Oct. 11, 1960 P. C. COLLURA 2,955,739

HANDLE CARTON

Filed Aug. 20, 1957

Fig. 3

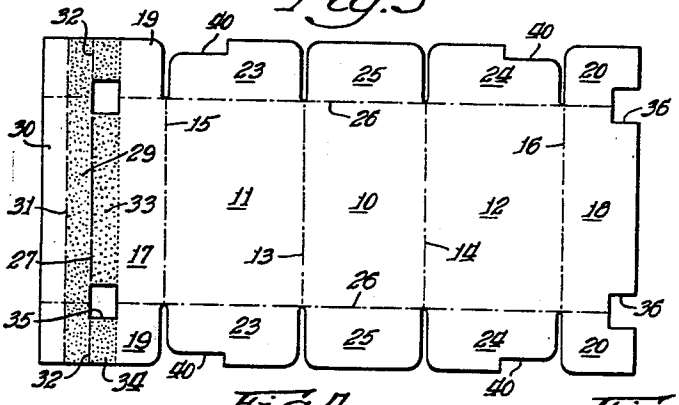


Fig. 6

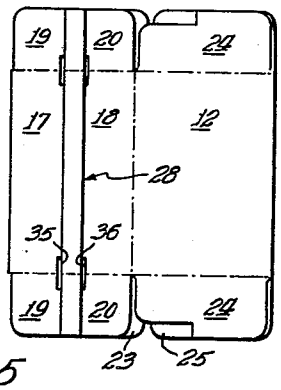


Fig. 4

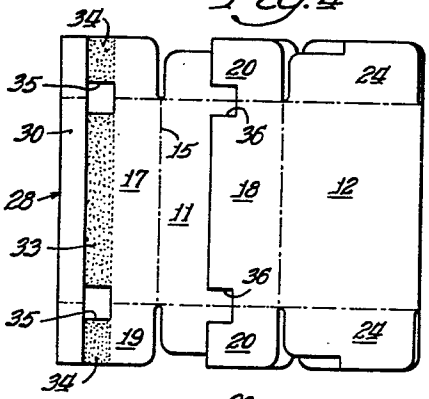


Fig. 5

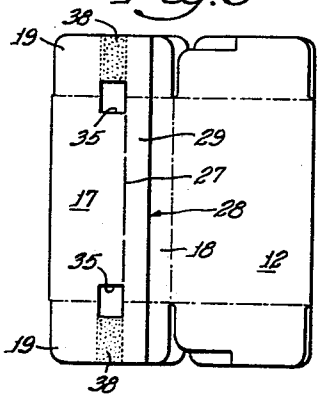


Fig. 2

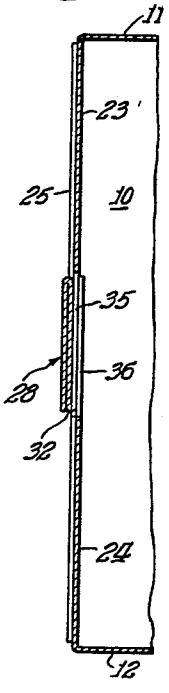
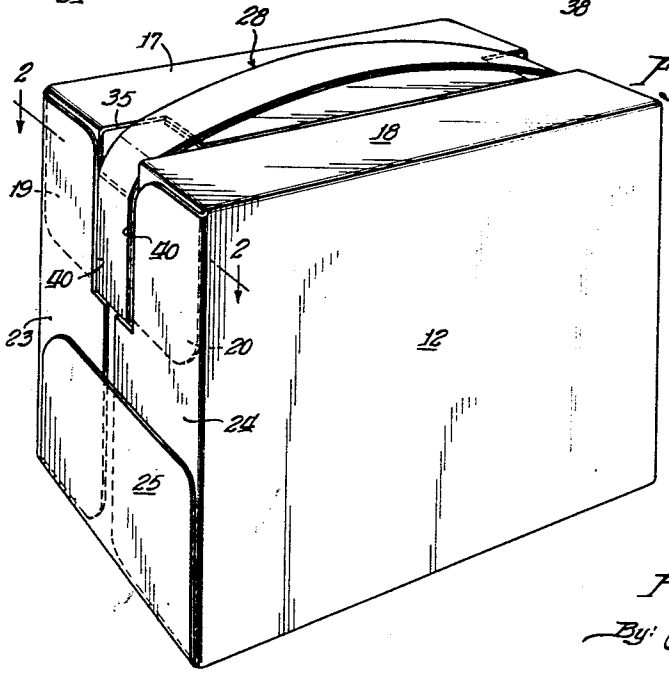


Fig. 1



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HANDLE CARTON

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1 Claim. (Cl. 229—52)

This invention relates to folding cartons and more particularly to a form of carton provided with a carrying handle.

An object of the present invention is to provide a sturdy and effective handle carton which can be formed from a single blank of foldable paperboard, and which can be manufactured on standard folding and gluing equipment, and set up, loaded and sealed by conventional carton loading machines.

A further object of the invention is to provide a carton with an integral handle structure which may be formed at the same time that other parts of the carton are being adhesively connected.

A still further object of the invention is to provide a reinforced handle for a tubular shaped, folding carton that may be secured in place at the manufacturer's joint as the carton is being glued in flat, collapsed form.

Additional objects and advantages of the invention will be come apparent as the description proceeds.

In the drawings:

Fig. 1 is a perspective view showing the carton of the present invention as it appears in set-up condition with the handle strip raised;

Fig. 2 is a fragmentary cross-sectional view taken along line 2—2 of Fig. 1;

Fig. 3 is a plan view of a preferred form of blank from which the carton may be made:

Fig. 4 is a plan view of the carton showing it partially folded;

Fig. 5 is a plan view of the carton as it appears near the final stage of its manufacture in which the handle strip is ready to be folded over to its final glued position; and

Fig. 6 is a plan view of the completed carton in flat, collapsed form.

The carton of the present invention, as herein disclosed, comprises a single blank of foldable paperboard with bottom, side walls, and a composite top wall which is formed of two overlapping sections which are carried on the upper edges of the side walls. The top wall sections carry flaps which form a part of the end closure of the carton. The lateral edges of the end closure flaps are joined to a narrow panel which provides a handle strip. Openings are formed in the ends of the top closure sections and these openings extend into the closure flaps. The openings are wider than the handle strip and the handle strip is in registration with the openings so that, as the central part of the handle is lifted, portions near the ends of the handle adjacent the ends of the top wall sections may enter the openings and facilitate movement of the central part of the handle away from the top wall for ease in carrying the carton by hand.

Referring more particularly to the drawings, Fig. 3 shows a form of flat blank from which the present carton is preferably made. This blank is suitably cut and creased to provide a bottom wall **10**, side walls **11** and **12** defined from the wall **10** by crease lines **13** and **14**. Attached to the side walls along crease lines **15** and **16**

are top wall sections **17** and **18**. These sections are preferably each somewhat wider than one-half the width of the carton so they can be overlapped and suitably secured together as by means of adhesive to form a composite top-wall, section **17** being the outer section and section **18** being the inner section in the area of overlap.

End closure flaps **19**, **19** and **20**, **20** are hingedly related to the respective top wall sections **17** and **18** and serve partially to close the ends of the carton. These end closure flaps are preferably held in their closed position by securing them adhesively to flaps **23**, **23** and **24**, **24** hinged to the side walls. Additional end flaps **25**, **25** are preferably hinged to the ends of bottom wall **10**. The flaps **19**, **20**, **23**, **24** and **25** are defined from their attached walls by crease or fold lines **26**, **26** preferably extending the entire length of the blank.

The handle strip, indicated as a whole at **28**, may be made of a single thickness of board, but preferably is composed of at least two thicknesses. For this purpose two strip elements **29** and **30** are provided at the end of the blank defined from each other by a fold line **31**. The strip element **29** is hingedly joined to the edges of the end closure flaps **19**, **19** along fold lines **32**, **32** which may be either in the form of crease lines or a series of closely spaced cuts. Likewise, the fold line between strip elements **29** and **30** may be in the form of closely spaced cuts to cause the strips when folded together to lie in close contact. The line **27** dividing the handle strip element **29** from the central portion of the top section **17** may be a complete cut, but preferably is formed as a series of cuts slightly separated by small nicks, whereby the action of folding the strip element **29** with respect to the top section **17** will cause severance of the strip element from the top section.

As will be seen by comparison of Figs. 3 and 4, the strip element **29** will have adhesive applied thereto after which strip element **30** is folded to lie flat against strip element **29**. Simultaneously, or in close sequence, the top section **18** and side wall **12** will be folded along crease line **14** and brought flatwise against bottom **10** and side wall **11**. Adhesive may then be applied to the inside surface of the area **33** of the top section **17** and areas **34**, **34** of the closure flaps **19**, after which the handle strip **28**, now of double thickness, and the top section **17** will be folded around line **15** so that the glued area **33** of section **17** and areas **34**, **34** of the flaps **19**, **19** will come to rest on similar areas at the free edge of top section **18** and closure flaps **20**, **20**. See Fig. 5.

For the purpose of enabling the central part of handle **28** to be lifted away from the composite top wall formed of the joined top sections **17** and **18** there are formed cut-away areas **35**, **35** and **36**, **36**. The cuts **35**, **35** are formed so as to intersect fold lines **26**, **26** in the areas of flaps **19**, **19** and top section **17** adjacent handle strip element **29**. The cuts **36**, **36** are formed at the opposite edge of the blank to intersect the fold line **26** so that such cuts extend both into the areas of the top section **18** and closure flaps **20**, **20**. These two sets of cut away portions are preferably formed so that the pairs **35**, **36** will be in registration with each other when the carton is folded together with the top sections secured in overlapping relation. As best shown in Fig. 1, the cut out portions are made wide enough to receive the handle strip.

After the carton has been brought to the condition illustrated in Fig. 5, adhesive may then be applied to areas **38**, **38** on the outside surfaces of closure flaps **19**, **19**, after which the handle strip **28**, comprising the two elements **29** and **30** in face to face contact, is folded over so that its end portions will come to rest upon the glued areas **38**, **38**, as shown in Fig. 6. The carton is

now in its completed, fully collapsed, tubular condition ready for delivery to the packer.

While the carton may be used for various commodities it is particularly suitable for the packaging of canned food and beverages. In the form of carton illustrated six cylindrical cans will be inserted into the carton after it has been expanded into tubular form and with one or both ends left open to receive the cans, preferably with their axes normal to the bottom and top walls. When the carton is loaded the ends will be closed. This may be conveniently done by folding downward the now composite top closure flaps **19, 20** and **19, 20** at opposite ends of the carton, then applying adhesive to flaps **23** and **24** on side walls **11** and **12** and folding these flaps inward, after which adhesive may be applied to bottom flaps **25, 25** and these flaps folded up and secured to the adjoining flaps **23** and **24**. The carton is now in filled form ready to be delivered to retail outlets.

The central part of the handle strip **28** will originally be disposed to lie flat against the top wall, and the portions near the ends of the handle strip will be folded to conform with the contour of the closed end wall structure and top wall. When it is desired to lift the filled carton by the handle it is only necessary to grasp the center portion of the strip and raise it. This action causes the portions near the ends of the handle strip to move inward into the cut out openings, giving ample space in the central part to accommodate the fingers of the person desiring to carry the carton.

In order to accommodate the end portions of the handle and provide for a relatively smooth end structure for the carton, the side wall end closure flaps **23, 23** may have their end portions suitably cut away as indicated at **40, 40.**

The particular method and sequence of steps in gluing or otherwise securing the various panels together forms no part of the present invention. Any convenient folding and gluing sequence may be employed, first, in the formation of the flat, collapsed tubular carton and, second, in the securing of the end wall flaps.

The construction of carton herein disclosed provides a reinforced handle for a collapsed, flat carton which is arranged to lie substantially flat against the folded carton during the time it is in storage awaiting use. The carton may be set up, filled and closed by existing carton filling and closing machinery with little or no adjustment of the machinery to accommodate the handle feature, and the filled cartons may readily be handled and stacked or grouped within larger containers according to customary procedures.

When the carton is used for round cans packed in two rows of three cans each with their axes normal to the top wall, there will be small spaces left between the curvature of the cans at the ends of the carton. Advantage is taken of this arrangement when the carton is thus filled with cans, as the end portions of the handle, upon moving inward when the central part of the handle is raised, tend to move between the adjacent curved areas of the end cans at the top of the carton.

While the present description sets forth a preferred embodiment of the invention, various changes may be made in the construction without departing from the spirit of the invention, and it is therefore desired that the present embodiment 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.

I claim:

A handle carton formed of foldable paperboard and comprising hingedly connected bottom and two side walls, a top wall section hinged on the upper edge of each side wall, said sections being secured in overlapping relation to form a composite top wall providing in the area of overlap an inner top wall section and an outer top wall section, whereby the carton may be formed as a flat collapsed tube, end closure flaps extending from opposite ends of each of the top wall sections, each flap being hinged to its top wall section along a fold line, means for securing said closure flaps in end closing position when the carton is set up, a narrow elongated handle strip disposed in generally parallel relation with the tubular axis of the carton along the outer top wall section and having its end portions extended beyond the ends of the wall section, each such end portion of the handle strip being integrally hinged along a lateral edge to respective lateral edges of the end closure flaps on the outer top wall section, adjacent portions of each top wall section and each attached end closure flap being cut away to form registering openings at each end of the carton for the reception of the handle strip, such openings extending a substantial distance on each side of the upper corner portions of the carton at the angle formed by the overlapped top wall sections and closure flaps, the handle strip being folded over to lie against the outer top wall section and with its end portions disposed flatwise against the end closure flaps to which such end portions of the handle strip are integrally hinged, and means for adhesively joining such handle strip end portions in flat relation to the respective attached end closure flaps.

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