Aug. 11, 1959 P. C. COLLURA 2,899,104

BAND TYPE CAN CARRIER

Filed Dec. 20, 1956

Fig. 1.

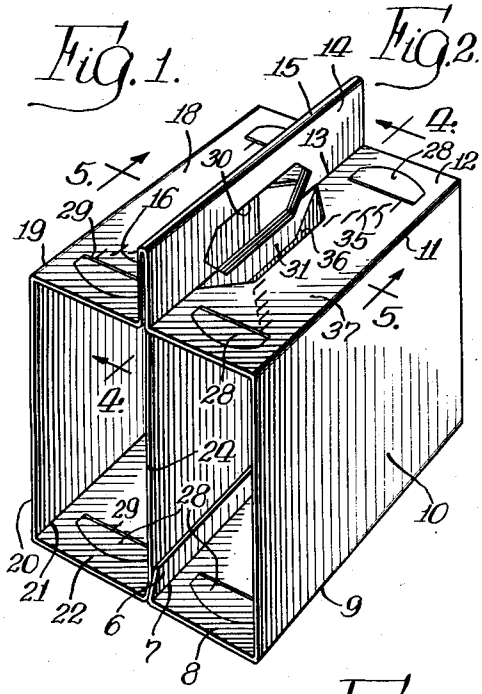


Fig. 2.

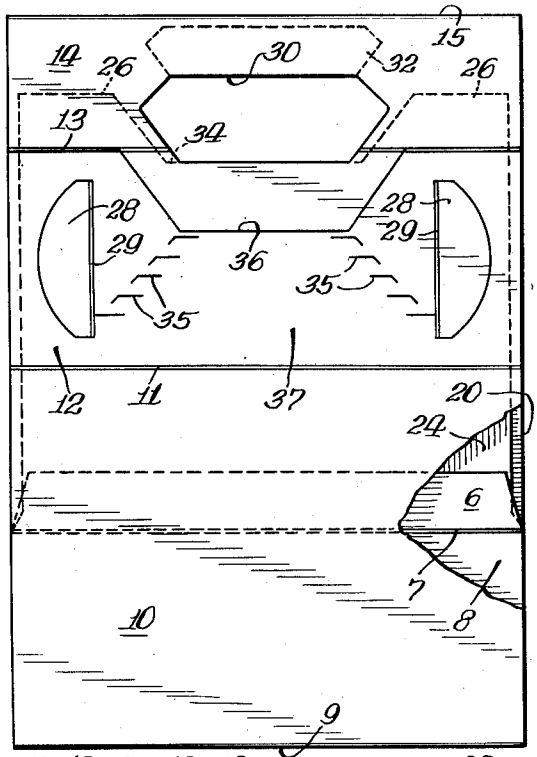


Fig. 3.

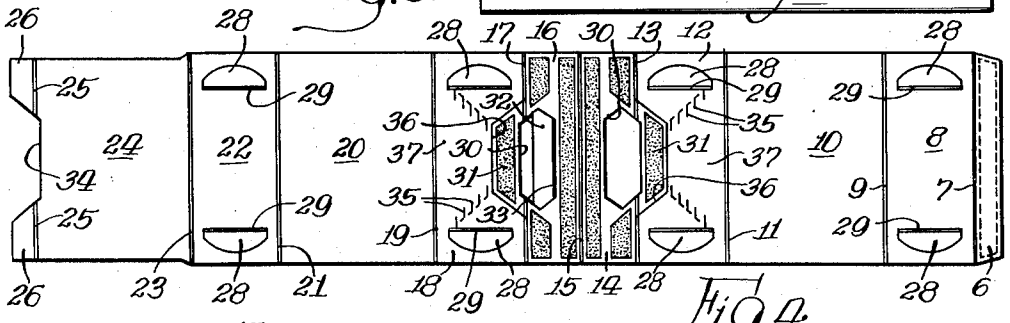


Fig. 4.

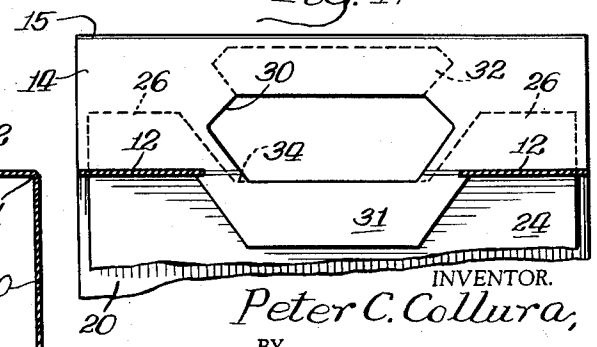
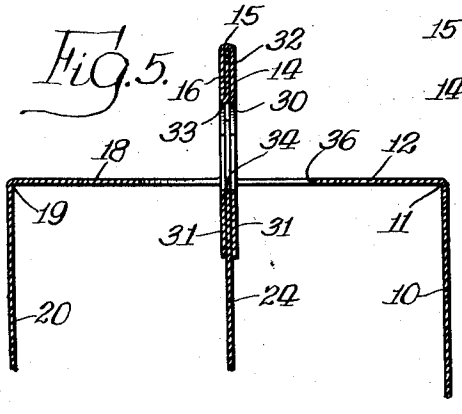


Fig. 5.



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BAND TYPE CAN CARRIER

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2 Claims. (Cl. 220—115)

This invention relates to can carriers and has to do with carriers of the open ended band type.

Can carriers of the type referred to are well known and are extensively used for transporting chimed end cans containing beverages, comestibles and other products. Many millions of such carriers are used annually and this is a highly competitive field in which cost of production is an important consideration. Can carriers of the type referred to are commonly formed from sheet material, such as paperboard, and it is of practical importance that the blanks from which the carriers are formed be such as to avoid waste of material while being capable of being folded and glued by machinery at high speed so as to reduce the cost of production to a minimum. It is also of practical importance that the carrier be of adequate mechanical strength and that the handle structure thereof possess both considerable rigidity and mechanical strength for supporting the load imposed upon it by the cans in the carrier. My invention is directed to a carrier which meets the above requirements and is particularly suitable for volume production in high speed machinery. Further objects and advantages of my invention will appear from the detail description.

In the drawings:

Figure 1 is a perspective view of a carrier embodying my invention in its setup condition ready for loading;

Figure 2 is a plan view of the carrier of Figure 1 in its flat folded condition;

Figure 3 is a plan view, on a reduced scale, of a blank from which the carrier of Figure 1 is formed;

Figure 4 is a fragmentary sectional view, taken substantially on line 4—4 of Figure 1; and

Figure 5 is a fragmentary sectional view taken substantially on line 5—5 of Figure 1.

The carrier shown in Figures 1 and 2 is formed from the blank shown in Figure 3, which is cut from suitable sheet material, such as paperboard, and is of elongated rectangular or oblong shape in plan, the blank being shown with its inner face uppermost. The blank of Figure 3 is suitably cut and scored to provide a glue flap 6 at one end of the blank attached along a fold line 7 to the inner edge of a first bottom wall panel 8 to the outer edge of which is attached, along a fold line 9, the lower edge of a first side wall panel 10 to the upper edge of which is attached, along a fold line 11, the outer edge of a first top wall panel 12. The top wall panel 12 is attached, along a fold line 13, at its inner edge, to a first handle flap 14 attached at its upper edge, along a fold line 15, to the upper edge of a second handle flap 16 attached at its lower edge, along a fold line 17, to the inner edge of a second top wall panel 18. The second top wall panel 18 is attached at its outer edge, along a fold line 19, to the upper edge of a second side wall panel 20 attached at its lower edge, along a fold line 21, to a second bottom wall panel 22 to the inner edge of which is attached, along a fold line 23, a center partition panel 24 to the upper edge of which are attached, adjacent each end thereof, along a fold line 25, end portions 26 of a third handle panel.

Each of the bottom wall panels 8 and 22 is provided, adjacent each end thereof, with a generally arcuate retaining tab 28 integrally attached thereto along a transverse fold line 29, and each of the top wall panels 12 and 18 is likewise provided with an arcuate retaining tab 28 attached thereto along a transverse fold line 29. Each of the handle panels is provided, at the midportion thereof, with a finger opening 30 of generally oblong formation with outwardly tapering end portions, such opening 30 extending a slight distance below the fold lines 13 and 17, respectively, i.e., outwardly of the top wall panels 12 and 18, respectively. A supporting flap 31 is cut from the mid-area of the inner portion of each of the top wall panels 12 and 18, this flap 31 being of generally flattened V-shape, conforming generally in outline to the lower portion of opening 30 and being integrally attached at its ends to the corresponding handle flap at the ends of opening 30 therein. A securing tab 32, formed of material cut from the upper portion of opening 30 in the handle flap 16, is attached to handle flap 16 at the upper edge of opening 30 therein along a fold line 33. The width of securing flap 32 is but slightly less than the width of the upper portion of the handle flap 16 between the fold lines 15 and 33. The midportion of center partition panel 24, at the upper end thereof, is cut out to provide a notch or opening 34 therein extending from the upper edge of panel 24 between the third handle panel portion 26 and a short distance downward beyond the fold line 25. In the above description of the blank of Figure 3 the elements thereof have been described with reference to the positions which they occupy in the completed carrier, with a view to avoiding confusion. The blank is of simple oblong form and may readily be cut in the manner above described with but a minimum of waste material.

In order to produce the carrier of Figures 1 and 2 from the blank of Figure 3, suitable adhesive is applied to the inner surfaces—the upper surfaces in Figure 3—of the load supporting flaps 31, the lower portions of the handle flaps 14 and 16 adjacent the lower portions of the openings 30 therein and to the upper portions of the handle flaps 14 and 16, above the openings 30; as indicated by the stippling. In that connection, it will be noted that the height of the end portions 26 of the third handle flap is considerably less than the height of the handle flap 16 and corresponds approximately to the distance between fold line 17 and the upper edge of the adhesive coated area adjacent each end of opening 30 in handle flap 16. After adhesive has been applied to the areas of the blank above described, the first bottom wall panel 8 is folded about fold line 9 downwardly onto the first side wall panel 10 and the then upper face of the glue flap 6 is provided with a coating of adhesive. The blank is then folded about fold line 21 so as to dispose the second bottom wall panel 22 in overlying relation to the lower portion of the second side wall panel 20, with the center partition panel 24 disposed in overlying relation to the upper portion of panel 20 and the second top wall panel 18, with the lower edge of cutout or notch 34 in register with the upper edge of load supporting flap 31 attached to the handle flap 16, the portion of panel 24 below notch or opening 34 therein seating on the adhesive coated surface of load supporting flap 31 and the end portions 26 of the third handle flap seating on the adhesive coated areas of handle flap 16 adjacent the ends of the opening 30 therein. The partially folded blank is then folded about the fold line 15, after folding the securing flap 32 over onto the midportion of the adhesive coated area at the upper portion of the handle flap 16, disposing the handle flap 16 in

overlying relation to the handle flap **14**, with the third handle flap portions **26** seating on the adhesive coated areas of handle flap **14** adjacent the ends of opening **30** therein, the center partition panel **24** overlying the first top wall panel **12** and the upper portion of the first side wall panel **10** and the adhesive coated surface of glue flap **6**, the fold line **21** being then in register with fold line **6** and the second bottom wall panel **22** overlying the first bottom wall panel **8**. Upon completion of the folding of the blank in the manner stated, the blank in its folded condition is maintained under appropriate pressure until the adhesive has set, thus completing the carrier in its folded condition shown in Figure 2.

The folded carrier of Figure 2 may be set up for use by subjecting it to vertical pressure effective for moving the top and the bottom wall panels to horizontal position, with the side wall panels and the center partition panel disposed vertically, the carrier then appearing as shown in Figure 1. In the completed carrier the infolded securing tab **32** provides, in conjunction with the upper portions of the handle flaps **14** and **16**, three thicknesses of material at the upper portion of the handle structure, above the finger openings **30**, and the third or inner handle flap end portions **26** provide, in conjunction with the handle flaps **14** and **16**, three thicknesses of material at the lower portion of the handle structure, at each end of the finger opening therethrough. The load supporting flaps **31** extend from the handle structure downward along the center partition panel and are secured to the opposite faces thereof providing, in conjunction with the corresponding areas of the center partition panel **24**, three thicknesses of material. Accordingly, the upper portion of the carrier is of substantially uniform thickness, comprising three thicknesses of material, as is shown more clearly in Figures 4 and 5, which facilitates the gluing operation and is conducive to high speed folding and gluing of the blanks to produce the carriers on a large volume basis. The handle structure is of exceptional strength and rigidity, particularly at the upper portion thereof above the finger opening, and well able to support the load to which it is subjected. The load supporting flaps **31**, in conjunction with the center partition panel **24**, provide a structure of substantial strength well capable of supporting the load at the central area of the carrier.

As above mentioned, in the loaded carrier the retaining tabs **28** are folded inwardly and engage the chimes of the end cans of the rows of cans for retaining the latter in the carrier. The paperboard of which the carrier is formed usually is tough and difficult to tear. In order to facilitate release of the cans each of the top wall panels **12** and **18** is provided with a series of cuts **35** extending from each outer corner of the opening **36** corresponding to the load supporting flap **31** to a point adjacent the outer end of the fold line **29** of the corresponding retaining tab **28**. The area of the top wall panel between the tear lines defined by the cuts **35** comprises a tear out portion **37** which may readily be torn from the top wall panel by grasping such portion at its inner edge, by inserting the fingers through the opening **36**. The opening **36** is disposed at the midarea of the inner portion of the top wall panel and converges outwardly thereof, thereby avoiding any objectionable weakening of the panel area adjacent the respective retaining tabs **28** which, in conjunction with the outwardly diverging tear lines provided by the cuts **35**, facilitates release of the cans in the manner stated while assuring that the top wall panels are not objectionably weakened and are of adequate strength for supporting the cans and retaining them within the carrier.

It will be understood that changes in detail may be resorted to without departing from the field and scope of my invention, and I intend to include all such variations, as fall within the scope of the appended claims, in this application in which the preferred form only of my invention has been disclosed.

I claim:

1. In an open ended carrier for chimed end cans and comprising a bottom wall, two side wall panels, two top wall panels, two handle flaps extending upward from the inner edges of said top wall panels, and a center partition panel extending upward from said bottom wall with its upper portion secured between said handle flaps providing therewith a three ply handle structure; load supporting flaps cut from the inner midportions of said top wall panels integrally attached to the lower edges of said handle flaps and extending therefrom downward along and secured to said partition panel, and can retaining tabs cut from said top wall panels adjacent the ends thereof and hinged thereto at their inner edges along fold lines extending transversely of said top wall panels, said load supporting flaps and the corresponding openings in said top wall panels being of materially less extent lengthwise of said top wall panels than the distance between said fold lines of said tabs, said top wall panels, except for the openings therein corresponding to said load supporting flaps and said tabs, being substantially imperforate and effective for restraining cans in said carrier against upward displacement therefrom, said top wall panels being respectively provided with weakened tear lines extending from the ends of the load supporting flap opening to points adjacent the outer ends of the hinge lines of said tabs and defining between them a tear out portion having its inner edge exposed at said load supporting flap opening to be readily grasped for tearing said portion from said top wall panel for ready access to and removal of cans from said carrier.

2. In an open ended carrier for chimed end cans and comprising a bottom wall, two side wall panels, two top wall panels, two handle flaps extending upward from the inner edges of said top wall panels, and a center partition panel extending upward from said bottom wall with its upper portion secured between said handle flaps providing therewith a three ply handle structure; load supporting flaps cut from the inner midportions of said top wall panels integrally attached to the lower edges of said handle flaps and extending therefrom downward along and secured to said partition panel at opposite sides thereof, and can retaining tabs cut from said top wall panels adjacent the ends thereof and hinged thereto at their inner edges along fold lines extending transversely of said top wall panels, said load supporting flaps and the corresponding openings in said top wall panels being of materially less extent lengthwise of said top wall panels than the distance between said fold lines of said tabs, said top wall panels, except for the openings therein corresponding to said load supporting flaps and said tabs, being substantially imperforate and effective for restraining cans in said carrier against upward displacement therefrom, said top wall panels being respectively provided with weakened tear lines extending from the ends of the outer side of the load supporting flap opening to points adjacent the outer ends of the hinge lines of said tabs and defining between them an outwardly flaring tear out portion having its inner edge exposed at said load supporting flap opening to be readily grasped for tearing said portion from said top wall panel for ready access to and removal of cans from said carrier.

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