July 15, 1952 J. D. CRARY 2,603,409

HANDLED CONTAINER

Filed June 30, 1950 3 Sheets-Sheet 1

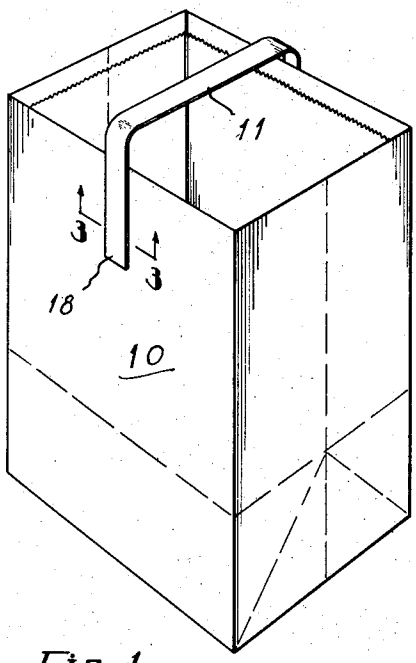


Fig 1

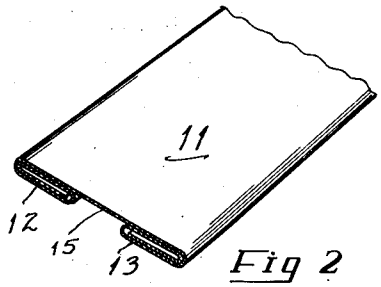


Fig 2

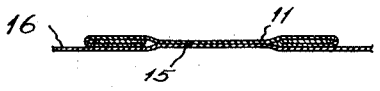


Fig 3

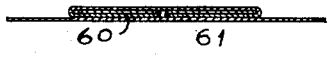


Fig 4

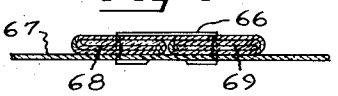


Fig 5

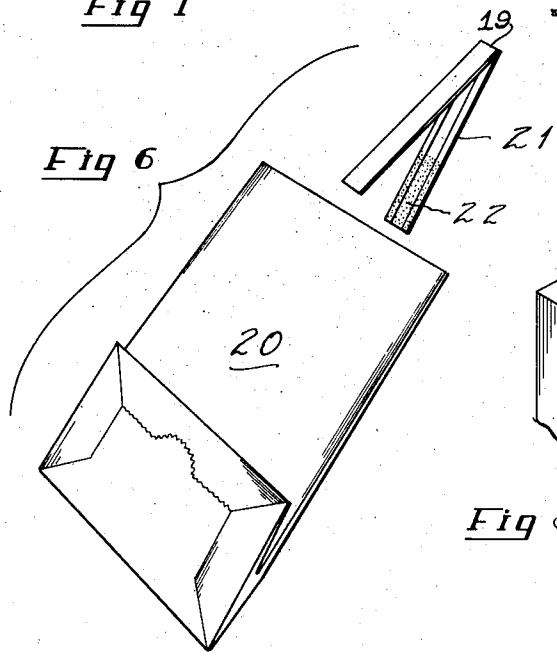


Fig 6

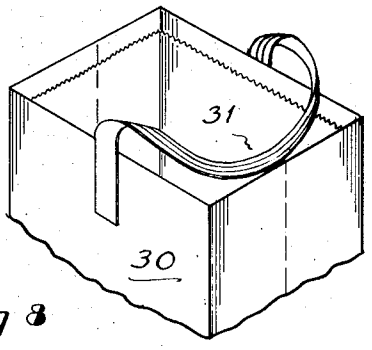


Fig 8

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HANDLED CONTAINER

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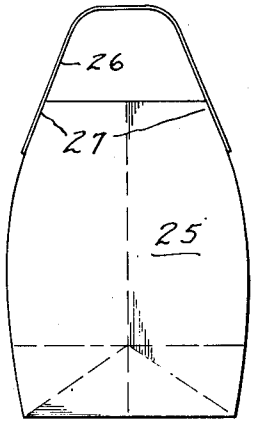


Fig 7

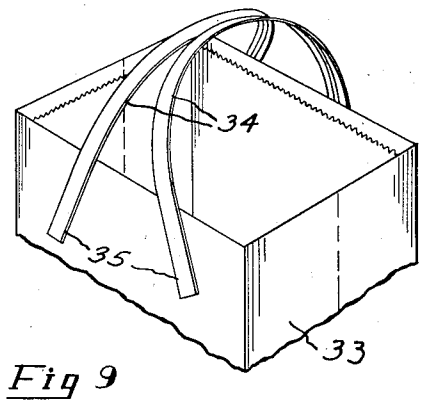


Fig 9

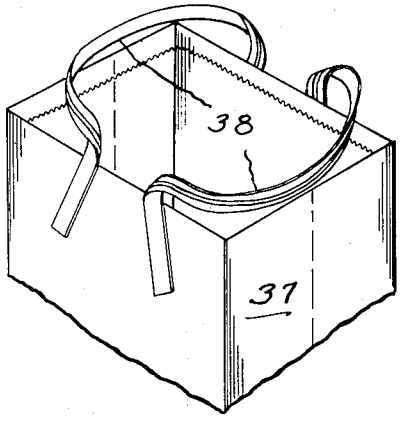


Fig 10

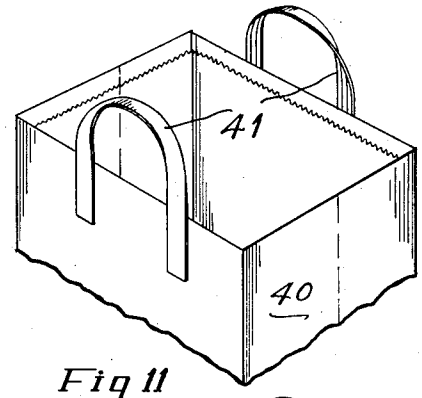


Fig 11

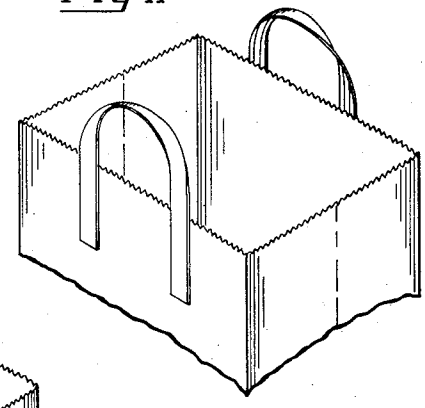


Fig 12

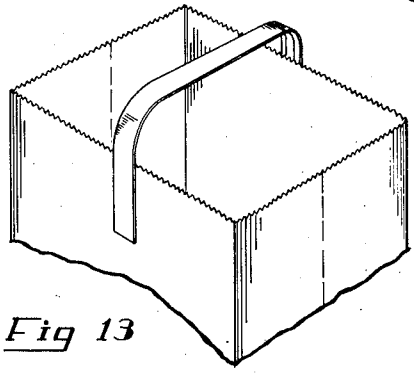


Fig 13

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HANDLED CONTAINER

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Fig. 14

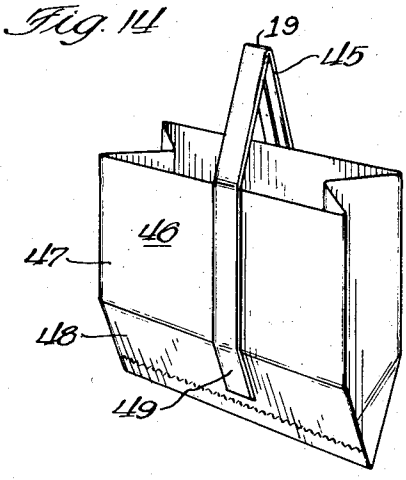


Fig. 15

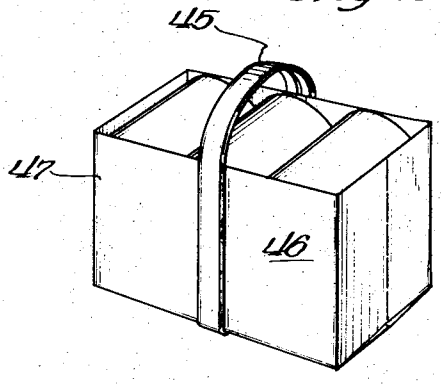


Fig. 16

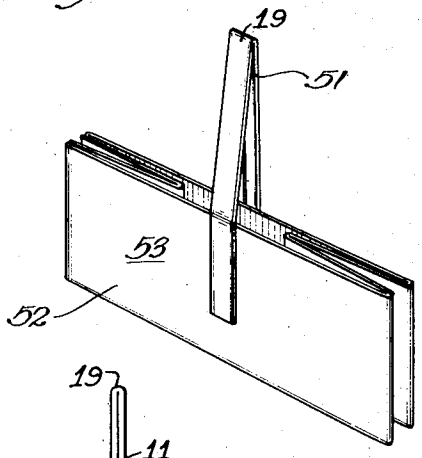
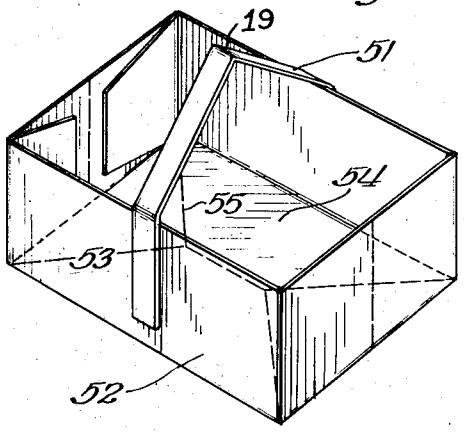


Fig. 17



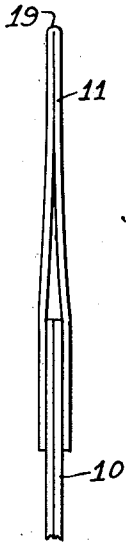


Fig. 18

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UNITED STATES PATENT OFFICE

2,603,409

HANDLED CONTAINER

Jay D. Crary, Portland, Oreg., assignor to Paper Strap Inc., Portland, Oreg., a corporation of Oregon

Application June 30, 1950, Serial No. 171,512

6 Claims. (Cl. 229—54)

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This invention relates to handled containers, such as bags, cartons, carriers and like articles of manufacture. The present application is a continuation-in-part of my copending application Serial No. 561,663, filed November 3, 1944, and entitled "Handled Bag," which prior application has now been abandoned.

Frequently it is desirable to provide inexpensive containers with a handle for facilitating the carrying of goods therewithin and while handled containers of many different types have been devised heretofore they are generally of such expensive construction that their usage has heretofore been largely restricted to shopping bags, which, because of their present high cost, are used only to a limited extent. For purposes of illustration, the cost of attaching handles of the type now in common usage to shopping bags amounts to approximately 46% of the total cost of the bag and which may account for the fact that merchants seldom package the purchases of their customers in handled bags unless specifically requested so to do in which cases they usually assess a separate charge therefor. Handled bags of the same size and weight as those considered above can be manufactured according to the present invention at a reduction in cost of nearly 40%. The handle in this instance represents only a slight increase in the cost of the bag so that the merchant can more readily economically justify the use of such bags in lieu of the ordinary type without making any additional charge.

Not only are the handled bags and other containers of the present invention cheaper than those of the prior art but the handle incorporated provides a grip which is more comfortable to the hand than those now in common usage. The small diameter cord type handles now ordinarily used tend to cut into the fingers particularly when carrying a heavily loaded bag over a considerable distance. The handle of the present invention provides a flat grip surface so that the weight of the load is distributed over a relatively large area of the hand.

It is therefore an object of the present invention to provide a new and improved handled container which is of a relatively simple design and is particularly characterized by its inherently law manufacturing cost.

A further object of the invention is to provide a new and improved handled container which can be made very cheaply and is furthermore strong and durable and capable of hard usage.

A still further object of the invention is to

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provide a new and improved handled container, the handle having a gripping surface which is comfortable to the hand even when carrying relatively heavy loads.

A still further object of the invention is to provide a new and improved handle arrangement on a paper bag by means of which a substantial saving in paper may be effected.

In accordance with the illustrated embodiments, the containers are, while folded flat, provided with strap handles formed from a strip of relatively thin and tough paper folded over upon itself a plurality of times. A flat, relatively flexible strap of uniform width throughout its entire length, suitable for handles, is thus produced, having rounded edges which are smooth and comfortable to the hand. The raw edges of the paper strip are spaced inwardly from the edges of the finished strap, and preferably embedded within the folds of the strap, so as to minimize any tendency for such raw edges to cut through the skin of the user's fingers. Lengths of the strap thus formed are secured at their opposite ends, preferably by adhesive, onto opposite side walls of the container adjacent the uppermost ends thereof, while in the flat folded condition.

When the containers are thus folded, the handles assume substantially the same plane as that of the containers which may be compactly stacked for storage and shipment.

For a consideration of what is believed novel and inventive, attention is directed to the following specification in which additional objects and advantages will be pointed out while the features of novelty characterizing the invention will be set forth with greater particularity in the appended claims.

In the drawings, Fig. 1 is a view in perspective illustrating a handled bag constructed in accordance with one form of the present invention; Fig. 2 is a view in perspective illustrating one form of paper strap used in the manufacture of handles incorporated in the invention; Fig. 3 is a cross-sectional view taken along the line 3—3 of Fig. 1; Fig. 4 is a cross-sectional view illustrating a paper strap according to a modification of the invention; Fig. 5 is a cross-sectional view illustrating a paper strap stapled to a side wall of a bag; Fig. 6 is a view in perspective illustrating the procedure of attaching a handle to a bag in accordance with one form of the invention; Fig. 7 is an end view of the bag shown in Fig. 1 but illustrated in the filled condition; Figs. 8 to 13, inclusive, are fragmentary views illustrating handled bags according to different modifications

of the invention; Fig. 14 is a view in perspective illustrating a handled bar in a partially unfolded condition in accordance with a still further modification of the invention; Fig. 15 is a view in perspective illustrating the bag of Fig. 14 in a filled condition; Fig. 16 is a view in perspective illustrating a carton in a partially unfolded condition in accordance with a further modification of the invention; Fig. 17 is a view in perspective illustrating the carton of Fig. 18 in the fully opened condition ready for use; and, Fig. 18 is a fragmentary edge view illustrating either one of the handled bags as shown in Figs. 1, 7, 8, 9, 10, 13, 14 and 15, or the handled carton as shown in the Figs. 16 and 17 in the flat, folded condition in which such containers are produced and sold as articles of manufacture.

Referring now to the drawings, in Fig. 1 is shown a typical paper bag **10** having a handle **11** attached to the upper end thereof in accordance with one form of the present invention.

Although it is not essential to the present invention, the handle **11** is preferably formed of paper strap such as is disclosed and separately claimed in my United States Patent No. 2,499,463, entitled Paper Strap. The paper strap as disclosed in that application consists of an elongated strip of relatively thin and tough paper, such as light weight kraft paper, having the opposite marginal edges folded over upon itself a plurality of times throughout its entire length. In Fig. 2 is shown a section of such a paper strap and from which it will be observed that the opposite edge portions **12** and **13** lie flat against one surface of the paper strip and, in the specific form shown, the adjacent edges of the folded portions are spaced somewhat apart so as to expose the central portion of the surface of the paper strip therebetween as indicated at **15**. The handles of the present invention are glued to the outermost surface of the upper ends of the opposite side walls of the bag with the fold side of the strap secured adjacent the surface of the bag as illustrated more clearly in the cross-sectional view of Fig. 3. By reference to this figure it will be observed that not only is the surface of the folded edge portions of the strap secured to the paper side wall **16** but the center portion **15** of the strap also thereby effecting a strong anchorage for the handle.

The opposite ends **18** of the handle **11** may be secured to the side walls of the bag throughout any desired length depending upon various factors such as weight of paper of the bag, and weight of load to be carried thereby. If necessary, the ends **18** may extend downwardly the full length of the bag and even around the bottom end. Ordinarily it will be sufficient if the handle end portions **18** which are glued to the side walls of the bag are of the order of from 2 to 4 inches in length.

The handled bag shown in Fig. 1 is capable of extremely low cost manufacture. The paper strap itself is inexpensive since it can be formed entirely by automatic machinery from rolls of paper in substantially continuous lengths. Handle lengths of the paper strap may readily be attached to the paper bag by a very simple procedure so that the cost of attachment is also low. By reference to Fig. 6 a folded bag is shown at **20** with the folded strap handle indicated at **21**. A length of edge folded paper strap formed as described is first doubled upon itself about a fold line **19** extending transversely thereof intermediate the opposite ends of the strap length.

The facing surfaces of the ends of the strap handle are coated with a suitable quick drying adhesive as at **22** after which the ends of the handle are pressed against the opposite side walls of the bag **20**.

Particular attention is directed to the fact that the ends of the handles are preferably attached to the outer surfaces of the bag in order that during the use thereof they will not tend to tear from the surface of the bag. This may best be illustrated by reference to Fig. 7 which illustrates a handled bag **25** in the filled condition. A filled bag will normally tend to bulge outwardly into a generally rounded configuration or to adapt itself to the contour of the objects placed therein. With a simple bail type of handle **26** having opposite ends secured to a pair of opposite sides of the bag the uppermost ends of these opposite sides will tend to be pulled in as indicated at **27**. The pull on the handle will therefore compress the bag between the handle and the bag contents and it will be impossible for the bag contents to pry the bag walls from the handles which would occur if the handles were adhesively united to the inner surfaces of the bag.

The modification illustrated in Fig. 1 represents a very inexpensive form of handled bag and is particularly suitable for single trip purposes. Because this bag costs very little more than an ordinary bag without a handle it may be used by merchants in place of such ordinary bags and being of relatively light weight construction is designed primarily for one time use and discarding. This type of handled bag is also suitable for use as a produce sales bag, that is, a bag which is prefilled by the merchant with ordinarily bulk goods such as potatoes, apples, oranges and the like with predetermined measured quantities, the filled bags being piled up on a display stand for the customer to pick up.

In the modification shown in Fig. 8 the bag **30** is provided with a paper strap handle **31** of substantially the same form and type as shown in Fig. 1 the only difference being that in this case the handle is somewhat longer than shown in the former case, the bail portion of the handle being adapted for turning inside out in which condition it will automatically assume a horizontal position to one side and presenting no obstruction to free access to the opening at the upper end of the bag for filling or for emptying.

In Fig. 9 is shown a further modification comprising a bag **33** having a pair of handles **34** secured to the upper end of the bag and extending across the top thereof. The handles **34** are of paper strap of the type and form as previously described and have opposite ends adhesively secured to the outer surfaces of the bag side walls. The use of a pair of handles as shown in this instance may be desired in the case of relatively heavy duty bags, such as shopping bags. In the case of a double handled bag of this type the bail portions will, of course, be gripped with a single hand so that during normal use the uppermost ends of the handles will lie closely adjacent each other as shown. In order that the opposite ends of the handles secured to the outer side walls of the bag extend in the same plane as the bail portion when stressed under a loaded condition of the bag the ends **35** of the handles **34** are spaced apart more widely at their lower ends than adjacent the top of the bag and in general extend in a straight line from the apex of the bail portions to the

opposite lowermost corners of the bag. Secured in this manner the pull transmitted through the handles to the side walls of the bag extends diagonally across the sides of the paper walls to the opposite lower corners and which arrangement is capable of withstanding maximum stress conditions of loading.

In the further modification of Fig. 10 the bag **37** is provided with a pair of handles **38** the opposite ends of which are secured to the opposite side walls of the bag in substantially the same manner as in the case of Fig. 9. The handles in this instance are of a sufficient length so when twisted inside out as previously described in connection with the modification of Fig. 9 they will assume a substantially horizontal position to one side enabling unobstructed access through the open top of the bag for filling or unloading.

In Fig. 11 is illustrated a bag **40** having a pair of U-shaped handles **41** secured to each of the opposite sides of the bag. The handles in this case consist of relatively short loops of paper strap of the same type and form as previously described. The opposite ends of the lengths of strap defining each handle are deformed so as to extend in a common plane and are preferably adhesively secured to the opposite sides of the bag on the outer surfaces thereof. The upper portions of the handles will inherently assume a horizontal position which is most favorable from the standpoint of presenting a comfortable grip surface.

In the previously described modifications of bags the uppermost edge is shown in the drawings as being folded inwardly. This inward folding of the upper end of the bags is a customary procedure in the manufacture of handled bags of the prior art, the primary purpose being to reinforce the upper end of the bag for the stapling of the conventional cord handle loops thereto. Usually an additional cardboard strip was inserted beneath the inturned flap and glued in place and the staples driven through the doubled thickness of the bag and also the reinforcing strip therebetween. It may be desirable to provide a very small inturned flap on the upper end of the bag for sake of appearance or to reinforce the edge itself, in the case of a bag designed to be used a plurality of times. However, such infolding of the upper end of the bag is not necessary for providing an anchorage for the handle and may readily be dispensed with. According to the further modifications of Figs. 12 and 13, handles of the type shown in Figs. 1 and 11 are shown attached to the upper ends of bags the upper edges of which are straight or unfolded. By leaving the upper edges of the bags straight a very substantial saving in paper may be effected, amounting to between 10 to 15% depending upon the size of the bag and the depth of the fold normally required by other handles.

In accordance with the modification shown in Figs. 14 and 15, a strap handle **45** is provided upon a bag indicated generally at **46**. The bag in this instance is of the end-folded type and comprises opposite side wall portions **47** and contiguous bottom wall defining portions **48**. The opposite end portions of the handle strap **45** are adhesively secured to the outer surface of the side walls **47** while the lowermost ends **49** of the handle strap are adhesively secured to the bottom wall defining portions **48**. It has been found that the bag of this modification is particularly suitable for packaging canned goods as illustrated in Fig. 15. A predetermined number of cans may be placed in the bag and the goods thus packaged placed upon a display counter from which they may be conveniently lifted by the customer. Because of the fact that canned goods are usually quite heavy, a strong anchorage is required for the handle strap but by extending the ends of the strap the full length of the bag side walls and around the lower corners onto the bottom wall, an anchorage is provided which is adequate for supporting any load within the strength limitation of the bag itself.

In the form of paper strap as shown in Figs. 2 and 3 the inner edges of the folded portions **12** and **13** are spaced slightly apart so as to expose the central portion of the paper strap surface **15** therebetween and which is normally adhesively secured to the side wall of the bag along with the surface of the folded edge portions, as illustrated in Fig. 3. In the modification of the strap illustrated in Fig. 4, the folded edge portions **60** and **61** extend closely adjacent each other. In the application of the adhesive coating against the surfaces of the folded portions **60** and **61**, the crack or slot between the folded edge portions **60** and **61** will become filled with adhesive and which, upon the application of pressure in the fastening of the strap handle against the bag surfaces, will flow against the intermediate portion of the strap. Thus the central portion of the strap between the folded edge portions will be effectively secured to the surface of the bag or other article in the case of strap as shown in Fig. 4 to substantially the same extent as shown in Fig. 3 While in the various described modifications of the invention it was mentioned that it was preferred to secure the ends of the handle straps to the bag side walls by means of adhesive, it is to be understood, however, that staples may be used, if desired, or a combination of staples and adhesive. It will be observed that the form of strap shown in Fig. 4 is particularly adaptable for use of metal staples therewith. By reference to Fig. 5 a strap is shown having a staple **66** fastening it to a side wall of a carton or bag indicated at **67**. The staple straddles the space between the folded edge portions **68** and **69** of the strap and each of the two legs of the staple **66** projects substantially centrally through each of the folded edge portions. In attaching handles to the bags it may be desirable under certain circumstances to use relatively light staples therewith for insuring the holding of the handles firmly in contact with the side walls of the bag until the glue has set.

A further important feature of the present invention resides in the fact that, in the formation of the strap and the handles **11**, the folded edge portions **12** and **13**, or **60** and **61**, are loose with respect to each other and to the intermediate strap portion **15**. The folded edge portions of the strap handle are kept from unfolding solely by securing the opposite end portions of the strap against the bag or other article with the folded surface of the strap next adjacent the surface to which the handle is attached. Not only is the cost of the handle unit kept at a minimum by the elimination of any fastening means over the major length of the handle, but the quality of the handle is actually improved. It has been found that, where the folded edge portions are glued in place against the intermediate strap portion **15**, throughout the entire length of the handle the strap is made stiff and presents a harsh, rough feel to the hand. By using no adhesive in the formation of the paper strap and restricting

its use solely to the anchorage of the opposite end portions of the handle, the strap presents a soft, pliable grip which is comfortable to the hand.

In all of the previously described modifications, the container is referred to as consisting of a paper bag. It will be obvious that the invention is not to be so narrowly limited, however, by reason of the fact that the handles as described may be applied to other types of folding containers as well. For example, in the modification illustrated in Figs. 16 and 17, a paper strap handle **51** is shown attached to the opposite side walls **52** of a folding cardboard carton or tray indicated generally by the reference character **53**. The details of construction of the carton **53** form no part of the present invention inasmuch as it is a prior art structure. The carton is of the flat folding type, however, open at the top while the bottom wall **54** folds upwardly and inwardly of the carton along the fold lines indicated at **55** into the collapsed condition as shown in Fig. 16. The strap handle **51** is attached onto the opposite outer surfaces of the side wall **52** in the same manner as previously described and as illustrated in connection with Fig. 6 of the drawings. This carton is particularly suitable for display purposes such as for grapes, berries and small fruit such as apricots, plums, cherries and the like. Such produce has heretofore usually been packaged in baskets or trays which are generally awkward and unwieldy to handle and particularly to carry.

Particular attention is directed to the fact that in all of those modifications of handled containers described above and in which the handle extends across the top of the container, when the container is folded flat, the handle likewise folds about the transverse fold line **19** into substantially the same plane as the container itself. This is a very important consideration, not only as regards the manufacture of the article but also as regards the packaging, storage, shipment and subsequent handling thereof. In the fragmentary edge view of Fig. 18, the compact relationship of the handle and container when in the flat folded condition is more clearly illustrated.

In all of the previously described modifications the handle is described as being formed of paper strap folded in a particular manner. While paper strap as illustrated and described has been found particularly suitable for use in forming handles for paper bags, containers and the like, it is to be understood that the invention is not to be so limited inasmuch as paper strap formed in other ways may be utilized without departing from the true spirit and scope of the invention.

While I have described numerous modifications of the invention it is to be understood that these different forms are merely illustrative and that it is intended in the following claims to cover all such variations as fall within the true spirit and scope of the invention.

I claim:

1. An article of manufacture consisting of a collapsed handled bag having opposed side walls lying closely adjacent each other, the handle of said bag consisting of an elongated strip of paper having its opposite marginal edge portions folded loosely upon itself in a nonoverlapping relation with respect to each other on the same side throughout the full length thereof defining a relatively heavy strap of uniform width and cross section throughout its length, the end portions of said strap handle having the folded side adhesively secured to opposite side wall surfaces of the bag over a considerable length whereby separation of said folded edge portions is prevented, said strap end portions extending longitudinally and centrally of said side walls and downwardly from the upper edges thereof, the central part of said strap end portions being adhesively secured relative to said bag surface between said folded edge portions and a fold line extending at right angles transversely of said strap midway between its secured end portions, said strap being doubled upon itself about said fold line so that the unsecured portions thereof lie flat in substantially the same plane as that of said collapsed bag whereby said article is capable of being stacked flat with a plurality of similar articles.

2. An article of manufacture consisting of a handled container in a flat folded condition having opposed side walls lying closely adjacent each other, the handle of said container consisting of an elongated strip of paper having its opposite marginal edge portions folded over upon itself in a nonoverlapping relation with respect to each other on the same side throughout the full length thereof defining a relatively heavy strap of uniform width and cross section throughout its length, a layer of adhesive extending between the surface of each of said folded edge portions at the opposite ends of said handle and adjacent opposite side wall surface portions of said container securing said handle end portions to the bag with the folded side of said strap facing said container side walls, said layers of adhesive further securing the central portion of said strap between said folded edge portions to the container surface, said folded edge portions being loose with respect to each other and the central strap portion except at said end portions providing a relatively pliable, comfortable, flat grip between said end portions, and a fold line extending at right angles transversely of said strap midway between its secured end portions, said strap being folded upon itself about said fold line so that the unsecured portions thereof lie flat in substantially the same plane as that of said folded container whereby said article is capable of being stacked flat with a plurality of similar articles.

3. An article of commerce consisting of a paper container in collapsed condition and having a pair of opposed side walls lying closely adjacent each other, a handle extending across the mouth end of the container, said handle consisting of a strip of relatively thin, tough paper having its opposite edge portions loosely folded longitudinally upon itself a plurality of times throughout its entire length in a non-overlapping relation so as to constitute a multiple ply flat strap of uniform width, said strap having one end thereof extending longitudinally and centrally of the outer surface of one of the side walls and its other end extending longitudinally and centrally of the outer surface of the other side wall, an adhesive film between a substantial portion of each end of said strap and the adjacent surface of the container, the folded side of said strap end portions facing said container surfaces whereby unfolding of said edge portions is precluded, said adhesive film providing the sole means for securing the handle to the container, a fold line extending at right angles transversely of said strap midway between its secured end portions, and said strap being folded upon itself about said fold line so that the unsecured portions thereof lie flat in substantially the same plane as that of said collapsed container whereby said article is capable

of being stacked flat with a plurality of similar articles.

4. An article of manufacture consisting of a handled container, the handle of said container comprising a flat strip of relatively thin, tough paper, both of the opposite longitudinal edge portions of said strip being folded over upon the same side of said strip and throughout the entire length thereof defining a strap of uniform width throughout its length, the opposite end portions of said handle including said edge portions being adhesively secured to the surface of said container whereby unfolding of said edge portions is precluded, said folded edge portions being loose with respect to the remainder of said strip except at said end portions, a fold line extending at right angles transversely of said strap midway between its secured end portions, said strap being doubled upon itself about said fold line whereby said doubled handle lies flat in substantially the same plane as that of said collapsed container whereby said article is capable of being stacked flat with a plurality of similar articles.

5. An article of commerce consisting of a collapsed folded paper bag having portions defining opposite side walls and other portions defining a bottom wall, a length of paper strap consisting of a strip of relatively thin, tough paper having its opposite edge portions folded loosely edgewise upon itself a plurality of times throughout its entire length, said length of paper strap being of uniform width throughout its entire longitudinal extent, the opposite end portions of said strap having the folded side thereof adhesively secured to the outer surface of a pair of opposite side walls of said bag and in a downwardly depending relation from the upper end thereof whereby unfolding of said edge portions is precluded, the lowermost ends of said strap being adhesively secured to said bottom wall defining portions, the intermediate portion of said handle extending across the upper end of said bag and being folded upon itself about a fold line extending transversely of the strap, said handle in the collapsed condition of said bag being substantially coplanar with said bag.

6. An article of manufacture comprising a paper bag, a pair of strap handles by which said bag may be carried, each of said handle straps being formed from a strip of paper having opposite marginal edge portions folded loosely upon itself a plurality of times throughout the full length thereof, said handles extending across the upper end of said bag and having the folded sides of the opposite end portions of each secured to the outer surfaces of said bag adjacent the upper end thereof whereby unfolding of said edge portions is precluded, the end portions of each of said handle straps being secured to the uppermost edge of the bag toward the center thereof and tapering downwardly and outwardly toward opposite corners at the lower walls of said bag, said handle straps being doubled upon themselves about a transverse fold line in the collapsed condition of said bag whereby said bag in said collapsed condition may be stacked flat with other similar bags.

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