March 5, 1957 J. D. CRARY ET AL 2,783,690

HANDLED OPEN END CAN CARTON

Filed Aug. 17, 1953 2 Sheets-Sheet 1

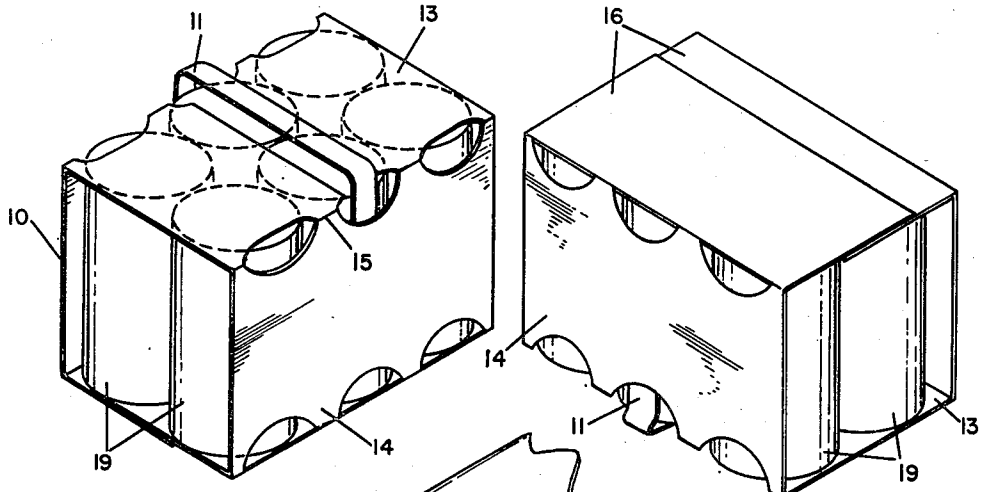


Fig 1 Fig 6

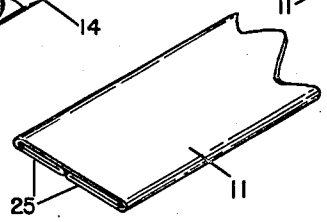


Fig 2

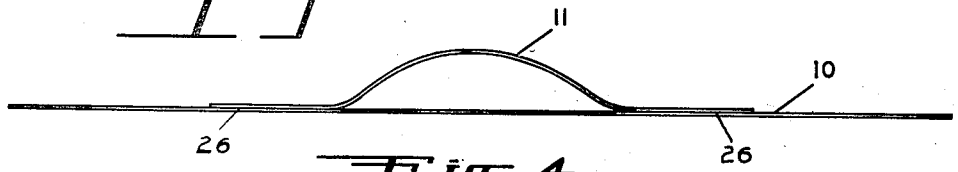


Fig 4

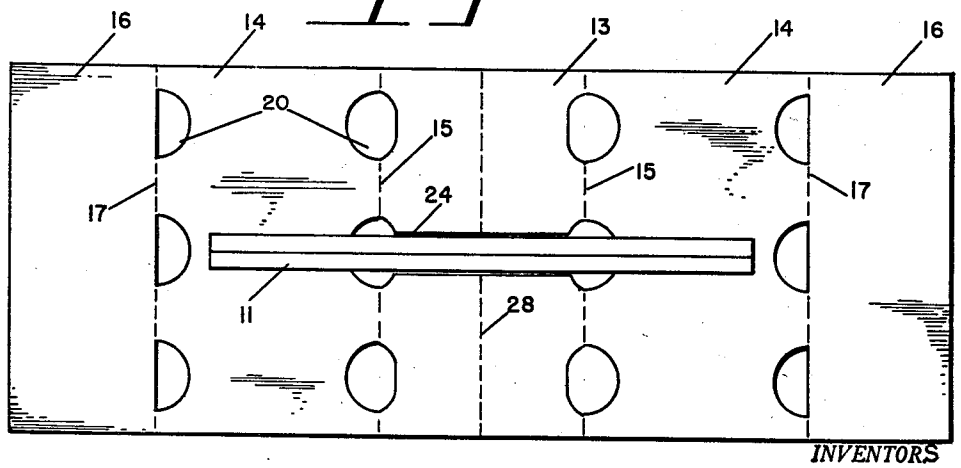


Fig 5

INVENTORS
JAY D. CRARY
BY VAN T. BURLEIGH
Buckhorn and Cheatham
ATTORNEY

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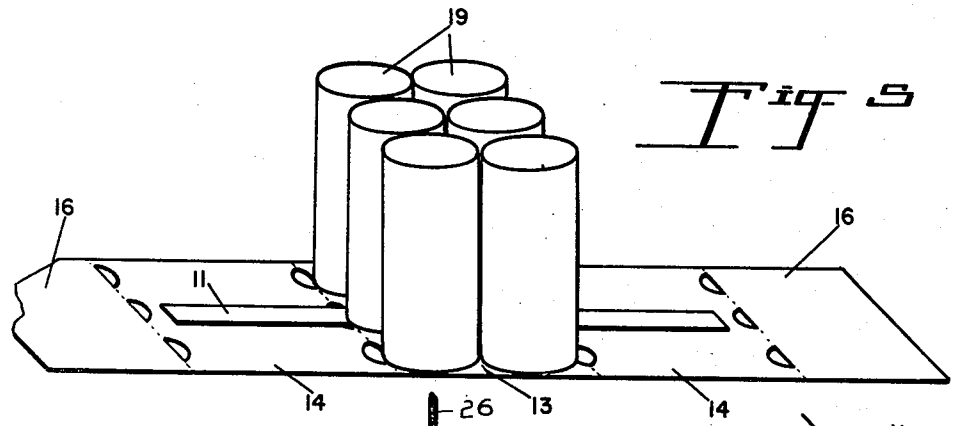


Fig. 5

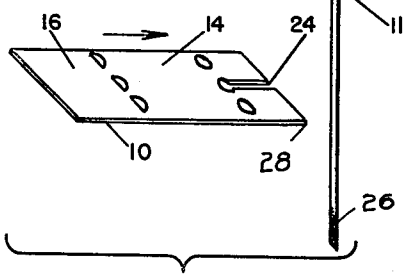


Fig. 7

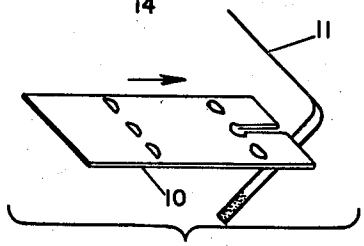


Fig. 8

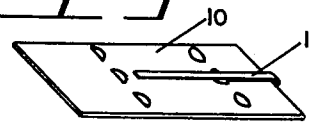


Fig. 9

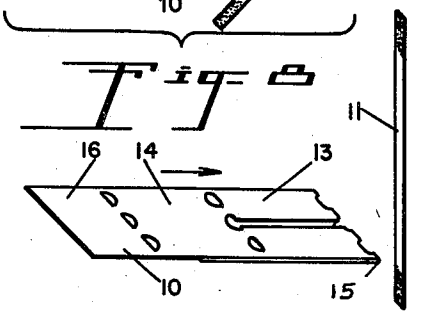


Fig. 10

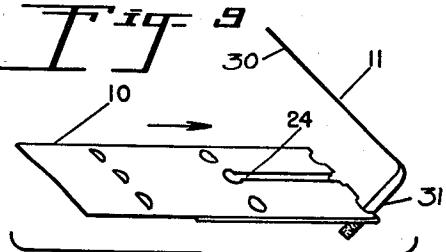


Fig. 11

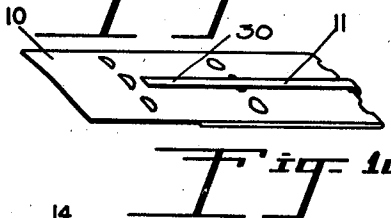


Fig. 12

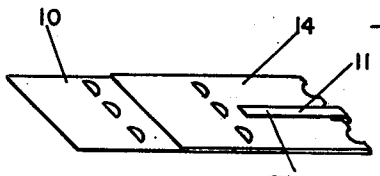


Fig. 13

INVENTORS
JAY D. CRARY
BY VAN T. BURLEIGH
Buckhorn and Chesthorn
ATTORNEY

United States Patent Office

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HANDLED OPEN END CAN CARTON

Jay D. Crary and Van T. Burleigh, Portland, Oreg., assignors, by mesne assignments, to Paper Strap, Inc., Portland, Oreg., a corporation of Oregon

Application August 17, 1953, Serial No. 374,537

5 Claims. (Cl. 93—1)

The present invention relates to handled containers or cartons and to methods of manufacturing the same.

A principle object of the present invention is to provide a simple, inexpensive handle arrangement for cartons.

Another object of the invention is to provide a handle arrangement for a carton that will not interfere with the placement of advertising matter upon the exterior surfaces of the carton.

Still another object of the invention is to provide a handle arrangement whereby the handle may be applied to the blank by the carton manufacturer, the handle being so arranged that it will not interfere with the packaging operations of the user.

A further object of the invention is to provide a new and improved method of attaching a handle onto a carton.

Other objects and advantages of the invention will become more apparent hereinafter.

In accordance with an illustrated embodiment of the invention the carton blank is prepared having portions defining an end or top wall, and opposite side walls from each of which extends a flap adapted to be overlapped and secured together to form the bottom of the carton. The top wall is formed with a transverse slot through which projects the intermediate portion of a handle member, the opposite ends of the handle member being secured to the inside surface of the side wall portions of the carton. In accordance with the described methods the handle ends may be secured to the inside surface of the carton blank when it is unfolded and flat, or when folded inside out in a manner to be described in more detail hereinafter. For a more detailed description of the features of the invention, attention is directed to the accompanying drawings and the following description thereof.

In the drawings,

Fig. 1 is a perspective view showing a handled carton formed in accordance with the invention;

Fig. 2 is a fragmentary view illustrating a strap such as may be used for forming the handle member incorporated in the carton shown in Fig. 1;

Fig. 3 is a plan view of the carton blank prior to the folding thereof;

Fig. 4 is an edge view of the carton blank shown in Fig. 3;

Fig. 5 is a view showing a step in the assembly of the carton about a number of cans prepared to be packaged within the carton;

Fig. 6 is a view showing the carton when the packaging operation has been completed;

Fig. 7 is a diagrammatic view illustrating a step of an alternative method of attaching the handle to the carton shown in Fig. 1;

Fig. 8 is a successive step of said alternative method;

Fig. 9 is a view illustrating the final step of attaching a handle to the blank by said alternative method;

Fig. 10 is a diagrammatic view illustrating still another method of attaching the handle to a carton blank for forming a carton as shown in Fig. 1;

Fig. 11 is a further diagrammatic view showing a successive step in the latter mentioned method;

Fig. 12 is a view showing the blank with a handle attached in accordance with the method of Figs. 10 and 11; and

Fig. 13 is a view showing the carton blank inverted in position relative to the view of Fig. 12.

Referring now to the drawings, the present invention is primarily concerned with the attachment of strap handles to "wrap-around" cartons of the type shown in Fig. 1 wherein is shown an open end carton 10 having a handle 11 attached thereto. It is to be understood, however, that the invention is not limited to use with cartons of the illustrated type but is adapted for use with other types of cartons as will be apparent to those skilled in the art. Referring to Figs. 3 and 4, the carton 10 is adapted to be made of paper board, corrugated fiber board or the like, and comprises a top or end wall 13 hingedly and integrally connected to opposite side walls 14 along parallel fold lines 15. Connected to the lower ends of the side walls 14 along fold lines 17 are flaps 16 which are adapted to be overlapped and glued together to form the bottom wall of the container as will presently appear. The carton is illustrated as adapted for carrying six cans indicated at 19 and accordingly the carton blank is formed with suitable small openings 20 along each of the fold lines 15, 17 through which the top and bottom rims of the cans may project when the carton is wrapped about the cans. Referring to Figs. 5 and 6, the cans are packaged within the carton 10 by placing the cans upright upon the upwardly facing inside surface of the top wall 13 of the flattened blank and thereafter folding the side walls 14 upwardly along fold lines 15 and folding the flaps 16 inwardly along the fold line 17 and overlapping and gluing the flaps so as to secure the side walls 14 snugly against the sides of the cans 19. Preferably the carton blank is so formed that the distance between the fold lines 15 is slightly less than twice the diameter of the cans 19 as measured across the flanged rims thereof whereby the cans will be held snugly in position. The carton is shown upside down in Fig. 6 at the completion of the packaging operation.

In accordance with the present invention a handle is provided for the carton 10 which may be easily grasped by a purchaser to carry the carton, but which is arranged on the blank so as not to interfere with the printing of advertising matter or other directions upon the exterior surfaces of the carton, or so as to interfere with the shipping of the empty cartons or with the packaging operations. In accordance with the invention the top wall 13 is provided with a transverse slot or opening 24 spaced medially between the opposite ends of the wall and extending substantially at right angles to the fold lines 15. The opposite ends of the handle 11 are glued or otherwise suitably secured to the interior surfaces of the side walls 14, sufficient slack being provided in the intermediate portion of the handles to provide a loop which may project through the slot 24 for grasping as indicated in Fig. 1.

Preferably the handle member 11 is formed from a length of paper strap, a short section of which is illustrated in the enlarged perspective view of Fig. 2. This strap consists of a strip of relatively thin and tough kraft paper, the opposite longitudinal edge portions of which are folded over upon themselves a plurality of times as indicated at 25. The particular form of paper strap shown is more fully described and is claimed in my Patent No. 2,499,463.

In accordance with one method of the invention, to attach the handle to the carton blank the opposite end portions 26 of a suitable length of such paper strap are adhesively secured to the inside surface of the opposite side walls 14 with the intermediate portion of the strap

in register with the opening **24** while the blank is in flattened condition as shown in Figs. 3 and 4. Preferably the folded side of the strap is faced outwardly from the surface of the carton and in securing the strap end portions onto the blank a slight amount of slack is provided in the intermediate portion thereof as indicated most clearly in Fig. 4. Such a flat folded, handled blank is adapted to be stacked with a number of like blanks for shipment to the user.

A further suitable method of attaching the handles **11** onto the carton blanks is illustrated in part by the diagrammatic views of Figs. 7, 8 and 9. In accordance with that method, the carton blanks are doubled inside out along a line **28** spaced medially between the fold lines **15**. The flat, folded blanks are fed in a continuous movement, folded end first, in the direction indicated. A measured length of paper strip **11** previously severed from a supply roll and having the opposite end portions **26** coated with a suitable adhesive is fed in a direction normal to the plane of the blank **10** into the path of forward travel of the blank. As the carton blank **10** approaches the strap **11**, the latter is doubled upon itself as indicated in Fig. 9, with the adhesive coated surfaces of the strap facing the carton. The carton is fed between the ends of the strap **11** simultaneously with the folding of the latter so that by the time the folding of the strap upon itself is completed, the opposite end portions **26** of the handle strap engage with the opposite exposed surfaces of the carton side walls **14** as illustrated in Fig. 9. The carton blank **10** and strap **11** are guided so that the end portions **26** of the strap are positioned on the blank in alignment with the slot **24** and the intermediate portion of the strap is in register with the slot. Also the doubled length of the intermediate portion of the strap is slightly greater than the distance between a fold line **15** and the fold line **28** whereby slack will be provided to form a loop for grasping to carry the set up carton. Pressure is then applied upon the assembly and maintained until the adhesive has set sufficiently to permit packaging of the handled cartons.

An alternative method of attaching the handles **11** onto the blanks of the carton **10** is illustrated in Figs. 10 to 13, inclusive. In accordance with the method shown in those views, the carton blank is folded inside out along one of the fold lines **15** and is fed folded end first in the direction indicated. A measured length of paper strap **11** previously severed from a supply roll and having the opposite end portions **26** coated with a suitable adhesive is fed in a direction normal to the plane of the carton **10** and into the path of forward travel of the carton. As the carton **10** approaches the strap **11**, the latter is folded transversely upon itself as indicated in Fig. 11 with the adhesive coated surfaces of the strap facing the carton. It will be noted that in this instance the strap is not folded at its midpoint as was done in the next previously described method and as indicated in Fig. 8, but is, instead, folded at a point offset from the middle so as to provide a long and a short leg on the folded strap. The folding of the strap **11** is arranged so that the long leg **30** of the strap is folded across the end wall **13** and unfolded side wall **14**, while the short leg **31** is brought into engagement with the side wall **14** which is folded back against the end wall **13**. The carton is fed between the ends of the strap **11** simultaneously with the folding of the latter so that as the folding of the strap is completed the opposite end portions **26** of the handle strap are engaged with the opposite exposed inner wall surfaces of the side walls **14** as illustrated in Figs. 12 and 13. Pressure is then applied upon the assembly and maintained until the adhesive has set to permit packaging of the cartons. The length of the strap **11** is adjusted so that the folded end of the strap projects slightly beyond the folded end of the carton as in the method described next above. This is done so as to provide slack in the intermediate portion of the handle whereby it may project outwardly through the slot **24** when the carton is set up.

The above described methods of attaching the handle to the folded carton blanks are quite similar to the method for attaching handles to bags described in Patent No. 2,635,510, issued to Frank A. Grant. The apparatus shown and claimed in that patent can be used with slight modification for attaching the handles to the cartons by these latter methods as will be apparent to those skilled in the art.

In addition to preserving the entire side faces of the carton for the presentation of advertising material, attaching the strap handle ends to the interior surfaces of the side walls has further advantages. For one thing, cartons may be stacked upon a shelf more readily than if the handle is attached to the exterior surface since in the latter case the edges of the side walls **14** may catch upon the handle as one carton is slid in place along side a previously positioned carton. Also, the placement of the handles on the interior surfaces of the carton facilitates the "wrap-around" packaging since nothing projects from the side of the carton to catch on the parts of the packaging machinery.

Having illustrated and described preferred embodiments of the invention, it should be apparent to those skilled in the art that the invention permits of modifications in arrangements and detail. We claim as our invention all such modifications as come within the true spirit and scope of the appended claims.

We claim:

1. A method of manufacturing a container comprising forming a container blank having an end wall and opposite side walls hingedly connected together along parallel fold lines, said end wall having a transverse slot therein extending substantially at right angles to said fold lines, folding said blank inside out along a line intermediate said side walls and parallel to said fold lines, folding a length of strap transversely intermediate its ends and arranging said strap on said blank with the opposite end portions of the strap in alignment with said slot and overlapping corresponding ones of said side walls, and adhesively securing said end portions to the inside surface of said corresponding side walls.

2. The method of manufacturing a handled carton comprising forming a carton blank having an end wall and opposite side walls hingedly connected along parallel fold lines, said end wall having an opening therein extending transversely of said end wall substantially at right angles to said fold lines, folding said blank inside out along one of said fold lines, applying adhesive to opposite end portions of a length of strap, folding said strap transversely of the opposite ends thereof and positioning the same on said blank with said opposite end portions overlapping corresponding ones of said side wall portions, and pressing said end portions onto the inside surface of corresponding ones of said side wall portions to cause said end portions to adhere to said surfaces.

3. In a method of manufacturing a container, the steps comprising forming a container blank having an end wall and opposite side walls hingedly connected thereto along parallel fold lines, said end wall having an elongated opening therein extending substantially at right angles to said fold line, folding said blank inside out along one of said fold lines, folding a length of handle defining strap transversely intermediate its ends and arranging said strap on said blank with the opposite end portions of the strap in alignment with said slot and overlapping said side walls, and securing said end portions to the inside surface of said corresponding side walls.

4. The method of manufacturing a handled carton comprising the steps of forming a carton blank having an end wall and opposite side walls hingedly connected to said end wall along parallel fold lines, said end wall having a transverse slot extending at right angles to said

fold lines, folding said blank inside out along a line parallel with and substantially medially between said fold lines, doubling a length of strap endwise upon itself, inserting the carton blank between the doubled end portions of said strap with the axis of said slot in alignment with the longitudinal axis of said strap and with the folded end of said blank adjacent the transverse fold of said strap, and securing the opposite end portions of said strap to the inner surface of the corresponding side wall.

5. In the method of manufacturing a handled carton, the steps comprising forming a carton blank having an end wall and opposite side walls hingedly connected together along parallel fold lines, said end wall having a transverse slot therein substantially at right angles to said fold lines, folding said blank inside out along a line parallel to said fold lines and spaced medially therebetween, adhesively coating opposite end portions of a length of strap, doubling said strap upon itself with

the coated surfaces of said strap facing one another, inserting the carton blank between the opposite end portions of said strap with the axis of said slot in alignment with said strap and pressing said coated end portions onto the inside surface of the corresponding side wall portions to cause said end portions to adhere to said surfaces.

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