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(54) **A carton with improved securing means.**

(57) A carton 1 has sides 2 which extend to form end portions 3a and 3b and a base 4 which is foldable along dotted line 5 to form an end piece 6. The end portions 3 each have an aperture 7 and the end piece 6 has a fold line 8 and tabs 9. To close the end of the carton 1, the end portions 3a and 3b are bent towards each other and the end piece 6 is folded up. The tabs 9 are raised to position them ready for insertion and are then inserted with the apertures 7 to hold the carton end 10 in position. To secure the closure adhesive is applied to secure the top portion 6a of the end piece 6 to the end portions 3a and 3b.

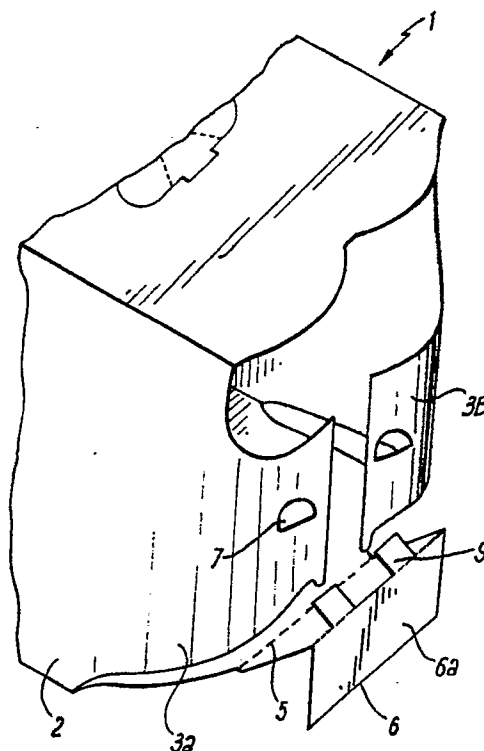


Fig. 2

EP 0 392 107 A1

A Carton With Improved Securing Means

This invention relates to a carton having improved means for securing its ends and to apparatus for filling and securing the carton.

The use of bar codes to distinguish goods is common practice in commerce. One of their many uses has been the labelling of cans or bottles. These are often sold in cartons in packs of four or more, so that the code on each individual can is inaccurate and a different code must be put on the carton. The code on the cans must therefore be obscured so that it is not read by mistake. Previously this problem has been approached by using a carton blank which has an end piece that folds up and obscures the can's code. However the folding arrangement is intricate and complicated and slow to accomplish as a result.

According to the present invention there is provided a carton comprising two opposed sides, a top and a base; the sides having end portions which may be bent inwardly to form ends of the carton; the base having foldably connected end pieces which may be folded to lie adjacent said end portions; the side end portions and base end pieces being formed with interlocking tab and aperture means.

Most preferably, the sides, top and base are made from a continuous piece of flexible material such as cardboard.

Preferably also, said tabs are provided by cut-out portions of said second end piece, and said apertures are cut out of said first end piece.

Preferably also, the interlocking tab and aperture means comprises an aperture formed adjacent the outer edge of each of said side end portions, and a pair of tabs formed on the mating base end piece.

The base end piece may be folded in such a way that the action of folding raises the tabs at right angles to the side end portions, so facilitating insertion into the apertures.

Preferably also the base end piece has adhesive applied to provide more secure engagement with the side end portions.

The carton end so formed is preferably high enough to obscure the codes carried by the cans.

Further according to the present invention there is provided apparatus for filling and securing cartons as defined above comprising means for squaring cartons, means for feeding said cartons to a filling point, means for feeding containers to fill said cartons to the filling point, means for pushing said containers into said cartons, means for folding the side end portions and base end pieces into engagement and for applying adhesive thereto and means for applying pressure to said end portions

and pieces to secure said adhesive.

An embodiment of the invention will now be described by way of example, with reference to the accompanying drawings in which:-

Fig.1 is a perspective view of the carton according to the present invention, with the ends opened out;

Fig. 2 is a partial perspective view of one end of the carton of Fig. 1 with the end half-closed;

Fig.3 is a plan view of the end of the carton of Fig. 1 with the end closed;

Fig. 4 is a top plan view of carton filling apparatus; and

Fig. 5 is a side view of carton filling apparatus.

Referring to the drawings, Fig. 1 shows a carton 1 with sides 2 which extend to form end portions 3a and 3b and a base 4 which is foldable along dotted line 5 to form an end piece 6. The end portions 3 each have an aperture 7 and the end piece 6 has a fold line 8 and tabs 9 which have been formed by cutting them out of the piece 6.

To close the end of the carton 1, the end portions 3a and 3b are bent towards each other and the end piece 6 is folded up along line 5. The tabs 9 are raised by folding along line 8 which positions them ready for insertion, as can be seen in Fig. 2. The tabs 9 are then inserted with the apertures 7 to hold the carton end 10 in position. To secure the closure adhesive is applied to secure the top portion 6a of the end piece 6 to the end portions 3a and 3b.

The carton may be carried by use of a pop-up portion 11 which is raised by folding along dotted lines 12.

A bar code appropriate for the number of cans contained in the carton is applied to the carton end 10 which is of sufficient height to obscure the codes carried by the cans within.

Thus the overall package is provided with a coding appropriate to its contents with no risk of a single code, as applied to the individual cans, being read by mistake.

The basic carton production described above is in practice carried out at high speed by carton filling apparatus 20 as illustrated in Figs. 4 and 5.

Cans to be inserted in cartons are fed into the machine in three lines by an infeed conveyor 21. A series of cartons 22, as described above, are fed from a hopper 23 to a carton set-up device 24 which squares the cartons up leaving the ends open and places the cartons in position to receive the cans. Seating wheels 25 then push the cans into the cartons and tuckers 26 fold the end por-

tions of the cartons into the required position before glue is applied by glue guns 27.

The cartons 22 continue alone the conveyor and are engaged by compression belts 28 which finish the sealing process by pushing the glued portions of the carton together. The finished cartons are then ready for distribution.

Modifications and improvements may be incorporated without departing from the scope of the invention.

Claims

1. A carton comprising two opposed sides, a top and a base; the sides having end portions which may be bent inwardly to form ends of the carton; the base having foldably connected end pieces which may be folded to lie adjacent said end portions; the side end portions and base end pieces being formed with interlocking tab and aperture means.

2. A carton as claimed in Claim 1, wherein said tabs are provided by cut-out portions of said second end piece, and said apertures are cut out of said first end piece.

3. A carton as claimed in Claim 2, wherein the interlocking tab and aperture means comprises an aperture formed adjacent the outer edge of each of said side end portions, and a pair of tabs formed on the mating base end piece.

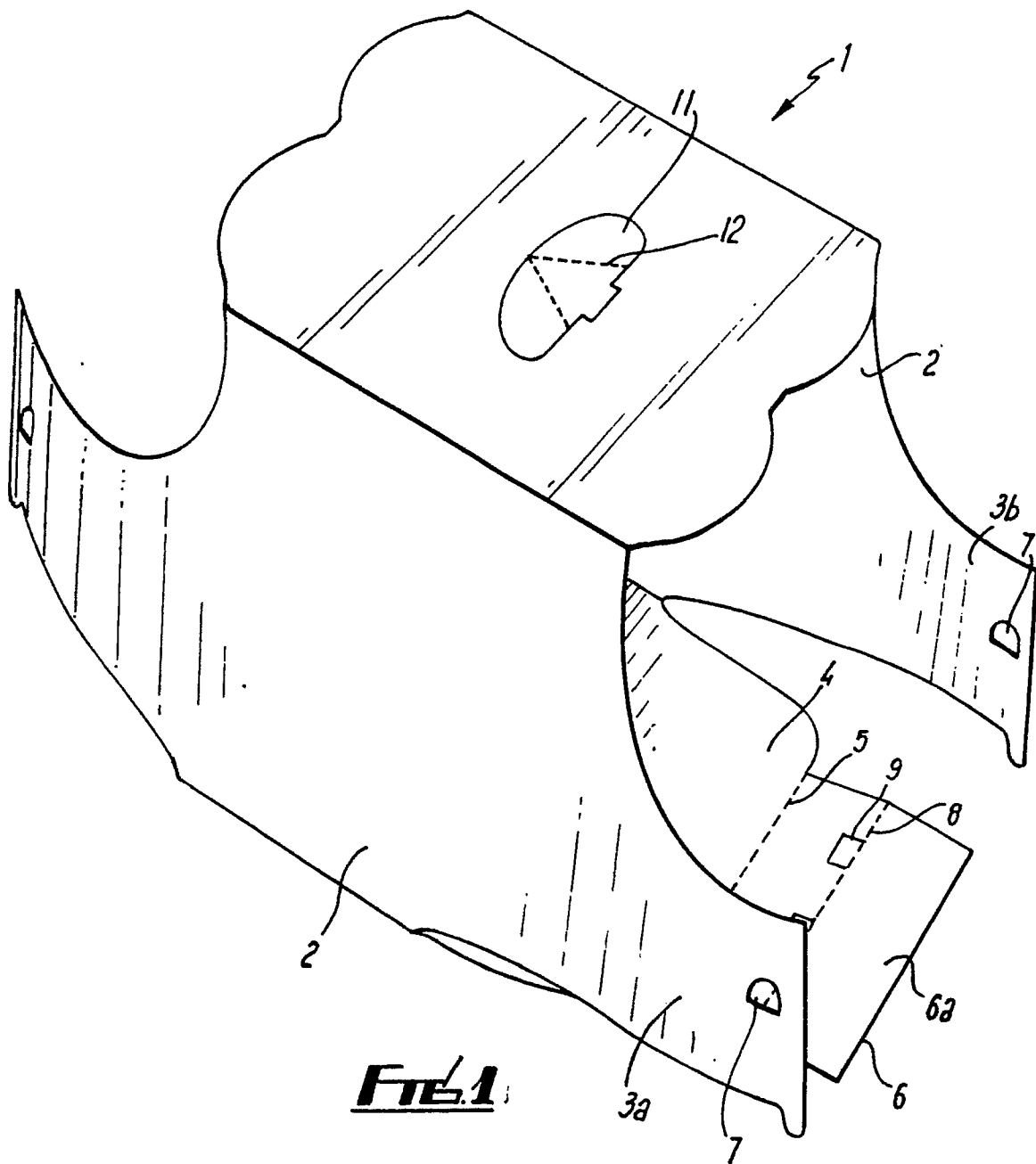
4. A carton as claimed in Claim 2 or 3, wherein the base end piece is folded such that the action of folding raises the tabs at right angles to the side end portions, so facilitating insertion into the apertures.

5. A carton as claimed in any one of the preceding Claims, wherein the base end piece has adhesive applied to provide more secure engagement with the side end portions.

6. A carton as claimed in any one of the preceding Claims, wherein the carton end is formed so as to obscure bar codes on cans contained in the carton.

7. Apparatus for filling and securing cartons as defined in any of the preceding Claims, comprising means for squaring cartons, means for feeding said cartons to a filling point, means for feeding containers to fill said cartons to the filling point, means for pushing said containers into said cartons, means for folding the side end portions and base end pieces into engagement and for applying adhesive thereto and means for applying pressure to said end portions and pieces to secure said adhesive.

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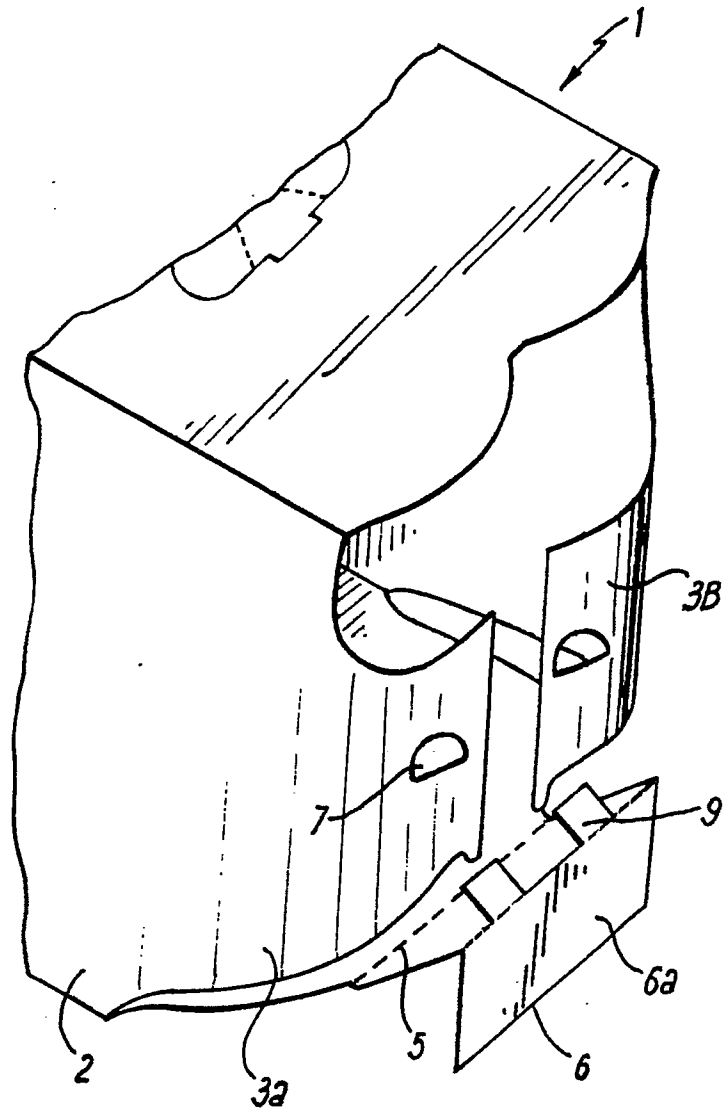


Fig. 2

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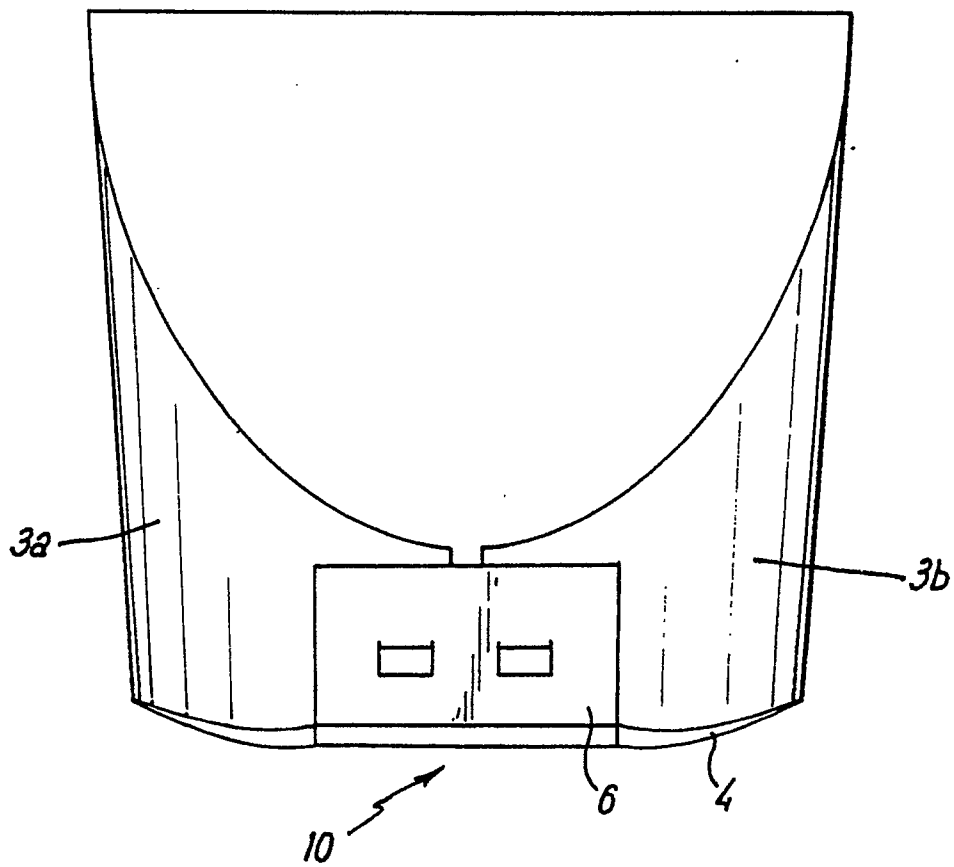
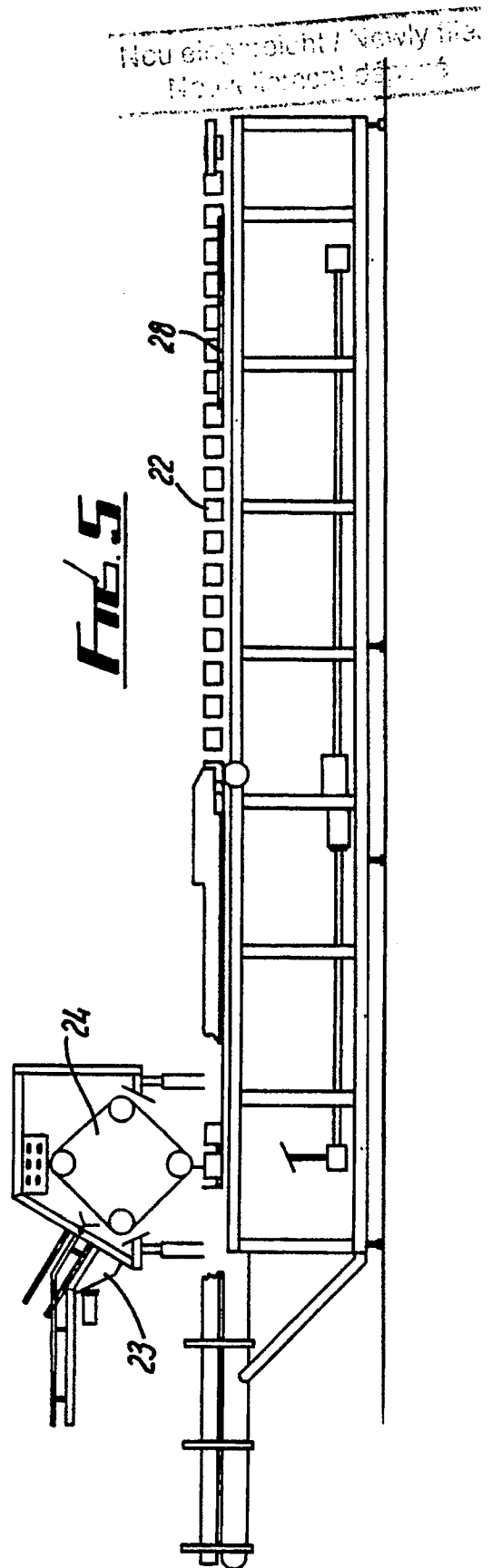
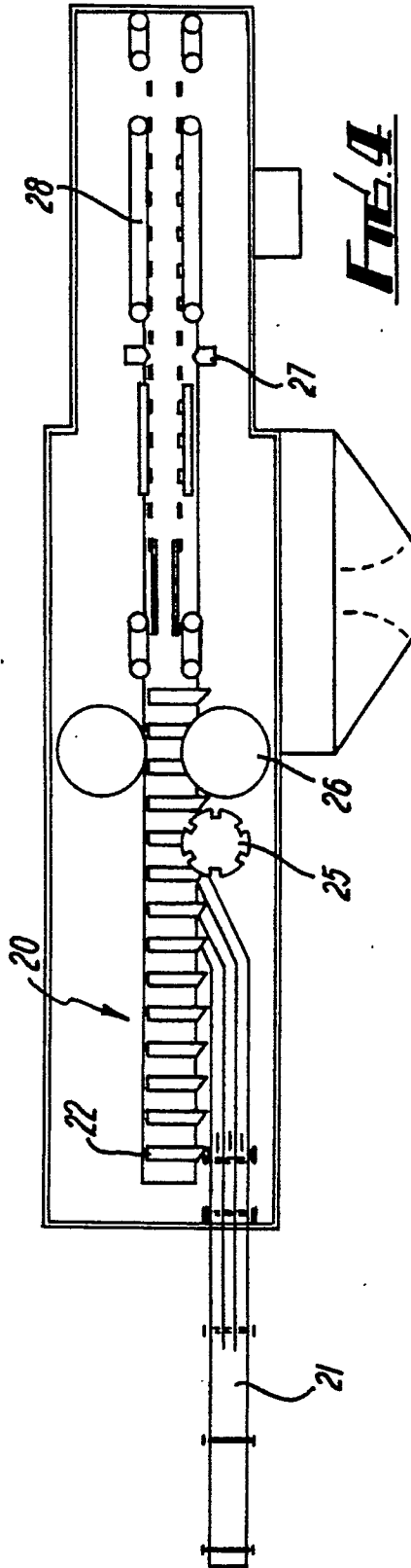


FIG. 3





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EUROPEAN SEARCH REPORT

Application Number

EP 89 30 4696

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
Y	GB-A-2 201 396 (MEAD) * Page 4, line 28 - page 6, line 22; figures * ---	1,4	B 65 D 71/00 B 65 B 11/10 B 65 B 43/42
Y	US-A-3 955 748 (MEAD) * Column 2, lines 30-63; figures 2,4 * ---	1,4	
A	FR-A-2 508 415 (BSN-GERVAIS DANONE) * Page 12, lines 2-26; figures 5,6 * ---	1,5	
X	US-A-4 012 887 (MEAD) * Whole document; abstract * -----	7	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B 65 D B 65 B
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 18-06-1990	Examiner NEWELL P.G.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			