United States Patent [19]

Hidding

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[54] **CARRYING HANDLE**

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[52] **U.S. Cl.** ..... **229/52 A,** 215/100 A, 220/94 R

[51] **Int. Cl.** **B65d 5/46,** B65d 25/28

[58] **Field of Search** ..... 229/52 A, 52 AL, 229/52 AM; 220/101, 105, 118, 94 R; 224/50, 51, 52, 55, 58; 294/27 R, 27 H, 31 A; 215/100 A

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[57] **ABSTRACT**

A carrying and pouring handle for a container that is provided with an upper ridge comprises a band of strap material having side pieces and a top piece merging with the side pieces at an angle to form respective corners. Cooperative fastener elements are disposed at opposite ends of the band for use in securing the band to an apertured portion of the container ridge. A rib arrangement is raised from the outer surface of the band integral therewith, and the rib arrangement possesses a first thickness along the side pieces adjacent the fastener elements and a second, greater thickness along the top piece, about the corners and onto the regions of the side pieces adjacent the corners so that, upon convergence of the fastener elements in securing the handle to a container, the upper portion of the band assumes a trapezoidal shape to facilitate holding, pouring and carrying.

8 Claims, 9 Drawing Figures

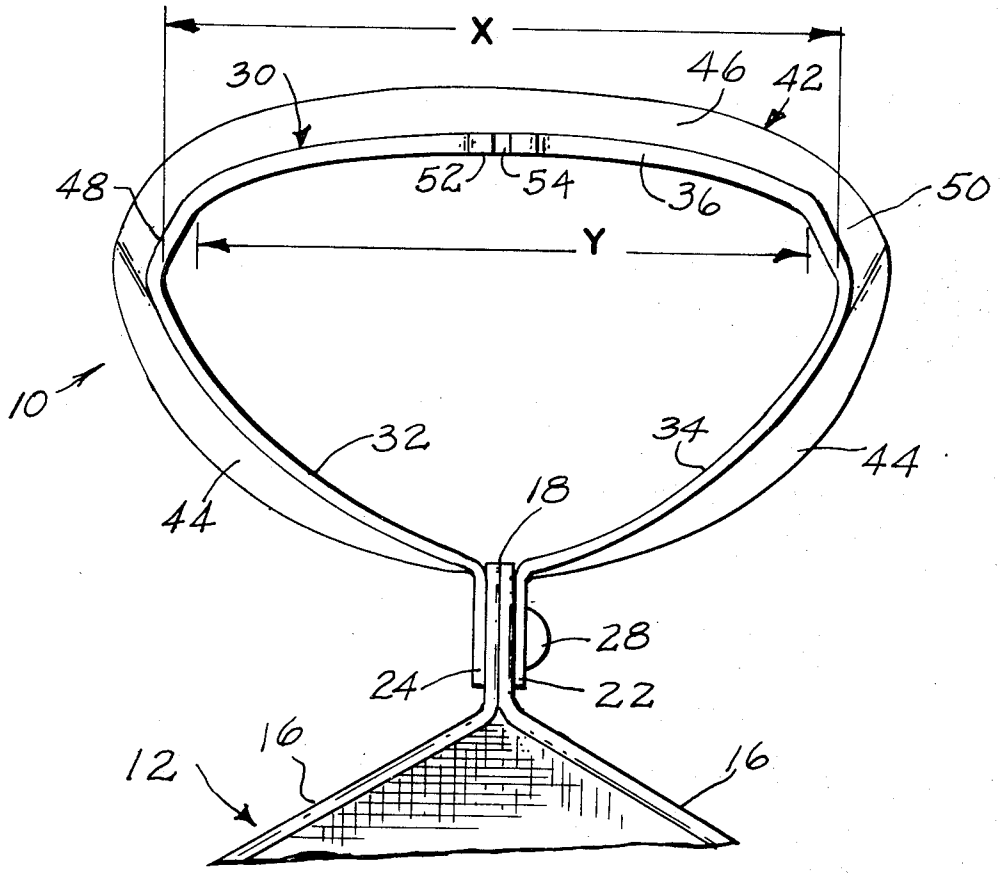


FIG. 1

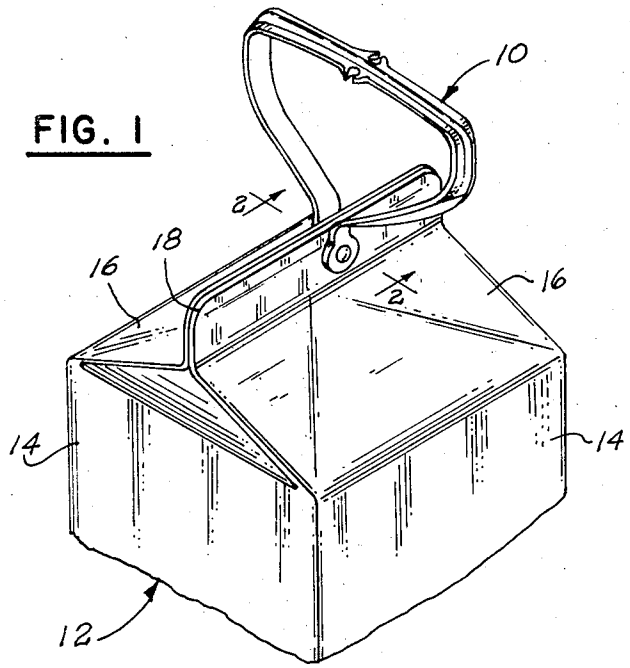


FIG. 2

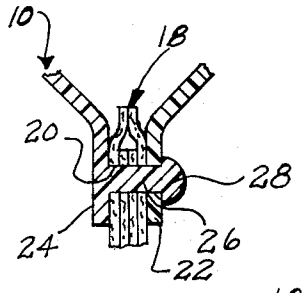


FIG. 3

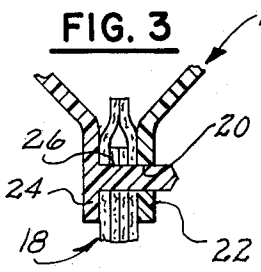


FIG. 4

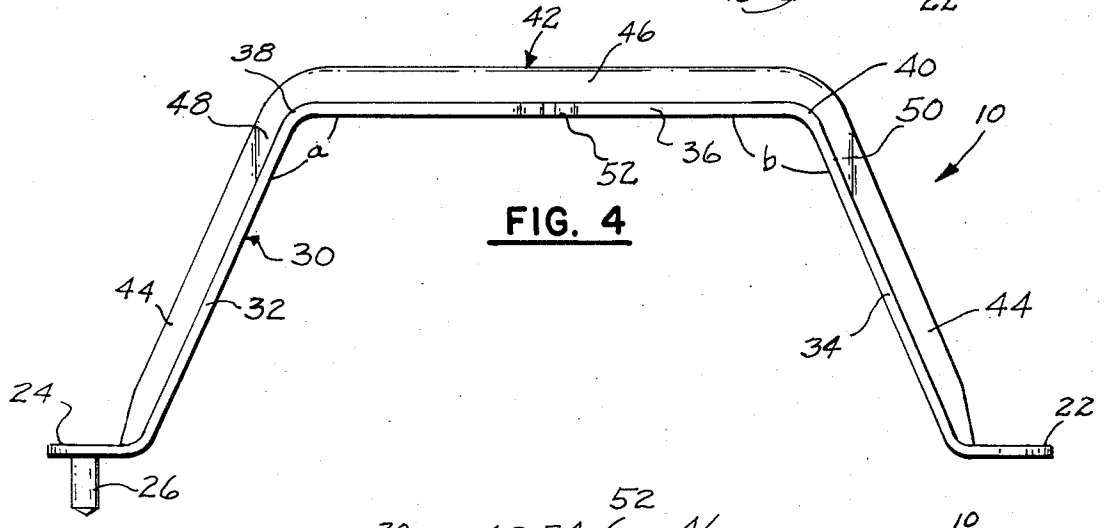
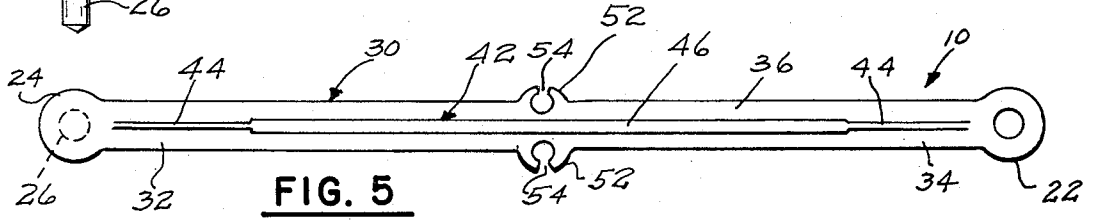


FIG. 5



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FIG. 6

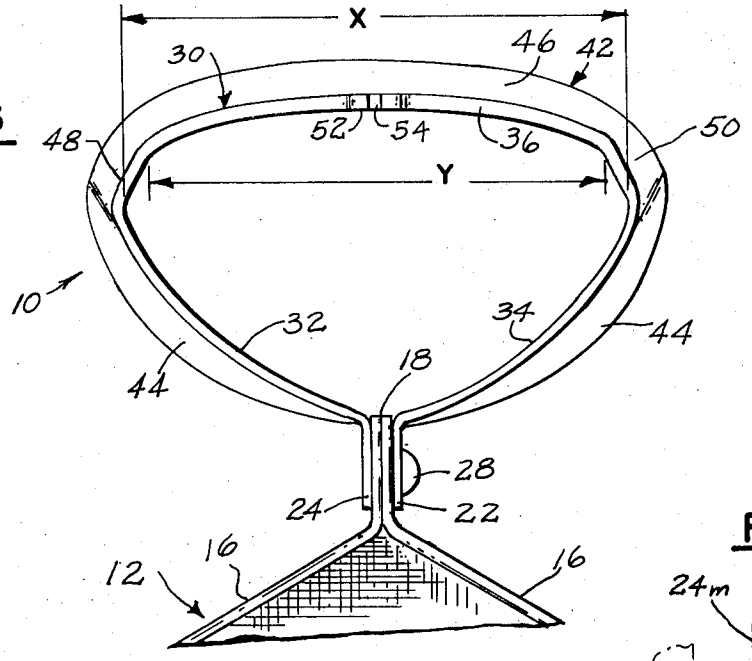


FIG. 9

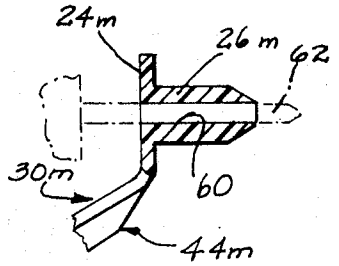


FIG. 7

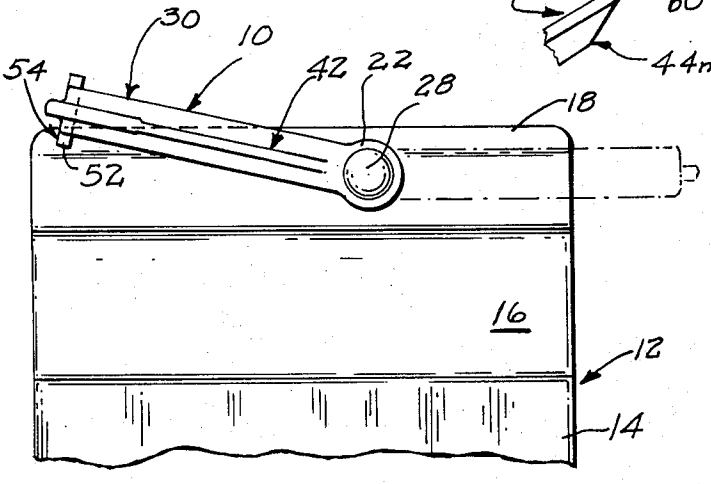
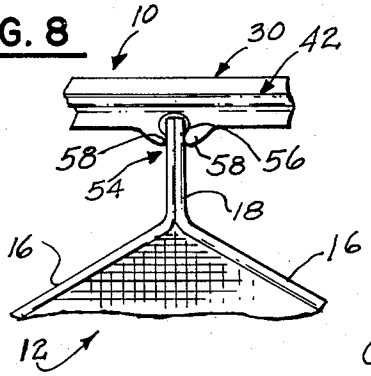


FIG. 8



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CARRYING HANDLE

This invention relates generally to carrying devices for use with cartons and bags and more particularly to such devices that are adapted to be mounted generally transverse the longitudinal axis of a carton ridge or bag closure seam.

In the past, carrying devices or handles have been developed for use with heavy, awkward items such as milk cartons of the half-gallon size and larger, multi-wall bags, and the like. Certain of these prior art handles have been arranged to be mounted generally coplanarly of the carton ridge or bag closure seam, and while serving admirably as a carrying device, this type of unit has not been particularly useful as an aid in pouring from the container. Other prior art devices have been adapted particularly for cartons and have been constructed to reside transverse the carton ridge so as to faciliate use in the pouring operation, but certain variations of this latter arrangement have not beem completely satisfactory because of weaknesses in the mode of attachment to the container while others frustrated the pouring function by not providing a single, freely rotating pivot at the connection with the carton.

Therefore, an important object of the present invention is to provide a carrying handle of the type adapted for mounting transverse the longitudinal axis on top of the attached container which handle provides boht a secure connection with the container and an effective pivot to facilitate pouring.

A more general object of the invention is to provide a new and improved carrying and pouring handle for heavy or awkward items.

Another object of the invention is to provide a handle device which, when attached to a container, takes a shape that conforms to the natural shape of a person's hand.

Still another object of the invention is to provide a handle device which is easily attached to a container by automatic mounting equipment.

And still another object of the invention is to provide a handle device which presents an as-manufactured shape that facilitates feeding from a magazine in mounting equipment.

A further object of the invention is to provide a handle device which incorporates a reclosure arrangement for the container to which it is attached.

These and other objects and features of the invention will become more apparent from a consideration of the following descriptions.

The invention, both as to its contruction and its mode of use, will be better understood by reference to the following disclosure and drawings forming a part thereof, wherein:

FIG. 1 is a perspective view of a half-gallon, gabled milk carton having a handle attached thereto in compliance with the present invention;

FIG. 2 is an enlarged cross-sectional view taken substantially along the line 2—2 of FIG. 1 and illustrating the headed type of fastener contemplated by the present invention for attaching the handle device to the container;

FIG. 3 is a view similar to the showing of FIG. 2 but illustrating the fastener elements prior to heading or riveting-over of the stem fastener;

FIG. 4 is a side elevational view of the carrying handle of FIG. 1, with the unit shown in its as-manufactured shape;

FIG. 5 is a top plan view of the carrying handle of FIG. 4;

FIG. 6 is a side elevational view, on the scale of FIGS. 4 and 5, showing the carrying handle attached to the gabled carton of FIG. 1;

FIG. 7 is an end elevational view of the assembled carton and carrying handle with the carrying handle shown in reclosure condition in solid outline and in storage condition in borken outline;

FIG. 8 is an enlarged elevational view taken along the line 8—8 of FIG. 7 and showing the reclosure feature in greater detail; and

FIG. 9 is a central corss-sectional view of a modified form of the stem fastener of the invention.

Referring now in detail to the drawings, specifically to FIG. 1, a carrying handle indicated generally by the reference numeral 10, is shown attached to a gabled milk carton 12, the carton 12 having lateral sides 14, a pair of upwardly and inwardly sloping top surfaces 16 and a central ridge 18 interconnecting the surfaces 16. The carrying handle 10 is specifically attached to the carton 12 traverse the ridge 18 by cooperating fastener elements shown in greater detail in FIGS. 2 and 3.

With reference to FIGS. 2 and 3, the carton ridge 18 is seen to comprise four thicknesses of material, the outer two of which rise somewhat above the inner two in the folded and glued state of the carton. In one mode of attaching the carrying handle 10 to the ridge 18, the ridge itself is pre-punched with a hole 20 to form a mounting site. Alternatively, the hole 20 is formed simultaneously with the handle-attaching operation. As is best seen in FIG. 3, the handle device 10 includes a centrally perforated pad or eye 22 and a cooperating pad 24 having a cylindrical stem 26 extending from the pad 24 generally toward the eye 22, the eye 22 being sized to pass the stem 26 freely in the assembly operation. When the free end of the stem 26 has penetrated the eye 22, as is shown in FIG. 3, and when the pad 24 and the eye 22 are in tightly converging relationship, sandwiching the ridge 18 snugly therebetween, the exposed portion of the stem 26 is headed or riveted-over to form a generally semi-spherical enlargement or head 28 which is best shown in FIG. 2 and which is considerably larger in diameter than the hole in eye 22 whereby to prevent separation of the pad 24 and the eye 22 from the carton ridge 18. The stem 28 is advantageously selected from a material that can be cold-headed, that is, from a material that lends itself to the formation of the enlargement 28 without the addition of heat.

Turning to FIGS. 4 and 5, the carrying handle 10 additionally comprises a band 30 of uniform thickness fabricated from a suitable resinous plastic material, such as polyethylene, polypropylene or acrylonitrile/-butadiene modified polystyrene. The band 30 comprises opposite side members 32 and 34 and a top member 36 which interconnects the side members and merges with said side members at respective angles *a* and *b* to form corners 38 and 40. In the illustrated embodiment, the angles *a* and *b* are equal and are advantageously selected to be obtuse angles, approximately 116° in the illustrated embodiment. The eye 22 and the pad 24 are arranged to take substantially the same thickness as the band 30 and to be deflected projections thereof.

In compliance with the features of the present invention, a rib arrangement **42** is raised from the outer surface of the band **30** integral therewith, the rib arrangement **42** having a first thickness **44** along the side members **32** and **34** adjacent the terminal fastener elements and a second, greater thickness **46** along the top member **36**, about the corners **38** and **40** and onto regions **48** and **50** of the side members **32** and **34** respectively, the regions **48** and **50** being adjacent the corners **38** and **40** respectively.

In order to provide a reclosure feature for the attached carton, the band **30** of carrying handle **10** is fashioned with laterally projecting, semi-circular pads **52**; and the pads **52** are relieved with a reclosure notch **54**. Turning fo the moment to FIG. **8**, a typical notch **54** is seen to comprise a container ridge receiving recess **56** and confronting, inwardly extending gripping elements **58** situated at the entrance of the recess **56**.

Advantageously, the band **30**, the rib arrangement **42** and the fastener elements **22**, **24** and **26** are fabricated integrally as in an injection molding operation.

Having thus described one construction of the invention, it is advantageous now to describe the advantages of the present invention and how the illustrated embodiment functions in use.

With reference to FIG. **5**, it will be apparent that the pad **24**, the protuberances **52** and the eye **22** define, at their upper and lower extremities as viewed in the figure, three co-planar upper points and three co-planar lower points. As will be apparent from a consideration of FIG. **4**, these points fall in a triangle and therefore define spatial planes. This arrangement permits a number of the carrying handles **10** to be stacked in a magazine one on top of another without becoming entangled, the upper point of one pad **24** touching the lower point of the pad **24** of a superposed carrying handle and likewise with the respective points of the protruberances **52** and the eyes **22**. The three point contact between adjacently stacked handle devices has been found to facilitate feeding of the handle devices in automatic assembling equipment.

In compliance with another feature of the invention, the carrying handle **10** is arranged so that, upon convergence of the fastener element in securing the handle to the container, the upper portion of the band **30** assumes a trapezoidal shape in order to promote ease in holding and carrying. Continuing with reference to FIG. **4**, the arrangement of the corners **38** and **40** to take obtuse angles in the as-manufactured condition cooperates with the irregular thickness of the rib arrangement **42** to achieve this shaping. Comparing FIG. **4** and FIG. **6** reveals the difference between the as-manufactured shape of the handle and the in-use shape of the handle. In FIG. **6**, the dimension *x* represents the major base of the trapezoidal shape whereas the dimension *y* represents the minor base of the trapezoid. This shape of the carrying handle coincides more naturally with the shape of a person's hand closed into a fist as in carrying the carton **12** or pouring from it.

The as-manufactured shape of the handle shown in FIG. **4** also facilitates assembly of the handle into the mounting conduction shown in FIG. **3** with the anvils of the attaching equipment moving only in converging arcuate paths.

It should also be noted with respect to FIG. **2**, that the cylindrical stem **26** defines a smoothly acting pivot for rotating the handle **10** about the transverse axis defined by the stem. In addition, the side members **32** and **34** of the band **30** are selected to take a length so that, when the handle **10** is affixed to the carton ridge **18** slightly rearwardly of the midpoint thereof, as is shown in FIG. **7**, the carrying handle may be swung rearwardly to clear the end of the ridge as is suggested in broken outline. Pivoting the handle **10** into this position facilitates storing the carton in cases and refrigerator trays.

Placing the mounting side of the handle **10** slightly rearwardly of the midpoint of the ridge **18** also permits the use of the notch **54** as a reclosure element once the carton has been opened by the consumer. This reclosing action is shown in FIGS. **7** and **8**, and it will be appreciated that the converging gripping elements **58** fix over the top of the carton ridge, engaging the lips of the ridge and nipping the same together.

Provision of the after-assembly riveted head **28** has been found to generate a highly positive connection of greater efficiency than can be achieved by other means, such as snap fastener arrangements. This more positive connection eliminates undesirable separation of the handle from the carton in handling both in the retail store and by the ultimate customer.

The specific embodiment thus far shown and described should be considered illustrative only. Various changes may be made; and in order to enhance the understanding of the invention, a modified embodiment thereof is illustrated in FIG. **9**. Since the embodiment of FIG. **9** is similar in many respects to the embodiment of FIGS. **1–8**, like numerals have been used to designate like parts, the suffix letter *m* being used to distinguish those elements associated with the modified embodiment.

The embodiment of FIG. **9** is particularly distinguished by perforating the pad **24***m* and the stem **26***m* with a common bore **60** which is sized to pass a steel punch **62**, the punch being part of the handle-assembling machinery and being arranged to form a pilot hole in the carton ridge in mounting of the carrying handle to the carton. As will be appreciated, the punch **62** also supports the stem **26***m* as it enters the material of the carton ridge.

While the invention has been described with reference to a gabled carton, it is to be understood as having utility with other containers having a stiffened, ridge-like top formation, such as multi-wall paper bags.

Various changes beyond those described will, no doubt, occur to those skilled in the art; and such changes are to be understood as forming a part of the invention insofar as they fall within the spirit and scope of the appended claims.

I claim:

1. A carrying handle for a container that is provided with an upper ridge, said handle comprising: a band of strap material having side members and a top member interconnecting said side members and merging with said side members at an angle to form respective corners; cooperating fastener elements at opposite ends of said band to be converged for use in securing said band to a container upper ridge; and rib means upstanding from the outer surface of said band integral therewith and extending outwardly at a substantially right angle with the plane of said band, said rib means having a first thickness in the direction of the plane of said band along said side members from adjacent said fastener elements and said rib means having a second, greater thickness along said top member, about said corners

and onto regions of said side members adjacent said corners providing demarcation between the rib means of said first and second thicknesses on each side member adjacent a respective corner rendering the rib means of said first thickness less resistant to bending for causing the upper portion of said band to assume a trapezoidal shape upon convergence of said fastener elements in securing said handle to a container to facilitate holding and carrying thereof.

2. A carrying handle according to claim 1 wherein said angle is an obtuse angle.

3. A carrying handle according to claim 1 wherein one of said fastener elements is an eye and another of said fastener elements is a headable stem.

4. A carrying handle according to claim 3 wherein said stem is cold headable.

5. A carrying handle according to claim 3 wherein said stem is tubular whereby to pass a pilot punch during assembly to a container.

6. A carrying handle according to claim 3 wherein said stem is cylindrical to form a pivot in said container ridge.

7. A carrying handle according to claim 1 wherein said top member and the corresponding rib means includes container reclosure means centrally thereof, said container reclosure means including a container ridge receiving recess and gripping elements at the entrance of said recess.

8. A carrying handle according to claim 1 wherein said band includes protuberant means intermediate said fastener elements, said protuberant means and said fasterner elements having surfaces which define points of two spaced apart, spatial planes generally perpendicular to the plane of said band whereby to facilitate the feeding of a plurality of said carrying handles in assembly equipment.

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