharge orifice 32 that communicates internally with a valve stem socket 34. A depending hollow boss or hub 36 encircles valve stem socket 34 and is positioned to be generally co-axial with valve stem 14. Hub 36 may be formed with a generally conical inner surface to guide actuating tab 20 and its socket 34 into alignment with the valve stem when the actuating tab is depressed.

A depending cylindrical skirt 38 is formed in the interior of overcap 18 and has an inwardly directed angular retaining lip 40 positioned at its lower margin. Lip 40 snaps over the rim (see FIG. 6) of the valve cup. In this manner, the overcap in retention on the container to prevent axial disengagement of the two, yet rotation of the overcap relative to the container about the container's axis is permitted.

As shown in FIGS. 1, 3, 6, and 11 through 13, valve actuator tab 20 is formed with side walls 42 which flank hub 36. At least one of these side walls further serves as a stop in a manner described in greater detail below.

As illustrated in FIG. 12, the valve stem is housed in and projects axially through a pedestal 44 which is formed as a central protruberance of the standard valve ferrule. A collar 46 is non-rotationally mounted about pedestal 44 so that rotation of the container assures rotation of the collar. This mount may be achieved, for example, by press-fitting the collar onto the pedestal.

An upstanding cam lobe 48 shown in FIG. 8 through 13, is formed with or mounted on collar 46.

A lock member in the form of an elongate, resilient, finger 50 is mounted within overcap 18, a free end of which projects into the gap normally existing between the top surface of collar 46 and the bottom edge of the side wall 42 of valve actuator tab 20. Overcap 18 is provided on its interior surface with a dovetail socket 52, and locking finger 50 is formed with a complementary dovetail tongue 54 which is inserted into the socket to mount the locking finger 50 in cantilever fashion relative to the cap wall.

Locking finger 50 is normally urged, as mentioned above, between the stop 42 and the collar 46 to limit depression of the valve actuator tab 20, clearance for this being provided by the raised position of actuator tab 20 to which it is normally biased. If depression of the tab is attempted, the under edge of wall 42 acts as a stop by abutting against the finger which in turn abuts the top surface of collar 46. As shown in FIGS. 11 through 13, the vertical thickness of the locking finger 50 is chosen so that the limited depression which it permits is insufficient to operate the valve stem 14 and hence the dispensing valve.

For example, this finger may be manufactured from resilient material such as spring steel or plastic which causes it to return to its preset position after being flexed from that position. Additionally, the locking finger is formed with a cam follower surface 56 adapted to coact with cam lobe 48 upon relative rotation between the two, to urge the locking finger 50 away from interposed condition relative to collar 46 and stop 42. This is indicated by arrow A in FIG. 10, occurring when the cam follower is contacted by lobe 48 by rotating the overcap relative to the container.

As can be seen in FIGS. 11 through 13, the locking finger 50 is formed at its free end with an upstanding latch pin 58 having a beveled face 60, and pin 58 interacts with the under edge of a depending partition 62 flanking side walls 42 of the actuator to form a catch arrangement for latching finger 50 in retracted position. Obviously the bevel could be placed instead on the partition, or both finger 50 and partition 62 could be beveled. When the locking finger is moved radially outwardly by the interaction of cam lobe 48 and cam follower 56, it is cammed downward by the interaction of beveled surface 60 against the lower edge of partition 62. Once the pin is moved back of the partition, the natural resilience of the finger causes it to spring upward, so that latch pin 58 firmly engages and is retained by catch partition 62. This relationship is best illustrated in FIGS. 8 and 11, in which condition the locking finger is said to be in cocked or armed condition.

The safety closure assembly of the present invention further includes a second construction which also inhibits unauthorized operation of the dispensing valve, even if the aforesaid cocked condition should exist. As shown in FIG. 7 through 13, the cyindrical wall portion of collar 46 projects axially below pedestal 44. A notch 64 is let into the upper edge of this collar wall, and valve actuator hub 36, in turn, is formed with a complementary web or rib 66 which projects radially outwardly. This rib extends generally axially relative to the hub and has a thickness which permits its insertion into the notch 64 when the two are vertically aligned and the actuator tab is depressed. Notch 64 and rib 66 constitute complementary keying elements which permit complete depression of the actuating tab to engage the valve stem only when properly registered. Such registration is achieved by rotating the overcap, and hence the actuator tab and rib 66, relative to the container and collar 46. The degree of accuracy of registration required may be readily controlled by the relative widths of the notch and key.

When the notch and rib are not aligned, downward depression of the actuator cap causes the bottom surface of the rib to abut the top unnotched surface portion of the collar, even if finger 50 is in cocked position. Accordingly, the height of the collar and the rib are chosen so that downward movement is limited by this abutting relation to prevent operation of the dispensing valve through valve stem 14.

As shown in FIGS. 3 and 4, the valve actuator tab 20 is formed with a sighting aperture 68. An index, which may be colored yellow, is provided on the collar which when sighted through the sighting aperture 68 indicates alignment of the keying elements, namely notch 64 and rib 66. In the preferred embodiment of the present invention, the vertically upstanding cam lobe 48, which is desirably colored differently than the collar itself, is made use of for this purpose, the lobe thus serving a
dual function.

The illustrated embodiment of the safety closure assembly of the present invention functions as follows. In its normal position with components assuming positions to prevent unauthorized operation of the dispensing valve, locking finger 50 is, as previously described, urged between stop 42 and the top surface of collar 46 to limit depression of the actuator tab within an inoperative range in respect to the valve (FIG. 13). The keying elements, namely notch 64 and rib 66, may or may not be in registry at this point, but the dispenser is still in "safe" condition since the intervention of the locking finger 50 renders the actuator tab inoperative.

With the safety closure assembly in this locked configuration, the user conditions it for operation by first rotating the overcap relative to the container to effect the aforesaid caming action between cam lobe 48 and cam follower 56 to condition locking finger 50 in the cocked position, as seen in FIGS. 8 and 11.

For maximum safety it is obvious that the collar should be constructed so that the interfitting notch and rib are not in registry immediately after the locking finger has been cocked. The operator then rotates the overcap relative to the container to bring the rib into interfitting alignment with the collar notch, as indicated by visual alignment of the index through the sighting aperture of the tab. This condition is illustrated in FIGS. 6 and 11. The valve actuator tab may now be depressed to operate the dispensing valve by depressing valve stem 14.

In addition to requiring the foregoing multistep sequence of functions to be properly performed to operate an aerosol container dispensing valve, the safety closure of the present invention reconditions itself automatically with each operation to relock itself by resetting or releasing the locking finger 50 from latched condition upon depression of the valve actuator tab 20. This reset operation is best illustrated with reference to FIGS. 11 through 13. As shown in FIGS. 8 and 11, which represent the previously described cocked and aligned position, side wall 42 overlies the inwardly projecting tip of the cam follower portion on locking finger 50. Thus, when valve actuating tab 20 is depressed, as indicated by arrow C in FIG. 12, the under edge of wall 42 acts as a pressure pad contacting the locking finger 50 to disengage the latch pin from the catch partition, as shown by arrow D. Further, when the valve actuating tab 20 is subsequently released, as indicated by arrow E in FIG. 13, the locking finger automatically returns to its interposed locked position, as indicated by arrow F, due to its resilience. Even though the notch 64 and rib 66 are still aligned at this point, the locking finger 50 functions to inhibit downward depression of the valve actuator to operate the valve stem 14. It is, of course, desirable to rotate the overcap relative to the container, in order to move the notch and rib out of registry after valve actuation. However, even if the user forgets to do this, the locking finger 50 still performs an effective locking function and a subsequent user cannot operate the valve until the multistep sequence of unlocking functions is performed properly.

The safety enclosure assembly of the present invention, then, provides several unique and novel advantages. It requires proper performance of a multistep sequence of functions before the closure assembly is conditioned to permit operating the dispenser valve of the aerosol container. Two of these are manual, involving first mechanical cocking of the locking arm. In the performance of this an audible signal is given by the snap-over of the latch pin on the partition, and this may also be "felt" through the overcap. Successful completion of the second manual function, which also involves rotation of the cap, is indicated visually. Accordingly it is extremely difficult for a small child to recognize and successfully coordinate performance of these mechanical and visual functions to operate the dispenser valve of an aerosol container on which such a closure assembly is installed. However, adults can do so with relative ease.

This closure assembly is automatically reset in an inoperative locked position after each use of the valve actuator tab to dispense contents of the aerosol container. Therefore, even if the user forgets to reset it, the closure assembly is conditioned in safe position. Moreover, the closure assembly is completely self contained and does not include any removable and replaceable blocking or locking elements. Therefore, no components of this closure assembly are exposed to be misplaced.

Although a specific embodiment of the present invention has been disclosed in detail above for application to aerosol containers, it is to be understood that this is for purposes of illustration since the concept of the invention is also applicable to other types of consumer product dispensers such as those using manual pumps for delivering the container contents. This disclosure should accordingly not be construed as limiting the scope of the invention since changes can be made to the described safety closure assembly structures by those skilled in the art in order to adapt this assembly to particular applications.

What is claimed is:

1. A safety closure assembly for capping an end of a container equipped with dispensing means having an actuating stem projecting from that end of the container, and for operating the actuating stem to dispense product from the container, performance of two functions being a requisite to operation of the dispensing means, said closure assembly comprising:

(a) a collar adapted to be non-rotationally mounted about the actuating stem of the container, said collar having a keying element;
(b) cam means, also adapted to be non-rotationally mounted about the actuating stem and having at least one projecting cam lobe;
(c) an overcap member for enclosing the actuating stem of the container and equipped with catch means in its interior, said cap having means for mounting it on the end of the container for rotation relative to said collar and cam means;
(d) stem actuator means associated with said overcap member having a discharge orifice and a socket opening, adapted to receive the end of said actuator stem, interconnected to said discharge orifice, said actuator means also having a pressure pad and a keying element complementary to said collar element;
(e) a locking member mounted in the interior of said overcap and biased to a normal locking position, said locking member having a cam follower operatively engaged by said cam means upon rotation of said overcap when installed on the container, and latch means to engage said catch means and retain the locking member against return to its normal biased position, said locking member normally assuming a position between said pressure pad and
said collar when said latch means is disengaged from said catch means to limit depression of said stem actuator means;
whereby rotation of said overcap member relative to said collar and cam means moves said locking member radially outwardly to retract said locking member from between said collar and said stop means and into engagement with said catch means, and whereby further rotation permits alignment of said keying elements to allow depression of said stem actuator means, said keying elements, except when thus aligned, cooperating to block depression of said stem actuator means relative to said overcap; and
reset means associated with said stem actuator means for disengaging said latch means from said catch means upon depression of said stem actuator means, allowing said locking member to return to blocking position between said actuator pressure pad and said collar.

2. The safety closure assembly for a container as claimed in claim 1, wherein said locking member is an elongate resilient finger, cantilevered in the interior of said overcap member and having a free end urged into blocking position between said actuator pressure pad and said collar.

3. The safety closure assembly for a container as claimed in claim 1, wherein said catch means is a depending partition mounted in the interior of said overcap member and said latch means is an upstanding pin formed on the free end of said finger and adapted to latch behind said partition.

4. The safety closure assembly for a container as claimed in claim 1, wherein said catch means is a depending partition mounted in the interior of said overcap member, said locking member is an elongate resilient finger and said latch means is an upstanding pin formed on one end of said finger which when positioned to one side of said partition retains said finger against biased return to its said normal position, and wherein said reset means is said actuator pressure pad which engages said locking finger at its free end and to disengage said pin from said partition when said stem actuator is depressed.

5. The safety closure assembly for a container as claimed in claim 4, wherein either said upstanding pin or said under edge of said depending partition has a sloping face adapted to engage the other and to cam the pin into latching position behind said partition when said finger is moved radially outwardly by said cam lobe.

6. The safety closure assembly for a container as claimed in claim 1, wherein said keying elements are positioned on said actuator and collar so as to require rotation of said overcap member relative to the container, in addition to that required to engage said latch, to align said complementary keying elements.

7. A safety closure assembly for enclosing an end of an aerosol container equipped with a dispensing valve and a valve stem projecting from that end of the container, performance of two functions being requisite to operation of the dispensing valve, said closure assembly comprising:

a collar, adapted to be non-rotatively mounted above the valve stem on the valved end of the container, having a keying element;
cam means, also adapted to be non-rotatively mounted about the valve stem on the valved end of the container, having at least one radially outwardly projecting lobe;
an overcap member for enclosing the valved end of the container and equipped with catch means in the form of a depending partition in its interior;
means for rotatively mounting said overcap member relative to said collar and said cam means on the valved end of the container;
valve actuator means associated with said overcap member having a discharge orifice and a socket opening adapted to receive the valve stem and interconnected to said discharge orifice, also having depending stop means and a keying element complementary to said collar keying element;
a locking member in the form of an elongate resilient finger mounted in the interior of said overcap and being resiliently urged between said stop means and collar to limit depression of said valve actuator means, also having a cam follower operatively engageable by said cam means when said overcap is rotated on the container, and a latch pin formed on said finger adapted to engage one side of said partition of latch said finger in retracted position relative to said stop means and collar;
whereby rotation of said overcap member relative to said collar and cam means moves said finger radially outwardly to retract said finger from between said collar and stop means until said latch pin is engaged and retained by said partition, and whereby further rotation permits alignment of said keying elements to allow depression of said valve actuator means, said keying elements, except when thus aligned, also cooperating to block depression of said valve actuator means relative to said overcap; and
reset means associated with said valve actuator means for disengaging said latch pin from engagement with said partition after depression of said valve actuator means, allowing said finger to return to blocking position between said stop means and said collar.

8. The safety closure assembly for closing and operating an aerosol container as claimed in claim 7 wherein said reset means is a pressure pad associated with said valve actuator means for pressing said tab downward to effect the disengagement of said pin from said partition when said valve actuator is depressed.

9. The safety closure assembly for closing and operating an aerosol container as claimed in claim 7 wherein said pin has an inclined surface to cam said pin over an edge of said partition when said finger is moved radially outwardly by said cam lobe.