Dec. 30, 1952 W. A. RINGLER 2,623,683

PARTITIONED CARRIER AND METHOD OF MAKING IT

Filed Feb. 20, 1947 2 SHEETS—SHEET 1

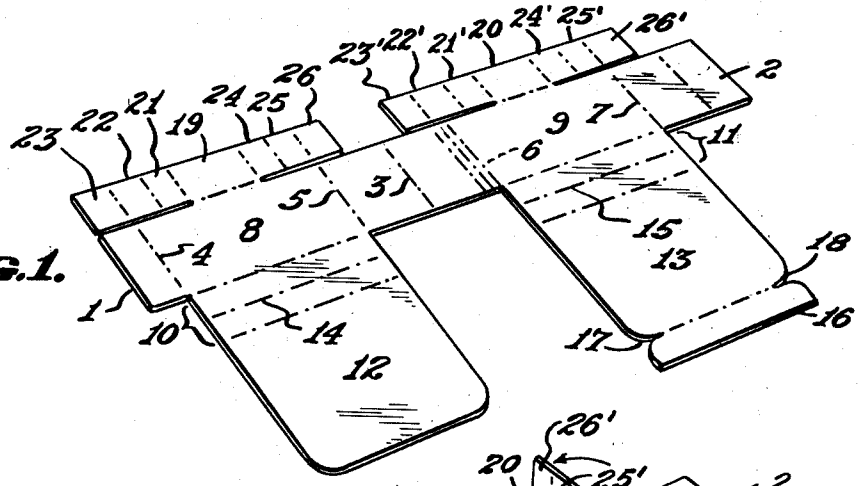


FIG. 1.

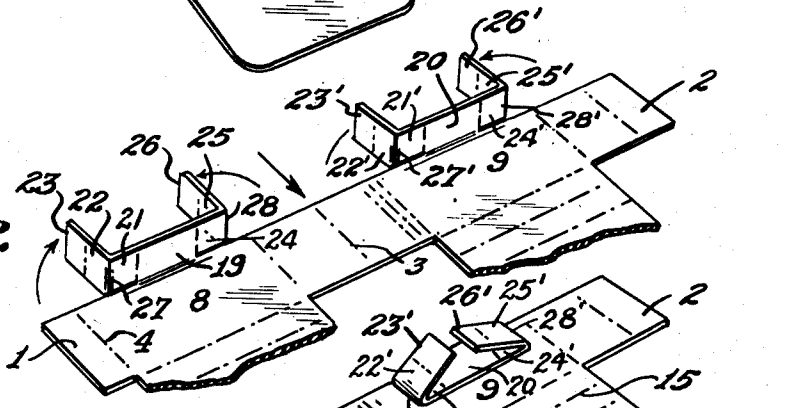


FIG. 2.

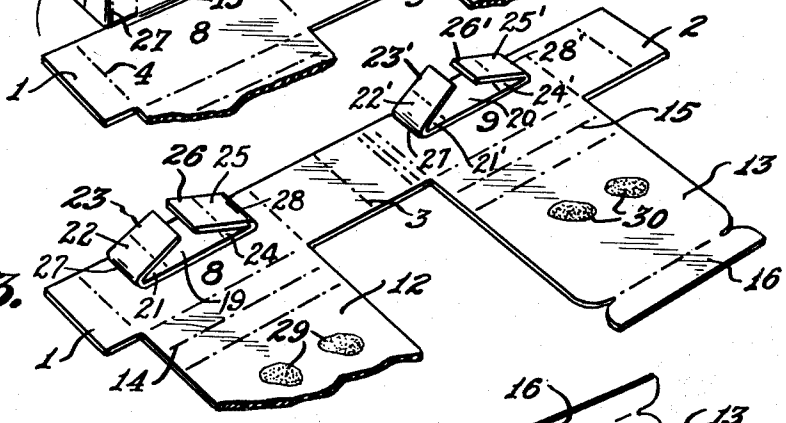


FIG. 3.

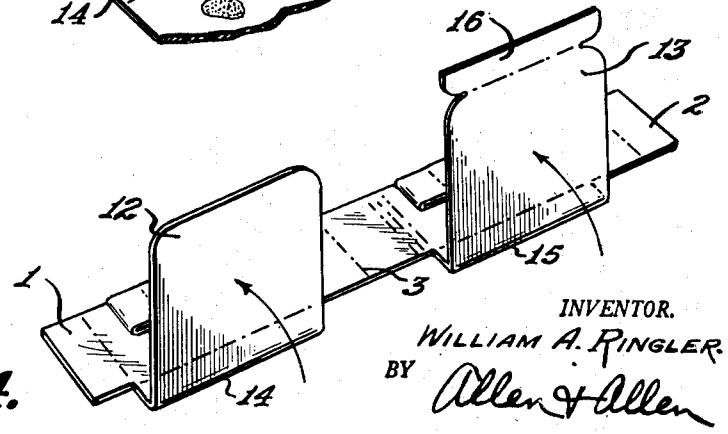


FIG. 4.

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PARTITIONED CARRIER AND METHOD OF MAKING IT

Filed Feb. 20, 1947 2 SHEETS—SHEET 2

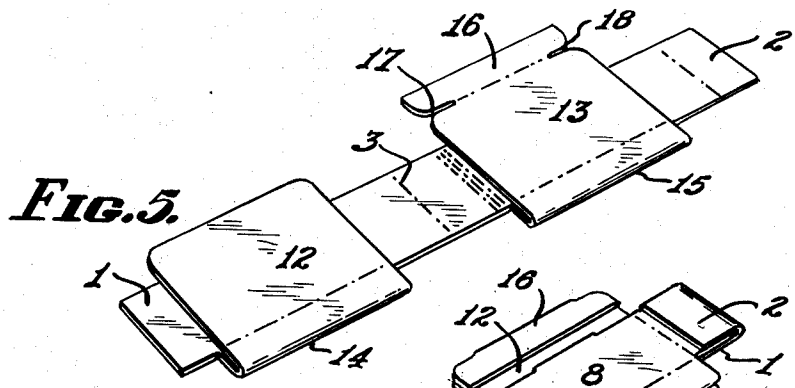


FIG. 5.

FIG. 7.

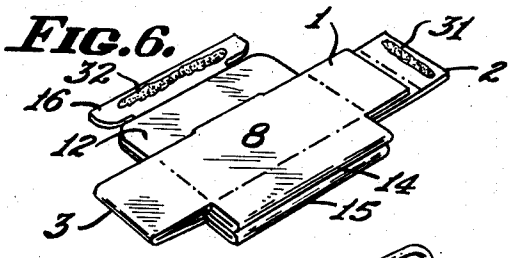


FIG. 6.

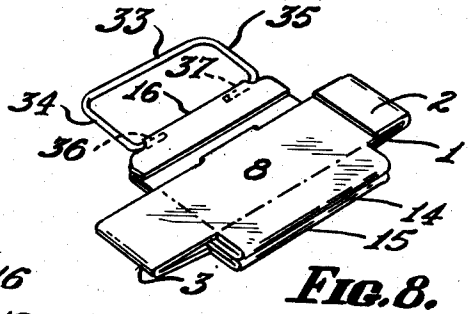


FIG. 8.

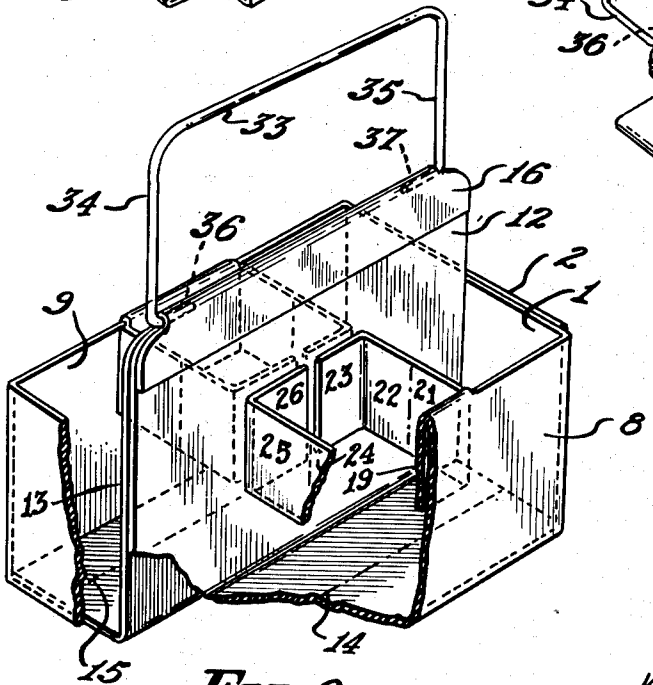


FIG. 9.

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PARTITIONED CARRIER AND METHOD OF MAKING IT

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Application February 20, 1947, Serial No. 729,795

2 Claims. (Cl. 229—28)

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My invention relates to the provision of carriers for assemblies of articles such, for instance, as bottles. The carriers are in form similar to those set forth in my copending application Serial No. 582,907, filed March 15, 1945, now abandoned, and entitled Carriers for Bottles, and comprises a closed band portion for surrounding the assembly of articles and a closed loop portion consisting of articulated members so related as to form when in the erected position bottom members for supporting the articles of the assembly and a double thickness portion extending upwardly within the band, serving to divide one row of articles from another, and serving also either as a handle member for the carrier or as a means to which a handle member can be attached.

There are a number of advantages in this type of carrier including strength and security, ability to stand alone in the erected condition whether or not filled with bottles, an attractive appearance, and a structure which permits the stacking of filled carriers one on another.

It is desirable however to provide such carriers with additional partition means to support individual articles in the carriers, and a principal object of this invention is the provision of a partitioned carrier of simplified and economical form and the provision of a simplified and economical process of producing it.

More specific objects of the invention are the provision of a structure and method wherein the entire knock-down carrier may be made by a series of operations performed upon a single blank of paperboard or the like, and wherein the partitioned members are therefore integral with the blank. It is an object of the invention to provide a one-piece carrier of the type to which reference has been made. It is also an object of the invention to gain the advantages set forth in a knock-down or collapsible structure wherein partition members fold along with other elements during collapsing and erection and wherein the partition members assist in maintaining the erected form of the structure to the extent that it becomes self-sustaining and not liable to tipping when unfilled or only partially filled.

These and other objects of the invention which will be set forth hereinafter or will be apparent to one skilled in the art upon reading these specifications, I accomplish in that structure and arrangement of parts and in that procedure of which I shall now describe an exemplary embodiment. Reference is made to the drawings forming a part hereof and in which:

Figure 1 is a perspective view of the unfolded paperboard blank for my structure.

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Figures 2, 3, 4, 5, 6 and 7 are respectively all perspective views showing the successive stages of folding and gluing characteristic of my method.

Figure 8 is a plan view of the formed article with a wire handle element which I may use.

Figure 9 is a perspective view of the erected carrier.

Referring to Figure 1, I have shown at 1 a band portion for my carrier. It is provided with a glue flap 2 by means of which its ends may be joined to form it into a closed band. Since this will be done by folding, I provide an intermediate score line indicated at 3.

The parts of the band 1 divided by the score line 3 will form both the sides and ends of the band portion of the carrier. If desired these parts may be left free of additional score lines so that they will follow the shape of the assembly of articles; but I may provide additional score lines as at 4, 5, 6, and 7 to demark side portions of the band from end portions thereof. A series of score lines in the end portions may also be employed to facilitate the following of a curved contour by the band when the carrier is erected. Side portions of the band have been indicated by the index numerals 8 and 9.

Members are articulated to one of the edges of the side wall members 8 and 9 of the band. These members include bottom forming portions 10 and 11 and central partition members 12 and 13. The bottom forming members are provided with intermediate longitudinal score lines 14 and 15. Element 13 is provided with an articulated glue flap 16. The line of articulation between glue flap 16 and the member 13 may be notched inwardly from the ends of these members as indicated at 17 and 18 for engagement with handle means.

To the opposite edges of the side members 8 and 9, I articulate partition forming elements. These comprise central panels 19 or 20 which are joined to the side members of the band, and additional articulated elements 21, 22, 23, 24, 25 and 26. These are indicated as articulated to each other and to the panel 19; but they are free of articulation to the band portion. Similar elements indicated by primed index numerals are articulated to the panel 20.

The combined width of elements 21 and 22 and of elements 24 and 25 will be sufficient to extend between the side element 8 and the center partition element 12 in the erected container. Portions 23 and 26 are attachment flaps and will be adhesively secured to the element 12 in forming up the partition element in knock-down condition. It is bent along the lines of articulation

between 21 and 22 and between portions 24 and 25 respectively.

Figures 2 to 7 inclusive illustrate successive steps in the folding and gluing of my carrier into knockdown condition. As indicated in Figures 2 and 3, preferably the first step begins with the folding of the partition panels 19 and 20. In the first of these figures these panels are shown folded to a position substantially at right angles to the side panels 8 and 9 of the band element, and concurrently the portions 22, 23 and 25, 26 are folded toward each other along the lines of articulations 27 and 28. The folding of the panels 19 and 20 may be a continuous operation ending with these panels completely infolded and lying over and parallel to the side members 8 and 9 of the band; and concurrently the end portions of the partition members are folded toward each other until they finally lie above the panels 19 and 20 and parallel to them. The directions involved in these folding operations are indicated in the figures by arrows.

Next glue or other suitable adhesive is applied to the central partition elements 12 and 13 as indicated in the shaded areas 29 and 30. These areas are so positioned and proportioned as to bring the adhesive against parts 23 and 26 and their primed counterparts when the blank is further folded along score lines 14 and 15 as indicated in Figure 4. The condition of the structure at the completion of the last mentioned folding operations is shown in Figure 5.

Next the blank is folded along the intermediate score line 3 of the band to bring it into the condition shown in Figure 6. Glue may be applied as at 31 to the glue flap 2 of the band and as at 32 to the glue flap 16 articulated to element 13. The final operations in forming the knock-down carrier include the infolding of the glue flaps 2 and 16 as shown in Figure 7. These last mentioned operations form the band portion of my carrier into a closed band and the loop portion of my carrier into a closed loop. It will be noted that in the knock-down condition the central partition member comprising elements 12 and 13 extend through the band and that the lateral partition elements are in knock-down position and attached both to the side members of the band and to the parts 12 and 13 of the central partition. The bottom portions 10 and 11 of the carrier are collapsed along their medial score lines 14 and 15.

The folding and gluing operations which have been described are well adapted for performance by mechanical elements in carton folding and gluing machines. There are for example known and available machines having sections in which fore and aft transverse folds may be made by elements traveling with the carton blanks. My blanks may be sent through such a machine with the rear traveling folding elements adjusted to fold forwardly the panels 19 and 20 while shaped stationary rods engage portions 22, 23 and 25, 26, and by holding them cause them first to fold rearwardly as in Figure 2 and then lay them down over the infolded partition elements as in Figure 3. A spot gluing apparatus may be employed in this section of the machine or between sections to apply the adhesive areas 29 and 30; whereupon forward folding elements traveling with the blank may be employed to fold rearwardly the elements indicated as so folded in Figures 4 and 5. With the blank still traveling in the same direction, stationary sweeps together with suitable holding means as known in the art may be employed to do the folding of the blank along the score line 3, while gluing apparatus similar to that employed in continuous carton folding machines may apply a glue stripe to the glue flap 2. A stationary sweep will then be employed to fold inwardly this glue flap.

This leaves only the folding and gluing of the central partition glue flap 16. This may be accomplished in several ways as by a traveling folder and spot gluing mechanism in another section of the same machine during a continuation of the movement of the blank in the same direction, or use may be made of a machine section at right angles to the first mentioned section, wherein the glue flap 16 may be striped with adhesive and folded by means of a stationary sweep. Again it is possible to take the knockdown carriers in the condition illustrated in Figure 6, and pass them through the usual continuous carton folding and gluing apparatus in a direction longitudinal of the band portion, in order to stripe the glue flap 16 and fold it inwardly.

Figure 9 is illustrative of the erected condition of my carrier. It will be noted that the band portion has been expanded into a position in which it will surround an assembly of articles. The folded section of the bottom elements 10 and 11 have been flattened out and brought into a position at right angles to the side panels 8 and 9 of the band. A central longitudinal partition formed of elements 12 and 13 extends upwardly in a central position between the side elements 8 and 9 of the band; and the previously folded lateral partition elements have been expanded and have come into position to separate articles in the rows thereof on each side of the longitudinal position 12, 13.

The longitudinal elements 12, 13, may if desired be extended so as to rise above the tops of the articles to be held in the carrier, and they may be provided with hand holds which form a handle. It is also possible under these circumstances to omit the glue flap 16 and the operations required to fold and secure it. Score lines in the extended handle members may be used to enable these to fold away from each other over the tops of the articles in the carrier to permit stacking.

However, I prefer to provide a closed loop portion as has been described and to use in connection with the loop portion a separate handle element such as is illustrated in Figure 9. This element is of suitable stiff wire bent to form a bail 33, legs 34, and 35 attached to the bail, and inturned portions 36 and 37 at the lower ends of the legs. In use the inturned portions 36 and 37 engage in the closed end of the loop and support the weight of the carrier and its contents. When the carrier is not being lifted by the handle, the handle may be depressed to a position in which the bail portion 33 will lie below the tops of the articles in the carrier for stacking purposes. It will be understood that the inturned portions 36 and 37 and the leg portions 34 and 35, slide between the central partition elements 12 and 13 to permit such depression of the handle.

Modifications may be made in my invention without departing from the spirit of it. Having described my invention in an exemplary embodiment, what I claim as new and desire to secure by Letters Patent is:

1. A method of forming one-piece knock-down carriers which comprises providing a blank hav-

ing an elongated band portion with a glue flap at one end, said band portion being of a length to surround an assembly of articles and to form side and end wall portions thereabout, parts articulated to the bottom edges of said side wall portions and scored to form bottom members and central partition forming members, lateral partition elements articulated to the upper edges of said side wall portions and scored to form parts adapted to lie inwardly of and parallel to said side wall portions, other parts adapted to extend between said first mentioned parts and the central partition forming members, and additional parts for adhesive attachment to said central partition forming members, there being medial score lines in the end wall portions, in the bottom forming members and in the parts of the lateral partition elements extending from the side wall portions to the central partition forming members, moving said blank in a direction transversed the length of the band portion and during such movement, folding inwardly the elements attached to the upper edges of said side wall portions and folding toward each other along said medial score lines the remaining parts of said lateral partition element, folding inwardly the parts articulated to the bottom edges of said side wall portions along the score lines intermediate the bottom members, thus bringing the central partition forming members into a position overlying folded portions of the lateral partition elements with the interposition of adhesive therebetween, and while maintaining the folded position of the previously folded parts, folding said band portion on said intermediate score line in its end wall portion, and thereafter folding the band glue flap against the free end of the band with the interposition of adhesive therebetween.

2. A one-piece, knock-down, fully partitioned paperboard bottle carrier comprising a closed band for surrounding an assembly of bottles, said band having a side wall, an end wall, a side wall and an end wall in articulation in the order named, extensions articulated to the bottom edges of said side walls, said extensions being scored to provide bottom forming members of substantially half the width of the erected carrier, and central longitudinal partition forming members extending upwardly centrally within said band, said central partition forming members being in face-to-face contacting relationship forming a double thickness central partition, said bottom members and said double thickness central partition being free of attachment to said end walls, lateral partition elements extending between the side walls of the band and the double thickness central partition, said lateral partition elements having part articulated to the upper edges of said side walls centrally thereof and folded to lie inwardly of and in contact with the inner surfaces of said side wall portions, intermediate parts of said partition elements extending between said first mentioned parts and the double thickness central partition, and additional parts on the ends of said intermediate parts lying along said double thickness central partition and adhesively secured thereto, vertically disposed medial score lines in said end walls and in said intermediate parts of said lateral partition elements, and horizontally disposed medial score lines extending from end to end of said bottom forming members, whereby said carrier may be collapsed by pressing inwardly on said side walls so as to cause said end walls, the intermediate portions of said lateral partition elements and the bottom forming members to concurrently collapse along their respective medial score lines.

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