(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 430 512 A1**

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **90312514.4**

(51) Int. Cl.5: **B65D 1/38**

(22) Date of filing: **16.11.90**

(30) Priority: **23.11.89 GB 8926453**

(43) Date of publication of application:
05.06.91 Bulletin 91/23

(84) Designated Contracting States:
AT BE DE DK ES FR GB IT NL SE Bulletin 1

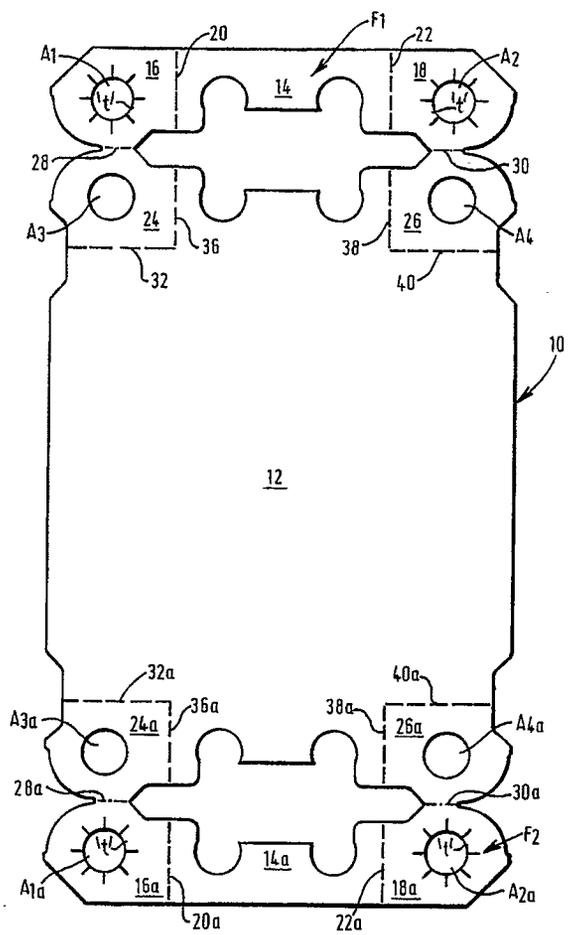
(71) Applicant: **THE MEAD CORPORATION**
2000 Courthouse Plaza NE
Dayton Ohio 45463(US)

(72) Inventor: **Bakx, Martinus**
Hogestede 85
NL-4701 JH Roosendaal(NL)

(74) Representative: **Hepworth, John Malcolm**
Hepworth Lawrence Bryer & Bizley, 36
Regent Place
Rugby Warwickshire CV21 2PN(GB)

(54) Pilfer proof bottle crate cover.

(57) A cover panel (10) for insertion into the top of a bottle crate so that the panel overlies the tops of the bottles or other articles accommodated in the crate, said panel having a main sheet (12) sized so as to substantially close the crate and having in a portion (16, 18; 24, 26) of the main sheet an aperture (A) through which the top of a bottle is received. The main sheet has frangible portions (20, 22; 32, 36; 38, 40) adjacent the aperture and the aperture is so formed as to provide sufficient resistance to the removal of the cover panel that the adjacent frangible portions are broken thereby allowing an incomplete cover panel to be removed.



EP 0 430 512 A1

PILFER PROOF BOTTLE CRATE COVER

This invention relates to a cover panel for overlying the tops of articles, e.g. bottles in a crate, to provide a dust inhibiting panel on which information can be displayed and which is formed so that once removed, a part of the panel is broken away so that prior removal of a panel replaced in the crate readily is apparent.

Cover panels for bottle crates formed from paperboard for providing dust inhibiting panels are well known and our co-pending British Patent Application No 8 904 175 discloses such a panel. In that arrangement the main cover sheet of the panel is provided with foldable end panels at each of its opposite ends which are adapted to be locked into handle holes provided at the opposite ends of a crate so as to secure the cover in position. Whereas this arrangement has proved to be satisfactory, unauthorised removal of bottles from the crate can be easily effected simply by removing the cover and then replacing it so that evidence of this action cannot easily be detected.

The present invention seeks to provide a pilfer proof bottle crate cover which, once removed from the crate, has portions which are torn away and thereby show that removal has taken place.

The invention provides a cover panel for insertion into the top of a bottle crate so that the panel overlies the tops of the bottles or other articles accommodated in the crate, said panel having a main sheet sized so as to substantially close the crate and having in a portion of the main sheet an aperture through which the top of a bottle is received characterized in that the main sheet has frangible portions adjacent the aperture and in that the aperture is so formed as to provide sufficient resistance to the removal of the cover panel that said adjacent frangible portions are broken thereby allowing the cover panel to be released from said bottle top and the incomplete cover removed from the crate.

According to a feature of the invention, said aperture may be formed in a corner portion of said main sheet which corner portion and said main sheet are connected together by said frangible portions.

According to another feature of the invention said corner portion may be included in an end flap which has two opposed and similar corner portions each having one of said apertures therein said corner portions being connected to a centre panel of said flap and to adjacent parts of said main sheet by said frangible connections.

According to yet another feature of the invention said end flap may be frangibly connected to a pair of corner panels of said main sheet each of which are themselves frangibly connected to adjacent areas of said main sheet and include apertures therein, said end flap being secured in superposed relation with an end part of said main sheet such that the apertures in said corner portions of said end flap are disposed in registry with the apertures in said corner panels.

According to yet another feature of the invention, the apertures in said corner panels may be of larger diameter than the apertures in the corner portions of said end flap which latter apertures are each formed with peripheral yieldable tabs which are adapted to engage the underside of the cap of a bottle whose neck portion is located in said aperture.

Preferably, the opposite end of the cover panel is of like construction to that described in any one of the five immediately preceding paragraphs.

An embodiment of the invention will now be described by way of example with reference to the accompanying drawing which is a plan view of a pilfer proof bottle crate cover panel according to the invention.

Referring to the drawing, there is shown an elongate blank 10 formed from paperboard or similar foldable sheet material and which comprises a substantially rectangular plannar main sheet 12 which is adapted to be received through the open top of a suitably sized bottle crate so as to overlie the tops of bottles accommodated in the crate (not shown).

At each of the opposite end edges of the main sheet 12 the cover panel 10 is provided with a hinged flap F1 and F2 respectively. The flaps and the corner portions of the main sheet 12 to which they are attached are of similar construction at each of the ends of the crate and therefore only one of these end constructions (at flap F1) is now described and in which like parts of the opposite end construction are designated like reference numerals with the addition of the suffix 'a'.

Flap F1 comprises a centre panel 14 and a pair of similar end panels 16 and 18, respectively, each of which is connected to the centre panel 14 along frangible score lines 20 and 22, respectively. The panel 16 is formed with a so-called "sunburst" aperture which is well known per se and is adapted to be passed over the top of a bottle so that the neck portion of the bottle extends through the aperture and the peripheral yieldable tabs 't' which surround the aperture engage the underside of the bottle cap. A similar "sunburst" aperture A2 is formed in the panel 18. These "sunburst" type apertures are of smaller diameter than the head of a bottle top which is to be passed through and the

yieldable tabs flex to allow the engagement to take place. Thereafter, with the tabs in engagement with the rim or cap of a bottle removal of the bottle is resisted by the more limited flexing which the tabs can undergo.

Flap F1 is hinged to corner panels 24 and 26 of the main sheet 12 along fold lines 28 and 30, respectively. Corner panel 24 is detachable from the main sheet 12 by virtue of frangible score lines 32 and 36 and likewise corner panel 26 is detachable from the main sheet 12 along frangible score lines 38 and 40. Each of the corner panels 24 and 26 is formed with a circular aperture A3, A4 which is of slightly larger diameter than the adjacent apertures A1 and A2 in the end panels 16 and 18 of flap F1 and are likewise a clearance fit over the head of a bottle top which is to be passed through those apertures.

Flap F1 is adapted to be folded about fold lines 28 and 30 into overlapping relationship with the adjacent end part of the main sheet 12 so that the end panels 16 and 18 are brought into superimposed relationship with the corner panels 24 and 26 and in particular so that the apertures A1 and A3 and apertures A2 and A4, respectively, are brought into registry. Flap F1 is secured, as by gluing, to the main sheet 12. Likewise flap F2 is brought into overlapping relationship with the opposite end portion of the main sheet 12 whereby aperture A1a is brought into registry with aperture A3a and aperture A2a is brought into registry with aperture A4a.

The cover panel is applied to the tops of the bottles in the crate with the end flaps F1 and F2 uppermost. Therefore, when the panel is deposited correctly inside the crate and a downward pressure applied to it, usually by some form of applicator, the bottle necks of each of the corner bottles engage with the respective paired corner apertures so that the necks pass through the apertures A3/A1, A4/A2, A3a/A1a and A4a/A2a. Thus each of the "sunburst" apertures is engaged beneath the rim or flange of the bottle top. The circumferential edge of each of the larger apertures A3, A4 and A3a, A4a restricts flexing movement of the sunburst tabs in a downward direction. Thus, when the cover panel is removed by pulling it upwardly the resistance created by the "sunburst" tabs against the bottle tops is sufficient to cause the frangible connections on both the flaps F1 and F2 and at the junction between the corner panels and the main sheet 12 to tear and thereby corner portions of the main sheet and hinged tabs are torn away thereby leaving separated corner parts remaining attached to the bottle necks so that the sheet can be identified as having been removed from the crate by the absence of the corner portions. Of course, in fitting an undamaged cover panel the sunburst tabs are free to flex upwardly so that initial engagement of a cover panel into a crate does not cause the corner portions to be disconnected.

Claims

1. A cover panel (10) for insertion into the top of a bottle crate so that the panel overlies the tops of the bottles or other articles accommodated in the crate, said panel having a main sheet (12) sized so as to substantially close the crate and having in a portion (16) of the main sheet an aperture (A1) through which the top of a bottle is received characterized in that the main sheet has frangible portions (20, 28) adjacent the aperture and in that the aperture is so formed as to provide sufficient resistance to the removal of the cover panel that said adjacent frangible portions are broken thereby allowing an incomplete cover panel to be removed.

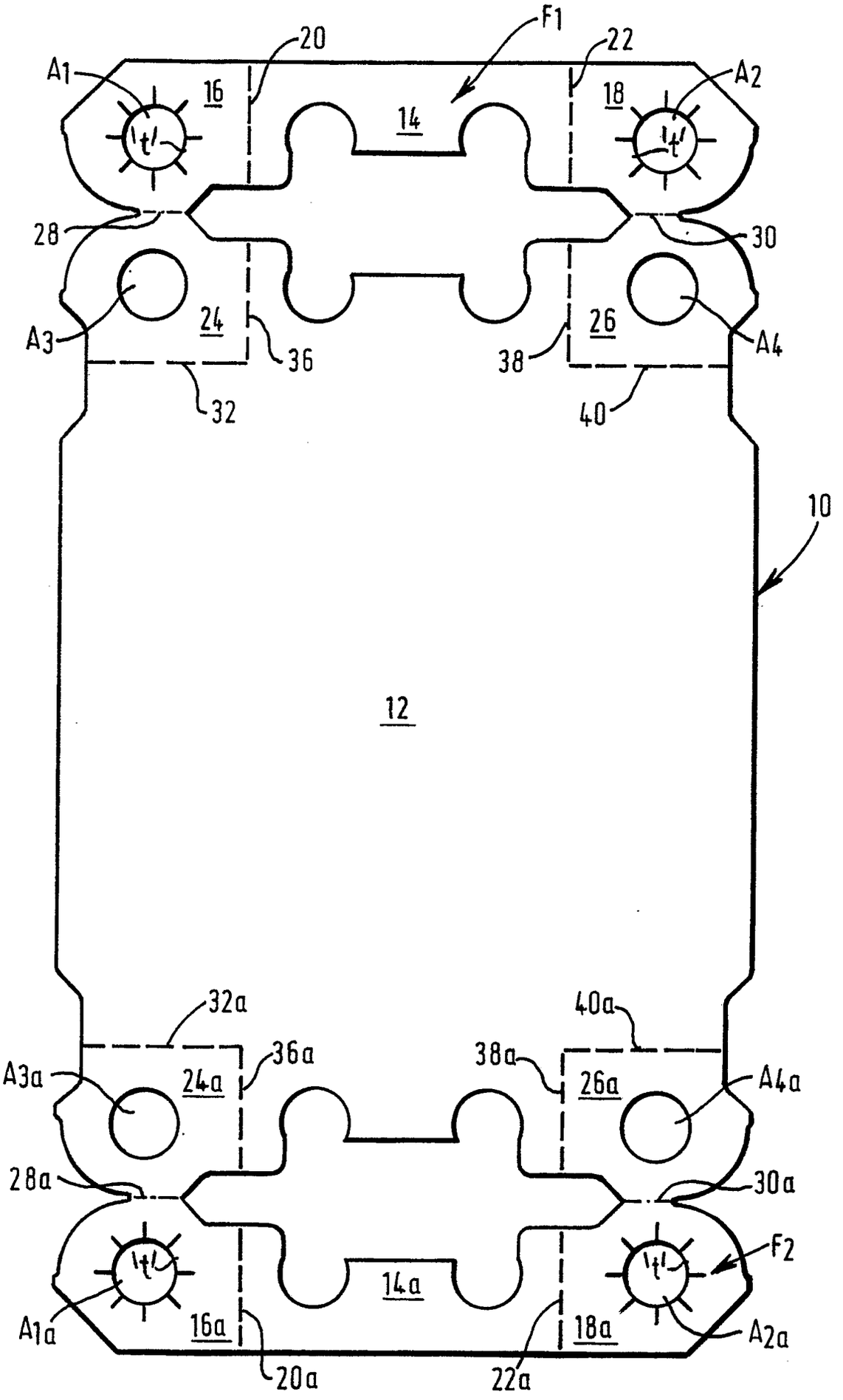
2. A cover panel according to claim 1, wherein said aperture is formed in a corner portion of said main sheet which corner portion and said main sheet are connected together by said frangible portions.

3. A cover panel according to claim 2, wherein said corner portion is included in an end flap (F1) which has two opposed and similar corner portions (A1, A2) each having one of said apertures therein said corner portions being connected to a centre panel (14) of said flap and to adjacent parts of said main sheet by said frangible connections.

4. A cover panel according to claim 3, wherein said end flap is frangibly connected to a pair of corner panels (24, 26) of said main sheet each of which are themselves frangibly connected to adjacent areas of said main sheet and inolude apertures (A3, A4) therein, said end flap being secured in superposed relation with an end part of said main sheet such that the apertures (A1, A2) in said corner portions of said end flap are disposed in registry with the apertures (A3, A4) in said corner panels.

5. A cover panel according to claim 4, wherein the apertures (A3, A4) in said corner panels are of larger diameter than the apertures (A1, A2) in the corner portions of said end flap which latter apertures are each formed with peripheral yieldable tabs (t) which are adapted to engage the underside of the cap of a bottle whose neck portion is located in said aperture.

6. A cover panel according to any of claims 3 to 5 wherein the opposite end of the cover panel is of like construction.


F1
20
22
A1
16
14
18
A2
28
30
A3
24
26
A4
36
38
32
40
10
12
32a
40a
A3a
36a
24a
38a
26a
A4a
28a
30a
F2
14a
A1a
16a
18a
A2a
20a
22a

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 90 31 2514

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)
A	EP-A-0051835 (RESAS) * page 4, line 36 - page 5, line 10 * * page 5, lines 22 - 34; figures 1, 2 * -----	1	B65D1/38

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	20 FEBRUARY 1991	SPETTEL, J.D.M.L.

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

EPO FORM 1503 03.82 (P0401)

1