Nov. 16, 1971 E. A. ECKBERG 3,619,852

REMOVABLE BOX BAIL

Filed Nov. 10, 1970

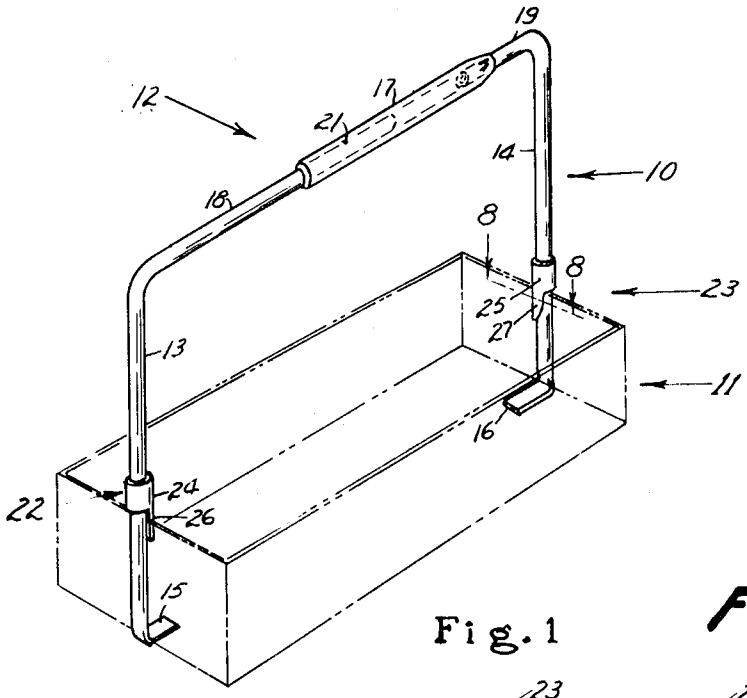


Fig. 1

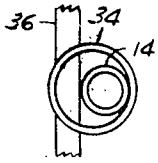


FIG. 5

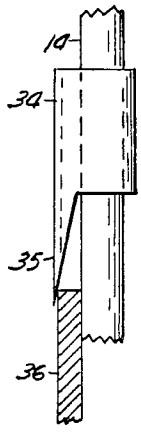


FIG. 4

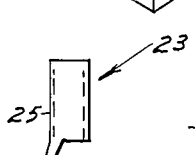


FIG. 6

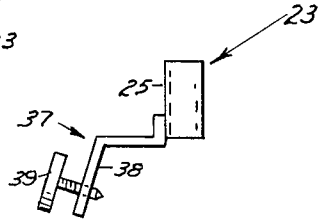


FIG. 7

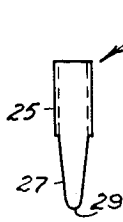


FIG. 2

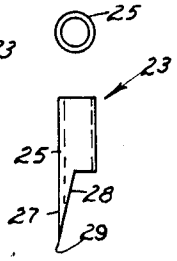


FIG. 3

FIG. 3A

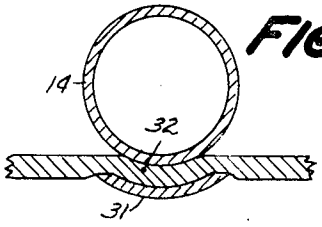


FIG. 8

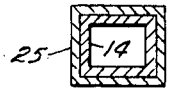


FIG. 9

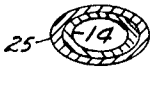


FIG. 10

INVENTOR

ERIC A. ECKBERG

BY

Stanley C. Biniak

ATTORNEY

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REMOVABLE BOX BAIL

Eric A. Eckberg, 509 S. Irwin St., Green Bay, Wis. 54301

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ABSTRACT OF THE DISCLOSURE

An attachable-removable bail or handle attachment, for a container, such as a vessel, basket, tray, box, carton, or the like, said bail having slidable clamp members operative to cam or wedge an intervening rim portion of such container directly against said bail to secure said bail immediately to said carton.

In the packaging of wholesale groceries and the like, extensive use is made of corrugated paperboard cartons. Such cartons, when emptied in a retail store, are usually relegated to the waste bins and are carted away as trash, to be burned or otherwise dumped. Both such dispositions contribute to environmental and ecological pollution.

An object of this invention is the provision of means for diminishing air and ground pollution in the field of package environment.

Another object is the provision of means for recycling or restoring waste cartons back into productive channels, that is, making every used box a handy basket.

Still another object is to provide means for salvaging and converting useless scrap cartons into useful carriers having handle means that are attachable-removable.

Yet another object of this invention is the provision of attachable-removable handle means, for a carton, including a hand grip portion, whereby a carton may be carried in an efficient and easy manner.

Still a further object is the provision of attachable-removable handle means, for a carton, that is easily secured to and easily detached from such carton.

Yet a further object is to provide a carrying bail means, for a carton, that is adjustable for accommodation to cartons of various dimensions.

Another object of this invention is the provision of a telescopic U-shaped bail means, for a carton, accommodatable to cartons of varying widths.

Still another object is the provision of a U-shaped bail means, for a carton, that is adjustable to cartons of various heights.

Other specific features and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings in which like reference numerals designate like parts throughout the figures thereof and wherein:

FIG. 1 is a perspective view of the removable bail secured to a container;

FIG. 2 is a front elevation view of one of clamps slidably mounted on the bail;

FIG. 3 is a side elevation view of the clamp shown in FIG. 2;

FIG. 3A is a plan view of FIG. 3;

FIG. 4 is a fragmentary elevation view illustrating a modification, showing the slidable tubular clamp of much greater diameter than the associated tubular bail;

FIG. 5 is a plan view of FIG. 4;

FIG. 6 is a modification showing a depending clamp finger bent outwardly;

FIG. 7 is a modification showing screw clamp means;

FIG. 8 is a fragmentary section view taken on line 8—8 of FIG. 1, showing the arcuated rim portion of the carton wedged between the arcuate finger and tubular arm;

FIG. 9 is a section view of alternate tubular members used in the construction, showing tubular members of square cross-section in lieu of cylindrical tubular members; and

FIG. 10 is a section view of another alternate tubular construction, showing tubular members of elliptical cross section.

Referring now to the drawings, wherein like reference numerals designate like or corresponding parts throughout the several views, there is shown a bail or U-shaped handle means generally indicated at **10** operatively associated with a salvageable corrugated paperboard carton generally indicated at **11**.

Because it would be time consuming, repetitious and impractical to discuss each of the various kinds of containers that relate to the present invention, and as the major portion of our wholesale groceries, agricultural products and manufactured products are shipped in corrugated paperboard containers, the present invention will be discussed in terms of its application to corrugated paperboard cartons; it being understood that the invention is applicable to other types of containers suitable for the intended purpose, and is not limited to corrugated paperboard cartons.

The bail comprises an inverted U-shaped handle means **10** including tubular cross bar means generally indicated at **12** having a pair of tubular arm members **13** and **14** depending normally from the ends of said cross bar means **12**, respectively.

The lower end portions of said tubular arms **13** and **14** are bent and turned inwardly toward each other, and flattened, as tabs or lugs **15** and **16**, respectively, and adapted to engage the undersurface of a container to support such container thereon.

The tubular cross bar means **12** comprises a tubular handgrip portion **17**, substantially centrally located, and a pair of horizontal tubular extensions **18** and **19** extending from the ends of said handgrip, respectively.

Handgrip extension **19** has one end received in said handgrip and secured therein as by crimping, pressfit, or by any other suitable means. The other end of extension **19** is connected to the upper end of arm **14** by any means, such as integrally or otherwise.

Handgrip extension **18** has one end telescopically received in handgrip **17**, as at **21**, and the other end is connected to the upper end of arm **13** by any suitable means, such as integrally or otherwise.

Arm **13**, extension **18**, and tab or lug **15** can be bent and formed of one piece of tubing.

Arm **14**, extension **19**, and tab or lug **16** can likewise be formed of one continuous piece of tubing, bent and shaped as above described.

Clamp means, generally indicated at **22** and **23**, are slidably mounted on arms **13** and **14**, respectively, for up-and-down movement thereon.

Said clamp means comprise tubular sleeve guides **24** and **25** slidably embracing arms **13** and **14**, respectively, and finger means **26** and **27** depending from said sleeve guides, respectively.

Said finger means can be an integral part of the tubular sleeve guides and extending therefrom, and formed as by cutting away the associated part of the tubing therefrom. It is preferred that the inner surface or profile edge of the finger means, such as at **28** be flared outwardly, relative to the longitudinal axis of the sleeve guides, thereby to cam or wedge the rim portion of a carton disposed in the clear space between said finger means and the adjacent arm, said rim portion being cammed or wedged against

said adjacent arm thus removably securing the bail **12** to said carton. Said finger means are suitably rigid for the intended purpose.

More specifically, the finger means are flared outwardly so that points along the length of said finger means become progressively farther from the longitudinal axis of the associated arms or sleeves, the points being considered initially from the upper end to the lower end of said finger means.

The end of the finger means is provided with a sharp point or knife edge, such as at **29**, for reasons hereinafter described.

In the cutting and forming of the finger means, it is preferred that an arcuate portion of the wall of the tubing be included, such as at the upper portion of the finger means, as at **31**, see FIG. 8, thereby to substantially arcuately conform that portion of the rim of a relatively soft paperboard carton such as at **32** intervening between such arcuated finger means and the associated tubular arm **14**, to the arcuate surface of such tubular arm, and thus increase the pertinent carton surface area bearing against the tubular arm surface for enhancing the frictional resistance, and otherwise interlock such members against relative sidewise displacement, and thus more securely coupling the arm **14** to the carton. The arcuated fingers are substantially concentric with the adjacent tubular arms.

To accommodate the clamp means to carton walls that are thicker than those adapted for use with the depending finger means shown in FIG. 3, the finger means can be bent, thrust, disposed, or formed to project outwardly from the arm as indicated at **33**, see FIG. 6.

In the alternative, see FIGS. 4 and 5, the sleeve guide **34** can be provided with a diameter suitably greater than the diameter of its respective arm **14**, thereby operatively displacing finger means **35** outwardly of arm **14** to accommodate a thicker carton wall **36**, as shown disposed prior to the movement of the finger **35** downwardly, for wedging action, as hereinafter described.

For use with wooden boxes or the like, finger means such as shown generally at **23**, FIG. 7, can be used. Such finger means comprise a sleeve **25** having an offset bracket generally indicated at **37** depending therefrom. The offset finger portion **38** is likewise flared outwardly and is provided with a laterally projecting thumb screw **39**, threadedly engaged through said offset **38**, to engage the rim portion of a wooden box disposed or wedged between said offset finger **38** and the adjacent arm, to press and more securely couple the arm to the box.

To maintain the clamp means **22** and **23** properly and operatively oriented, that is, with the fingers **26** and **27** disposed inwardly of their respective arms and confronting each other, the sleeves **24** and **25** and their associated arms **13** and **14**, respectively, can be made of tubular members having a square cross-section or an elliptical cross-section, in lieu of the cylindrical tubular members hereinbefore described, see FIGS. 9 and 10.

Likewise, the telescopically related handgrip **17** and extension **19** can be of square cross-section or elliptical cross-section, to maintain a fixed telescopic orientation, one with the other, that is, telescopic longitudinally, only.

Obviously, other conventional and suitable means can be used to maintain the members properly and operatively oriented and assembled, that is, to allow the associated members to slide longitudinally relative to each other, but not movable rotatively relative to each other.

OPERATION

A corrugated paperboard box, or the like, to be carried, is conveniently disposed right side up, and the bail is disposed over and astride such box or carton, then lowered, and telescopically adjusted to the width of the box so that the lugs **15** and **16** engage the undersurface of such box and the arms **13** and **14** are drawn disposed to a position adjacent the sides of the box.

The clamps **22** and **23** are then maneuvered so that the fingers **26** and **27** engage the upper rim portion of the carton, preferably the inner surface of such portion, and the clamps then pressed and pushed downwardly, whereby the cam action of the flared edges **28** wedge such relatively soft rim portion against the adjacent arms, to secure the said bail arms to said carton, and the carton is otherwise pressed firmly seated on the support lugs.

With the bail arms thus clamped to the box, and the box otherwise supported on the bail lugs, the box can be carried about by hand as a basket.

In the event the rim edge is relatively thick, that is, extending beyond the point or knife edge **29** of the fingers **26** and **27**, such point or knife edge can be pushed into said edge to pierce and penetrate the edge portion, whereby the flared edges **28** will wedge the rim portion against the adjacent arms as hereinbefore described.

In the event a wooden box or the like is desired to be carried, wooden material being rigid and less likely to crush and wedge as does a corrugated paperboard box, then the clamp means shown in FIG. 7 can be used, and the thumb screw **39** tightened into the intervening rim edge and the wooden box held more securely between the offset fingers **38** and the adjacent arms.

To remove the bail from the carton box, one merely pulls upwardly on the clamp means thereby withdrawing the finger means from its wedging engagement with the rim portion of the carton, and then one telescopically extends the bail sidewise until the support lugs are withdrawn from the undersurface of the carton box, thus completely releasing the bail from the carton box.

In the removal of a bail having clamp means shown in FIG. 7, one must first back-off the thumb screw to release its engagement with the wooden box, and then follow the steps above recited.

Some characteristic features of this invention are the provision of a box bail removably securable to a box by slidable wedge means on said bail for wedging or fastening the rim portion of such box directly and immediately against said bail; the provision of a removable box bail as described above wherein the wedge means comprises a flared depending finger for wedging or fastening the rim portion of a box directly and immediately against said bail; the provision of a removable box bail as described above wherein the depending wedge finger is arcuate in cross-section; and the provision of a removable box bail as described above wherein the depending wedge finger is provided with a sharp point or knife edge at the end thereof.

Obviously many modifications and variations of the present invention are possible in the light of the above teachings. It is therefore to be understood, that within the scope of the appended claims, the invention may be practiced otherwise than as specifically described.

What is claimed and desired to be protected by Letters Patent of the United States is:

1. A removable bail for a container, comprising:

(a) an inverted substantially U-shaped member comprising a cross-bar member and a pair of spaced arm members depending from the ends of said cross-bar member;

(b) inwardly projecting support lugs on the ends of said arm members for engaging the undersurface of a container; and

(c) clamp means mounted for slidable longitudinal movement on said arm members, respectively, said clamp means including depending finger means spaced from said arm members, respectively, for receiving rim portions, of a container supported on said lugs, in the space between said depending finger means and said arm members, respectively, and for engaging such rim portions, respectively, thereby to secure said rim portions to said adjacent arm members.

2. The apparatus of claim 1 wherein the depending finger means are disposed flared outwardly relative to the associated arm members and operative to wedge such rim portions against said arm members.

3. The apparatus of claim 2 wherein the depending finger means are flared outwardly so that points on the operating range of said finger means become progressively farther from the respective arms, the points being considered initially from the upper end to the lower end of said depending finger means.

4. The apparatus of claim 3 wherein the points on the operating range are on a straight line.

5. The apparatus of claim 1 wherein the finger means include separate screw means for engaging such rim portions and thrusting such rim portions against said arm members.

6. The apparatus of claim 4 wherein the cross-bar member is telescopic.

7. The apparatus of claim 6 wherein the arm members are tubular and the clamp means comprise a tubular sleeve on each of said arms and a finger depending from each of said sleeves, said fingers being flared outwardly relative to the respective arms.

8. The apparatus of claim 7 wherein the fingers have an arcuate inner surface substantially concentric with the surface of said tubular arm members.

9. The apparatus of claim 8 wherein the fingers terminate in knife edges.

10. The apparatus of claim 9 wherein the knife edges are sharp points.

11. The apparatus of claim 6 wherein the telescopic cross-bar member is elliptical in cross-section.

12. The apparatus of claim 7 wherein the arm members and the sleeves are elliptical in cross-section.

13. The apparatus of claim 6 wherein the telescopic cross-bar member is rectangular in cross-section.

14. The apparatus of claim 7 wherein the arm members and the sleeves are rectangular in cross-section.

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BOBBY R. GAY, Primary Examiner

D. L. TROUTMAN, Assistant Examiner

U.S. Cl. X.R.

220—94