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(54) **Container with reinforced base for bottles**

Behälter mit verstärktem Bodem für Flaschen

Recipient a comportant une base renforcée pour contenir des bouteilles.

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Description

[0001] The present invention relates in general to the field of packaging and more particularly relates to a container made in board or similar materials for bottles, for example glass or plastic bottles filled with a pharmaceutical product.

[0002] The problem of ensuring a sufficient mechanical resistance to the bottom wall or base of containers in board, with special reference to containers for the pharmaceuticals industry, is greatly felt. As is known, the closure of these containers, is generally achieved by first folding one over the other in succession (in the case of parallelepiped containers) three closure flaps extending from respective faces of the container and then engaging between one face and the sides of two opposite closure flaps turned towards said face a closure tab that extends from the corresponding side of the third closure flap.

[0003] Various techniques have been proposed and implemented for giving the base of the container made in this way sufficient mechanical strength for supporting the weight of the bottle placed therein without collapsing. It has however been found that a growing degree of safety offered by these techniques corresponds to greater difficulties in the operations of formation and automatic closure of the containers with standard boxing machines. To limit operating failure of the assembling machines and the rejects due to the difficulties of closure of the base of the containers with these techniques, complex and frequent operations of setting up the machines are necessary which, in conclusion, lead to undesirable production slowing-down. GB 449 265 and EP 1 577 221 both disclose boxes with closure flaps provided with teeth serving as a stop to prevent surreptitious opening of the box by leaving traces in form of breaking or tearing. These solutions are however unsuitable for processing by standard boxine machines.

[0004] The object of the present invention is to provide a container for bottles which has sufficient mechanical resistance of its base and at the same time does not create operating problems during the phases of its formation in the boxing machines currently in use.

[0005] This object is achieved with the container for bottles according to the invention whose feature lies in the fact that at least one of the flaps for closure of its base is provided with a tooth projecting coplanarly from at least one of its sides and suitable for engaging in a notch correspondingly formed along the fold line which joins at least one of the other flaps for closure of said base to the respective side faces of the container.

[0006] Thanks to the engagement of this tooth, or a pair of overlapped teeth, in the notch formed at the fold line that joins another closure flap to the corresponding side face of the container, it is possible to anchor at least one closure flap or, advantageously, two closure flaps to the faces of the same container, ensuring sufficient resistance of the base and eliminating the problems found in the closure of the base with the presently used assembling machines and which are responsible for the inconveniences found in the prior art.

[0007] The invention will now be illustrated in greater detail with the following description of one of its embodiments, given by way of a non-limiting example with reference to the accompanying drawings, in which:

- Figure 1 is a blank of a container for bottles according to the present invention;
- Figure 2 is a plan view of the open base of the container formed with the blank of Figure 1;
- Figure 3 is a perspective view of the base portion of the bottle of Figure 2 in the closure phase;
- Figure 4 shows a blank of a first variation of the container for bottles according to the invention;
- Figure 5 is a plan view of the open base of the container made with the blank of Figure 4;
- Figure 6 is a perspective view of the base portion of the container of Figure 5 in the closure phase;
- Figure 7 is a blank of a second variation of the container for bottles according to the present invention;
- Figure 8 is a plan view of the open base of the container made with the blank of Figure 7;
- Figure 9 is a perspective view of the base portion of the container of Figure 8 in the closure phase.

[0008] Referring to Figures 1, 2 and 3, 1 denotes a container for bottles, for example containing pharmaceutical products, of which only the base portion indicated at 1a in Figure 3 is shown. The container 1 is made up from a blank indicated generically at 2 and illustrated in Figure 1, obtained by punching a sheet of board, Bristol paper or equivalent paper materials. The blank 2 is made up of four panels 3, 4, 5 and 6, joined one to the other in succession by fold lines 7, 8 and 9. The panels 3, 4, 5 and 6 make up the side faces of the container 1. An additional fold line 10, parallel to the previous ones, joins the panel 3 to a connection flap 11 that can be attached with glue or another adhesive to the panel 6 to close the flat development 2, giving it a parallelepiped shape.

[0009] The panels 3, 4, 5 and 6 have a rectangular shape in the embodiment illustrated, with the connection flap 11 that extends from a larger side of the panel 3. Closure flaps 12, 13 and 14 extend from the smaller consecutive sides of said panels, forming, once overlapped, the upper closure portion of the container. Similarly further closure flaps 15, 16 and 17 extend from the opposite smaller and consecutive sides of said panels, forming, once overlapped, the lower closure portion or base, indicated at 1a in Figure 3, of the container 1. More particularly the pair of panels 4 and 6 have opposite closure flaps 13, 15 and 14, 17 joined to the respective panels by fold lines 18, 19 and 20, 21. Instead the two closure flaps 12 and 16 extend, from opposite sides, from the pair of panels 3 and 5, joined to the respective panels via fold lines 22 and 23. Respective closure tabs 24 and 25 also extend from the closure flaps 12 and 16, joined to said flaps via fold lines 26 and 27.

[0010] The closure flaps 15 and 17 are sheared from the closure flap 16, placed between them, so as to form a pair of teeth 15a and 17a turned one towards the other in the blank 2. Along the fold line 23 that joins the closure flap 16 to the panel 5 of the blank 2 (corresponding to the side face of the container 1) a notch 28 is formed wherein the teeth 15a and 17a engage, overlapped one over the other, once the closure flaps 15 and 17 are folded one over the other, as shown in Figure 3. The closure of the base 1a of the container 1 is then completed by turning the closure flap 16 over the two flaps 15 and 17 already folded and engaging the closure tab 25 in the container 1 between the side face 3 and the sides of the closure flaps 15 and 17 turned towards it. In this way the closure flaps 15 and 17 are anchored via the respective teeth 15a and 17a to the side face 5 of the container 1.

[0011] In the embodiment of the invention shown in Figures 4, 5 and 6, wherein identical reference numerals correspond to identical parts in relation to the previous figures, the closure flap 17 has a further tooth 17b which extends from the side which, once the closure flaps 15 and 17 have been overlapped, is turned towards the closure flap 15. Moreover the closure flap 17 has a length substantially equal to the length of the fold line 23. Along the fold line 19, which joins the closure flap 15 to the respective face 4, a notch 29 is formed wherein the tooth 17b engages when the two closure flaps 15 and 17 are folded one over the other. Therefore, in this embodiment the closure flaps 15 and 17 are anchored both to the face 5, with the teeth 15a and 17a overlapped and engaged in the notch 28, and to the face 4 of the container 1 with the tooth 17b which engages in the notch 29.

[0012] In the embodiment of the invention shown in Figures 7, 8 and 9, wherein identical reference numerals correspond to identical parts in relation to the previous drawings, only the tooth 17b is provided, extending from the outer side of the closure flap 17 so as to be able to engage in the notch 29 formed along the fold 19 that joins the closure flap 15 to the face 4 of the container 1. In this case too the closure flap 17 has a length substantially equal to that of the fold line 23 that joins the closure flap 16 to the face 5 of the container 1 to allow the insertion of the tooth 17b in the notch 29.

[0013] It will be noted that in none of the embodiments of the invention illustrated above the presence of the anchorage teeth 15a, 17a and 17b hinders the closure of the base 1a of the container 1.

[0014] As a matter of fact, these teeth do not interfere with the closure movement of the closure flap 16, which is arranged externally above the already overlapped opposite closure flaps 15 and 17, nor with the insertion of the closure tab 25 between the face 3 of the container 1 and the sides of the closure flaps 15 and 17.

[0015] Variations and/or modifications may be brought to the container with reinforced base for bottles according to the present invention, without departing from the scope of the invention as set forth in the following claims.

Claims

1. Container for bottles, comprising: main faces (3, 4, 5, 6) joined by parallel fold lines (7, 8, 9), the two end faces (3, 6) being attached one to the other by means of a connection flap (11) extending from one of them and glued to the other; an upper part and a base (1a) formed by closure flaps (12, 13, 14, 15, 16, 17) joined to the respective faces via fold lines (18, 19, 20, 21, 22, 23), one of said closure flaps (12, 16) of said upper part and of said base comprising respective closure tabs (24, 25) extending from one of its sides via fold lines (26, 27) and suitable for engaging between one face (3, 5) of the container and the sides of at least two closure flaps (13, 14, 15, 17) turned towards said face, said container being **characterized in that** at least one of the closure flaps (15, 17) of the base (1a) is provided with a tooth (15a, 17a, 17b) projecting coplanarly from one of its sides and engaging in a notch (28) correspondingly formed along the fold line (23) that joins at least one of the other closure flaps (16) of said base to the respective faces (5) of the container.

2. Container according to claim 1, wherein two opposite closure flaps (15, 17) of said base (1a) are provided with respective teeth (15a, 17a) projecting coplanarly from their sides, suitable for overlapping when said flaps are overlapped to form a single tooth suitable for engaging in said notch (28) formed correspondingly along the fold line (23) of the closure flap (16) towards which the sides of the two closure flaps bearing said teeth are turned.

3. Container according to claims 1 or 2, wherein a further tooth (17b) extends coplanarly from the side of one of said closure flaps (17) provided with said projecting and superimposable teeth (15a, 17a), said further tooth (17b) being turned towards the other (15) of said closure flaps, a notch (29) for the engaging of said further tooth being formed at the fold line (19) that joins said other closure flap (15) to the respective face (4) of the container.

4. Container according to claim 1, wherein a projecting tooth (17b) extends coplanarly from one side of one of said closure flaps (17) of said base (1a) opposite the side with which said closure flap (17) is joined to the respective face of said, container, said projecting tooth being engageable in a notch (29) formed at and along the fold line (19) that joins the opposite closure flap (15) to the respective face (4).

Patentansprüche

1. Behälter (1) für Flaschen, enthaltend Hauptseiten (3, 4, 5, 6), die durch parallele Faltlinien (7, 8, 9) ver-

bunden sind, wobei die zwei Endseiten (3, 6) mittels einer Verbindungslasche (11) aneinander befestigt sind, die sich von einer von ihnen aus erstreckt und an die andere geklebt ist; ein Oberteil und eine Basis (1a), die durch Verschlussklappen (12, 13, 14, 15, 16, 17) gebildet sind, die mit den entsprechenden Seiten durch Faltlinien (18, 19, 20, 21, 22, 23) verbunden sind, wobei eine der Verschlussklappen (12, 16) des Oberteils und der Basis jeweilige Verschlusslaschen (24, 25) enthalten, die sich über Faltlinien (26, 27) von einer seiner/ihrer Randseiten erstrekken und zum Eingriff zwischen eine Seite (3, 5) des Behälters und den Randseiten von wenigstens zwei Verschlussklappen (13, 14, 15, 17) geeignet sind, die zu der Seite hin geklappt sind, welcher Behälter **dadurch gekennzeichnet ist, dass** wenigstens eine der Verschlussklappen (15, 17) der Basis (1a) mit einem Zahn (17a, 17b) versehen ist, der coplanar von einer ihrer Randseiten vorsteht und in eine Aussparung (28) eingreift, die entsprechend längs der Faltlinie (23) ausgebildet ist, die wenigstens eine der anderen Verschlussklappen (16) der Basis mit den jeweiligen Seiten (5) des Behälters verbindet.

2. Behälter nach Anspruch 1, wobei zwei einander gegenüber liegende Verschlussklappen (15, 17) der Basis (1a) mit jeweiligen Zähnen (15a, 17a) versehen sind, die coplanar von ihren Randseiten geeignet zum Überlappen vorstehen, wenn die Klappen überlappt sind, um einen einzigen Zahn zu bilden, der zum Eingriff in die Aussparung (28) geeignet ist, die entsprechend längs der Faltlinie (23) der Verschlussklappe (16) ausgebildet ist, zu welcher die Randseiten der zwei Verschlussklappen, die die Zähne tragen, hin geklappt werden.

3. Behälter nach Anspruch 1 oder 2, wobei sich ein weiterer Zahn (17b) coplanar von der Randseite einer der Verschlussklappen (17) erstreckt, die mit den vorstehenden und überlagerbaren Zähnen (15a, 17a) versehen sind, welcher weitere Zahn (17b) zu der anderen (15) der Verschlussklappen geklappt wird, wobei eine Aussparung (29) für den Eingriff des weiteren Zahns an der Faltlinie (19) ausgebildet ist, die die andere Verschlussklappe (15) mit der entsprechenden Seite (4) des Behälters verbindet.

4. Behälter nach Anspruch 1, wobei sich ein vorstehender Zahn (17b) coplanar von einer Randseite von einer der Verschlussklappen (17) der Basis (1a) gegenüber der Randseite erstreckt, mit welcher die Verschlussklappe (17) mit der entsprechenden Seite des Behälters verbunden ist, welcher vorstehende Zahn in eine Aussparung (29) in Eingriff bringbar ist, die an und längs der Faltlinie (19) ausgebildet ist, die die gegenüber liegende Verschlussklappe (15) mit der entsprechenden Seite (4) verbindet.

Revendications

1. Récipient (1) pour bouteilles, comportant : des faces principales (3, 4, 5, 6) reliées par des lignes de pliure parallèles (7, 8, 9), les deux faces d'extrémité (3, 6) étant fixées l'une à l'autre au moyen d'une bande de raccordement (11) s'étendant de l'une d'elles et collée sur l'autre ; une partie supérieure et une base (1a) constituées par des pattes de fermeture (12, 13, 14, 15, 16, 17) reliées aux faces respectives via des lignes de pliure (18, 19, 20, 21, 22, 23), l'une des dites pattes de fermeture (12, 16) de ladite partie supérieure et de ladite base comportant des onglets de fermeture respectifs (24, 25) s'étendant à partir de l'un de ses côtés via des lignes de pliure (26, 27) et adaptés pour s'insérer entre une face (3, 5) du récipient et les bords d'au moins deux pattes de fermeture (13, 14, 15, 17) tournés vers ladite face, ledit récipient étant **caractérisé en ce que** l'une au moins des pattes de fermeture (15, 17) de la base (1a) est munie d'une dent (15a, 17a, 17b) s'étendant de façon coplanaire à partir d'un de ses bords et s'engageant dans une fente (28) réalisée de façon correspondante le long de la ligne de pliure (23) qui relie au moins l'une des autres pattes de fermeture (16) de ladite base aux faces respectives (5) du récipient.

2. Récipient selon la revendication 1, où deux pattes de fermeture opposées (15, 17) de ladite base (1a) sont munies de dents respectives (15a, 17a) s'étendant de façon coplanaire à partir de leurs bords, adaptées pour se recouvrir quand lesdites pattes se recouvrent pour former une seule dent apte à s'engager dans ladite fente (28) réalisée de façon correspondante le long de la ligne de pliure (23) de la patte de fermeture (16) vers laquelle sont tournés les bords des deux pattes de fermeture portant lesdites dents.

3. Le récipient selon la revendication 2, où une autre dent (17b) s'étend de façon coplanaire à partir d'un bord de l'une des dites pattes de fermeture (17) munie des dites dents en saillie et superposables (15a, 17a), ladite autre dent (17b) étant tournée vers l'autre (15) des dites pattes de fermeture, une fente (29) pour recevoir ladite autre dent étant réalisée sur la ligne de pliure (19) qui relie ladite autre patte de fermeture (15) à la face respective (4) du récipient.

4. Le récipient selon la revendication 1, où une dent en saillie (17b) s'étend de façon coplanaire à partir d'un bord de l'une des dites pattes de fermeture (17) de ladite base (1a) opposée au bord avec lequel ladite patte de fermeture (17) est reliée à la face respective du dit récipient, ladite dent en saillie étant apte à s'engager dans une fente (29) réalisée sur et le long de la ligne de pliure (19) qui relie la patte de fermeture opposée (15) à la face respective (4).

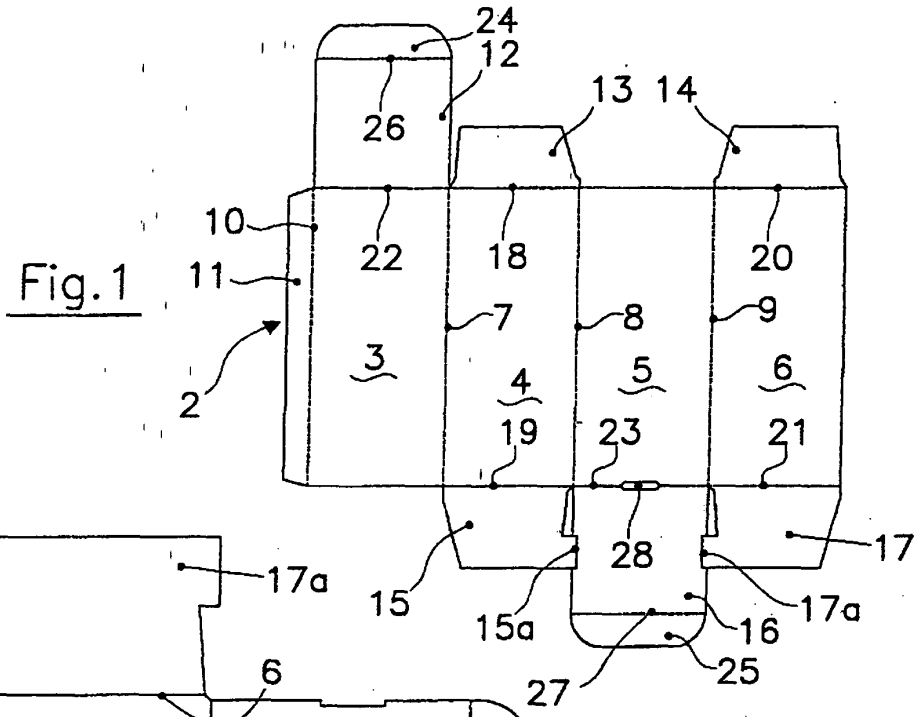

Fig.1

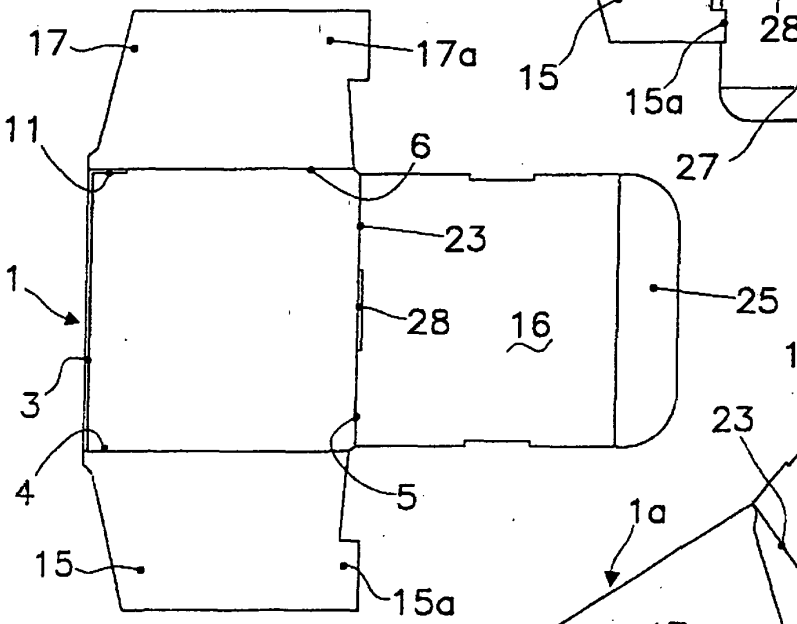

Fig.2

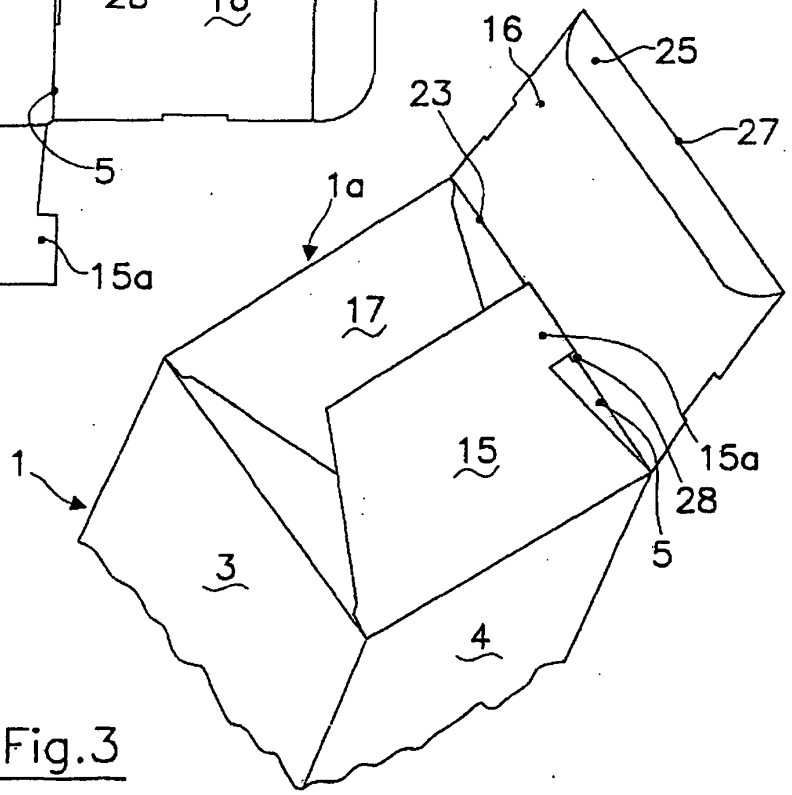

Fig.3

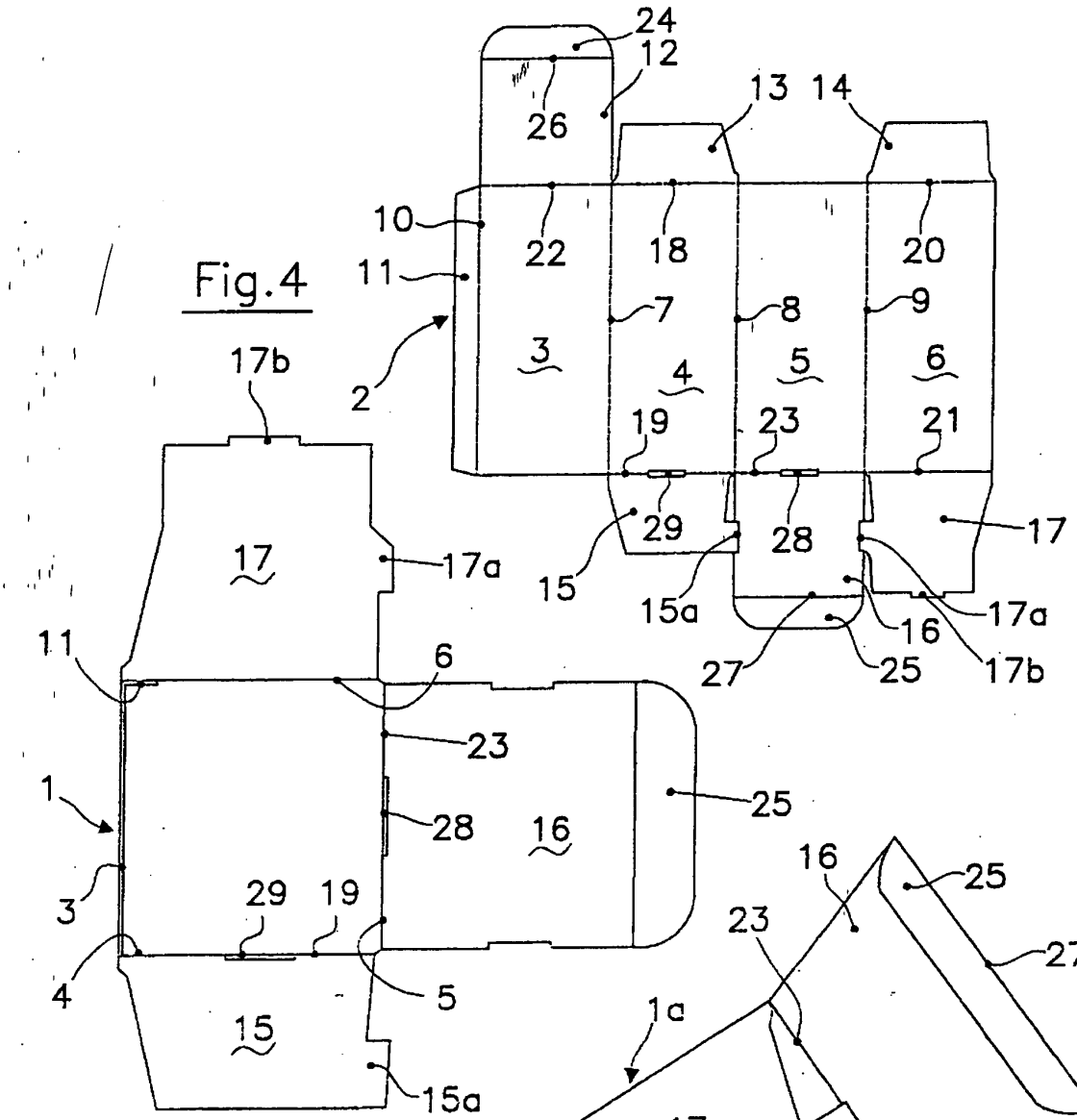

Fig.4

Fig.5

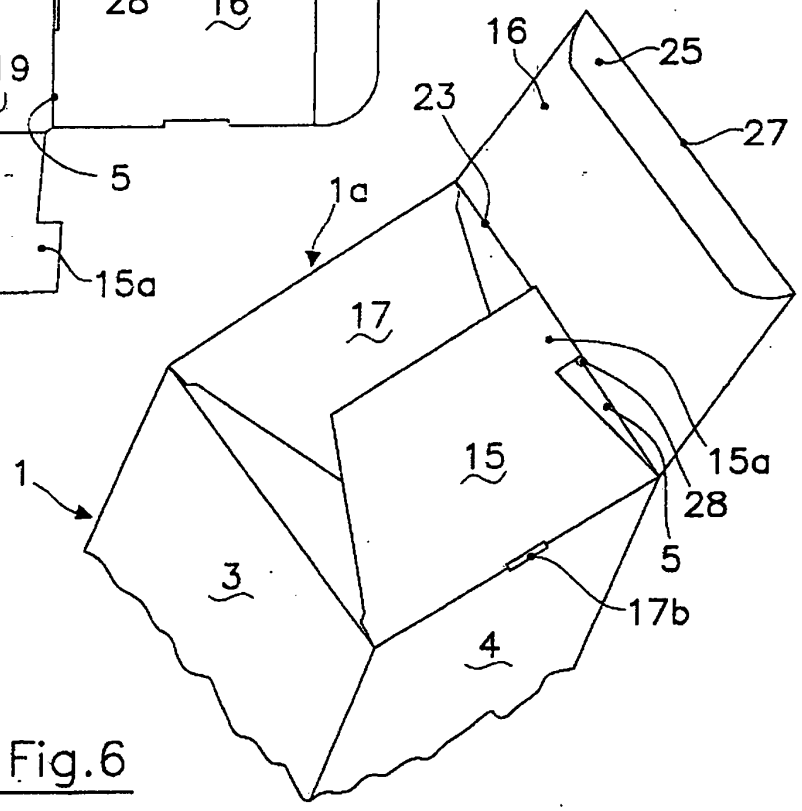

Fig.6

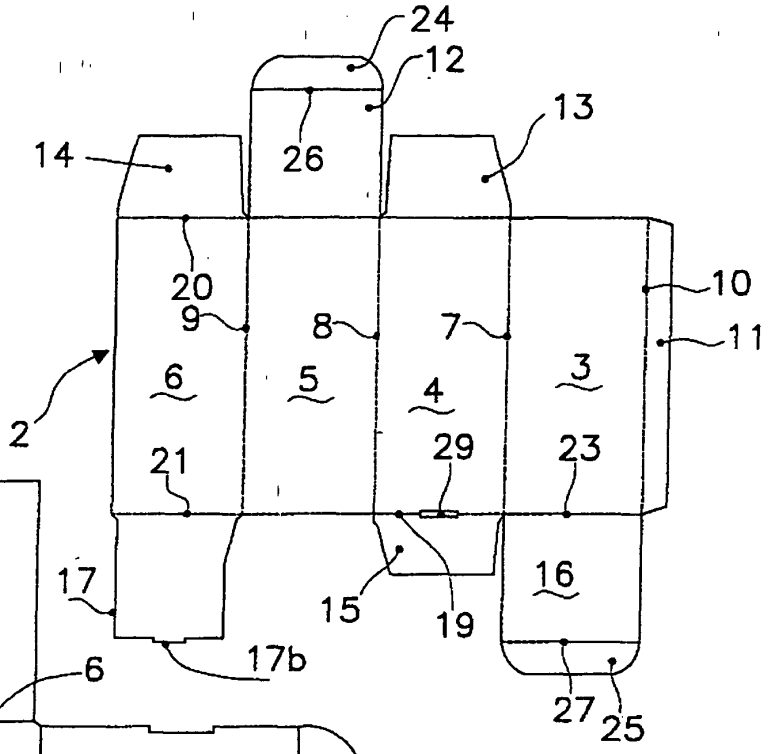

Fig.7

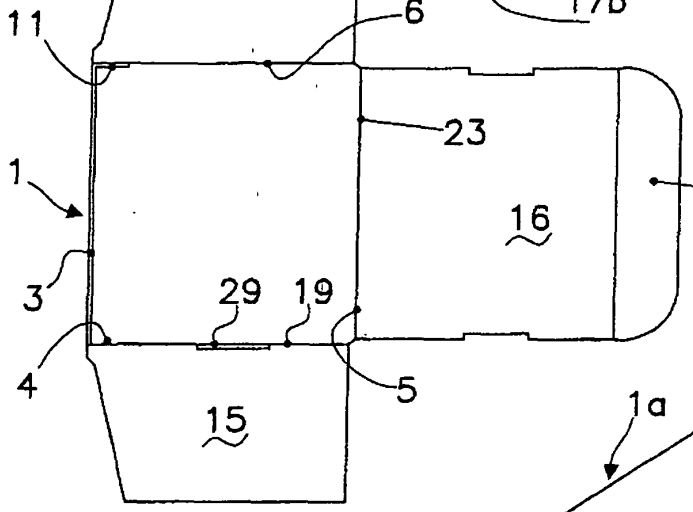

Fig.8

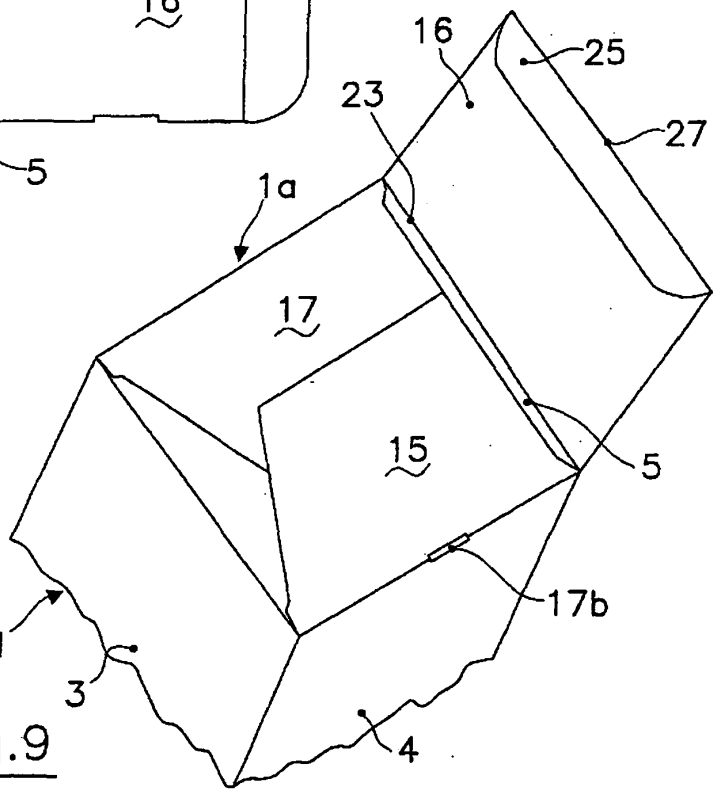

Fig.9

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- EP 1577221 A **[0003]**