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CONTAINER HANDLE CONSTRUCTION

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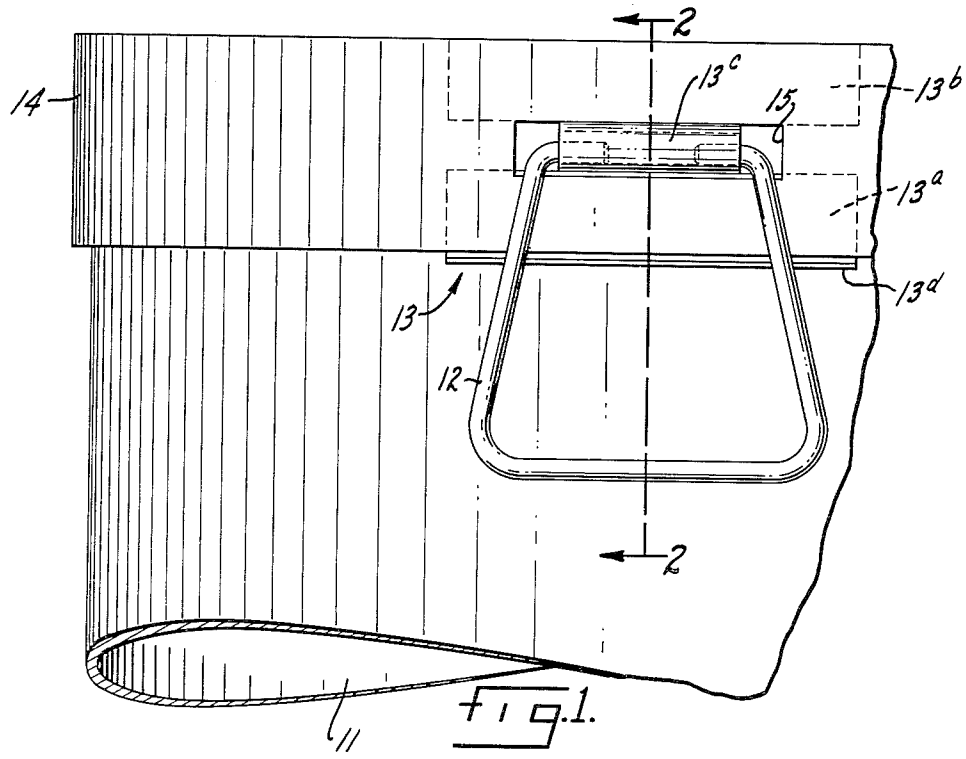


Fig. 1.

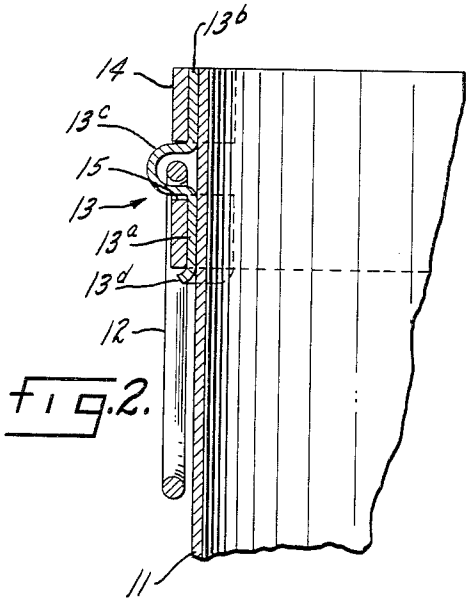


Fig. 2.

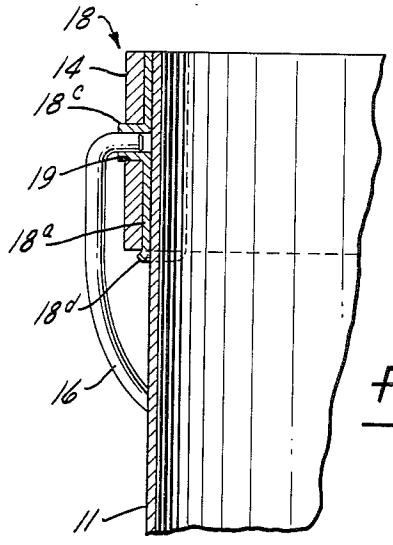


Fig. 3.

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CONTAINER HANDLE CONSTRUCTION

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6 Claims. (Cl. 220—94)

The present invention relates in general to containers and, more particularly, to an improved handle construction for nonmetallic containers wherein the handle is pivotally connected to a container wall.

During recent years there has been an increasing demand for inexpensive nonmetallic containers which may be readily transported from place to place and which are capable of storing diverse materials. In some instances the container is intended to serve as an outer pack for an inner pack or liner made of flexible or pliable material; e.g., a bag made of a thermoplastic material. In other instances, the nature of the contents requires that the inner surface of the container be completely smooth. That is, the container wall must be void of inwardly projecting parts such as nail or screw heads which might interfere with or damage the contents, as for example, when the container is used to package coiled wire, particularly thin enameled wire. In still other applications, it is important that the container wall be void of screw or nail holes which tend to reduce the fluid-tight integrity of the container. Conflicting with these desired features for nonmetallic containers is the requisite that such containers be provided with suitable handles or lift bails which must be affixed to the container wall.

In those cases where the container and the bearing member for the handle are both made of metal, the handle is ofen affixed to the outer surface of the container wall by spot welding; and where the two parts are made of thermoplastic materials they can be fused together by the application of heat. In either case, the inner surface of the container wall remains smooth, no openings need be formed in the wall to accommodate separate fasteners, and all movable parts of the handle assembly remain outside of the container.

However, when the container wall is nonmetallic, for example, when it is made of paperboard, fiber, wood or plywood, or other natural or synthetic nonmetallic material, and when the handle bearing member is made, for example, of metal, the parts are not susceptible of being welded or fused together by the application of heat. In these instances the handle assembly is generally secured to the container by separate fasteners which project through the container wall. Such fasteners require openings in the wall which tend to decrease the fluid-tight integrity of the container. Moreover, the fasteners, and occasionally the handle bearing members, often project into the container, thus tending to damage either the contents thereof, or the flexible inner liner where such a liner is employed.

Accordingly, it is a general aim of the present invention to provide an improved handle construction suitable for attachment to a nonmetallic container body, yet wherein the handle is fastened directly to the outer surface of the container wall.

It is a more specific object of the invention to provide a pivotal handle connection for a nonmetallic container body characterized in that all of the components of the handle assembly, both movable and stationary, are affixed to the outer surface of the container wall without the need for fasteners which project through the wall.

A further object of the invention is to provide a nonmetallic container of the type having pivoted handles or lift bails, yet wherein the inner surface of the container wall is smooth and void of inwardly projecting parts.

Other objects and advantages of the invention will become apparent as the following description proceeds, taken in conjunction with the accompanying drawing, in which:

FIGURE 1 is a fragmentary side elevation of a container embodying the features of the present invention;

FIG. 2 is a vertical cross-sectional view, taken substantially along the line 2—2 of FIG. 1; and,

FIG. 3 is a view similar to FIG. 2 of a slightly modified container construction also embodying the features of the present invention.

While the invention is susceptible of various modifications and alternative forms, specific embodiments thereof have been shown by way of example in the drawing and will herein be described in detail. It should be understood, however, that it is not intended to limit the invention to the particular forms disclosed but, on the contrary, the intention is to cover all modifications, equivalents and alternatives falling within the spirit and scope of the invention as expressed in the appended claims.

Referring now to the drawing, there is illustrated an exemplary container, only partially shown in FIGURES 1 and 2, and having a container body or side wall **11** and a handle **12** pivotally connected thereto by means of a bearing member generally indicated at **13**. Of course, while only one handle **12** is shown in the drawing, the container may have another similar handle pivotally connected to the side wall **11** at a diametrically opposed point, or connected to the opposed side wall if the container has a rectangular or other polygonal cross-section.

As the ensuing description proceeds it will become apparent that the container body **11** can be made of a wide variety of nonmetallic materials such, for example, as paperboard, fiber, wood or plywood, or other natural or synthetic materials, while the handle **12** and its bearing member **13** may be made of any material, metallic or nonmetallic, suitable for withstanding the uses to which the particular container is to be subjected. However, the invention will find particularly advantageous use in those instances where the container body and the handle assembly to be attached thereto are made of materials which prohibit the two components from being welded or heat-fused together.

In accordance with one of the important aspects of the present invention, provision is made for pivotally mounting at least one handle on the outer surface of a nonmetallic container wall in such a manner that no portion of the handle or its fastening components project through the wall; i.e., the wall remains imperforate. In the exemplary form of the invention shown in FIGS. 1 and 2, the handle **12** is pivotally connected to a bearing member **13**, the latter having a pair of laterally extending flat base portions 13^a and 13^b which engage the outer surface of the container body **11** and which are connected to one another by a central portion 13^c having a substantially U-shaped cross-section. This central portion 13^c serves to pivotally receive the bent extremities of the handle **12**.

In carrying out the present invention, the bearing member **13** is secured to the container body **11** by means of a fastening strap **14** having a slot **15** to permit passage of the central portion 13^c of the bearing member. The fastening strap **14** may be made of any of the materials suitable for use in the construction of the container body **11**, and may be secured to the body **11** in any suitable manner, for example, with glue or other appropriate adhesive. Of course, in those instances where two handles **12** are to be pivotally attached to the container, the fastening strap **14** will have a pair of slots **15** posi-

tioned to respectively receive the U-shaped central portions 13^c of the two bearing members **13**.

Referring to FIG. 3, there is illustrated a slightly modified form of lift handle arrangement particularly suitable for nonmetallic containers and also embodying the features of the invention. In this exemplary construction, a lift bail **16** is pivotally connected to the container body **11** at two diametrically opposed points. To accomplish this, a pair of bearing members (one such member generally indicated at **18** being shown in FIG. 3) are secured to the container body **11**. Each bearing member includes a flange-shaped base portion 18^a and a socket 18^c disposed in substantially perpendicular relationship to one another, the sockets being positioned to receive the bent extremities of the bail **16**. As with the construction shown in FIGS. 1 and 2, the bearing members **18** are attached to the container wall **11** by a fastening strap **14**, the latter being provided with a pair of apertures **19** (one such aperture being shown in FIG. 3) positioned to receive the sockets 18^c of the respective bearing members **18**. Again, the fastening strap **14** is secured to the container body **11** in any suitable way, for example, by adhesive.

In order to further inhibit upward sliding movement of the bearing member **13** (FIGS. 1 and 2) or the bearing member **18** (FIG. 3) when, for example, a filled container is lifted, the lower edges 13^d, 18^d of the respective bearing member base portions 13^a, 18^a are bent outwardly away from the container body **11** so as to project beneath the lower edge of the associated fastening strap **14** (FIGS. 2 and 3). Of course, the same or a similar result may be obtained by bending the lower edge of the bearing member base portion outwardly over only part of its length.

While the present invention has been illustrated in connection with a single fastening strap **14** which extends entirely about the upper periphery of the container body **11**, it will be readily apparent to those skilled in the art that the strap **14** can have other configurations. For example, the fastening strap **14** may be longitudinally split so as to form two or more straps. Moreover, the fastening strap may be constituted by a reinforcing ring for the top edge or rim of the container body—as is conventional in such constructions this reinforcing ring may be bent inwardly and downwardly so as to encompass the container body top edge. The fastening strap **14** may also be made with a considerably smaller width and may (in the form shown in FIGS. 1 and 2 for example) cover only one of the base portions 13^a or 13^b—in such a case the uncovered base portion may be omitted. Furthermore, the fastening strap **14** need not be uninterrupted and wholly surrounding the container body—it may be split, or it may consist of two separate parts. And, of course, the U-shaped central portion 13^c (FIG. 2) or the central socket 18^c (FIG. 3) need not project entirely through the slot **15** or the aperture **19** respectively, so as to protrude beyond the outer surface of the fastening strap.

I claim as my invention:

1. A container comprising, in combination, an imperforate nonmetallic outer body wall, means defining a bearing member having a base portion in engagement with the outer surface of said outer body wall, said body wall and said bearing member being respectively formed of mutually infusible materials, lift means pivotally connected to said bearing member, a fastening strap extending at least partially about said outer body wall, said strap overlying and in engagement with said base portion, and means for adhesively securing said strap upon the outer surface of said outer body wall for retaining said bearing member in place while maintaining said outer body wall imperforate and free of fastener components projecting therethrough.

2. A container as set forth in claim **1** further characterized in that said bearing member includes an outwardly projecting U-shaped bearing portion disposed substantially centrally of said base portion, said fastening strap having a slot formed therein for reception of said bearing portion.

3. A container comprising, in combination, an imperforate outer body wall, means defining a pair of bearing members each having a base portion adapted to engage the outer surface of said outer body wall, such outer body wall and said bearing members being respectively formed of mutually infusible materials, lift means pivotally connected to said bearing members, a fastening strap extending at least partially about said outer body wall, said strap overlying each of said base portions, and means for adhesively securing said strap upon the outer surface of said outer body wall for retaining said bearing members in place while maintaining said outer body wall imperforate and free of fastener components projecting therethrough.

4. A container comprising, in combination, an imperforate outer body wall, means defining a pair of bearing members each having a base portion adapted to engage the outer surface of said outer body wall, said bearing members each including an outwardly projecting socket integral with and substantially perpendicular to the respective ones of said base portions, said outer body wall and said bearing members being respectively formed of mutually infusable materials, said sockets being disposed substantially centrally of their respective base portions, a lift bail having its opposite ends pivotally received within respective ones of said sockets, a fastening strap extending at least partially about said outer body wall, said strap overlying each of said base portions and having a pair of spaced apertures formed therein for reception of respective ones of said sockets, and means for adhesively securing said strap upon the outer surface of said outer body wall for retaining said bearing members in place while maintaining said outer body wall imperforate and free of fastener components projecting therethrough.

5. A container comprising, in combination, an imperforate outer body wall, means defining a pair of bearing members each having a base portion adapted to engage the outer surface of said outer body wall and an outwardly projecting socket, said outer body wall and said bearing members being respectively formed of mutually infusable materials, lift means pivotally connected to said sockets, a fastening strap extending at least partially about said outer body wall and adhesively secured thereto, said strap overlying each of said base portions and having a pair of spaced apertures formed therein for reception of respective ones of said sockets, said base portions including downwardly extending portions projecting beneath the lower edge of said overlying fastening strap, said downwardly projecting portions of said base portions each being bent outwardly relative to said outer body wall over at least part of their lengths so as to project outwardly beneath said fastening strap whereby upward sliding movement of said bearing members relative to said outer body wall is inhibited.

6. A container comprising, in combination, a nonmetallic outer body wall, means defining a bearing member having a base portion adapted to engage the outer surface of said outer body wall and an outwardly projecting socket, said outer body wall and said bearing member being respectively formed of mutually infusable materials, lift means pivotally connected to said socket, fastening means extending about the periphery of said body wall, said fastening means overlying said base portion and having an aperture formed therein for reception of said socket, said base portion extending downwardly beneath the lower edge of said overlying fastening means, said downwardly extending portion of said base portion being bent outwardly relative to said outer body wall over at least part of its length so as to project outwardly beneath said fastening means where-

by upward sliding movement of said bearing member relative to said outer body wall is inhibited, and means for adhesively securing said fastening means upon the outer surface of said body wall for retaining said bearing member in place while maintaining said body wall imperforate and free of fastener components projecting therethrough.

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