Dec. 6, 1960 T. W. FOSTER ET AL 2,963,198

BAND TYPE CAN CARRIER

Filed Nov. 16, 1956

Fig. 4

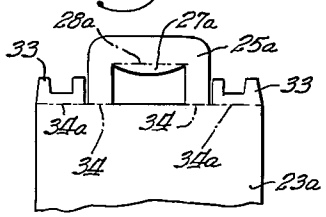


Fig. 1

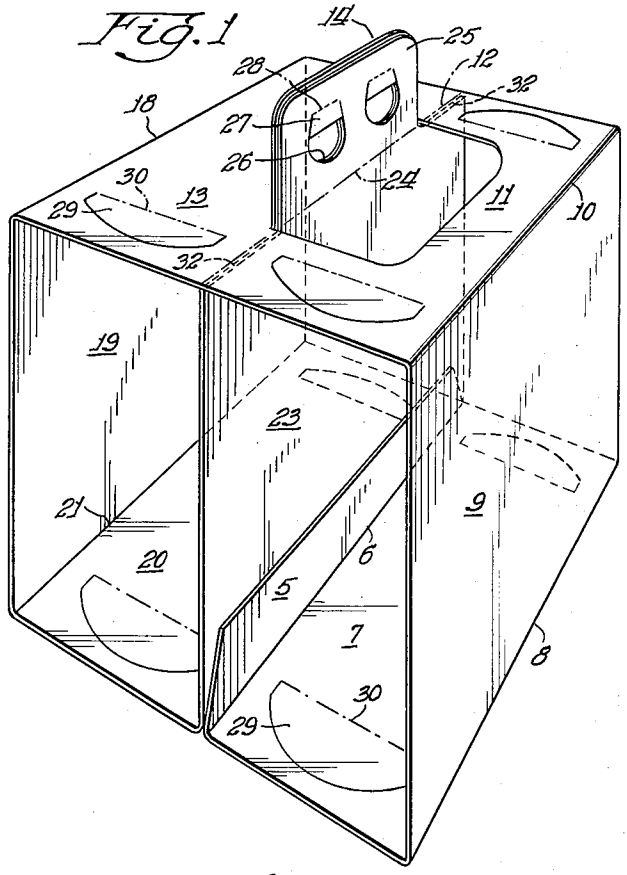


Fig. 2

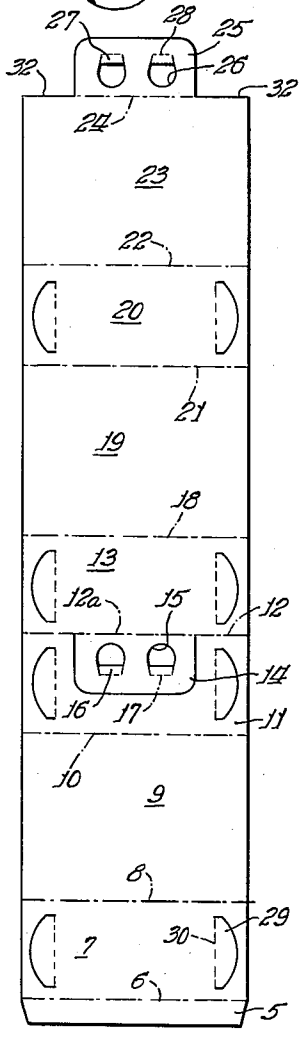
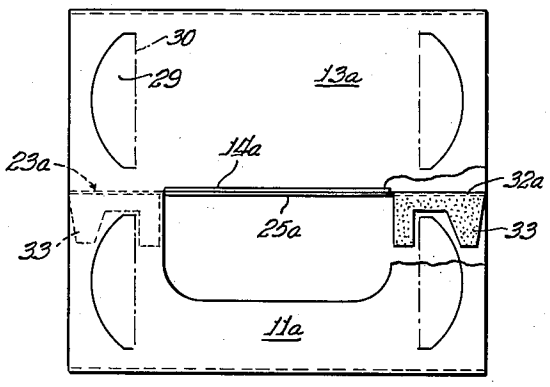


Fig. 3



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BAND TYPE CAN CARRIER

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1 Claim. (Cl. 220—112)

This invention relates to carriers for transporting chimed end cans and analogous containers, and has to do with carriers of the open end band type.

Carriers of the type above referred to are well known and extensively used, many millions of such carriers being used annually. This is a highly competitive field and one in which any saving in the cost of production is of considerable practical importance. The carriers referred to are commonly formed from sheet material, such as paperboard, from which the carrier blanks are cut, the blanks being then suitably folded and glued by machinery to produce the carriers. It is important, from the cost of production standpoint, that the blanks be so cut and scored as to avoid waste of material and that they be adapted to high speed folding and gluing operations by machinery. Our invention is directed to a carrier which requires a minimum of material, avoids waste of material, may be machine folded and glued at high speed, possesses adequate mechanical strength for its intended use and may be produced at comparatively low cost. Further objects and advantages of our invention will appear from the detail description.

In the drawings:

Figure 1 is a perspective view of a can carrier embodying our invention;

Figure 2 is a plan view of the blank from which the carrier of Figure 1 is produced;

Figure 3 is a top plan view, partly broken away, on a reduced scale relative to Figure 1, of a modified form of carrier embodying our invention; and

Figure 4 is a plan view of one end portion of a blank from which the carrier of Figure 3 is produced.

The carrier of Figure 1 is produced from the blank of Figure 2, which blank is cut from suitable sheet material, such as paperboard. The blank of Figure 2 is cut and scored to provide a glue flap **5** attached along a fold line **6** to a first bottom wall panel **7** attached along a fold line **8** to a first side wall panel **9** which is attached along a fold line **10** to a first top wall panel **11**. The first top wall panel **11** is attached along a fold line **12** to a second top wall panel **13**, the panels **11** and **13** constituting the top wall of the carrier and being integrally connected along fold line **12**. A handle flap **14** is cut from the midportion of the first top wall panel **11** and is integrally connected at its lower edge to the inner edge of the second top wall panel **13** along a fold line **12***a*, which is a portion of the fold line **12**. The handle flap **14** is provided with two finger openings **15** and at the upper portion of each thereof with a tab **16** attached to flap **14** along a fold line **17**. The second top wall panel **13** is connected, along a fold line **18**, to a second side wall panel **19** connected to a second bottom wall panel **20**, along a fold line **21**, panel **20** being connected along a fold line **22** to a center partition panel **23** to the midportion of the upper edge of which is attached, along a fold line **24**, a second handle flap **25** similar to the handle flap **14** and provided with finger openings **26** each having at its upper portion a tab **27** attached thereto along a fold line **28**. The

panels **7**, **11**, **13** and **20** are all of the same width and the panels **9**, **19** and **23** are all of the same height. Each of the bottom wall panels and each of the top wall panels is provided adjacent each end thereof, with an arcuate retaining tab **29** cut therefrom and attached thereto along a fold line **30**. In the use of the carrier, the retaining tabs **29** are folded inwardly about the fold lines **30** into proximity with the inner faces of the corresponding panels and engage the inner portions of the chimes of the end cans of rows of cylindrical cans loaded into the carrier, as is known.

In order to produce the carrier of Figure 1 from the blank of Figure 2, adhesive is applied to the inner surfaces of the handle flaps **14** and **25**, except the tabs **16** and **27** thereof, it being understood that the inner surface of the blank is shown in Figure 2. The blank is then folded about the fold line **21** so as to bring the handle flap **25** into register with the handle flap **14**, with panel **20** overlying panel **19** and panel **23** overlying panel **19** in part and panel **13**. Glue flap **5** is then folded over onto the inner face of panel **7** and a coating of adhesive is applied to the then upper face of glue flap **5**, after which the blank is folded over about fold line **10** into position with panel **9** overlying panel **11** and the outer face of handle flap **25** and the upper portion of the then upper face of panel **23**, and with panel **7** overlying the remainder of the upper face of panel **23**, with the fold line **6** at the lower edge of panel **23** and the adhesively coated surface of glue flap **5** seating upon the corresponding lower portion of the upper face of panel **23**. The blank thus folded is then maintained under appropriate pressure until the adhesive has set, thus producing, in flat folded condition, the carrier, which may be shipped in bales or bundles in such condition.

In the folded carrier the handle flaps **14** and **25** extend from the top or upper edge of the center partition panel **23**. The carrier may readily be set up for use by merely subjecting it to vertical pressure effective for moving the bottom wall panels **7** and **20** and the top wall panels **11** and **13** outward to horizontal position, the setup carrier then appearing as shown in Figure 1. As previously noted, the retaining tabs **29** are folded inwardly of the carrier into position adjacent the inner faces of the top wall panels and the bottom wall panels, preliminary to loading the cans by machinery into the carrier. The carrier shown is intended to receive six cans arranged in two rows of three cans each, separated by the center partition panel **23**, the end cans of each row being retained in the carrier by the retaining tabs **29**.

When the carrier is loaded with cans, the load at the central portion of the carrier is supported to large extent by the handle flap **25** attached directly to the upper edge of the center partition panel **23** and constituting an upward extension thereof. The portions of the center partition panel **23** extending beyond the ends of the handle flap **25** provide shoulders **32** disposed in abutting relation to the underface of the top wall of the carrier at the central fold line **12** thereof and assist materially in supporting the load at the end portions of the carrier transmitted to the top wall through the side wall panels **9** and **19**. The blank of Figure 2 is thus well suited for high speed machinery folding and gluing operations and by cutting the handle flap **14** from the top wall panel **11** a carrying handle structure of adequate mechanical strength is provided and waste of material is reduced to a minimum, with the result that the carrier may be produced at comparatively low cost.

The carrier of Figure 3 is produced from a blank the same as that of Figure 2 except as to the center wall panel. Referring to Figure 4, the center wall panel **23***a* is provided, at its upper edge, with a handle flap **25***a* of substantially inverted U-shape attached to the upper

edge of panel 23*a* along fold lines 34 and provided with a tab 27*a* attached to the upper or bight portion of handle panel 25*a* along a fold line 28*a*. Two glue flaps 33 of substantially U-shape are attached to the upper edge of the center partition panel 23*a*, adjacent the ends of the handle flap 25*a* along fold lines 34*a* constituting extensions of the fold lines 34. It will be understood that the top wall panel of the blank of Figure 4 corresponding to panel 11 of the blank of Figure 2 is cut to provide at the midportion thereof a handle flap similar to the handle flap 25*a*. In order to produce the carrier of Figure 3 from the blank of Figure 4, the handle flap 25*a* and the glue flaps 33 are coated with a suitable adhesive, with the exception of the tab 27*a*, after which the blank is folded in the same manner as above described in respect to the blank of Figure 2. In the first step of the folding operation the glue flaps 33 are disposed upon the inner face of the top wall panel corresponding to panel 11 of the blank of Figure 2, and straddle the inner end portions of the retaining tabs 29 of that panel. The second step in the folding of the blank is then performed, followed by the retention of the folded blank under pressure until the adhesive has set, as previously described. The blank may be set up from its folded condition for use by subjecting it to vertical pressure, as above described, and during such setting up operation the glue flaps 33 are folded into position at right angles to the center partition panel 23*a*, being then adhesively secured to the under face of the top wall panel 11*a* and straddling the inner end portions of the retaining tabs 29 of that panel. The glue flaps 33 thus provide reinforcement for the end portions of the top wall panel 11*a* from which the handle flap 25*a* has been cut and the shoulders of the center partition panel 23*a*, to which the glue flaps 33 are attached, assist in supporting the load at the end portion of the carrier in the manner previously described. The carrier of Figure 3, formed from the blank of Figure 4, is well suited for high speed machine folding and gluing operations and reduces waste of material to a minimum, which is conducive to comparatively low cost of production, an important consideration in this highly competitive field, as has been pointed out above.

It will be understood that changes in detail may be resorted to without departing from the field and scope of our invention, and we intend to include all such variations, as fall within the scope of the appended claim, in this application in which the preferred forms only of our invention have been shown.

We claim:

A carrier formed from a one piece blank of sheet material comprising, a glue flap, a first bottom wall panel, a first side wall panel, a first top wall panel, a second top wall panel, a second side wall panel, a second bottom wall panel and a center partition panel, connected together along fold lines in the order stated, said blank further comprising a first handle flap cut from the midportion of said first top wall panel and attached to the inner edge of said second top wall panel along a fold line coincident with the fold line between said top wall panels and a second handle flap attached along a fold to the midportion of the free edge of said partition panel; said blank initially being folded flatwise with said partition panel and second bottom panel overlying said second side wall panel and second top wall panel with said second handle flap seating on and adhesively secured to said first handle flap and with said first bottom wall panel and first side wall panel overlying said partition panel and second bottom wall panel with said glue flap folded over onto the inner face of said first bottom wall panel and seating on and adhesively secured to the upper face of said partition panel; said blank being erectible from its flatwise folded condition to carrier form by opposing pressures applied at the fold line between said partition panel and second bottom wall panel and at the fold line between said first side wall panel and first top wall panel; said blank, when so erected from its flatwise folded condition, provided a carrier comprising when empty two bottom wall panels, two side wall panels attached at their lower edges along fold lines to the outer edges of said bottom wall panels and extending upward therefrom, a unitary top wall attached at its side edges along fold lines to the upper edges of said side wall panels, a first handle flap cut from the midlength portion of said top wall at one side of the lengthwise medial line thereof and integrally attached thereto at said median line, a center partition panel attached at its lower edge along a fold line to the inner edge of one of said bottom wall panels and extending therefrom upward to said top wall, a glue flap attached along a fold line to the inner edge of the other of said bottom wall panels and extending therefrom upward along and adhesively secured to said partition panel at the side thereof facing the opening in said top wall corresponding to said handle flap, and a second handle flap attached at its lower edge along a fold line to the upper edge of said partition panel and extending therefrom upward through said opening in face to face relation to said first handle flap and adhesively secured thereto, said top wall being provided with lengthwise median fold lines extending from the ends of said opening to the ends of said top wall.

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