Nov. 17, 1959 S. LA ROCCA 2,913,275

HANDLE MEMBER

Filed March 19, 1956

Fig. 2.

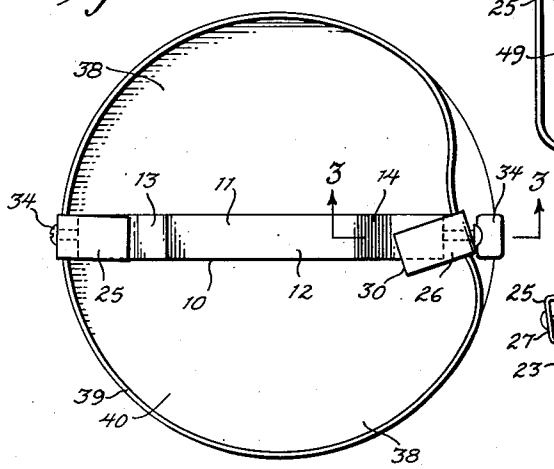


Fig. 7.

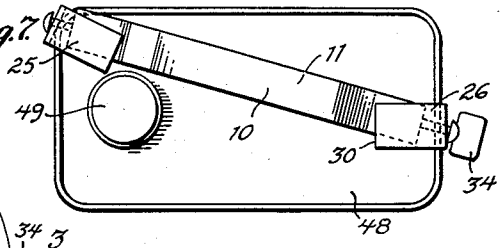
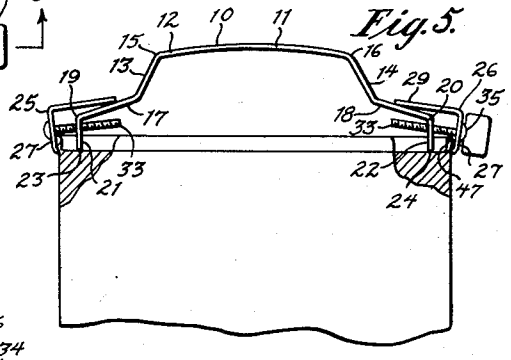


Fig. 5.



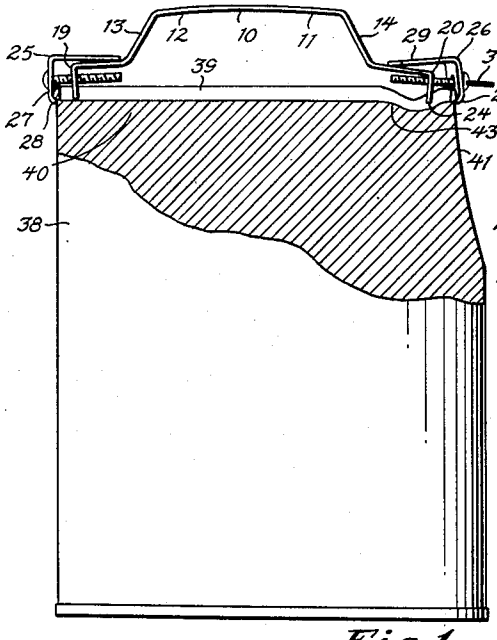
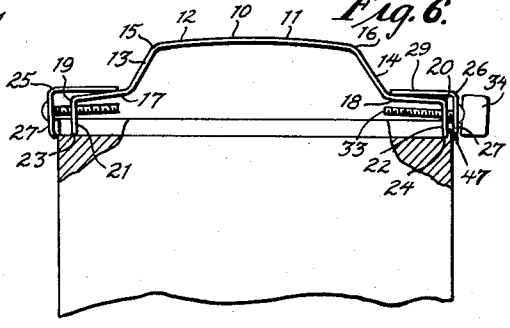


Fig. 1.

Fig. 6.



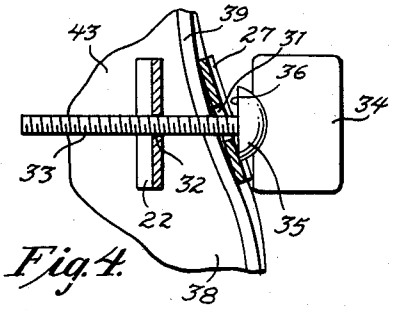


Fig. 4.

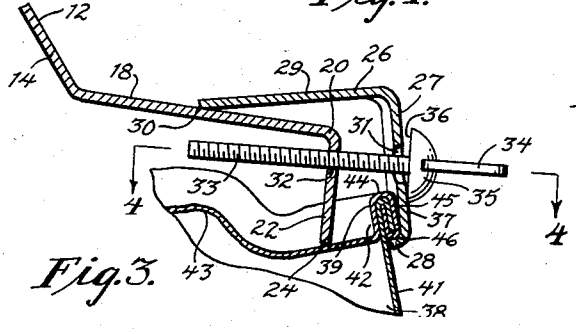


Fig. 3.

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2,913,275

Patented Nov. 17, 1959

2,913,275

HANDLE MEMBER

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Application March 19, 1956, Serial No. 572,450

4 Claims. (Cl. 294—31)

My invention relates to handle members, and relates more particularly to detachable handles adapted to be attached to the upper edge portion of a container, and to extend across the top thereof in a manner to enable the container to be lifted by placing the hand beneath said handle while substantially in vertical alignment with the center of gravity of the container.

For economy of shipping space large containers are usually shipped without handle members. Nevertheless, in their actual use, a handle is often a virtual necessity. Thus for instance, cooking oil can be obtained at a maximum of economy if it is purchased in large metal cans. In use, the cook punctures the top face in two places and pours the oil out of one of the resulting openings. This oil drips down the sides. When it is necessary to carry the can from one part of the kitchen to another it has formerly been requisite closely to embrace the can for it is too heavy for a small housewife to carry in any other manner. Yet this very act causes the oil on the outside of the can to stain her garments. This detracts from the feasibility of such economy-size cans. Substantially the same difficulty confronts users of large cans or similar containers of other products, and in many different fields.

As result, users have often found it necessary to empty the contents of the large container into other containers having handle members, or into a number of small containers which do not require handle members. The resulting wastage in equipment, labor and spillage further reduces the economy of purchasing the large, "economy-size" container.

Attempts have been made in the past to provide handle members which would make the use of such large containers feasible. Many of these seek to attach the handle member to the top and bottom of a container, or to embrace the side of the container in a manner to project the container outwardly away from the hand. While this may be feasible for some small containers, larger containers when full would be too heavy for lifting in this manner. Other attempts have been made to dispose a handle member across the top of the container, interlocking with the lower outer edge portion of the beaded top. Such handle members have been of very limited use, however, for they are too easily sprung, are generally capable of use only with a given size and shape of container, containers of other sizes and shapes requiring separate handle members of their own. Also, since containers frequently arrive in "bashed in" condition, their beaded edges would thus not be in condition safely to hold the interlocking portions of such handles.

One object of my invention, therefore, is to provide a handle member which is capable of use on a great variety of sizes and shapes of containers, while assuring a firm grip thereon.

Another object of my invention is to provide a handle member which is adapted to be disposed above and substantially in vertical alignment with the center of gravity

of the container, while being completely dependable in operation.

A further object of my invention is to provide a handle member which is so constructed as to enable it to be mounted across the top of a container and at various angles with respect to the outer edge thereof, operably inter alia to enable the handle member to avoid interference with objects such for instance as pouring spouts which may project upwardly from the upper face of the container, without detracting from the operating efficiency of the handle member.

Another object of my invention is to provide a handle member which is inexpensive to manufacture, easy to attach to, and to detach from, a container, and safe and certain in operation.

Other objects will appear from the description which follows hereinafter.

For the purpose of illustrating my invention, I have shown in the accompanying drawings one form thereof which is at present preferred by me, since the same has been found in practice to give satisfactory and reliable results, although it is to be understood that the various instrumentalities of which my invention consists can be variously arranged and organized, and that my invention is not limited to the precise arrangements and organizations of the instrumentalities as herein shown and described.

Referring now to the drawings, in which like reference characters indicate like parts:

Figure 1 represents an elevational view of a handle member mounted on a container (shown partly broken away) and embodying my invention, said container being illustrated as partly "bashed-in."

Figure 2 represents a plan view of the handle member and container illustrated in Figure 1.

Figure 3 represents an enlarged vertical sectional view taken generally along the lines 3—3 of Figure 2.

Figure 4 represents an enlarged sectional view taken generally along the lines 4—4 of Figure 3.

Figure 5 represents an elevational view of a handle member, illustrating the same in initial interlocking position with respect to a container which at one portion thereof comprises a distorted bead, and embodying my invention.

Figure 6 represents an elevational view of a handle member, illustrating the same with one end portion in fully interlocked condition, and the other end portion in a bead-gripping condition, with respect to the container illustrated in Figure 5, and embodying my invention.

Figure 7 represents a plan view of a handle member mounted across the top of a container which has a spout projecting upwardly therefrom, and embodying my invention.

According to my invention, I provide a handle member 10 which may be made of any suitable material such, for instance, as stainless steel, white metal, cast iron, Monel metal or the like. In one form it may be made of sheet metal, and for purposes of illustration only it has been shown thus in the drawings. The handle member 10 comprises a hand-bearing portion 11 which may if desired consist of the central portion of a substantially narrow strip of sheet metal 12. Offset portions 13 and 14 of said strip 12 project downwardly from the outer end portions 15 and 16 respectively of said hand-bearing portion 11. Step-bearing portions 17 and 18 project outwardly respectively from the lower end regions of said offset portions 13 and 14. The strip 12 is then preferably bent downwardly substantially 90° at folds 19 and 20 respectively to form respective downwardly projecting base portions 21 and 22 which respectively terminate in edges 23 and 24. In a preferred form, the hand-bearing portion

is slightly upwardly bowed, the offset portions 13 and 14 are inclined at a substantially 45° angle with respect to the horizontal and the step-bearing portions are inclined at approximately 15° with respect to the horizontal. It is to be understood that while the foregoing has been described with respect to a sheet metal strip 12, my invention relates as well to the described elements formed of material (not shown) other than a sheet metal strip.

Bead-engaging members 25 and 26 may be provided respectively in opposition to the step-bearing portion 17 and base portion 21, and the step-bearing portion 18 and base portion 22, said bead-engaging members each comprising a jaw portion 27 having an inwardly projecting lower lip portion 28, and a follower portion 29 projecting substantially from an upper edge region of the jaw portion 27 and extending toward the step-bearing portion 17, 18, and terminating in an inner edge portion 30. The follower portion 29 is preferably substantially 90° with respect to the jaw portion 27. In one preferred form, the bead-engaging member is formed of a strip of sheet metal substantially similar to that of the strip 12. An orifice 31 is formed through the jaw portion 27. An orifice 32 may be formed through each base portion 21, 22, and is preferably threaded to receive a threaded bolt 33 having manual operating means 34, said bolt 33 being adapted to be passed loosely through the orifice 31, and in threaded engagement with the orifice 32. In one preferred form, the bolt 33 and operating means 34 may together comprise a thumb-screw 35. The operating means 34 has a base portion 36 adapted to bear against the outer face 37 of the jaw portion 27.

For purposes of illustration I have shown in Figures 1 to 4, inclusive, of the accompanying drawings, a container having a bashed-in edge portion, and have illustrated the use of my handle member 10 in conjunction with said bashed-in edge portion, although it is to be understood that my invention is adapted for use in conjunction with a beaded edge whether in a normal condition (as for instance illustrated on the left-hand side of Figures 1, 5 and 6) or in distorted condition (as for instance illustrated on the right-hand portions of Figures 1 to 6 inclusive).

My handle member 10 is adapted for use in conjunction with a container 38 which may be any desired form of container which has a beaded edge 39 projecting about its top portion region 40. Thus for instance, the container 38 may be formed of sheet material and may comprise a vertical tubular wall 41 whose upper edge portion is folded outwardly in conjunction with a sheet material top to form an upwardly and outwardly extended bead 39 having an inner face region 42 extending downwardly to a substantially flat top portion 43 which substantially comprises a disc extending across the interior of the tubular wall 41 countersunk from the top edge portion 44 of the bead 39. The bead 39 extends outwardly from the tubular wall 41 to form an outer face 45, and extends downwardly along said outer face 45 to a lower edge portion 46.

In operation, the manual operating means 34 at either end region of the handle member 10 is turned so as to enable the jaws 27 to be extended away from each other a distance slightly greater than the distance between the outer faces 45 of the bead 39 at the portions of said bead which are intended to be engaged by the handle member 10. The handle member 10 is then disposed across the top 40 of the container 38 in a manner to project the lips 28 of the jaw 27 beneath the outer lower edge portion 46 of the bead 39. In so doing the lower edges 23, 24 of the base portions 21, 22 may come to rest against the top portion 43 of the container 38. Either manual operating means 34 may then be turned so as to rotate the threaded bolt 33 in the threaded orifice 32 operably to draw the base portion in which said orifice is formed toward the jaw adjacent said operating portion 34. For purposes of illustration, reference may be made to Figure 3 wherein the operating portion 34 is illustrated as being used to draw the base portion 22 toward the jaw 27. It will be observed that as the base portion 22 is thus being drawn toward the jaw 27, the inner edge portion 30 of the follower member 29 rides upwardly along the upwardly inclined face of the step-bearing 18, while the base portion 36 of the operating means 34 bears inwardly against the outer face 37 of the jaw portion 27 in the general vicinity of the bead 39. In so doing, the bead engaging member 26 is rocked downwardly about the follower edge 30 as a pivot while said follower edge 30 is moved upwardly along the upwardly inclined step-bearing 18. This downward rocking movement is further enhanced by the engagement of the base portion 36 against the outer face 37 of the jaw portion 27, while said jaw portion 27 is free to move laterally with respect to the bolt 33 by virtue of the loose disposition of said bolt through the orifice 31 which is preferably formed of a diameter greater than the diameter of said bolt immediately behind the base portion 36 thereof. In either event, the turning of the operating means 34 in a manner to draw the base portion 22 toward the jaw 27 operates to swing the lip 28 beneath the lower edge 46 of the bead 39 and upwardly thereagainst while at the same time being urged toward the tubular wall 41 of the container 38. In this manner, the lip 28 is securely disposed beneath said bead 39.

It should be noted that it is not necessary to impose a great amount of tension on any of the elements of the handle member 10, the mere firm disposition of any portion of the lip 28 against the lower edge 46 of the bead 39 in the manner described being sufficient to hold the handle member 10 in secure engagement with the container 38.

When it is desired to lift the container, the operator inserts his hand (not shown) beneath the hand-bearing portion 11 which may be projected upwardly away from the top region 40 by means of the offset portions 13 and 14. When the operator lifts his hand (not shown), the hand-bearing portion 11 is urged upwardly and in so doing, tension is imposed on the offset portions 13 and 14 and on that portion of each of the step-bearings 17, 18 which is disposed between the inner edges 30 of the followers 29 and the offset portions 13, 14. The remainder of the step-bearing portions 17, 18 tend to swing downwardly about said inner edge 30 as a pivot, and in so doing cause the lower edges 23, 24 of the respective base portions 21, 22 to tend to bear against the top disc portion 43 and in a manner to transmit forces thereto. In so doing, the weight of the container is not borne entirely by the lips 28, but is distributed between the lips 28 and the base portions 21, 22. Moreover, the tensile or shearing stress imposed upon the lips 28 is thus substantially relieved by the compression stress on the base portions 21, 22. Not only so, but this tendency of the step-bearing portions 17, 18 causes said base portions 21, 22 to tend to rock downwardly and inwardly in a manner to carry with them the threaded bolts 33 with which they are in substantially fixed engagement. The base portions 36 of the heads of said threaded bolts are thus urged more firmly against the outer faces 37 of the jaws 27 in the vicinity of the bead 39, thereby further urging the lips 28 beneath and in firm engagement with the outer lower edge 46 of the bead 39.

It will be noted that disposition of any portion of the lip 28 beneath the beaded edge 46 is sufficient to hold the handle member 10 in engagement with the container 38. Thus, in the case of bashed-in beads, a corner edge of the lip 28 may be disposed beneath the lower bead edge 46; or in the case of the bead being formed into a sharply rounded corner, the portion of the lip 28 intermediate its outer edges may be disposed tangentially with respect to the wall portion 41 and in engagement with the lower bead edge 46. Not only so, but the loose disposition of the jaw 27 about the bolt 33 enables

the jaw **27** to be disposed substantially flush against the bead **39** regardless of the angle of the bead with respect to the longitudinal axis of the strip **12**, as may be seen more clearly in Figures 2 and 4.

When a bead has been so distorted as to eliminate any effective lower edge portion **46** at the place where it is desired to secure the handle member **10**, the operating means **34** may be turned sufficiently to draw the base member **21** or **22** against the inner face **42** of the bead **39** and thereby clamp the bead between said base member and the jaw **27**, as illustrated with respect to the distorted bead portion **47** illustrated in the right hand portion of Figures 5 and 6.

I am aware that the invention may be embodied in other specific forms without departing from the spirit of essential attributes thereof, and I therefore desire the present embodiment to be considered in all respects as illustrative and not restrictive, reference being had to the appended claims rather than to the foregoing description to indicate the scope of the invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A handle member for a container having a bead, said handle member comprising a hand-bearing portion; an inclined step-bearing portion; an offset portion disposed between said hand-bearing portion and said-step-bearing portion; a base portion projecting downwardly from said step-bearing portion and spaced from said offset portion; said base portion having an edge portion adapted to bear against a top portion of said container; a bead-engaging member comprising a jaw portion having an inwardly projecting lower lip portion, and a follower portion projecting substantially from an upper edge portion thereof and in substantially fixed relation to said jaw; an orifice formed in said jaw portion; a threaded orifice formed in said base portion; a threaded bolt loosely disposed in said first-mentioned orifice and in threaded engagement with said threaded orifice; a head portion on said bolt, adapted to bear against the outer face of said jaw portion; means operable manually to turn said bolt; said follower portion being adapted to ride upon said inclined step-bearing portion; and said jaw portion being adapted to pivot loosely about said bolt when said lip is not in engagement with a bead, and to be held in substantially fixed condition when said lip bears against a bead, said follower portion bears against said step-bearing, and said bolt head portion bears against said jaw.

2. A handle member for a container having a bead, said handle member comprising a hand-bearing portion; an inclined step-bearing portion; a base portion projecting downwardly from said step-bearing portion and spaced from said hand-bearing portion; a bead-engaging member comprising a jaw portion having an inwardly projecting lower lip portion, and a follower portion projecting substantially from an upper edge portion and in substantially fixed relation to said jaw; means to draw said base portion toward said jaw portion; said follower portion being adapted to ride upon said inclined step-bearing portion.

3. A handle member for a container having a bead, said handle member comprising a bowed hand-bearing portion; a step-bearing portion; a base portion projecting downwardly from said step-bearing portion and spaced from said hand-bearing portion; a bead-engaging member comprising a jaw portion having an inwardly projecting lower lip portion, and a pivot and follower portion adapted to bear upon, and to be longitudinally moved along, said step-bearing portion; means to draw said base portion toward said jaw portion.

4. A handle member for a container having a bead, said handle member comprising a bowed hand-bearing portion; a step-bearing portion; a base portion projecting downwardly from said step-bearing portion and spaced from said hand-bearing portion; a bead-engaging member comprising a jaw portion having an inwardly projecting lower lip portion, and a pivot portion adapted to bear upon said step-bearing portion and to be selectively displaced longitudinally therealong; means to draw said base portion toward said jaw portion; said jaw portion being adapted to rock about and axis lateral to an axis between said jaw portion and said base portion.

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