United States Patent

Simms

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[54] CAM OPERATED DETACHABLE CARTON HANDLE

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[52] **U.S. Cl.** **294/31.2,** 222/465

[51] **Int. Cl.** **A47j 45/10**

[58] **Field of Search** ..... 294/27, 27 H, 31.2, 31; 222/183, 472, 473, 474; 224/45, 52, 55

[56] **References Cited**

UNITED STATES PATENTS

3,073,642 1/1963 Barnes 294/31.2

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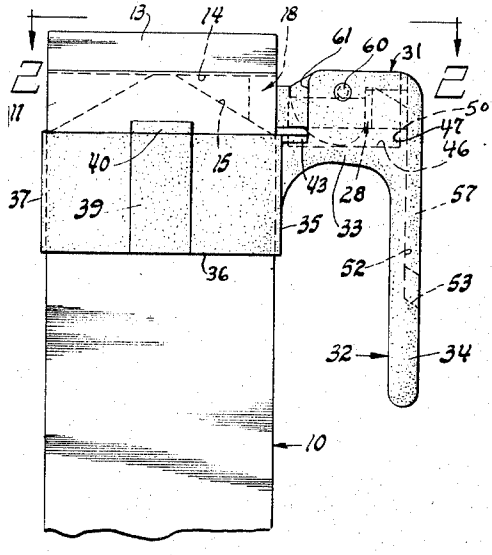
[57] **ABSTRACT**

A cam operated detachable carton handle for use on milk cartons and the like, and which includes an integral rectangular housing adapted to be slidably mounted over the upper end of a carton. A handle is integrally formed on the housing. A plunger is slidably mounted on the handle and a pivotally mounted cam is provided for camming the plunger into a recess in the upper end of the carton for retaining the rectangular housing and handle in place on the carton.

3 Claims, 4 Drawing Figures



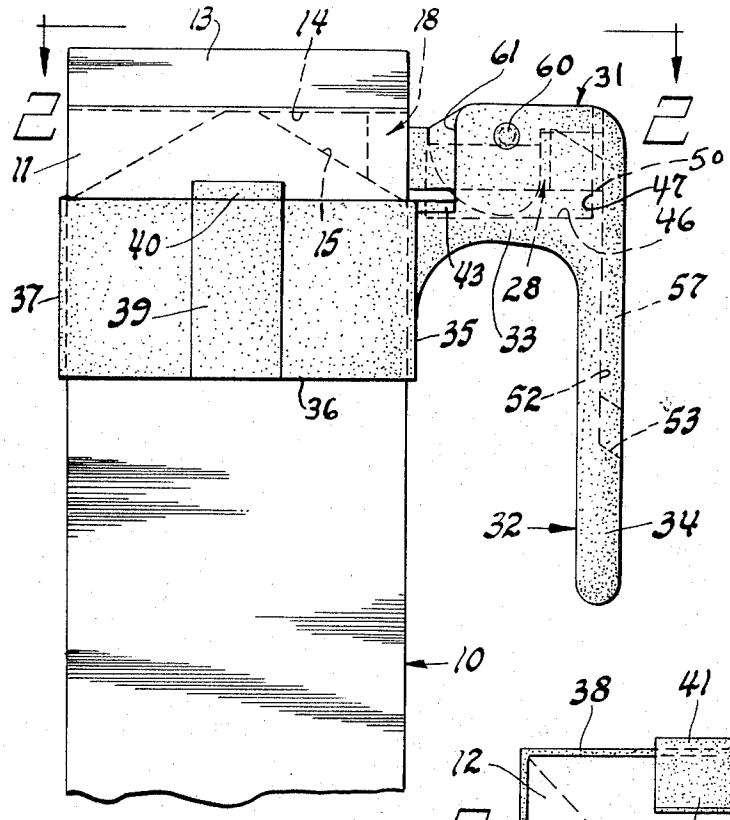


Fig. 1

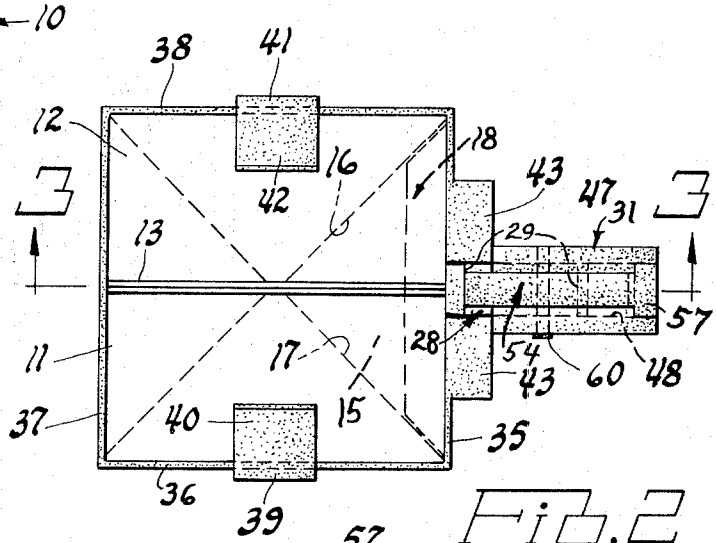


Fig. 2

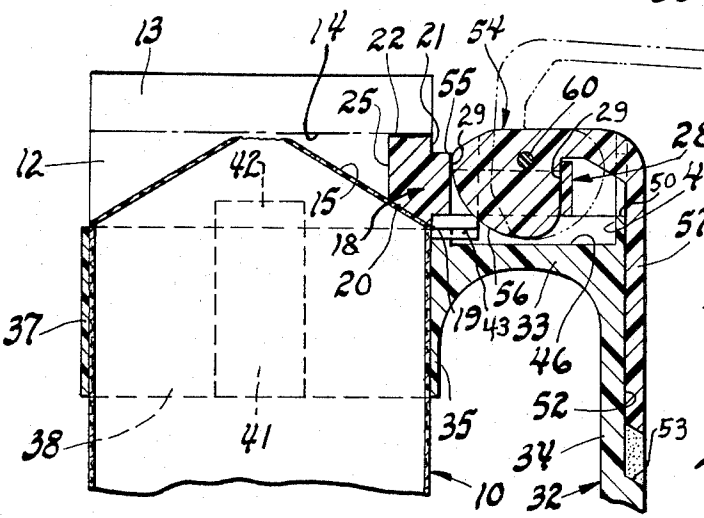


Fig. 3

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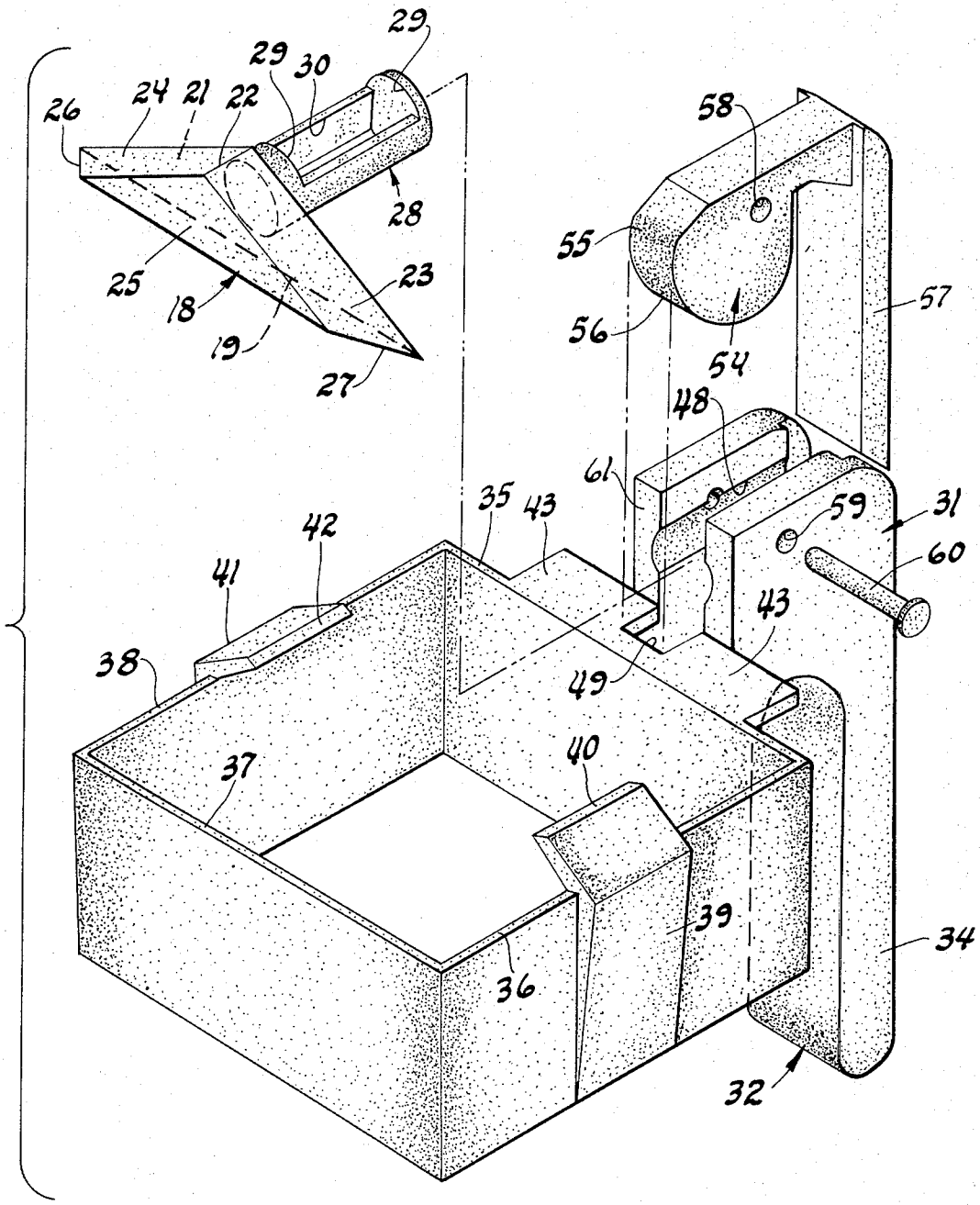

Fig. 4

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CAM OPERATED DETACHABLE CARTON HANDLE

SUMMARY OF THE INVENTION

This invention relates to a novel and improved cam operated detachable carton handle, and more particularly to a carton handle which may be quickly and easily mounted on a milk carton or the like.

Coated paperboard cartons are used at the present time for packaging milk, fruit juices and other fluids. Some of these cartons are made in quart sizes, others in half-gallon sizes, and still others in gallon sizes. These cartons are generally made from a suitable paperboard which is coated with a plastic material. While these cartons are economical to make, fill and seal, they have the disadvantage in that they are difficult to handle. Accordingly, it is an important object of the present invention to provide a novel and improved cam operated detachable carton handle which may be quickly and easily mounted on a paperboard carton, whereby the carton may be easily handled and the contents thereof poured out in a efficient and easy manner.

It is another object of the present invention to provide a cam operated detachable carton handle which is simple and compact in construction, economical to manufacture and light in weight.

It is still another object of the present invention to provide a novel and improved cam operated detachable carton handle which is especially adapted for use on large coated paperboard containers and cartons.

It is a further object of the present invention to provide a novel and improved cam operated detachable carton handle which embodies a cam operated pyramidal shaped retainer member and a cam means for operating said retainer member for releasably securing the handle to a carton.

It is still another object of the present invention to provide a novel and improved cam operated detachable carton handle which includes an integral rectangular housing, a handle integrally formed thereon, and a cam operated retainer means for projecting into a recess on the carton for releasable gripping engagement with the carton.

Other objects, features and advantages of this invention will be apparent from the following detailed description, appended claims, and the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of a cam operated detachable carton holder made in accordance with the principles of the present invention, and showing the handle operatively attached to the upper end of a conventional coated paperboard milk carton.

FIG. 2 is a top plan view of the carton and carton handle structure illustrated in FIG. 1, taken along the line 2—2 thereof, and looking in the direction of the arrows.

FIG. 3 is a fragmentary, elevational section view of the structure illustrated in FIG. 2, taken along the line 3—3 thereof, and looking in the direction of the arrows.

FIG. 4 is an exploded perspective view of the cam operated detachable carton handle structure of the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to the drawings, and in particular to FIG. 1, the numeral 10 generally designates a large size milk carton, as for example a gallon milk carton, on which is operatively mounted an illustrative carton handle made in accordance with the principles of the present invention. The numerals 11 and 12 in FIG. 2 designate the two carton top end panels which slope inwardly and upwardly and which are sealed together to make the sealed joint 13 along the upper end of the carton. As viewed in FIG. 1, the left side of the upper end of the carton 10 would be opened in the usual manner to provide a pouring spout. The right upper side of the upper end of the carton 10 is provided with the usual recess formed by the top end panels 11 and 12 and the usual upper end side upwardly sloping panel 15 under the joint 13. As shown in FIG. 1, the upper end of the recess is formed by the lower end 14 of the sealed joint 13 and the outer surface of panel 15. FIG. 2 illustrates the recess as extending inwardly along the converging edges 16 and 17 of panel 15.

As shown in FIGS. 1 and 2, the detachable carton handle of the present invention includes the plunger or retainer member generally indicated by the numeral 18, which is adapted to be seated in the aforedescribed recess. As shown in FIG. 4, the cam operated plunger or retainer 18 is provided with a substantial triangularly shaped body when viewed from the front end thereof, so as to nest into the aforementioned recess and engage the various sloping surfaces of the upper end panels of the carton 10 which surround the recess. As shown in FIG. 3, the plunger 18 is provided with a rear horizontal lower rear edge 19, and the lower surface of the plunger slopes upwardly and forwardly from the lower rear edge 19, as indicated by the numeral 20 in FIG. 3. As shown in FIGS. 3 and 4, the plunger retainer 18 is provided with a vertical rear surface or face 21, and a centrally disposed upper ridge 22 which separates the two downwardly, outwardly and forwardly sloping side faces 23 and 24 (FIG. 4). The numeral 25 in FIG. 4 designates the front vertical face of the plunger retainer 18. The numerals 26 and 27 designate the outer converging side bottom edges of the plunger retainer 18.

As best seen in FIGS. 3 and 4, the plunger retainer 18 is integrally connected to a cam follower or cam operator generally indicated by the numeral 28 which is cylindrical in overall configuration and which is integrally attached to the rear face 21 of the plunger retainer 18. The numerals 29 in FIGS. 3 and 4 designate the ends of a longitudinal slot 30 which is formed in the cam follower 28 and which extends vertically therethrough. As best seen in FIG. 4, the upper face of the cam follower 28 is partially removed to expose the slot 30. The numeral 31 in FIGS. 1 and 4 generally designates a handle bracket for attaching a handle generally indicated by the numeral 32 to the rear wall 35 of a handle housing. The handle 32 comprises a vertically disposed portion 34 which extends downwardly from the rear outer end of the bracket 31 and which is attached at its upper end to the lower side 33 of the bracket 31. The handle bracket 31 is integrally connected to a rectangular housing which is square and comprises the rear housing wall 35, the left side wall 36, the front wall 37, and the right side wall 38. It will be understood that the housing, the handle bracket 31 and handle portion 34 may be integrally formed as an integral unit from any suitable material, as for example a suitable plastic material.

As shown in FIGS. 2, 3 and 4, the housing is provided with a pair of seating tabs 40 and 42 which are carried on the upper end of a pair of tab carrier legs 39 and 41, respectively. The tab carrier legs 39 and 41 are integrally formed with the housing side walls 36 and 38. The seating tabs 40 and 42 slope inwardly and upwardly at an angle commensurate with the slope of the carton upper end walls 11 and 12. As best seen in FIGS. 2 and 4, a plunger rest guide 43 is integrally formed on the upper end of the housing rear wall 35, and this guide extends rearwardly toward the handle bracket 31. A vertical cam slot is formed through the handle bracket 31, and the numeral 46 in FIG. 3 designates the bottom of this slot. The numeral 47 in FIG. 3 designates the rear end of the cam slot. A cylindrical or round, longitudinally extended slot 48 (FIG. 4) is formed through the handle bracket 31 in a position above the rest guide 43. The round slot 48 is adapted to slidably receive the cylindrical cam follower or operator 28. The numeral 49 in FIG. 4 designates a recess or slot formed in the rest guide 43 for movement therethrough of the operator cam 54. The numeral 50 in FIG. 1 designates a slot which communicates the cam slot in the bracket 31 with the handle slot 52 which is formed in the rear or outer face of the handle portion 34. The numeral 53 designates the lower end of the cam operator handle slot 52. The numeral 54 in FIGS. 3 and 4 designates generally a pivotally mounted, round-nose cam for moving the plunger retainer 28 inwardly and outwardly relative to a carton 10. The numeral 55 in FIGS. 3 and 4 designates the radial

clamping nose or point on the front end of the cam **54**. The numeral **56** designates the lower rounded end of the cam **54**. A cam operator handle **57** is integrally formed on the rear end of the cam **54**. A pivot pin **60** extends through suitable pin holes **59** in the bracket **31** and a pin hole **58** in the cam **54** for pivotally mounting the cam **54** in the bracket **31**. The numerals **61** in FIG. **4** designate the front vertical faces of the bifurcated portions of the bracket **31**.

The handle of the invention is used by first swinging the cam operated handle **57** in a counterclockwise direction to move it to the broken line position shown in FIG. **3** so as to moVe the plunger retainer **18** to a retracted position relative to the housing back wall **35**. The housing is then slipped over the upper end of a carton **10** until the seating tabs **40** and **41** engage the carton upper end walls **11** and **12** which limit the downward movement of the housing over the carton. The cam operated handle **57** is then swung clockwise or downwardly to the solid line position shown in FIG. **3**, whereby the retainer plunger **18** is cammed by the cam **54** to the left as viewed in FIG. **3** into the recess at the rear end of the carton **10** below the joint member **13** and into a clamping engagement therewith. The user may then easily lift the carton **10** for transporting and pouring purposes with safety and efficiency.

While it will be apparent that the preferred embodiment of the invention herein disclosed is well calculated to fulfill the objects above stated, it will be appreciated that the invention is susceptible to modification, variation and change.

What I claim is:

1. A detachable carton handle for mounting on the upper end of a carton having a sealed top end and a recess formed under the sealed top end, comprising:

a. a rectangular housing including a back wall, a left side wall, a right side wall, and a front wall;

b. a seating tab carried on each of said side walls for locating said housing on the upper end of a carton;

c. an integral handle bracket formed on the back wall of said housing;

d. a handle integrally attached to the outer end of said handle bracket;

e. a retainer plunger slidably mounted on said handle bracket; and,

f. cam means for camming said retainer plunger in one direction to an inoperative position to permit said housing to be slidably mounted over the upper end of a carton and to an operative position to be seated in said recess in a clamping engagement with the carton to releasably secure the housing and handle on a carton.

2. A detachable carton handle for mounting on the upper end of a carton having a sealed top end and a recess formed under the sealed top end, comprising:

a. a rectangular housing including a back wall, a left side wall, a right side wall, and a front wall;

b. a seating tab carried on each of said side walls for locating said housing on the upper end of a carton;

c. an integral handle bracket formed on the back wall of said housing;

d. a handle integrally attached to the outer end of said handle bracket;

e. a retainer plunger slidably mounted on said handle bracket;

f. cam means for camming said retainer plunger in one direction to an inoperative position to permit said housing to be slidably mounted over the upper end of a carton and to an operative position to be seated in said recess in a clamping engagement with the carton to releasably secure the housing and handle on a carton;

g. said cam means includes a cam follower attached to said retainer plunger; and,

h. said cam means further includes a rotatable cam which is pivotally mounted on said handle bracket and which is extended into operative engagement with said cam follower for moving said retainer plunger between said operative and inoperative positions.

3. A detachable carton handle as defined in claim **2**, wherein:

a. said pivotally mounted cam is provided with an operating handle which is adapted to be nested in a recess in said carton handle when the cam has moved the retainer plunger into a clamping engagement in said recess in a carton.

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