PLATE BLANK FOR CARRYING DEVICES FOR BOTTLES AND A CARRYING DEVICE FOR BOTTLES

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ABSTRACT

A plate blank of cardboard or a similar material consisting of a plurality of carrying devices for bottles, which devices are interconnected by weakening lines so that the plate blank as a unit can be mounted on all the bottles which are arranged vertically in a case, and the weakening lines simultaneously or later can be broken, so that a plurality of carrying devices each engaging a group of bottles are constituted in the case, so that the carrying devices with bottles can be removed from the case independently. The invention also includes a carrying device of the said kind having stiffening flanges along their edges and in another embodiment two layers, so that each carrying device in loaded condition is shaped like a three-dimensional beam with great strength and stiffness.

5 Claims, 9 Drawing Figures
PLATE BLANK FOR CARRYING DEVICES FOR BOTTLES AND A CARRYING DEVICE FOR BOTTLES

The invention relates to a plate blank of cardboard or a similar material for forming a number of carrying devices, each adapted to engage and carry a number of bottles of a larger group of bottles standing upright in a case, the said carrying devices having holes for receiving the bottle necks, and webs which are provided around the holes and so adapted that when bent out they constitute supporting webs for projecting parts of the bottle necks, each carrying device having finger grip means.

It has become practice to provide bottles with carrying means placed on the neck of a certain number of bottles, for example four or six bottles, which can then be carried by means of the carrying device. It has also been proposed to place such groups of bottles in a bottle case capable of receiving a number of groups having each its carrying device.

It is known to place a continuous, strip-formed plate blank on two parallel rows of bottles and subsequently to separate the blank into a number of carrying devices along transverse cutting lines, the said carrying devices with their bottles being then each of them separately placed in a case. This method is comparatively time-consuming and rather difficult to automatize.

The plate blank according to the present invention has the essential feature that it is of a form conforming substantially to the opening of the case and is provided with weakening lines extending parallelly with the rows of bottles and defining the individual carrying devices.

With the plate blank formed in this manner it may be placed as a whole on the bottles in a case, after which a suitable working plunger may press the total plate blank down over the total number of bottle necks and possibly break the weakening lines simultaneously so that the plate is divided into a number of separate carrying devices, each engaging and carrying a group of bottles. As a result, both the manufacture and the arrangement of the carrying devices on bottles in cases may be performed quickly and fully automatically.

The invention is also concerned with various embodiments of carrying devices of the aforesaid kind, by which special advantages are obtained as will appear from the following description.

Thus, according to the invention there is provided a carrying device which may have a comparatively great rigidity and carrying capacity with the use of supporting flanges produced by punching and folding.

To ensure easy deformation and tearing up and for economical reasons the plate material preferred is comparatively thin, but thereby it will be difficult to obtain the necessary rigidity and carrying capacity. This difficulty is relieved by the present invention by making the carrying device of two layers, converting it to a hollow section of great rigidity when folding it.

The invention is also concerned with such a two-layer carrying device in which the lower plate portion is provided with outwardly bendable guiding webs which facilitate the introduction of the bottle necks into the carrying device and afford lateral support for the bottle necks.

Various embodiments of a plate blank and a carrying device according to the invention will now be described with reference to the drawing, in which

FIG. 1 is a top view of a punched plate blank,
FIG. 2 is a section taken on the line II—II of FIG. 1, when the two layers are glued together,
FIG. 3 is the carrying device, according to FIG. 2 in working position,
FIG. 4 is the same as in FIG. 3, showing a modified embodiment,
FIG. 5 is the upper plate portion for a carrying device according to FIG. 4 in its flat condition,
FIG. 6 is the lower plate portion for the carrying device according to FIG. 4 in its flat condition,
FIG. 7 the carrying device according to FIGS. 4—6, viewed in perspective and in its active position,
FIG. 8 a part of the lower plate portion of a carrying device in a modified embodiment, and
FIG. 9 a part of FIG. 4 showing a modified embodiment.

FIG. 1 shows a punched plate blank according to the invention. The blank consists of two rectangular plate portions 1 and 2 joined along a folding line 3 and made by punching of cardboard or a similar material. The plate portion 1 is provided with side webs 4 serving when the plate blank is placed on top of the bottles in the bottle case to cover the finger grip openings in the case.

The plate portion 1 is provided with six rows of holes 5, each row consisting of five holes. These holes are surrounded by radial cuttings 6 forming peripherally arranged webs 7 which are bent out of the plane of the plate when a bottle neck is pressed through the hole 5 and form supports capable of carrying a bottle by resting against a projection provided on the bottle, for example the downwardly directed edge of the bottle cap.

In the following the longitudinal direction of the plate blank is referred to as the direction from left to right in FIG. 1, whereas the transverse direction is constituted by the direction up and down in the drawing, that is, at right angles to the longitudinal direction.

The plate portion 1 is further provided with longitudinal weakening lines 8 forming a tearing strip 9 between them, of which the plate portion 1 has two parts, which divide the plate portion into three longitudinal zones, each containing ten holes 5. The plate portion 1 is further provided with three transverse cutting lines 10 which divide the said zones into two sections, one containing six holes 5, whereas the other one contains four holes 5.

The plate portion 1 is further provided with twelve circular finger grip openings 11 along a longitudinal center line 12 between the rows of holes. The said center line 12 is formed as a folding line with its back projecting upwards in FIG. 1. On either side of the folding line 12 is a folding line 13 parallel therewith and having its back directed oppositely that of the folding line 12.

The plate portion 2 has a number of openings 14 corresponding to the openings 5, that is, when the two portions are folded over the folding line 3, the openings 14 will be concentric with the holes 5.

The holes 14 are provided with radial cut 15 in one side so as to form three webs 16 which similarly as the webs 7 constitute supporting webs.

The plate portion 2 is provided with longitudinal weakening lines 17 which limit a tearing strip 18. The plate portion 2 has likewise transverse cutting lines 19, and by means of the said lines there are formed sections corresponding to the sections of the plate portion 1.
The plate portion 2 is further provided with longitudinal folding lines 20 extending in the middle of the sections.

On the back of the blank are provided glueing strips a as indicated in FIG. 2; the said glueing strips extend along the tearing lines 8 and 17, that is, on the tearing strips 9 and 18. Furthermore, glueing strips are provided on either side of the folding line 3 and along the upper and lower edges 21 and 22 of the blank.

The plate is attached to the bottles by being pressed as a unit down over their necks. The bottle necks 23 with their caps 24 are passed through the openings 14 and 15, and as a result the webs 7 and 16 are bent out of the plane of the plates so as to form tongues the edges of which are resting against the lower edge of the caps 24 and a bead 25 on the bottle neck.

As will appear from FIG. 3, the webs 16 will keep the underpart spaced from the upper part 1 by its engagement with the bead 25, thus giving the carrying device the hollow section desired in order to provide the requisite rigidity. As will likewise appear from FIG. 3, the folding lines 12, 13 and 20 act upon the carrying device in such manner that it becomes of substantially square cross-section; this applies in particular when the carrying device is pulled upwards by a person putting two fingers 26 through the openings 11, thus carrying the bottles by means of the carrying device. This loaded condition is shown in FIG. 3, in which the carrying device has assumed a tubular form with a large cross-sectional area and consequent very efficient rigidity.

The bottle case with its content may be supplied to the shop with the plates 1, 2 mounted on the bottles, that is, pressed down over the bottle necks as illustrated in FIG. 3, the plate simultaneously protecting the bottles against dirt and light. When the bottles have to be removed from the case, one or more of the tearing strips 9, 18 are removed, which may be done by a single operation, and one or more carrying devices may then readily be pulled out of the case, the cutting lines 10, 19 being so weak as to provide no obstacle.

It is also possible to break the weakening lines when attaching the plate, and in that case the tearing strips 9 may be dispensed with and substituted by ordinary weakening lines.

The embodiment of a carrying device according to the invention as shown in FIGS. 5 and 6 consists of an upper plate portion 101 and a lower plate portion 102. The plate portion 101 has six holes 103 with supporting webs 104. The plate portion 101 has edge flanges 105 and 106 which may be bent outwardly over the folding lines 107 and 108. The lower plate portion 102 — FIG. 4 — is likewise provided with edge flanges 109 and 110 which are narrower than the flanges 105 and 106. The flanges 109 and 110 may be bent over the folding lines 111 and 112. Opposite each hole 103 the edge flanges 105 and 106 form supporting webs 104a, 104b which are at any time lying in the same plane as the flanges 105 and 106 and which — see FIG. 4 — serve to keep the flanges 105, 110 and 106, 109 obliquely downwards. The lower plate portion has holes 120 which, when the carrying device is folded up in three dimensions, are lying concentrical with the holes 103 of the upper plate portion, see FIG. 7.

Along the greater part of the edges of the holes 120 are provided guiding webs 121, 122, 123, 124 which may be bent upwards out of the plane of the plate along folding lines 131, 132, 133, and 134 — see FIGS. 4 and 7. The webs are separated by through-going cuttings extending substantially radially from the holes 120. At such part of the edge of the hole 120 as coincides with the folding line 112 there is no guiding web. The folding lines 131, 132, 133, and 134 and a part of the folding line 112 constitute in combination a polygon. At the middle of the plate portion 102 extends a folding line 137.

The flanges 105 and 106 are glued to the flanges 109 and 110.

Directly before the plate is mounted on the bottles, the flanges are bent obliquely downwards, the central parts of the plate portion 101 and the plate portion 102 being simultaneously removed from each other. When the carrying device is passed down over the bottle necks 141, 142, the caps 143, 144 will at first break their way through the openings 120 and then through the holes 103. When they pass through the openings 120, the guiding webs 121-124 are bent obliquely upwards and the webs 104 are bent upwards in similar manner. The upper end of the said webs will engage the caps beneath their edges. The webs 104a, 104b will contribute to keep the flanges in an obliquely downward directed position. The guiding webs 121, 122, 123, and 124 will together with the flanges 105, 106, 109, 110 act as lateral guides and further make it easier to pass the carrying devices down over the bottle necks as the webs will catch and guide the said necks.

As will be seen from FIG. 5, two inner webs 145 and 146 are cut in the middle of the upper plate portion 101. The said webs may be bent downwards over folding lines 147 and 148, by which there are formed two finger grip holes. The webs 145 and 146 are as indicated provided with holes 149 serving to receive guiding pins of an attachment tool (not shown) and for centering same.

The guiding webs 121 and 124 may be rather wide near the flanges 110 as indicated in FIG. 9. The guiding webs 121 and 124 have a width b substantially equal to or slightly larger than the distance d which is equal to the difference between the width of the flange 105 and the flange 110.

The guiding webs are, as described above, normally limited by substantially radial cuttings in the lower plate portion, but there is nothing preventing the two webs 122 and 123 — to see FIG. 8 — which are close to the folding line 137 from having 150 cuttings 150 substantially parallel with the line 137. That part of the cutting 150 which ends at the edge of the opening 20 is, however, bent so as to be substantially at right to the edge of the hole.

In the foregoing specification are mainly described plate blanks and carrying devices which are with double layers, but the embodiments described may to a wide extent also be used for single layer plate blanks and carrying devices.

I claim:

1. A bottle carrier which comprises an upper plate having a plurality of apertures for receiving the necks of corresponding bottles to be carried, a plurality of web members connected to said upper plate for extension therefrom at said apertures to engage and restrain selected parts of the bottle necks, a lower plate having a plurality of apertures aligned with corresponding
apertures of the upper plate to accommodate extension of the bottle necks through the lower plate, a plurality of web members connected to said lower plate for extension therefrom at the apertures thereof to engage and restrain other selected parts of the bottle necks, and means connecting said upper and lower plates together along a pair of opposite, spaced-apart junction lines disposed in generally symmetrical relation to a central plane of symmetry, said upper and lower plates being deformable into a configuration in which the lower plate is V-shaped about said central plane and in which the apertures and web members of the upper plate are spaced-apart from corresponding apertures and web members of the lower plate to increase the bending resistance of the bottle carrier, said upper and lower plates being connected together along junction lines spaced from the edges of said plates, and the edge portions of said plates being joined together to form double-plate thickness flanges reinforcing the bottle carrier against bending under load of the bottles.

2. A bottle carrier according to claim 1 wherein said upper and lower plates are connected together along parallel junction lines that allow said upper and lower plates to be positioned, both flat, against each other with their respective apertures aligned for insertion of bottles.

3. A bottle carrier which comprises an upper plate having a plurality of apertures for receiving the necks of corresponding bottles to be carried, a plurality of web members connected to said upper plate for extension therefrom at said apertures to engage and restrain selected parts of the bottle necks, a lower plate having a plurality of apertures aligned with corresponding apertures of the upper plate to accommodate extension of the bottle necks through the lower plate, a plurality of web members connected to said lower plate for extension therefrom at the apertures thereof to engage and restrain other selected parts of the bottle necks, means connecting said upper and lower plates together along a first pair of opposite, spaced-apart junction lines disposed in generally symmetrical relation to a central plane of symmetry, means connecting said upper and lower plates together along a second pair of junction lines located between said first pair of junction lines and oriented parallel thereto, and weakening lines disposed in said upper and lower plates and extending along at least one of said second pair of junction lines to subdivide the bottle carrier into a plurality of separable bottle carrier sections each capable of independently supporting for carrying a distinct group of bottles, said upper and lower plates being deformable into a configuration in which for each separable bottle carrier section a portion of the lower plate associated therewith is V-shaped to increase the bending resistance of the bottle carrier section.

4. A bottle carrier according to claim 3 wherein said upper and lower plates have matching peripheral edges dimensioned to engage respective sides of a bottle case.

5. A bottle carrier according to claim 3 wherein said upper and lower plates have weakening lines disposed to subdivide the bottle carrier into two classes of separable bottle carrier sections, one class of bottle carrier sections being disposed to receive a different number of bottles than the other class of bottle carrier sections.

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