Aug. 9, 1955 R. C. POTTS 2,714,972

HANDLE-MEANS ASSEMBLY FOR CONTAINERS

Filed March 6, 1951

FIG. 1

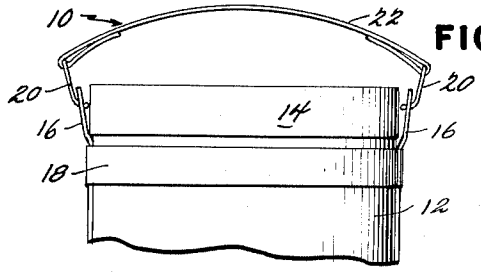


FIG. 2.

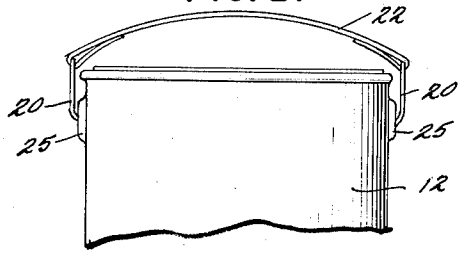


FIG. 3

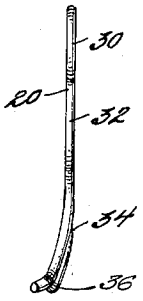


FIG. 4

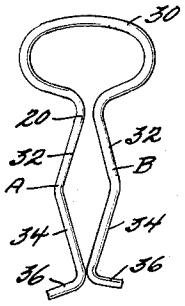


FIG. 8

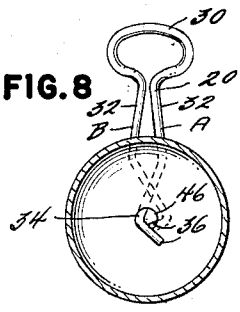


FIG. 5.

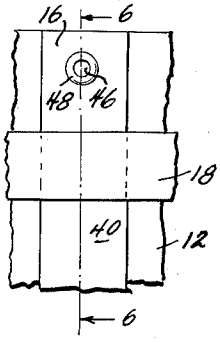


FIG. 6.

FIG. 7.

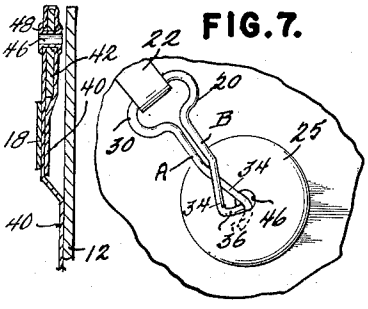
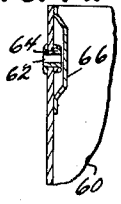


FIG. 14.



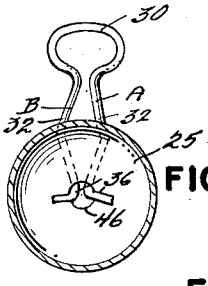


FIG. 9.

FIG. 10.

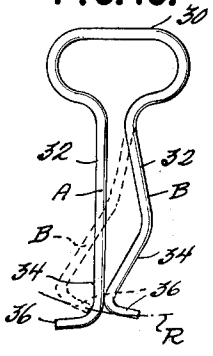


FIG. 11.

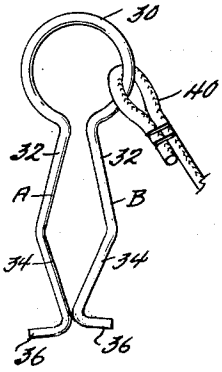


FIG. 12.

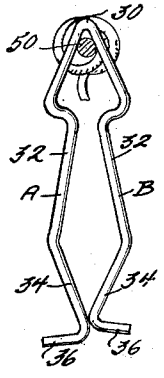
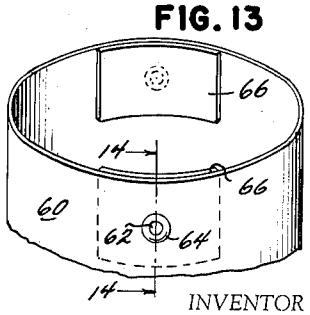


FIG. 13



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HANDLE-MEANS ASSEMBLY FOR CONTAINERS

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Application March 6, 1951, Serial No. 214,107

9 Claims. (Cl. 220—91)

It is an object of the invention to provide a handle-means assembly which may be attached to various types of containers such as bags, boxes, pails, drums and the like and be manually secured thereto and be removed therefrom.

It is a further object of this invention to provide a handle-means assembly as aforesaid which is simple in construction and each part of which may be produced by automatic machinery at low cost and which parts may be easily and readily assembled into a complete handle-means.

It is a further object of this invention to provide a handle-means assembly which may be substituted in part for the handle-means assembly covered by my copending application Serial No. 145,442, filed February 21, 1950, and which is further adapted in its parts for attachment to the conventional ears of pails of the type that have a central aperture or orifice in said ears.

It is a further object of this invention to provide a handle-means assembly as aforesaid which may be manually attached to the wall of a container, either exteriorly or interiorly, by the container manufacturer, the container packer, the retailer, or the ultimate user and in all cases will serve as a practicable and convenient means for handling or carrying the container.

It is a further object of this invention to provide a handle-means assembly as aforesaid which in combination with a container of any desired type produces a practicable and convenient "ready-to-go" container that may be used for any desired purpose.

It is a further object of the present invention to provide a complete handle-means assembly which comprises means for its attachment to various types of containers and provides a flexible handle-means for the handling and carrying of the container to which it is attached, the invention in toti comprising a flexible base-handle element secured into the loop segments of a pair of preformed wire fastener elements, said fastener elements each comprising additionally two leg members adapted to be inserted into and held within an aperture of a second end-attaching member, or, when practicable, into an aperture within the wall or ear of the container.

The component parts of the complete handle assembly and the methods of using them to attain the objects of the invention will be made clear from the following description, taken in connection with the annexed drawings, in which:

Figure 1 is a perspective view of a preferred form of a complete handle-means assembly attached to a container.

Figure 2 is a perspective view of a modified form of the handle-means assembly of Fig. 1, attached into the ears of a pail.

Figure 3 is a side elevation view of the fastener element of Fig. 4.

Figure 4 is a plan view of a preferred form of one of the fastener elements.

Figure 5 is a fragmentary plan view of one of the

end-attaching members of Fig. 1, secured to the wall of a container.

Figure 6 is a cross-section view of the container wall and the end-attaching members of Fig. 5 taken on line 6—6.

Figure 7 is a fragmentary plan view of the fastener element of Fig. 4 with one leg B overcrossing the other leg A and the extreme end of leg B interlocked against the other leg A and the end segment of leg A inserted into the aperture of an ear of a pail.

Figure 8 is a view of the end segment of the overcrossed leg A inserted into the aperture of the ear of a pail showing also the position of the extreme end portion of the other leg B in its interlocked relation to leg A ready, when released, to enter said aperture.

Figure 9 is a view of the end segments of both legs of the fastener element locked within said aperture of Fig. 8 after their inter-locked relation is dislocated within the orifice of the ear of the pail or container.

Figure 10 is an alternative form of the fastener element of Fig. 4.

Figure 11 is an alternate form of the fastener element of Fig. 4 with its loop segment circular in form and a loop of cordage engaged in said loop.

Figure 12 is an alternate form of the fastener element of Fig. 4 with a V-shaped looped segment in its median portion and a fragmentary view of a knotted rope connected into the said V-shaped looped segment.

Figure 13 is a perspective fragmentary view of a container having an aperture in each of two opposite walls and a ply of sheet material covering each of the apertures on the inside wall.

Figure 14 is a cross-section of Fig. 13 on line 14—14.

Throughout the specification and the drawings, like numbers designate or identify the same or identical parts of the invention.

Referring now to Fig. 1, I show in it my complete handle-means assembly **10** secured to the exterior walls of a container **12** having an over-capped cover **14**. The handle-means assembly **10** is attached to the exterior opposite walls of the container **12** by the end-securing means **16** and **16** which are adhesively secured to said walls. To prevent the end-securing means **16** from being stripped outward and downward off of the container wall, a strip of tape-strap or reinforced tape **18** is placed over and crosswise of the upper portion of the end-securing means **16**, below the lower edge of the cover **14**, where it is adhesively secured to the said container wall on each side of the said end-securing means **16**. The remaining members of my complete handle-means assembly comprise a pair of fastener elements **20** and **20** and a flexible connecting handle **22** secured into each of the fastener elements **20** and **20**.

Fig. 2 shows the direct attachment of a modified form of my handle-means assembly to the ears **25** of a container **12**, the parts of my handle-means assembly that are employed being a pair of fastener elements **20** and **20** and a flexible connecting means secured to each of the fastener elements **20**. The ears of the container in Fig. 2 are typical of the kind conventionally used on paint pails and other such pails which have a wire bail that is inserted at each end into an aperture or circular orifice within each ear of the pail. However, my device may be used with other types of ears such as a loop of wire extending outward from the rim of the pail, a flattened ear with an aperture therein and either riveted, spot welded or otherwise secured to the wall or rim of the pail or container. And, as shown in Fig. 13, the aperture itself may be formed in the wall of a container as will be explained later.

Fig. 3 is a side elevational view of the fastener element **20** of Fig. 4. It will be noted that the loop-end segment

30 of the fastener element and the base-portion of each leg segment 32 are in the same plane and that the lower part of each of the leg segments 34 curves outwardly in the same curvilinear plane from the plane of the looped-end segment 30, and, the said outward curve approximates 20 degrees which enables the base portion 32 of each leg-member and the looped-segment 30 to attain an upstanding position in a plane practically parallel to the vertical plane of the aperture 46 as shown in Figs. 2 and 9 when both of the end segments 36 of the fastener element are engaged within the aperture 46 in the wall or ears of the container. Also, it should be noted that the extreme end segment 36 of each leg lies generally within the plane of each curved leg segment 34 and that the extreme end segment 36 of each leg lies in opposed or reversed direction to the other and at an angle approximating 90 degrees to its adjacent segment 34 and in substantial linear alignment with each other except for the extreme tip end portion of the shorter leg.

Fig. 4 shows a preferred form of the fastener element. In it the main segments 32 and 34 of each leg are bowed or curved outwardly from the other leg. In Fig. 4, one leg B is shown shorter than leg A and the end segment 36 of leg B is turned slightly inwardly out of its plane with segment 34 to give it an interlocking action with the other leg A when it is crossed over it as shown in Fig. 10 and will later be described in detail.

Fig. 5 is a fragmentary plan view of one of the end-attaching or securing segments 16 of Fig. 1 secured to the wall of a container.

Fig. 6 is a cross-section view of Fig. 5 on line 6—6. In both Figs. 5 and 6 is shown a reinforcing strip 18 which overlies the end-attaching member crosswise and extends outwardly from each side of it on the container wall where it is adhesively secured to the wall of the container to prevent the end-attaching member from being stripped outwardly from the container. In Figs. 5 and 6, 40 is a strip of tape which at one end is folded around and adhered to a reinforcing strip of fibreboard or other firm, tear-resistant, sheet material 42 and the free end 44 of the tape strip 40. At least one or more perforations provide orifices or apertures 46 through the folded tape and the reinforcing element 42 within the said folded tape strip 40. Additional reinforcing of the walls of the aperture is obtained by placing a metal eyelet or grommet 48 within the aperture 46 with a washer 48' secured over it on one side of the container wall. The end-securing element or member 16 may be attached to either the inner or outer surface of the container wall, as may be desired.

Fig. 7 shows a view of the over-crossed legs A and B of the fastener element 20. The extreme end segment 36 of leg B is interlocked in the angle portion of leg A at the intersection of segments 34 and 36 of leg A, and, the extreme end segment 36 of leg A is inserted into the aperture 46 of the ear of a pail, an end-securing means, or a wall of a container bearing said aperture.

Figure 8 is a view of Fig. 7 taken from its opposite side. It shows the extreme end segment 36 of leg A inserted through the aperture 46 to the point where the extreme tip end of the end segment 36 of leg B is also entered into the aperture where, by its actual dislocation from its interlocked contact with leg A it also passes through the aperture 46, as shown in Fig. 9, and becomes fully engaged within the aperture 46 upon the inner wall of the ear, end-securing means, or wall of the container in which the aperture is located.

Fig. 9 is a view of the end segments 36 of the two legs of a fastener element fully engaged thru an aperture 46 upon the inner wall of the ear, end-securing means, or wall of the container having said aperture 46 in it.

Fig. 10 is an alternate form of a fastener element in which only one of the legs is bowed outwardly from the other leg. The radial line R, struck from the extreme tip of end segment 36 of leg B, shows this leg to be shorter than leg A, and it also shows that the tip end of end segment 36 of leg B has a direct contact with the portion of leg A within the angle of intersection of segments 34 and 36 of leg A. And, with the tip end of segment 36 of leg B turned slightly out of its plane, it is firmly engaged with leg A and thereby is held in an interlocked position and relation to leg A. A further cause of it becoming inter-locked with leg A is due to the spring-like action of the wire used in forming the fastener element. Fig. 3 shows the main body of each leg and the loop segment of the fastener element to be in the same plane. To effect a cross-legged position of the two legs, one must be crossed over the other. Pressure applied inwardly and to one side on the outer side of the bowed-out segments 32 and 34 of leg B naturally deflects it over and across leg A and causes a torque reaction downward on the tip end of segment 36 of leg B as it crosses over leg A. This torque action brings the tip end of segment 36 of leg B into a firmly engaged relation with leg A at the point of intersection, which as previously stated is positive at the point of angle of juncture of segments 34 and 36 of leg A which are respectively the base portion 34 and the extreme end portion 36 of the end-segment. Until this engaged relationship is disengaged, the tip of the end segment 36 of leg B is firmly established adjacent the base of the end-segment 36 of leg A. And, when the free end of the end-segment 36 of leg A is inserted into the aperture of an ear, end-securing means, or wall of a container, in which the aperture has a diameter equal to twice the diameter of the wire of which the fastener element was formed, the tip end of the end-segment 36 of leg B is simultaneously brought into positive position within the aperture and must also enter the aperture when it is dislocated from its engaged inter-locked position against the segments of leg A. Thus, when the fastener elements of Figs. 4, 10, 11, and 12 are preformed from spring-like wire they will operate as above described. And, it would be possible to connect into the loop segment of a fastener element a flexible handle means of the types shown in Figs. 1, 11 and 12 and to overcross the leg members of the fastener element by applying pressure thereon as previously explained whereby the tip end of the shorter leg is interlocked in an engaged position with the other leg, and to insert the free end of the end segment of the longer leg and the tip end of the end-segment of the shorter leg simultaneously in an aperture, then disengage the tip end of the end-segment of the other leg at that point and have the end-segments of both legs of the fastener element fully secured within the aperture and upon the inner surface of the ear, end-securing means, or wall of the container bearing the aperture. It should be noted that the actual releasing of the engaged end of segment 36 of the shorter leg B from its interlocked contact with the longer leg A is very easily and quickly performed by applying a slight side pressure on the extreme tip of it as by pressing it against the wall of the aperture 36 or the inner wall of the reinforcing grommet 46 within the aperture.

In Figs. 10, 11, and 12, three different forms of the loop segment 30 of the fastener element are shown. In Fig. 10, the median portion of the loop segment is flattened to provide the desired contact for a strap-handle means. In Fig. 11, the median portion of the loop segment is circular to provide easy action thereon of a looped rope or cordage handle as shown at 40, and, in Fig. 12, the loop segment is V-shaped to provide for engagement in the point of the V of the end of a knotted piece of cordage as shown at 50.

Figures 13 and 14 show the construction of apertures in the wall of a container and the application of a ply of sheet material over the inner wall of the container surrounding the area in which the aperture is located. The aperture must have a diameter which exceeds twice the diameter of the wire in the fastener element. It pref-

erably should be reinforced by a suitable grommet or eyelet having the required inner diameter. The ply of sheet material may be of any kind suitable for the purpose. It may be flexible and should be secured to the inner wall of the container by an adhesive. Both the ply sheet material and the adhesive should be of such a character of material as will not be affected or disintegrated by action of the material that is to be placed in the container. For this purpose, some of the newer plastic sheet materials and the adhesives adapted for cementing such materials to metal, paper, and other materials are best suitable for the purpose.

In Figs. 13 and 14, **60** is the wall of the container, **62** an aperture in the wall, **64** a grommet in said aperture, and **66** a ply of sheet material applied over and surrounding said aperture on the inside wall of the container. Obviously, the end segments of the legs of a fastener element inserted through said aperture, as illustrated in Fig. 9, would lie upon the inside wall of the container and between said wall and the ply of sheet material. Also, with the ply of sheet material adhesively secured to the area surrounding the aperture in said wall, the container would be leak-proof thru the aperture, and, the said aperture or reinforced aperture would provide the equivalent of ears to which the fastener elements of my invention may be directly attached. However, in the absence of apertures on or in the wall of the container, then my complete handle-means assembly provides a flexible handle means that may be attached either to the outside or the inside walls of the container.

While I have disclosed herein various specific embodiments of my inventive concept and modifications of it, I do not intend to be limited to the physical details illustrated and described, but only as set forth in the subjoined claims which are to be broadly construed.

I claim:

1. A fully preformed fastener element for engaging a handle-means into an aperture in a wall or ear of a container, said fastener element comprising a single length of wire having a looped-segment in its median portion and a pair of leg-members, each of said leg-members having a base portion and an end-segment, the base portion of each leg-member and the said looped-segment lying in the same plane, the end-segment of each leg-member lying in a curvilinear surface extending at an angle approximating 20 degrees from the plane of the said looped-segment, the extreme end portion of each end-segment being curved outwardly and reversely from the other at an angle approximating 90 degrees, one of the said leg-members being shorter than the other and having its tip end portion turned slightly out of said curvilinear surface, whereby, when the shorter leg is overcrossed on the other leg it interlocks with the other leg at the point of juncture of the base portion and the extreme end portion of the end-segment of said other leg and in that interlocked position the free end-portion of the longer leg may be inserted directly into an aperture in a wall or ear of a container and the tip end of the shorter interlocked leg simultaneously thereby is brought into positive position within said aperture and may be released directly into said aperture thus effecting complete engagement of both legs of the fastener element into said aperture.

2. In combination, a pair of fully preformed fastener elements of the character described in claim 1, and a handle member connecting the said looped-segment of each of said pair of preformed fasteners.

3. A fully preformed fastener element of the character set forth in claim 1 in which at least one of the said leg-members is bowed outwardly in its base-portion from the other leg-member.

4. A fully preformed fastener element of the character set forth in claim 1 in which a part of the looped-segment of said fastener is V-shaped in its median section.

5. The combination set forth in claim 2 in which the handle member comprises a strip of flexible sheet material having looped ends in each end of it.

6. The combination set forth in claim 2 in which the handle member consists of cordage having an enlarged knotted portion in each end of it.

7. The combination set forth in claim 2 and a container having an aperture in each of two opposed walls, the extreme end-portion of each of the leg-members of said pair of fastener elements being engaged within respective apertures in said container wall.

8. The combination set forth in claim 2 and a container having ears secured to each of two opposed walls, said ears having an aperture therein, and the extreme end-portion of each of the leg members of said pair of fastener elements being engaged within respective apertures in said ears secured to said container wall.

9. The combination set forth in claim 7 in which the apertures in the opposed walls of the container are each reinforced by a grommet adapted to receive and engage therein the end-segments of each of the leg-members of a fastener element.

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