July 19, 1966 H. E. LESHER 3,261,053

WIRE HANDLE FOR METAL CHIME ON FIBRE DRUM

Filed Feb. 27, 1963

FIG. 1

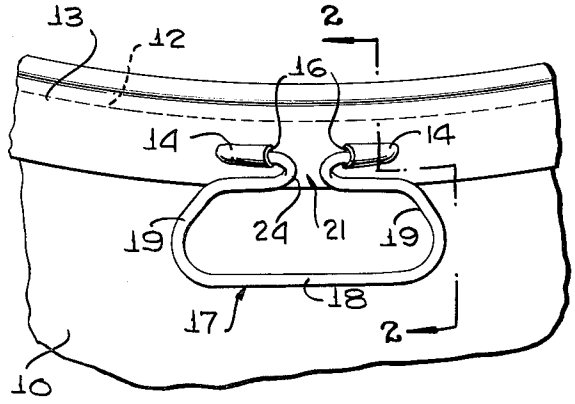


FIG. 2

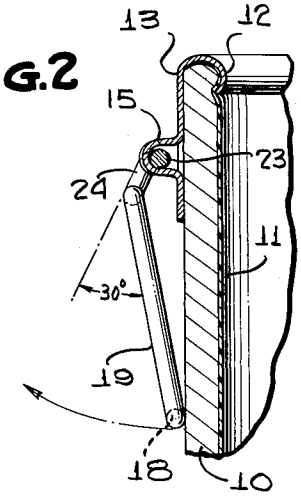


FIG. 3

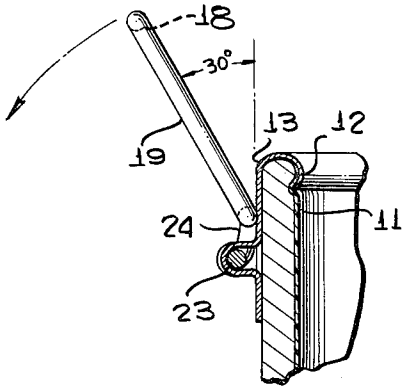


FIG. 4

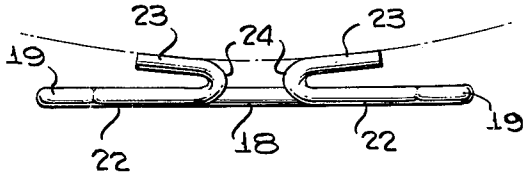
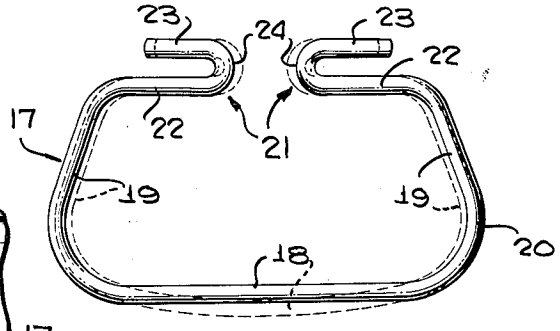


FIG. 6



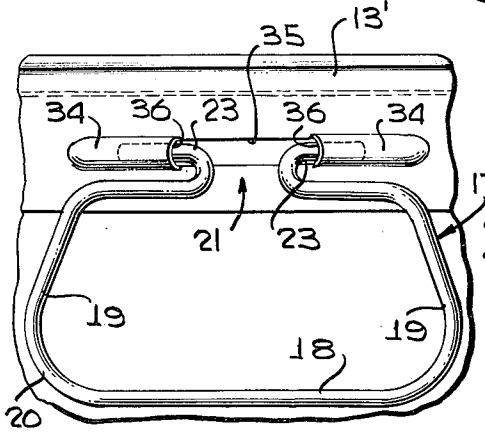


FIG. 5

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WIRE HANDLE FOR METAL CHIME ON FIBRE DRUM

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3 Claims. (Cl. 16—126)

This invention relates in general to new and useful improvements in fibre drums and more particularly to novel means and methods for providing fibre drums with carrying handles.

The invention more particularly deals with novel means for attaching a carrying handle to a fibre drum.

This invention is further concerned with providing a novel carrying handle for attachment to a chime of a fibre container.

The completed drum of the present invention is particularly adapted for the storage and shipment of lard, vegetable shortening and the like. The drum bodies are preferably made from fibre tubing composed of several plies or windings of paperboard. The interior surfaces of the drum bodies are further provided with linings or coatings to prevent the absorption by the paperboard of the lard or comparable fill which may be grease-like but not necessarily a food product, to prevent the drum from taking on an undesirable appearance, and further to prevent the lard from oxidizing and becoming rancid.

Drums for use in the lard or shortening industry may contain as much as 120 pounds of fill, more or less. It is, therefore, demanded by the industry that handles be provided for convenience in moving the heavy filled drums. It is known in the industry to provide handles on the covers of the drums, but this is unsatisfactory because the benefits of the handles are lost as soon as the covers are removed. It is also known in the industry to attach handles to the side wall of the drum by riveting holding plates to the side wall, but this is objectionable because the riveting punctures the drum lining and necessitates patching of the drum lining.

In view of the foregoing, it is the primary object of this invention to provide a special handle for fibre drums.

Another object of this invention is to provide a handle adaptable for attachment to the existing chime of a fibre drum.

A further object of this invention is to provide a one-piece wire handle having a bowed grasping portion, a pair of connecting sections attached at the opposite ends of the grasping portion which converge toward and are connected to a pair of reversely bent attaching portions, and a prong formed by each free end of the pair of attaching portions.

A further object of this invention is the provision of a novel method for connecting the handle set forth above to a chime of a fibre drum comprising the steps of squeezing the connecting sections of the handle towards each other so that the prongs can be aligned with prepared pockets or prong receiving recesses in the chime, removing the squeezing force and allowing the connecting sections to move outwardly from each other and the prongs to slip partially into the pockets or recesses, and to straighten the bowed grasping portion to spread the connecting sections and thereby move the prongs farther into the pockets or recesses.

Another object of the invention is to provide a handle in accordance with the foregoing with the handle having attaching portions which are bent at an angle of approximately 30 degrees to a plane defined by the grasping portion and connecting sections so that when the handle is attached to the fibre drum chime in a downwardly suspended position, the grasping portion lies closely adjacent the side wall of the fibre drum, and when the handle is pivoted upwardly the attaching portions engage the chime and provide stop means for limiting the pivoting of the handle.

Still another object of the invention is to form the handle set forth above such that the outer end of each prong is slightly offset from the approximate 30 degree plane so that the prongs approximately follow the contour of the chime.

With the above objects in view, and others that will hereinafter appear, the invention will be more clearly understood by reference to the following detailed description, the appended claims and the various views illustrated in the accompanying exemplary drawing:

In the drawing:

FIGURE 1 is a fragmentary perspective view showing a portion of a drum and a chime with the handle connected thereto.

FIGURE 2 is a vertical cross-section taken along the line 2—2 of FIGURE 1 with the handle in a downwardly suspended position.

FIGURE 3 is a view similar to FIGURE 2 with the handle in the uppermost position in which it is to be gripped by a carrier of the drum.

FIGURE 4 is a plan view of the handle.

FIGURE 5 is a fragmentary elevational view similar to FIGURE 1 but showing an alternate type of attaching means formed in the chime.

FIGURE 6 is a front elevation of the handle showing its original shape in dotted lines and its final form in solid lines.

Referring to the drawings in detail, there is shown a portion of a drum **10** which may be made up of a tube of several plies or convolute windings of paperboard or the like. The interior surfaces of the drum **10** are preferably provided with a coating or lining **11** which is impervious to the products to be carried in the drum **10**. The lining **11** protects the drum **10** from product absorption when the drum contains lard, vegetable shortening or like fill. Other products may, of course, be contained in the drum **10**, it being obvious that petroleum jelly, flaked or powdered chemicals, liquids and many other materials may be packaged therein.

The top circumferential edge of the drum **10** is enclosed in a bight portion **12** of a metal chime **13** which is fixed to the drum **10** by compressing the bight portion **12** and the top edge of the drum. The chime **13** extends partially down along the outside wall of the drum **10** and forms a metal band around the top of the drum.

About the periphery of the chime **13** are a plurality of pairs of spaced beads **14**, the beads of each pair being placed in opposition to each other. Each bead **14** is formed from an outwardly displaced or projected portion of the metal chime **13** and thus forms an interior pocket or receiving recess **15**, the recesses provided by each cooperating pair of beads **14** opening in opposition one to the other through the opposed cut edges **16** of the beads. The beads **14** and the recesses **15** may be formed by a punching operation prior to the placement of the chime **13** on the drum **10**.

The beads **14** and recesses **15** comprise means for attaching a handle **17** to the chime **13**, thus to provide for convenient lifting and handling of the drum **10**. The chime **13** provides the preferred position for attaching the handle **17** to the drum of the type disclosed, rather than to the cover or to the side walls of the drum, because of the availability of the handle even though the cover be removed, and because of the added advantage that puncturing of the drum side wall and liner is avoided since no rivets and hanging plates are needed for mounting the handles.

The handle **17** is preferably formed of galvanized wire, and it has been found that #9 (.148 dia.) wire is suitable for the intended purposes. Of course, the specific wire used may vary depending upon the weight of the contemplated load and/or size of the drum.

The wire handle **17** is of a one-piece construction and is comprised of a bowed grasping portion **18**, a pair of converging connecting sections **19** joined to the grasping portion **18** by smoothly curved portions **20**, and reversely bent attaching means generally indicated at **21** for readily attaching the handle **17** to the chime **13**. The attaching means **21** are comprised of a pair of opposed, outwardly opening U-shaped segments spaced from each other, said U-shaped segments each comprising an inner leg member **22**, a free leg member or prong **23** and a bight portion **24** connecting the inner leg member **22** to the prong **23**.

The reverse bend of the wire at the bight portion **24**, which results in the attaching means **21** being U-shaped, provides a better fastening means than if the beads were centrally disposed between inwardly directed prongs. Hence, when turning a filled drum by grasping and pulling on the handles so that a tangential force is applied to the chime, the handle of the present invention does not pull out of the bead as would be the case with other forms of handles. Thus, lighter gage wires may be used without any sacrifice of necessary strength or intended performance.

It is an important feature of this invention that the bight portions **24** be disposed in a plane which forms an angle with the plane defined by the grasping portion **18** and the sections **19**. A suitable angle has been found to be approximately 30 degrees and has been so illustrated in the drawings. As a result of this angular relationship, the grasping portion **18** and sections **19**, when in the non-use position illustrated in FIGURE 2, depend from the beads **14** alongside of the side wall of the drum **10** and the grasping portion **18** lies in abutting relation to said side wall due to the force of gravity acting upon the angulated handle. With the handle so disposed, it is less likely to be damaged than if it were spaced outwardly from the side wall.

When the handle is pivoted upward to the use position shown in FIGURE 3, the angular relationship of the bight portions **24** with respect to the plane of the segments **19**, provides another important feature of this invention in that the bight portions **24** and the inner leg members **22** are disposed flush against the chime **13** and provide stop means for limiting the arcuate swinging of the handle **17**. As is readily apparent from the drawings, the handle is stopped short of a vertical position and forms an angle therewith that is substantially equal to the angle which the plane of the bight portions **24** forms with the plane of the segments **19** and grasping portion **18**. This is a desirable feature in that the fingers of the person lifting the drum **10** are not mashed between the grasping portion **18** and the top of the chime **13** or a cover thereon.

Another important feature of this invention is that the free leg members or prongs **23** of the U-shaped attaching means **21** are slightly bent from the plane of the bight portions **24**, as is best shown in FIGURE 4, so that the prongs **23** approximately follow the circumferential contour of the chime **13**. This feature facilitates the assembly of the prongs **23** into the recesses **15** of the beads **14**, because the beads **14** and recesses **15** are circumferentially spaced on the chime **13** and are not in a straight line open relationship with each other.

An alternate form of attaching means is shown in FIGURE 5 wherein beads **34** are formed in a chime **13'** which has a cut-out portion **35** formed therein between the beads, and the beads **34** are punch-formed in the same manner as the beads **14**. The openings into the beads **34** are defined by the cut edges **36** and receive the prongs **23** of the handle **17**, thereby attaching the handle to the chime **13'**.

The handle of the present invention readily adapts itself to a simple method for attaching the handle to the chime. In FIGURE 6, the handle is shown in its original shape in the dotted line form and in full lines in its final, or expanded form. In attaching the handle to the chime **13** or **13'**, the handle is given a slight squeeze which moves the bight portions **24**, the prongs **23** and the sections **19** slightly inwardly or toward each other so that the outer ends of the prongs **23** may be slipped past the opposed cut-edges **16** or **36** of the beads **14** or **34**. Upon release of the squeezing force, the resilience of the wire causes the handle to return to its original shape and the prongs **23** are disposed slightly within the openings defined by the beads **14** and **34** and are held in this position so that the handle will not fall out prior to bending the bowed portion **18** of the handle to spread the prongs into final engaging position. A force is then applied to the handle **17** which changes its shape from the bowed dotted line position of FIGURE 6 to the straighter full line position. As is clearly shown in the drawing, the curved or bowed grasping portion **18** is moved inwardly to a substantially straight position and the connecting segments **19** and the prongs **23** are moved outwardly, thereby causing the prongs to be substantially nestled in the openings defined by the beads **14** or **34**. The handle **17** is thereby firmly connected to the chime and will not pull loose under normal conditions.

It will be apparent from the foregoing that there has been provided a novel handle and a novel combination of a handle and chime on a fibre drum. Furthermore, there has been disclosed alternate types of attaching means formed in the chime, and a method of assembling the handle to either form of chime attaching means.

The herein disclosed specific examples of structure and method are not meant to be restrictive, and it is to be understood that the invention is limited only by the scope of the appended claims.

I claim:

1. A one-piece wire handle comprising a grasping portion; a pair of connecting sections, one for each end of the grasping portion; and reversely bent attaching means for each of said pair of connecting sections; said attaching means comprising a U-shaped segment having an inner leg member, a free leg member and a bight portion connecting the free leg member to the inner leg member; said attaching means being connected to the connecting sections by the inner leg member; said bight portion of each of said attaching means defining a plane which is angularly disposed with respect to a plane defined by said pair of connecting sections, the free leg member of each of said attaching means being bent out of the plane defined by the bight portion of each of said attaching means.

2. A handle as in claim **1** wherein the grasping portion is bowed, and said connecting sections converge toward said attaching means.

3. In combination, a chime for a drum and a handle connected to said chime; attaching means formed in said chime and means on said handle for pivotally connecting said handle to said attaching means, said attaching means in said chime comprising a pair of spaced outwardly displaced portions of the chime forming a pair of beads opening in opposition to each other; and the means on said handle for pivotally connecting said handle to said attaching means comprising a pair of oppositely disposed U-shaped segments each having an inner leg member, a free leg member and a bight portion connecting the inner leg member to the free leg member, the free leg member of each of said pair of U-shaped segments being adapted to be received in a respective one of said pair of beads, said bight portion and inner leg member of each of said U-shaped segments defining a plane which is angularly disposed with respect to a plane defined by said handle, each said bight portion and each said inner leg member being adapted to abut against said chime to limit the pivotal swinging of said handle, the free leg member of each of said U-shaped segments being bent

out of the plane defined by the respective bight portion and inner leg member to conform generally to the arc of the chime.

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