June 21, 1960 E. SILVERMAN 2,941,637

COMBINED CARRYING MEANS AND LATCH

Filed June 24, 1957

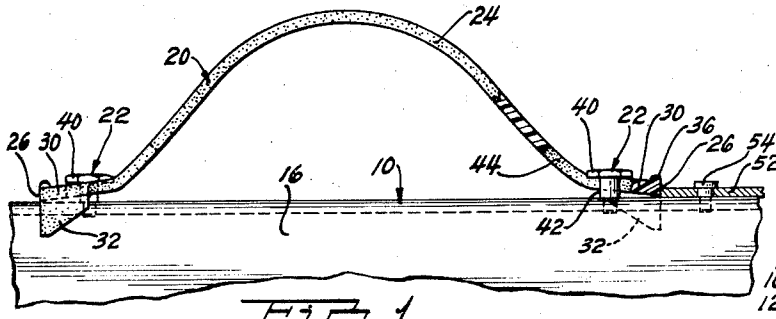


Fig. 1

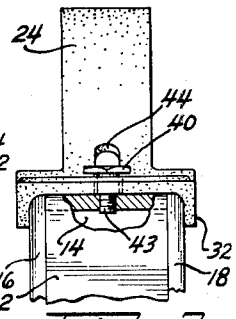


Fig. 2

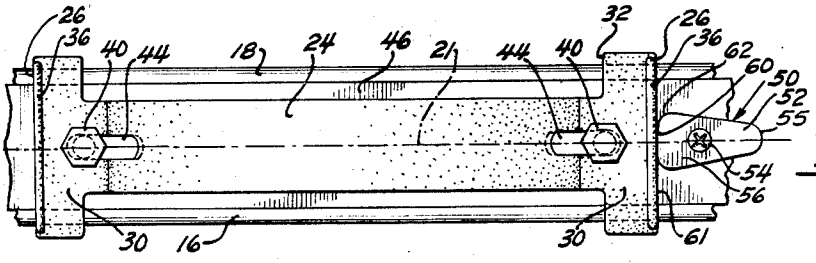


Fig. 3

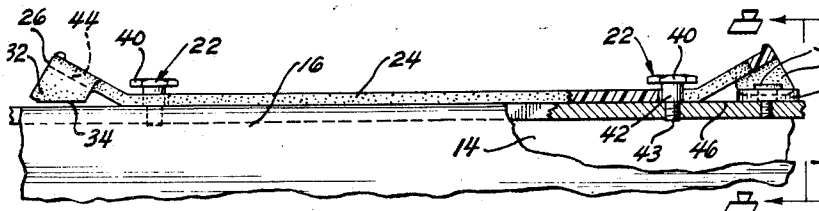


Fig. 4



Fig. 5

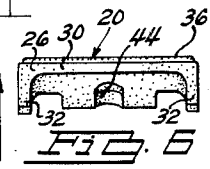


Fig. 6

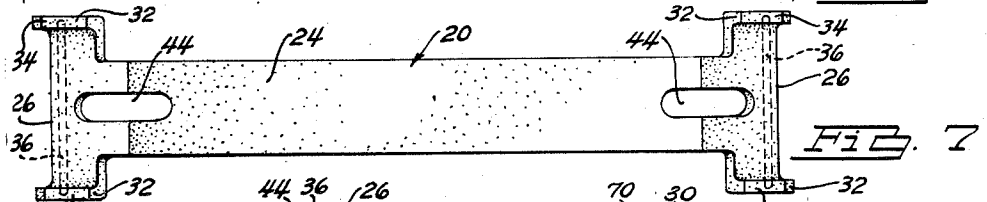


Fig. 7

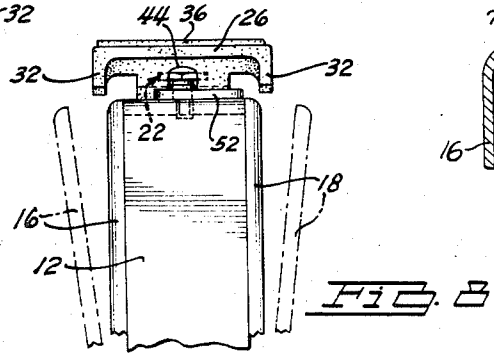


Fig. 8

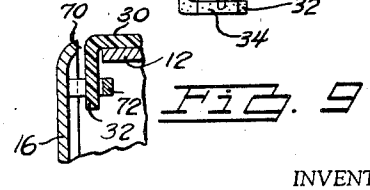


Fig. 9

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United States Patent Office 2,941,637
Patented June 21, 1960

2,941,637

COMBINED CARRYING MEANS AND LATCH

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Filed June 24, 1957, Ser. No. 667,420

9 Claims. (Cl. 190—55)

This invention relates to latch mechanisms or devices for article-carrying containers or the like and particularly to such mechanisms including as a part thereof operating means that may serve as the carrying media.

It is known to provide carrying containers such as brief cases and pocket books with a handle or strap by which they may be conveniently carried, and with a separately manipulatible pressure releasable snap catch or latch for the closure member or members. These catches and the like have usually been composed of intricate fitting parts requiring special tools to make and assemble and have been costly. Moreover, they could not always be depended upon to hold and have often been awkward to release. They have also been the cause of many broken finger nails.

The present invention aims to overcome these prior problems and provide a dependable inexpensive container latch mechanism of positive character that is easily operable and wherein the container-carrying element may be the latch operator.

An object of my invention is to provide a container with a closure latch mechanism in which the latch is an integral part of the carrying element for the container and operable by the latter.

Another object is to provide a combination latch and carrying strap for containers and the like composed entirely of resilient plastic material.

A further object is to provide a container with a closure latch mechanism and carrying element operably interconnected.

Still another object is to provide mechanism of the character of the preceding objects in which the latch and carrying element are both externally of the container.

A particular object is to provide a combination latch and carrying element for a container having a closure member to be held in closed position by the latch and which requires no operating parts on the closure member.

Another specific object is to provide a combination latch and carrying element for a container having a closure member to be held in closed position by the latch which latches the closure member only when the element is in container-carrying position.

A further object is to provide a structure as in the preceding object including means for locking the element in latching and carrying position.

Another object is to provide a strap-like carrying element for a container having a closure member to be held in closed position during carrying of the container which element includes a closure latching portion at one end operable to latching position by pulling up on the carrying element and operable to release said latch by collapsing the carrying element.

Other objects and advantages of my invention will appear from the following description and from the drawings illustrating, without limitation thereto, a preferred embodiment of my invention and wherein:

Figure 1 is an elevational view showing a portion of a container to which the combination latch and carrying element and other features of my invention has been applied;

Figure 2 is an end view of my invention in Figure 1 with part of the container broken away, the container

shown having a pair of closure members held in latched position;

Figure 3 is a top plan view of the structure in Figure 1;

Figure 4 is an elevational view partly in section of the structure in Figure 1 showing the carrying element in collapsed position and latches released;

Figure 5 is an elevational view of the preferred combination carrying strap and latch of my invention separated from the container;

Figure 6 is an end view of the structure of Figure 5;

Figure 7 is a bottom view of the structure of Figure 5 looking in the direction of the arrows 7—7 in Figure 5;

Figure 8 is an end view looking in the direction of the arrows 8—8 in Figure 4, of the structure of my invention in the latch releasing condition shown in Figure 4 and showing the pair of closure members swung away from the body of the container on hinges not shown; and

Figure 9 is a fragmentary sectional view of a modification.

In the drawing illustrating my invention and wherein similar numerals represent corresponding parts of the structure, the numeral **10** generally connotes an article-carrying container of any suitable material preferably metal or rigid plastic comprising a body structure **12** defining a chamber **14** closed by a pair of closure members or panels **16**, **18** suitably supported for instance by hinges or other means (not shown) so as to be displaceable relative to the body structure **12** to render the chamber **14** accessible. It will be understood that the container may have a single closure member if desired.

The container has a combination carrying and latching means or element generally referred to by the numeral **20**, preferably supported on the body structure **12** by mounting means generally designated by the numeral **22**. The element **20** includes a container carrying strap or handle portion **24** and a latch portion **26** preferably integrally and resiliently connecting with the portion **24**, at **28** (see Figure 5) in a predetermined angular relationship such that when pressure is applied to the handle portion **24** which constitutes the operating means for the latch portion, the latch portion will be raised from a position (see Figure 1) engaged with and locking the closure members **16** and **18** to the body structure in abutting relation, to a position (see Figure 4) releasing these members **16** and **18** for displacement to render the container chamber **14** accessible. As shown, I preferably provide a latch portion at each end of the handle **24**, it being understood however, that in many applications a single latch portion **26** will suffice.

In the preferred form the element **20** may be preformed, as seen in Figures 5 to 7 inclusive as a continuous one-piece, preferably resilient structure, of predetermined shape and of suitable shape retaining material, for instance, spring metal and preferably a synthetic plastic, such as polyethylene plastic. The handle portion **24** is preferably of elongated strap-like character and may be of uniform thickness throughout. It is preferably of slightly bow-shape, high at the mid portion for advantages in manipulation, although it could be substantially flat. The latch portion **26** has a main section **30** extending upwardly and outwardly from the portion **24** at the region of connection **28** and forming an included obtuse angle with the top side of the strap portion **24** and an acute angle with the lower side thereof. Stated otherwise, the main sections **30** of the latch portions **26** diverge upwardly from the handle portion **24**. The latch portion also as shown in Figures 3 and 7, forms a T-shape with the handle portion **24**.

The main sections **30** of the latch portions **26** have a downwardly projecting latching finger or leg **32** at each side thereof forming with the section **30** a structure of inverted U shape. The fingers **32** are preferably spaced

apart the thickness of the container over the closure members **16** and **18** and project vertically downwardly from the sections **30** a sufficient distance to provide a holding face of ample area. As shown, the plane of each finger **32** is substantially normal to that of the section **30** and for reasons which will become apparent, the outer portion of the fingers **32** will taper somewhat from adjacent their connections with the section **30** to their lower, i.e. outer ends. Described otherwise, the fingers **32** are of generally rectangular shape and have their outer corners **34** remote from the outer end of the portions **26** removed to provide clearance for the closure members **16, 18** in swinging by when the latches are released as will be evident from Figures 4 and 8.

It will be understood that when there is only one closure member, one of the latching fingers **32** of each latch portion **26** may be omitted. However, it is found that better latching and freedom from distortion results when two are used, the one not serving as a latching acting as a further guide for the latching portion. It also provides greater stiffness for the latch portion, a feature which may also be obtained by the transverse end bead **36**.

The mounting means **22** preferably comprises, as best seen in Figure 4, a stud-like camming member comprising a head portion **40**, a shank portion **42** and a threaded end **43**, the latter being threadedly received in the body structure **12** for securing the means **22** thereto and being of lesser diameter than the shank portion **42** so as to produce a mountnig shoulder for this means. The shank portion **42** is received through an elongated slot **44** in part on the handle portion **24** and in part on the section **30** of the latch portion **26**. The shank portion **42** is of slightly lesser diameter than the width of the slot **44** to faciliate sliding movement of the strap. The shank portion is also of slightly greater height than the thickness of the strap **24** to facilitate changes in latch position. The head portion **40** may be of hexagonal or other shape and sufficiently larger than the shank **42** diameter to provide portions overlapping the slots **44** that retain the handle in position and that also serve as a suitable guide and cam face for the latch portion in endwise shifting of the latch portion **26**.

Referring now to Figures 1 to 4 and 8 it will be seen that when the strap **24** is pulled up as seen in Figure 1, that the fingers **32** of the latch portions **26** overlap the closure member **16** and **18** and confine these members between them in their closed positions on the container, i.e., with the members **16** and **18** in abutment with the body structure **12**. In this position the shanks **42** of the mounting means **22** are in the latch portions of the slots **44** and the main sections **30** of the latch portions **26** are substantially abutted with the top face **46** of the body structure **12**. In the stated condition the container may be carried about as long as desired without fear of the closure members becoming accidentally or otherwise unlocked.

When, however, the strap portion **24** is flattened or pushed down as in Figures 4 and 5, and during which action the latch portions are shifted endwise relative to the mounting means **22** as permitted by the slots **44**, the latch portions assume their natural angular position relative to the handle portion **24** in which position their latch fingers **32** as seen in Figures 4 and 8 are clear of the closure members **16** and **18** and the latter may now be freely displaced to gain access to the chamber **14** of the container. It will be observed that in this position of the element **20** the shanks **42** are in the strap portion of the slots **44**.

When the strap portion **24** of the element **20** is again pulled up as in Figure 1, the main section **30** of the latch portions will in effect be cammed downwardly of the head portions **40** of the mounting means **22** into latching position as there shown.

For some applications it may be desired to lock the latch **26** in its holding positions and/or to keep the carrying strap **24** raised. For this purpose I provide a locking means generally designated by the numeral **50** and comprising a generally flat lever **52** hinged on a stud **54** secured to the body structure **12**, preferably on the longitudinal axis **21** of the element **20**, and which in locking positions has its own longitudinal axis coincident with the axis **21**. The lever **52** includes an operating finger **55** and a locking head **56**, these portions being on opposite sides of the axis of the stud **54**. The head portion **56** will preferably be of no greater thickness than the strap **24** for clearance purposes (see Figure 4) when the latch **26** is released.

As seen in Figure 3 when the longitudinal axis of the lever **52** is aligned with the axis **21** of element **20**, the outer edge **60** of the head portion **56** of the lever will bear against the outer end wall **61** of the main section **30** of the latch portion **26** and will prevent the handle from collapsing to release the latch. It is preferred that the edge **60** of the lever parallel to edge **61** over part of the width of the lever and that it have rounded corners **62** which cause a slight compression of the end portion of the latch portion **26** upon contacting the edge **61** when the lever is swung into locking position by reason of the greater distance of the corners **62** from the axis of the stud **54** than between the latter and the edge **60**. When this compression is released, the to wedges **60** and **61** will abut each other. While I have only shown one locking means **50**, it will be understood that there may be one at each end.

When the lever **52** is swung by its finger **55** to a position 90° to the longitudinal axis of the handle i.e., transversely of the container as seen in Figure 4, the handle **24** may be collapsed as there shown and the latch portion **26** will pass over the locking means **50** and release the closure members **16, 18** as will be evident from this figure and Figure 8.

From the foregoing description of my invention it will be evident that I have made a novel latch and carrying means of unique character well adapted for its intended use and that has general application. It will be understood that various substitutions, changes and modifications will suggest themselves to those skilled in this art without departing from the spirit and intent of my invention. For example, the latch means may be so formed that the fingers **32** project through the body structure **12** as through an opening **70** and hook over (i.e. behind) a projection **72** on the closure member **16**, all as shown in Figure 9, to retain the same in container closing position. These and all other such changes, substitutions, modifications, and equivalent constructions coming within the scope of the appended claims are therefore contemplated.

I claim:

1. A latch mechanism for an article-carrying container and the like having a body structure defining a chamber and having a closure member supportable on said body structure in position for closing said chamber and displaceable relative to said body structure for making said chamber accessible, comprising an element including a latch portion operable to hold said closure member in position closing said chamber, and a latch operating portion offset from said latch portion at an obtuse angle thereto, an elongated slot in part on said latch portion and in part on said operating portion and a camming member secured to said container and extending through said slot, said element being movable in a direction lengthwise of said slot between a first position wherein said camming member is engaged with said latch operating portion of said element and said latch portion thereof is in position relative to said closure member releasing the same for making said chamber assessible, and a second

position wherein said camming member is engaged with said latch portion of said element and the latter is in holding position relative to said closure member effecting closing of said chamber by said closure element.

2. A latch mechanism for an article-carrying container and the like having a body structure defining a chamber and having a closure member supportable on said body structure in position for closing said chamber and displaceable relative to said body structure for making said chamber accessible, comprising an element including a latch portion having a main section and having a latching finger in downwardly projecting relationship to said main section, and a latch operating portion in resilient connection with said main section and normally at a substantial angle thereto, said main section and latch operating portion containing an elongated slot extending over part of each thereof and a stud mounted on said body structure having a shank extending through said slot and having a head portion straddling said slot and retaining said main section and operating portion to said body structure, said element being movable in a direction lengthwise of said slot from a first portion wherein said head portion of said stud is engaged with said operating portion but not with said main section to a second position wherein said head portion is engaged with said main section but not with said operating portion and said head portion being adapted in said movement of said element to deflect said main section from a position wherein said latching finger is in releasing position relative to said closure member to a position wherein it is in holding position relative to said closure member.

3. A latching mechanism as claimed in claim 2, wherein said latch portion has a pair of transversely spaced latching fingers.

4. A latching mechanism as claimed in claim 2 wherein there is a pair of latching portions having their main sections in resilient connection with opposite ends of the operating portion.

5. A combination carrying strap and latch for an article carrying container and the like having a body structure and a side member pivotally mounted with respect to the latter and movable from a position of substantial abutment with the body structure wherein the container is closed to an open position away from the body structure whereby the container is rendered accessible, comprising a preformed strap-like element of resilient material having a central elongated hand grip portion, and opposite end portions normally extending divergently from said central portion, said end portions each having opposite side wings forming an inverted U-shape with said end portions, and there being an elongated, slot on said element adjacent each end thereof and pin means mounting said element to said body structure through said slots, said element being operable for latching said side member of the container in closing position by pulling up on said grip portion and causing said pin means to cam said end portions toward said body structure whereby said side wings are moved toward said body portion and straddle said body and side member to hold the side member in closed position.

6. A carrying case comprising a body structure defining a chamber; a pair of closure members hingedly secured to said body structure and adapted to close opposite sides of said body structure when in abutting relationship therewith; a combination carrying member and latch for transporting said case and holding said closure members in closed position comprising an element having a pair of latching portions operable to hold said closure members in chamber closing position, and a latch operating portion having a resilient connection with said latching portions; and means mounting said element to said body structure, said element having a slotted portion through which said element is mounted by said mounting means and facilitating operation of said latching portions by said latch operating portion from a position holding said closure members in chamber closing position to one releasing said closure members.

7. A latch mechanism for an article-carrying container and the like having a body structure defining a chamber and having a closure member supportable on said body structure in substantial abutting relationship therewith for closing said chamber and displaceable relative to said body structure for making said chamber accessible, comprising an elongated element having a latch portion for holding said closure member in chamber closing position, and an operator operable portion in resilient connection with said latch portion and normally at a substantial angle thereto, a camming member securing said latch portion and operating portion of said element to said body structure, said element being movable in a direction lengthwise of said element from a first position wherein said camming member is engaged with said operating portion but not with said latch portion to a second position wherein said camming member is engaged with said latch portion but not with said operating portion, and said camming member being adapted in said movement of said element to deflect said latch portion from a position wherein said latch portion is in releasing position relative to said closure member to a position wherein it is in holding position relatve to said closure member.

8. A latch mechanism as claimed in claim 7 including a locking member mounted on said container in juxtaposition to a lengthwise end of said element and operable into abutting relation with said latch portion when the latter is in its said holding position.

9. In combination, an article-carrying container having a body structure defining a chamber and having a closure member supportable on said body structure in position for closing said chamber and displaceable relative to said body structure for making said chamber accessible, said body structure having a wall portion defining an opening, a projection on said closure member below said opening behind which a finger may be positioned, and a latch mechanism for retaining said closure member in position for closing said chamber comprising a latch portion having a main section and a latching finger in downwardly projecting relationship to said main section, said finger being projectable through said opening in said body structure into position behind said projection for holding said closure member in closed position, a latch operating portion in resilient connection with said main section and normally at a substantial angle thereto, said main section and latch operating portion containing an elongated slot extending over part of each thereof, and a stud mounted on said body structure having a shank extending through said slot and having a head portion straddling said slot and retaining said main section and operating portion on said body structure, said latch mechanism being movable in a direction lengthwise of said slot from a first position wherein said head portion of said stud is engaged with said operating portion thereof but not with said main section, to a second position wherein said head portion is engaged with said main section but not with said operating portion, and said head portion being adapted in said movement of said latch mechanism to deflect said main section from a position wherein said latching finger is disengaged from behind said projection on said closure member to a position wherein it is in position behind said projection.

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