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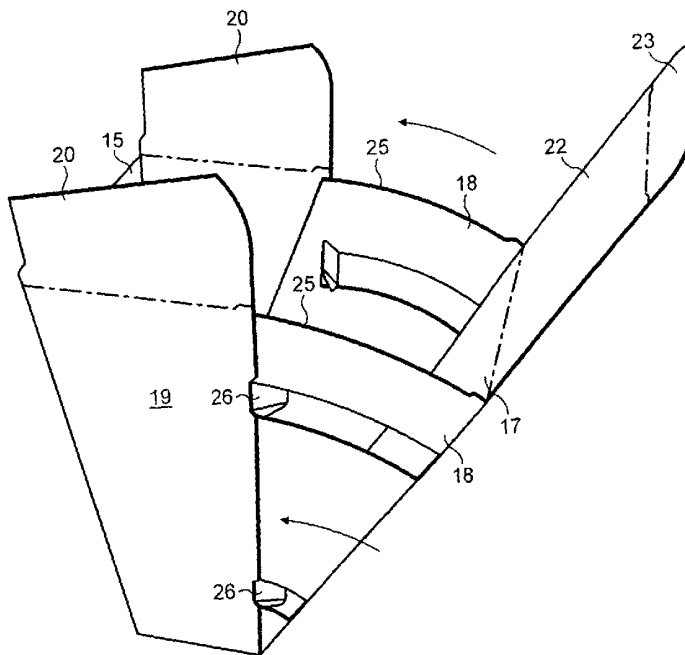
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- (71) Applicant (*for all designated States except US*): RIVERWOOD INTERNATIONAL CORPORATION [US/US]; 3350 Cumberland Circle, Suite 1400, Atlanta, GA 30339 (US). For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

- (72) Inventor; and
(75) Inventor/Applicant (*for US only*): HUDD, Marcus [GB/GB]; 138 Longs Drive, Yate, Bristol BS37 5XP (GB).

(54) Title: CARTON WITH MEANS FOR INCREASING THE ACCESS AREA



(57) Abstract: There is provided a carton (11) having a pair of first side panels (18) and a pair of second side panels (19). The first side panels (18) are attached to a rear panel (17) and the second side panels (19) are attached to a front panel (15). Locking tabs (26) extend from the second side panels (19) and are received in arcuate slots provided by the first side panels (18). This enables the rear panel (17) and a first side panels (18) to rotate thereby increasing the access area at the top of the carton. Top closure means (20, 22, 23) are also provided.



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CARTON WITH MEANS FOR INCREASING THE ACCESS AREA

This invention relates to cartons, and more particularly but not exclusively to cartons which are made from paperboard. It is often a problem with cartons that it would be beneficial for the opening area of the carton to be larger than it is in order to improve access to the contents of the carton.

According to the present invention there is provided a carton having a number of interconnected panels thereby to define an enclosed volume, one or more of said panels being movable relative to the other panels to increase said enclosed volume.

In some arrangements, the panels include a base panel, front and rear panels connected to opposite edges of the base panel, top closure means, first side panels hingedly connected to the rear panel and second side panels hingedly connected to the front panel and interconnected with the respective first side panels so as to be movable relative thereto. Preferably the first side panels have one or more arcuate slots centered on the hinge connection between the rear panel and the base panel, inwardly projecting tabs being provided on the second side panels for interengagement with the slots to guide the movement of the rear and first side panels relative to the second side panels.

Conveniently two spaced tabs and two spaced slots are provided on each side of the carton. In certain arrangements each tab has lateral projections which project radially beyond the arcuate side edges of its associated slot on the inside of the carton.

Preferably the relative movement of the panels results in a substantial doubling of the length of the side edges at the top opening of the carton, when the carton is expanded.

With preferred arrangements the top closure means comprises side flaps hingedly connected to respective second side panels and an overlying top panel hingedly connected to the rear panel, the top panel

having a tuck flap remote from the rear panel for releasable retention between the front panel and the two side flaps.

An embodiment of the invention will now be described in more detail, the description making reference to the accompanying drawings in which:

Figure 1 is a view of a paperboard blank for producing a carton according to the present invention,

Figure 2 shows a perspective view of the assembled carton in a closed condition,

Figure 3 shows a perspective view from another angle of the carton of figure 2 with top closure means open, and

Figure 4 shows a perspective view from yet another angle of the carton of figure 2 in an open and expanded condition.

In the figures there is shown a paperboard blank 10 for producing a carton 11 which in use may contain a number of articles (not shown) such as sweets.

The carton 11 has a base panel 12 with two oppositely disposed lower side flaps 13 hingedly connected thereto. Also connected to the base panel 12 by a fold 14 is a front panel 15 and by a fold 16 is a rear panel 17.

The rear panel 17 has at its side edges a pair of first side panels 18 which in use lie inside of second side panels 19 which are hingedly connected to the side edges of the front panel 15. At the upper ends of the second side panels 19 are upper side flaps 20 which are hingedly connected to the respective second side panels 19. Top closure means 21 are provided at the top of the rear panel 17 and take the form of a top panel 22 and a tuck flap 23. Such top closure means 21 and upper side flaps 20 are conventional in form and need no further description.

Each first side panel 18 is provided with a pair of parallel sided arcuate slots 24, each of which has as its centre of curvature in use the hinge 16 between the rear panel 17 and the base panel 12. The top edge

25 of each rear panel 17 is also arcuate with a similar centre of curvature in use.

Each second side panel 19 has a pair of locking tabs 26 which are positioned for engagement with the slots 24. Each tab 26 is in use folded inwardly about folds 27 and through its associated slot 24. Each tab has lateral projections 28 which can be manipulated through its associated slot 24 so as to project radially beyond the arcuate side edges of the slot 24 on the inside of the carton. The marginal position of each slot 24 is, therefore, disposed between the projections 28 and the second side panel 19 when the carton 11 is erected. Each second side panel 19 also has a lengthwise crease 29 which is generally parallel to and spaced from the free edge of the second side panel and the folds 27. The crease 29 assists in keeping the second side panel 19 stiff when the tabs 26 are inserted into the slots 24 during erection of the carton.

In this way the tab/slot combinations act as a guide for movement of the rear panel 17 and the first side panels 18 relative to the front panel 15 and the second side panels 19. It will be seen from figure 4 that the open pack in its fully expanded condition effectively doubles the length of the top edge of the top opening thus increasing the access area at the top of the carton. The arcuate nature of the top edge 25 of the first side panels maintains a smooth continuation of the top of the carton 11.

The radial width of the slots is a matter of design choice but should be sufficient to enable the tabs to be manipulated therethrough but remain small enough to make it difficult for the articles in the carton to pass through.

When access to the carton is no longer required, then the rear panel 17 can be pushed inwardly to the position shown in figure 3. The top closure means 21 can then be closed and the tucking of the tuck flap 23 between the front panel 15 and the upper side flaps 20 substantially prevents from the rear panel 17 hinging about the base panel and into its expanded position. It will be appreciated that the second side panels 19

are external and thereby give the carton a conventional appearance prior to expansion.

It will be realised that the shape of the carton 11 is simply an example and that the expansion arrangement can be applied to many different shapes of carton. Furthermore the number and form of the slots/tabs is for illustrative purposes and should not be regarded as limiting.

CLAIMS

1. A carton having a number of interconnected panels thereby to define an enclosed volume, one or more of said panels being movable relative to the other panels to increase said enclosed volume.
2. A carton as claimed in claim 1 wherein the panels include a base panel, front and rear panels connected to opposite edges of the base panel, top closure means, first side panels hingedly connected to the rear panel and second side panels hingedly connected to the front panel and interconnected with the respective first side panels so as to be movable relative thereto.
3. A carton as claimed in claim 2 wherein the first side panels have one or more arcuate slots centered on the hinge connection between the rear panel and the base panel, inwardly projecting tabs being provided on the second side panels for interengagement with the slots to guide the movement of the rear and first side panels relative to the second side panels.
4. A carton as claimed in claim 3 wherein two spaced tabs and two spaced slots are provided on each side of the carton.
5. A carton as claimed in claim 3 or claim 4 wherein each tab has lateral projections which project radially beyond the arcuate side edges of its associated slot on the inside of the carton.
6. A carton as claimed in any one of claims 2 to 5 wherein the relative movement of the panels results in a substantial doubling of the length of the side edges at the top opening of the carton, when the carton is expanded.

7. A carton as claimed in any one of claims 2 to 6 wherein the top closure means comprises side flaps hingedly connected to respective second side panels and an overlying top panel hingedly connected to the rear panel, the top panel having a tuck flap remote from the rear panel for releasable retention between the front panel and the two side flaps.

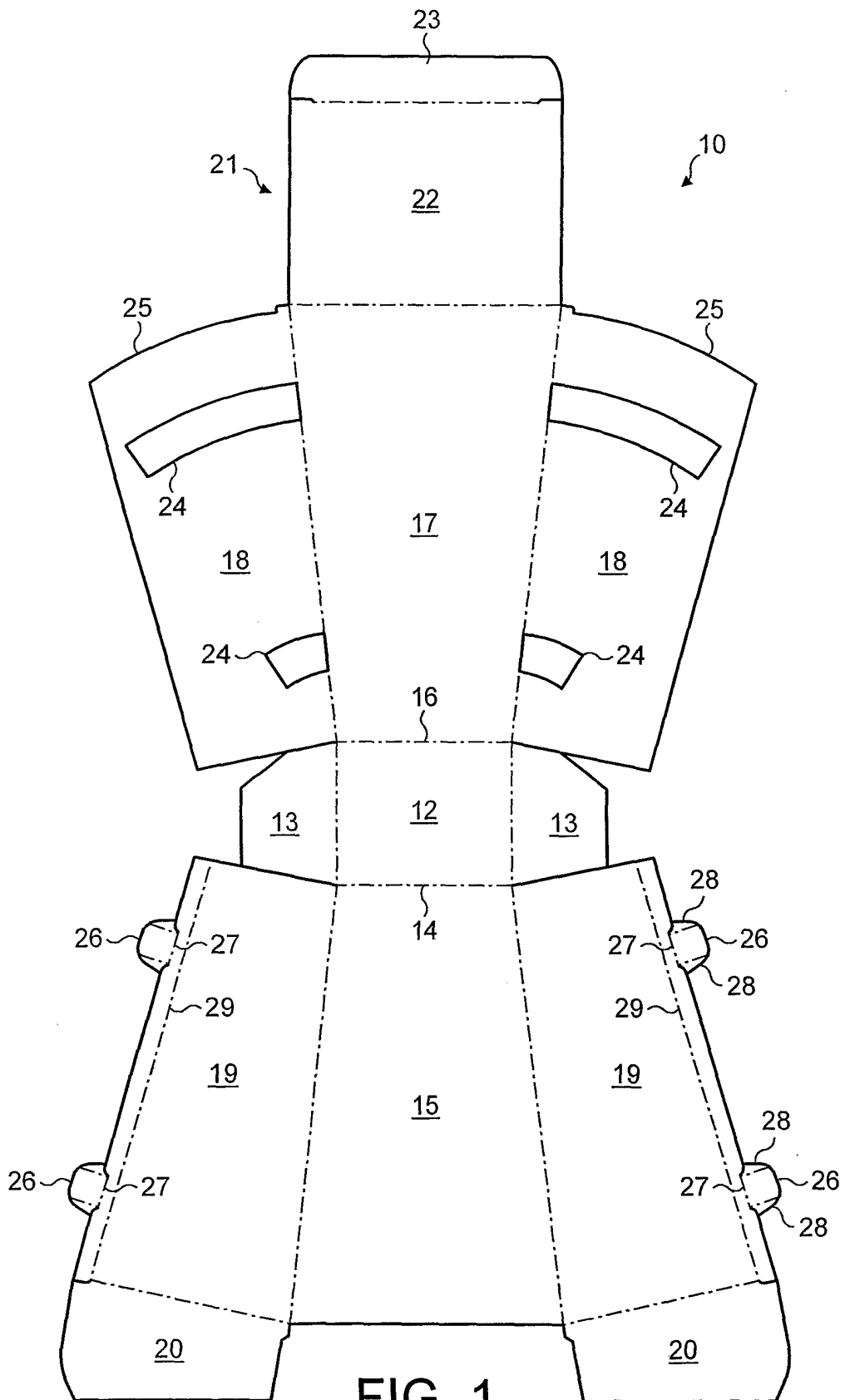


FIG. 1

SUBSTITUTE SHEET (RULE 26)

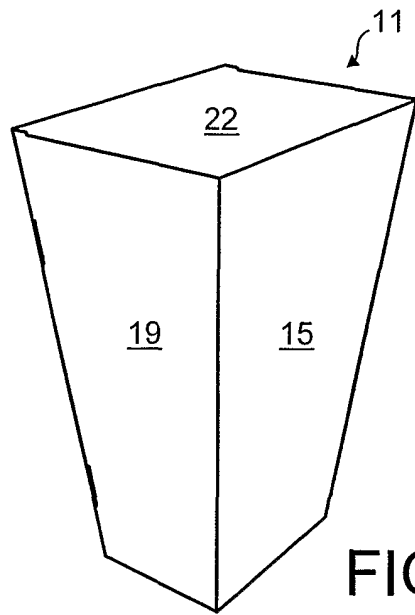


FIG. 2

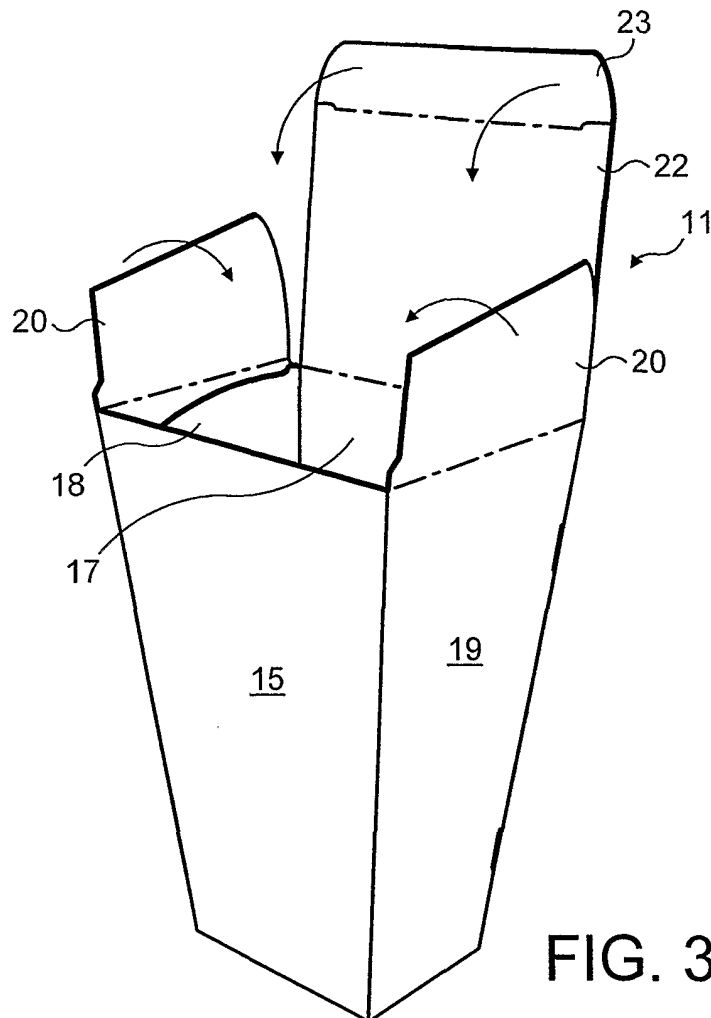


FIG. 3

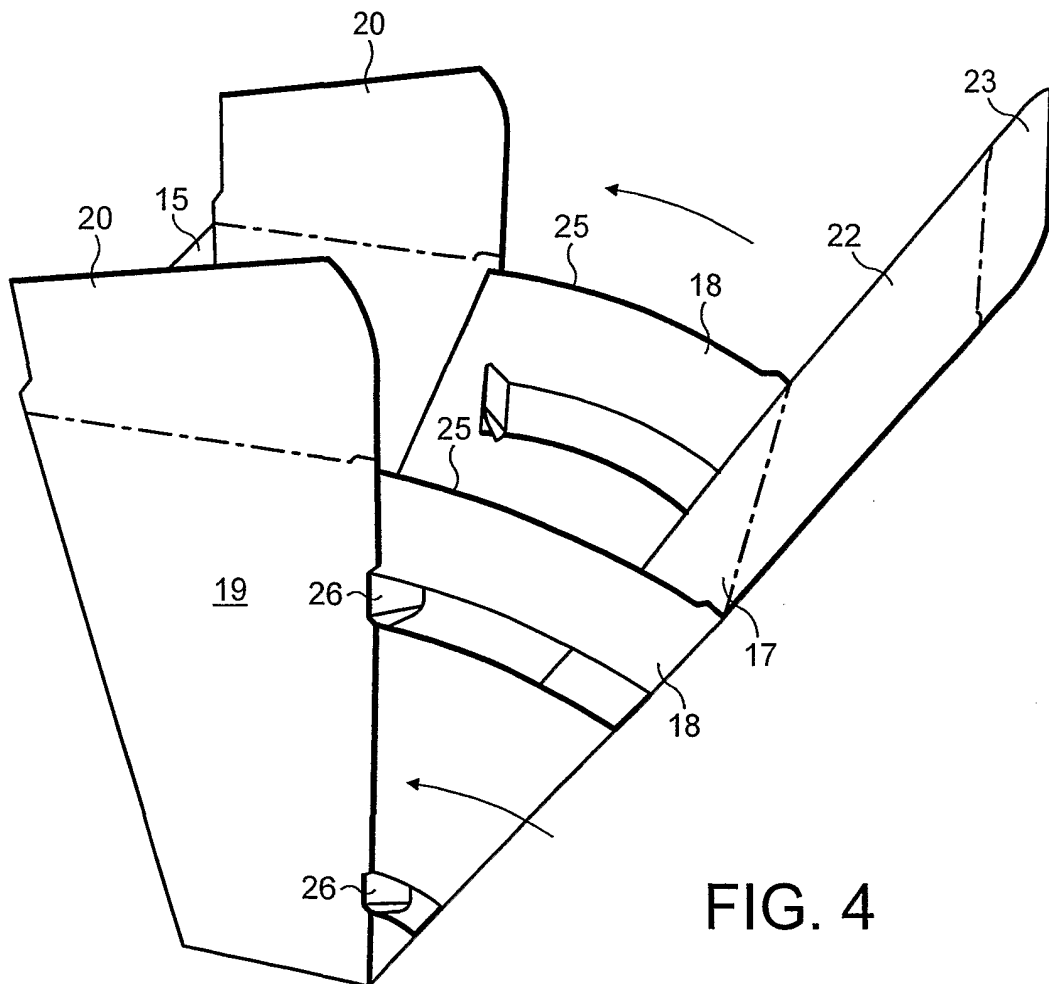


FIG. 4

INTERNATIONAL SEARCH REPORT

In Application No

FCI/GB 01/03567

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 B65D5/355 B65D5/18

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 B65D A45C

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 299 07 411 U (FALLER KG AUGUST) 12 August 1999 (1999-08-12)	1
Y	abstract; figures	2,6,7
A		3
X	FR 2 730 186 A (LUXORD SA) 9 August 1996 (1996-08-09)	1
A	page 3, line 11-15 page 4, line 3 -page 5, line 5; figures	2-4,6
Y	US 2 083 449 A (INMAN WILLIAM H) 8 June 1937 (1937-06-08) figures	2,6,7

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

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P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

& document member of the same patent family

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Balz, O

INTERNATIONAL SEARCH REPORT

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Patent document cited in search report		Publication date	Patent family member(s)	Publication date
DE 29907411	U	12-08-1999	DE 29907411 U1	12-08-1999
FR 2730186	A	09-08-1996	FR 2730186 A3	09-08-1996
US 2083449	A	08-06-1937	NONE	