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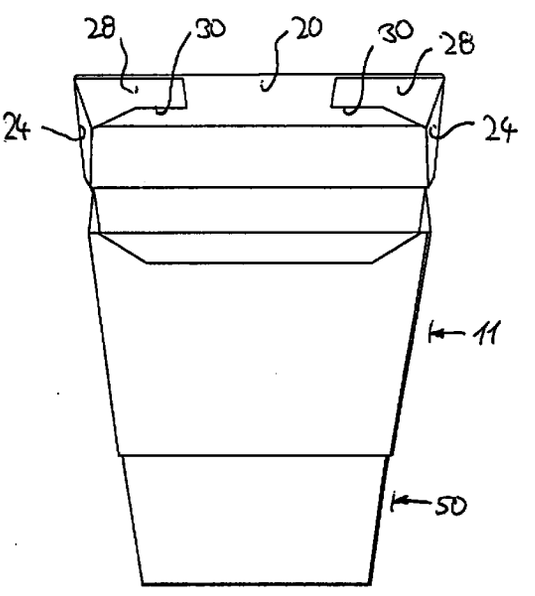
(54) Package and package blank

(57) A package blank (10) and a package are provided. The package can conveniently be used for shipping, shelf presentation and by the end user. It is inexpensive to manufacture, of a pleasant appearance, sufficiently stable and simultaneously aids the user in easily retrieving the contents of the package. The package comprises a first portion (11) defining a first volume and having a top closure (21), at least one side wall (14, 16, 18, 20) and a bottom opening and a second portion (50) defining a second volume and having a top opening, at least one side wall (54, 56, 58, 60) and a bottom wall. The top closure and the bottom wall define opposite extremities of the package and the second portion is insertable coaxially into the first portion; the first and second portions are connected by at least one linking wall (40) having a weakening line (42) or zone. The invention also relates to a blank for manufacturing the package.

FIG. 16



EP 0 908 391 A1

Description

TECHNICAL FIELD

[0001] The invention relates to a package for goods such as flat foodstuff, which can conveniently be used for shipping, shelf presentation and by the end user. In particular, the invention relates to such packages made from paper or cardboard. The invention also relates to blanks for such packages.

BACKGROUND ART

[0002] Packages for packaging foodstuff and the like are well-known. For example, DE 85 18 273 U1 discloses a package comprised of three parts, two of which are aligned and slid over the third part. Said package can be opened by sliding apart the two outer parts towards the outer edges of the third part. Stopper flaps are provided to prevent the two outer parts from disengaging from the third part. As a final opening step, the outer parts can be pivoted downwards and thus form stands for the whole package so that the contents of the package can readily be presented.

[0003] Finally, various types of packages are known on the market which are either formed of an inner layer of aluminium foil and an outer layer of paper wrapping or of a single layer of polymeric material.

[0004] Despite the numerous packages known in the field, several drawbacks still exist.

[0005] With foodstuff such as chocolate, for example, package sizes can be such that the contents are not completely consumed after the initial opening of the package. Therefore, a need exists for a package which is recloseable. Additionally, reclosed packages should have sufficient strength to protect the contents from mechanical damage. Further, known recloseable packages fail to provide the user with an aid for retrieving the contents from the package. Finally, packages composed of multiple layers or made from several parts require numerous, expensive manufacturing steps.

SUMMARY OF THE INVENTION

[0006] Under consideration of the known packages, it is an object of the present invention to provide a package which is inexpensive to manufacture, of a pleasant appearance, sufficiently stable to protect the contents of the package and simultaneously aids the user in retrieving the contents of the package. Further, it is an object of the present application to provide a package blank for producing such a package.

[0007] According to one aspect of the present invention, this problem is solved by a package in accordance with claim 1.

[0008] Advantageous embodiments of this package are described in the dependent claims 2 to 14.

[0009] In another aspect according to the invention, there is provided a foldable package blank in accordance with claim 15.

[0010] Advantageous embodiments of this package blank are defined in the dependent claims 16 to 22.

[0011] The package according to the invention provides significant advantages over previously known packages. The inventive package is designed such that its second portion can be slid into its first portion, once the weakening line or zone is broken. Consequently, the weakening line or zone is designed such that it provides enough stability for handling the inventive packages during manufacturing, filling and shipping while simultaneously enabling the end user to break the weakening line or zone. Breaking can easily be achieved by, for example, pushing the first and second portions together. The two portions will then telescope and push the contents out of the top closure. Hence, easy access to the contents is advantageously provided. The user can then remove and consume the contents in subsequent steps. More advantageously, it is possible to remove the contents without having to grip them by hand.

[0012] According to a preferred embodiment of the invention, the two portions of the package are connected by at least one linking wall having a weakening line or zone. This preferred embodiment renders manufacturing of the package easier, manufacturing of the package from a single blank being favoured. As an alternative to the linking wall, the overlapping regions of the first an second portions can be adhered or otherwise connected to each other in such a manner that the connection is relatively easily broken when the first and second portions are pushed towards each other by the consumer.

[0013] First and second portions of substantially polygonal or curvilinear cross-section are preferred design options. It has been shown that clearances and tolerances of the inventive package can best be kept with these designs while at the same time enhancing the appearance of the package. The clearance between the first and second portions should be dimensioned to enable the second portion to be inserted into the first, while simultaneously preventing that the second portion accidentally disengages from the first. Should it be desired that the edges of first and second portions are flush when the second portion is completely inserted into the first, it is provided that the first and second portions have a substantially equal length and breadth. The terms length and breadth do not indicate a preferred orientation but merely serve to illustrate preferred relative dimensions of the inventive package. For example, in order to guarantee an optimum adaptation of the package for packing foodstuff such as chocolate bars or the like, a further preferred embodiment of the package is of rectangular cross-section where the width of the first and second portions is substantially smaller than the length and breadth of the first and second portions.

[0014] The linking wall can preferably be located such

that the side wall of the package in the overlapping region between the first and second portions comprises three layers, an intermediate layer of which is formed by the linking wall. Consequently, only first and second portions are visible while a package is being displayed or in use. Further, the linking wall and consequently also the weakening line or zone of the linking wall are exposed to tensile stress when first and second portions are displaced with respect to each other. This provides a well-defined disconnection zone so that the first and second portions remain undisturbed and undamaged during and after the process of disconnecting the portions from one another.

[0015] A preferred weakening line is formed of a perforation. Hence, first and second portions can easily be separated by end users of all ages. However, those versed in the art will readily appreciate that other weakening lines or zones are also contemplated, such as reduced wall thickness or the like.

[0016] Location of the weakening line or zone intermediate the first and second portions, more preferably approximately half-way between the connection of the linking wall and the first portion and the linking wall and the second portion, respectively, will effect the following. When the first and second portions are disconnected from one another, the part of the linking wall which is still connected to the first portion will, due to the elasticity of the material of the package, be biased towards the second portion. Likewise, the part of the linking wall still connected to the second portion will be biased towards the first portion. Consequently, should the second portion be pulled out of the first portion, the remaining parts of the linking walls will engage and provide a mechanical stop which prevents the second portion from being accidentally completely pulled out of the first portion.

[0017] In order to minimise the gap between the overlapping region of the first and second portions, the linking wall is, on opposing sides of the weakening line or zone, further connected to one of the side walls of the first portion and to one of the side walls of the second portion, respectively. This further connection preferably comprises an adhesive. However, depending on the choice of materials for the package, connection means such as heat sealing, welding, or the like are also envisaged.

[0018] The inventive package should preferably be manufactured from a single, one-piece blank. The package's top closure, necessary for protecting the contents of the package on the one hand and the end user from potential leaking or falling out of the contents on the other hand, should preferably be recloseable in a simple and reliable manner. A flip-type closure, providing yet another advantageous embodiment of the invention, has been found to meet these needs. More preferably, the flip-type closure is latchable.

[0019] In order to provide well defined edges and planar side walls of a package of polygonal cross-section, the wall thickness of the edge regions between adjacent walls of the first portion and the second portion and the linking wall is advantageously smaller than a wall thickness of the remaining regions. By reducing the wall thickness of the package in these regions, fold lines are provided. Assembly of the package is rendered easier and the package's outer appearance is enhanced.

[0020] The inventive package blank referred to above preferably provides that the first and second wall segments are substantially rectangular and foldable such that the folded first and second wall segments each define volumes of polygonal or curvilinear cross-section. Thus, the inventive package blank may be folded into packages of, for example, rectangular, hexagonal, elliptical or circular cross-section.

[0021] Preferably, the length of the first wall segment along the axis of the blank is substantially equal to that of the second wall segment. This provides that the first and second wall segments are foldable into portions of substantially equal length so that the two volume portions can be telescoped into one another until the edges are substantially flush, once the two volume portions are separated from one another by breaking the weakening line or zone. Again, the terminology "length" is not to indicate a preferred orientation.

[0022] Those skilled in the art will be familiar with the methods of manufacture of the blanks of this invention, whether the blanks are made of plastic, paper or other suitable materials. They will also be able to select suitable methods of folding the blanks, preferably already about the product items to be packed, and suitable ways of fixing the blank to form a package, which might be by means of adhesive if not welding or hot melt gluing.

BRIEF DESCRIPTION OF THE DRAWINGS

[0023] The invention is described in greater detail in the following by way of purely exemplary embodiments represented schematically in the drawings, in which:

- Fig. 1 shows a plan view of a package blank according to the present invention;
- Fig. 2-17 show perspective views of the inventive package blank in sequential manufacturing steps;
- Fig. 18 shows a perspective view corresponding to that of Fig. 17, but with hidden folds and edges visible; and
- Fig. 19 shows an enlarged view of a preferred detail of the package, namely of a preferred engagement mechanism between the first and second portions.

EMBODIMENTS OF THE INVENTION

[0024] In the following detailed description of preferred

embodiments, similar reference signs are used throughout for the same or corresponding parts of the inventive package and the inventive package blank.

[0025] A shipping, presentation and end user package according to the present invention is shown in Fig. 1 in plan view in its configuration after manufacture of the blank. It comprises two main portions, namely a first portion 11 and a second portion 50. The first portion 11 and the second portion 50 are releasably connected by a linking segment 40. Releasing the connection between first and second portions is enabled via perforation 42.

[0026] Each of the first and second portions has a front wall, a rear wall and two side walls. As can be seen in Fig. 1, the first portion 11 is provided with a right side wall segment 14, a rear wall segment 16, a left side wall segment 18 and a front wall segment 20. The terminology indicating direction, such as left and right, was chosen so that it corresponds to the orientation of Figures 2-16 as viewed, said Figures indicating the folding process of the blank into a package.

[0027] The first portion 11 extends or branches off into several segments which form the top closure. After folding, the top closure comprises a top wall 22, two side walls 24, a front wall 26 and two attachment flaps 28 which, after fixing them to the front wall segment 26, hold the various walls of the top closure in place. The attachment flaps 28 are further provided with closure engagement edges 30, the function of which will be outlined in greater detail below with reference to Fig. 18.

[0028] In the following, the folding process of the blank into a package will be described.

[0029] Fig. 2 shows the package blank immediately after manufacture and prior to any folding. Although the first portion 11 and the second portion 50 are of substantially equal length L, it can be seen from the Fig. that the first wall segments 14, 16, 18, 20 are, in total, slightly broader than the second wall segments 54, 56, 58, 60. As the first wall segments are to form the first portion 11 of the package and the second wall segments are to form its second portion 50, and since the second portion is to be inserted into the first, the first wall segments of the blank must span a greater circumference than the second wall segments, once folded. Folding of the blank is performed along fold lines 70.

[0030] As can also be seen in Fig. 2, one of the first wall segments, in this case rear wall segment 16, extends into the linking segment 40. Linking segment 40, in turn, extends into one of the second wall segments, in this case rear wall segment 56. In the illustrated embodiment, the perforation 42 is provided near the fold line 70 between linking segment 40 and rear wall segment 56. However, those skilled in the art will notice that the perforation can advantageously be relocated near the middle of the linking segment 40.

[0031] Fig. 3 illustrates the package blank after the first folding step. In this figure, the package is illustrated in the same orientation as in Fig. 2. In the first folding step, the package blank is folded such that one fold line 70 adjacent to the linking segment 40 is folded in one direction, while the other fold line adjacent to the linking segment is then folded in the other direction. As a result, rear wall segment 56 overlaps rear wall segment 16. The linking segment 40, which is not visible in Fig. 3, is interposed substantially coplanar between the two rear wall segments.

[0032] A subsequent folding step is illustrated in Fig. 4. In this folding step, right side wall segment 54 and attachment flap 52 are folded along fold line 70 located between rear wall segment 56 and right side wall segment 54 to partially cover rear wall segment 56. Preferably, adhesive should be spread on attachment flap 52 in this step.

[0033] In a further folding step shown in Fig. 5, front wall segment 60 is folded along fold line 70 to then lie on top of the rear wall segment 56 and overlap the attachment flap 52 (illustrated by phantom lines). Due to the adhesive previously applied, front wall segment 60 is attached to attachment flap 52.

[0034] Subsequently, right side wall segment 14 and attachment flap 12 of the first portion are folded along fold line 70 to then partially cover rear wall segment 16 of the first portion and front wall segment 60 of the second portion (see Fig. 6).

[0035] During this stage, adhesive should be applied to attachment flap 12 of the first portion.

[0036] Thereafter, as depicted in Fig. 7, the front wall segment 20 and the latching flap 32 of the first portion are folded along fold line 70 so that the front wall segment 20 overlaps attachment flap 12 (invisible; illustrated by phantom lines) and is mounted thereto. Consequently, front wall segment 20 of the first portion also partially overlaps front wall segment 60 of the second portion.

[0037] Fig. 8 illustrates a subsequent manufacturing step of the package. In this step, the package blank is erected so that the front wall segments 20, 50 are spaced apart from the rear wall segments by the side wall segments. Due to the perspective angle, only side wall segments 18 and 58 are visible in the Figure. Erection of the package is performed by locking the rear wall segments into place and shifting the front wall segments relative to the rear wall segments, in the Figure to the right. As a result of this step, the package is three-dimensional. Length L, breadth B and width W of the first and second portions are apparent.

[0038] In the subsequent manufacturing steps, the side attachment flaps 66 found on the bottom of the package are folded inwards (see Fig. 9) and the first bottom wall flap 62 is folded over the side attachment flaps 66 and at least partially covered with adhesive. The second bottom wall flap 64 is then folded over the first bottom wall flap 62 and fixed thereto (see Fig. 10), after which the package is stable enough to retain its erected state. Naturally, it is also possible to first fold the second bottom wall flap 64 upwards whereupon the bot-

tom wall segment 62 is attached thereto.

[0039] In the drawings, the perspective angle changes from Fig. 10 to Fig. 11. In Fig. 11, the details of the package's top closure and its latching mechanism prior to manufacturing are depicted. When forming the top closure and the latching mechanism, the latching flap 32 is first folded downwards (see Fig. 12). Secondly, the side wall segments 24 of the top closure are folded relative to the top wall 22 of the closure until side wall segments 24 and top wall 22 form right angles, respectively (see Fig. 13).

[0040] Looking at Figure 14, it can be seen that the attachment flaps 28 of the top closure are folded downwards until they form right angles with the side walls of the closure. It is at this stage that adhesive should be applied to the top surface of attachment flaps 28. Fig. 15 shows how the front wall segment 26 of the top closure is folded downwards onto the attachment flaps 28 and adhered thereto.

[0041] In Fig. 16, the top closure is illustrated with the lid almost completely opened. It can thus be seen how the front wall 26 of the top closure is positioned relative to the side walls 24 and attachment flaps 28. Fig. 16 also shows how the closure engagement edges 30 are substantially parallel to the long edges of the closure's front wall 20.

[0042] At this stage, the only step missing from the complete manufacture of the package from a package blank is closing the lid. Fig. 17 depicts a view from a different angle, once this final manufacturing step is taken.

[0043] Fig. 18 represents a "hollow" model of the assembled package. In particular, Fig. 18 shows how the closure engagement edges 30 and latching flap 32 engage. As mentioned earlier with reference to Fig. 12, latching flap 32 is folded downwards along the corresponding fold line. Due to the elastic nature of the material chosen to form the package and package blank, the latching flap 32 will have a tendency to return to its initial position. Consequently, the latching flap 32 is slightly angled away from the adjacent front wall 20. When closing the lid, attachment flaps 28 will slide along latching flap 32 and impel it toward front wall 20. Upon complete closure of the package, the biasing elasticity of the blank material will force the latching flap 32 away from the front wall 20 so that the "outer" edge of the latching flap will eventually engage with the closure engagement edges 30. Since opening of the package is only possible with additionally applied force, accidental opening thereof can be avoided.

[0044] After opening the package (see Fig. 16), the user then pushes the second portion 50 into the first portion 11 until perforations 42 break. The contents of the package may then be pushed out of the package's top opening, simply by telescoping these two portions, and consumed.

[0045] Fig. 19 depicts in detail the engagement mechanism between the first 11 and second 50 portions, once these two portions are separated along perforation 42. After this separation, the portion 41 of the linking wall still connected to the first portion 11 is biased towards the outer surface of the adjacent wall of the second portion 50, while the portion 43 of the linking wall still connected to the second portion 50 is biased towards the inner surface of the first portion 11. Biasing is achieved by choosing the package to have resilient material properties.

[0046] As mentioned above, the package and package blank are preferably made from paper or cardboard material, and the corresponding preferred attachment of wall segments and attachment flaps is by means of an adhesive. However, some applications of this inventive package may require that it be coated with a polymeric material or completely manufactured from a polymeric material. Accordingly, heat sealing, spot welding, etc. would then be preferred attachment methods.

[0047] As will be apparent to a person skilled in the art, the inventive package could be manufactured from two package blanks, the connection between first and second portions being achieved by a line or zone of weakness, e.g. strips of adhesive. Although this latter embodiment would be less preferred, telescoping of the two portions after breaking this connection would advantageously still be accomplished.

[0048] Further embodiments and advantages of the inventive package and the inventive package blank are defined in and by the various combinations of the following claims.

Claims

1. A package (100), the package having an axis and comprising:
   - a first portion (11) defining a first volume and having a top closure (21), at least one side wall (14, 16, 18, 20) and a bottom opening; and
   - a second portion (50) defining a second volume and having a top opening, at least one side wall (54, 56, 58, 60) and a bottom wall;
   - the top closure and the bottom wall defining opposite extremities of the package;
   - the second portion being insertable coaxially into the first portion; and
   - the first and second portions being connected by at least a weakening line (42) or zone.

2. Package according to claim 1, **characterised in that** the first and second portions being connected by at least one linking wall (40) having a weakening line (42) or zone.

3. Package according to any one of claims 1 or 2, **characterised by** being producable from a single package blank.

4. Package according to any one of the preceding

claims, **characterised in that** the first and second portions are of substantially polygonal or curvilinear cross-section.

5. Package according to claim 4, **characterised in that** the first and second portions have a length (L) and a breadth (B) which are substantially equal.

6. Package according to any one of claims 4 or 5, **characterised in that** the package is of rectangular cross-section and a width (W) of the first and second portions is substantially smaller than length and breadth of the first and second portions.

7. Package according to any one of the preceding claims, **characterised in that** the weakening line or zone is located between one of the at least one side walls of the first portion and one of the at least one side walls of the second portion, with the second portion being partially inserted into the first portion.

8. Package according to any one of the preceding claims, **characterised in that** the weakening line or zone is formed by a perforation (42) or reduced wall thickness.

9. Package according to any one of claims 2 to 8, **characterised in that** the weakening line or zone is located in a portion of the linking wall intermediate the first and second portions.

10. Package according to any one of claims 7 to 9 as dependent on claim 2, **characterised in that** on opposing sides of the weakening line or zone, the linking wall is further connected to the one of the at least one side walls of the first portion and to the one of the at least one side walls of the second portion, respectively.

11. Package according to claim 10, **characterised in that** the further connection comprises an adhesive.

12. Package according to any one of the preceding claims, **characterised in that** the top closure of the first portion is a flip-type closure (21).

13. Package according to claim 12, **characterised in that** the flip-type closure is latchable (30, 32).

14. Package according to any one of claims 4 to 13 as dependent on claim 2 and of polygonal cross-section, **characterised in that** a wall thickness of edge regions (70) between adjacent walls of the first portion, the second portion and the linking wall is smaller than a wall thickness of the remaining regions.

15. A foldable package blank (10), the blank having an axis and comprising:

- at least one first wall segment (14, 16, 18, 20) and at least one second wall segment (54, 56, 58, 60), spaced apart along the axis by at least one linking segment (40) having a weakening line (42) or zone;
- sufficient tabs or flaps (12, 52) on the margins of the first and second wall segments to permit the formation, by folding and fixing of the tabs or flaps to the respective adjacent wall segments, of a first portion defining a first volume and a second portion defining a second volume, the folded second portion being insertable coaxially into the folded first portion.

16. Package blank according to claim 15, **characterised in that** the first and second wall segments are substantially rectangular and foldable such that folded first and second wall segments each define volumes of polygonal or curvilinear cross-section.

17. Package blank according to claim 16, **characterised in that** a length (L) of the first wall segment along the axis of the blank is substantially equal to that of the second wall segment.

18. Package blank according to any one of claims 15 to 17, **characterised in that** the weakening line or zone is formed by a perforation (42).

19. Package blank according to any one of claims 15 to 18, **characterised in that** the weakening line or zone is located in a portion of the linking segment intermediate the first and second wall segments.

20. Package blank according to any one of claims 15 to 19, **characterised in that** the first wall segment extends into at least one closure segment (22, 24, 26, 28), the at least one closure segment being foldable into a flip-type closure.

21. Package blank according to claim 20, **characterised in that** the first wall segment extends into a latch segment (32), the latch segment being engagable with the flip-type closure.

22. Package blank according to any one of claims 15 to 21, the blank having a wall thickness and **characterised in that** first and second wall segments are foldable along lines (70) of reduced wall thickness.

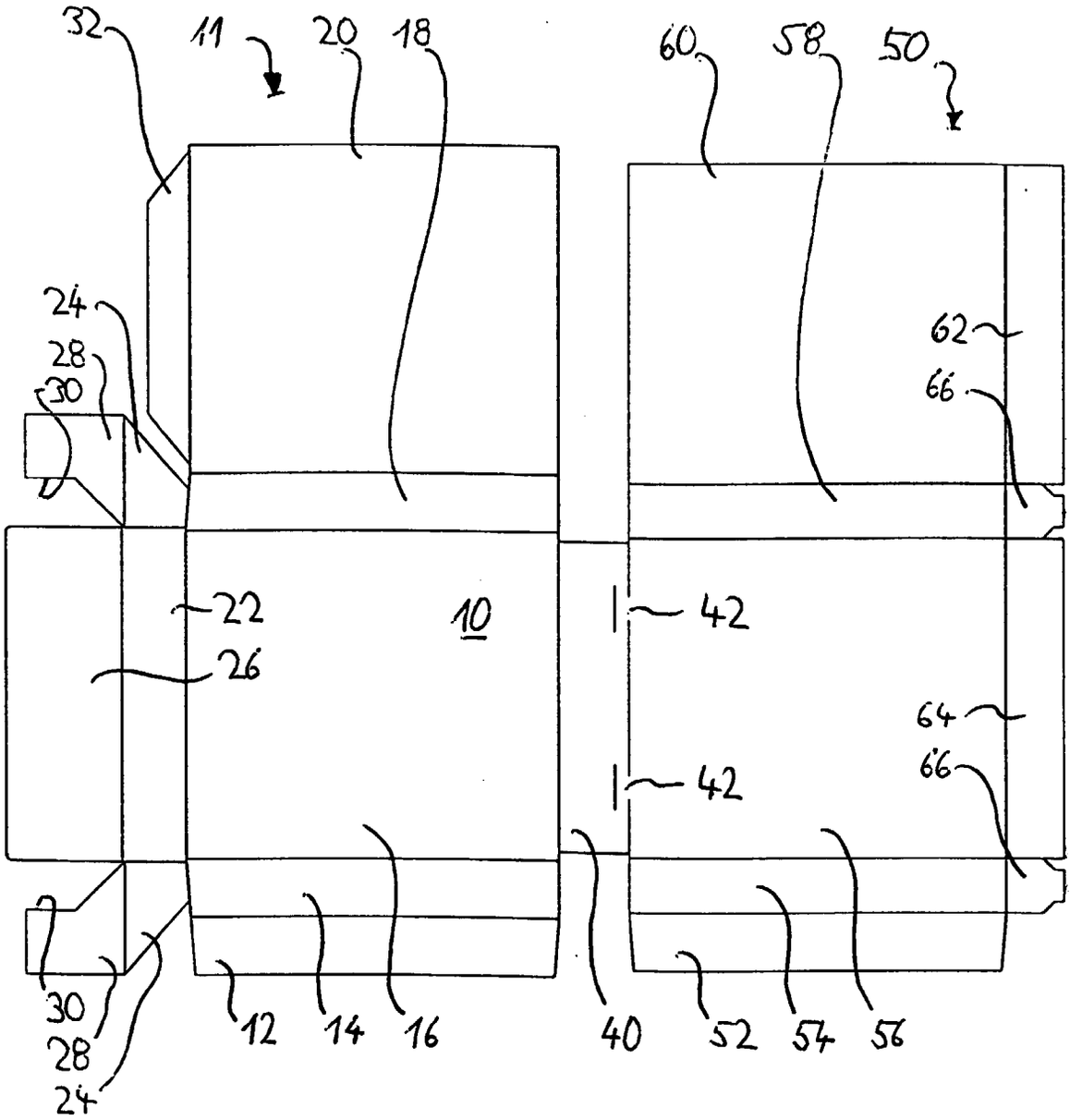

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FIG. 1

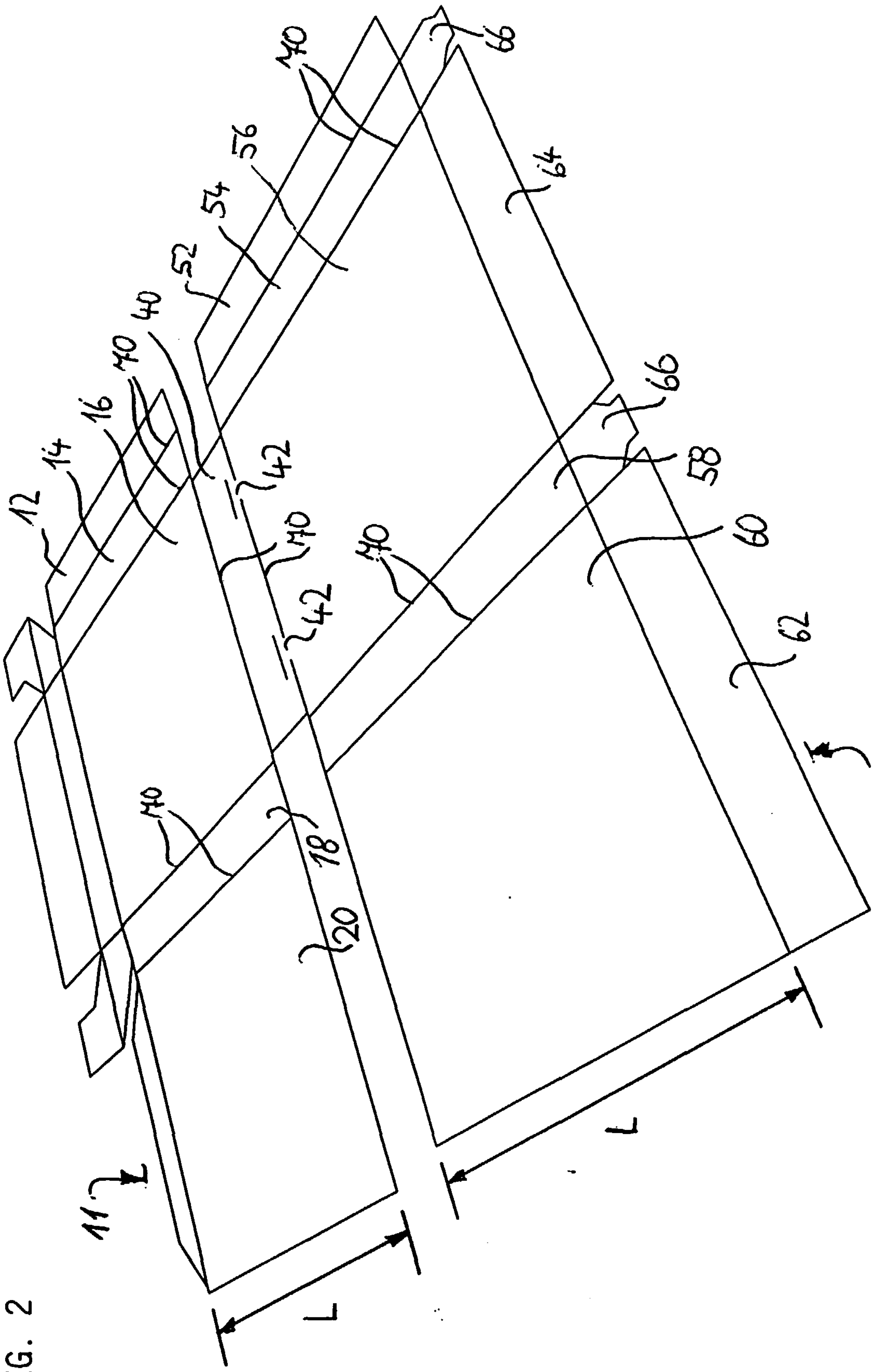


FIG. 2

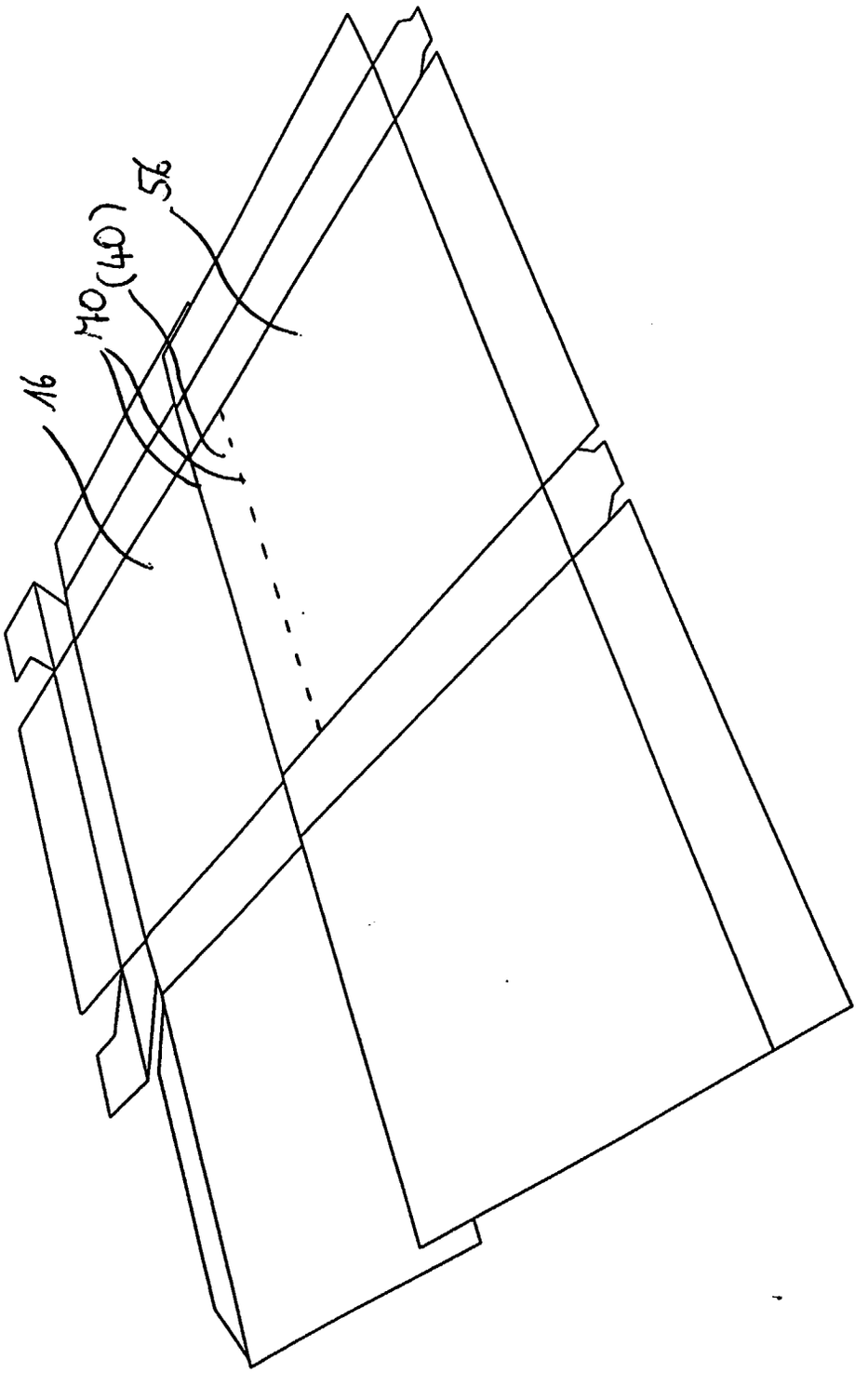


FIG. 3

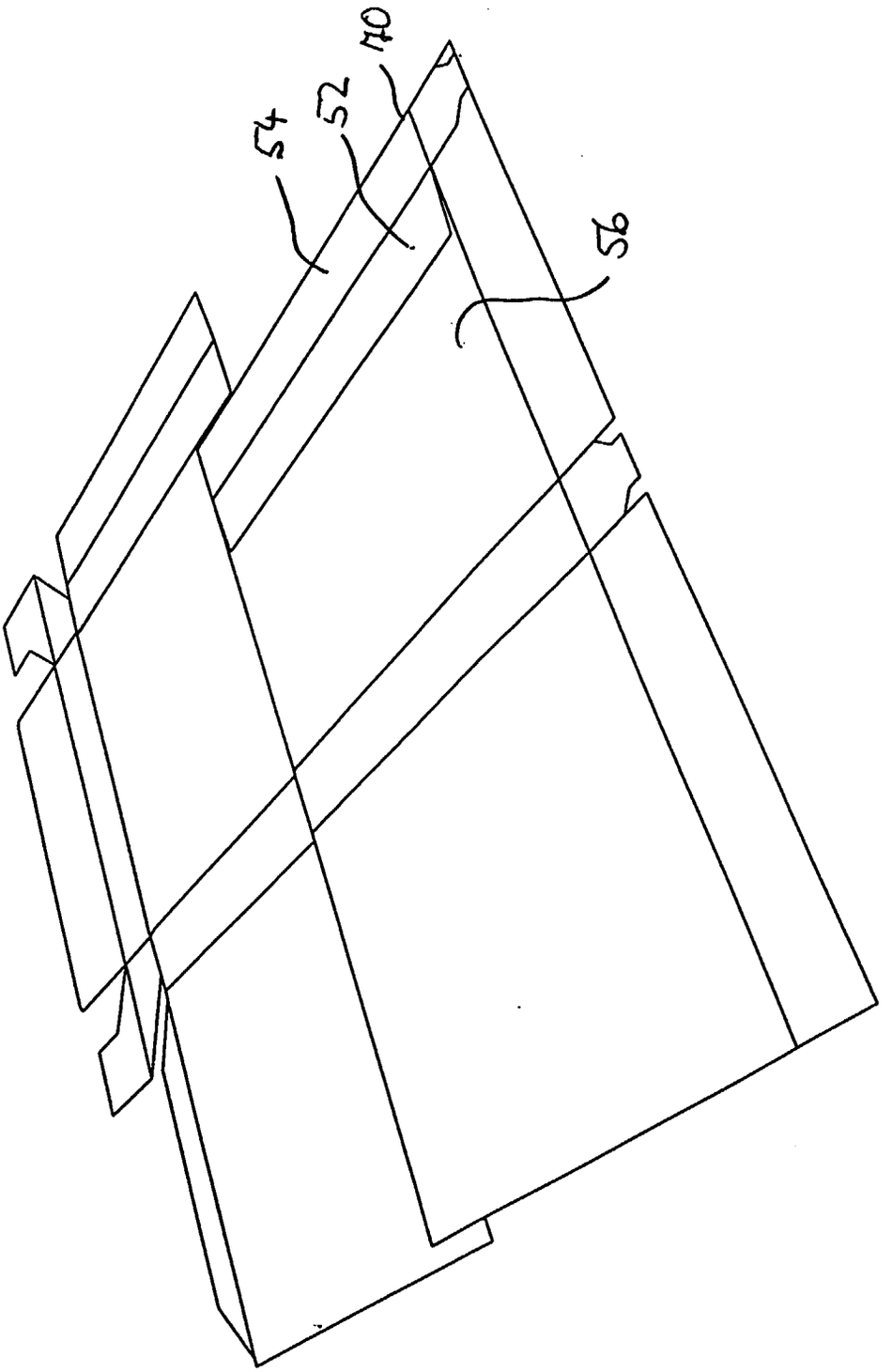


FIG. 4

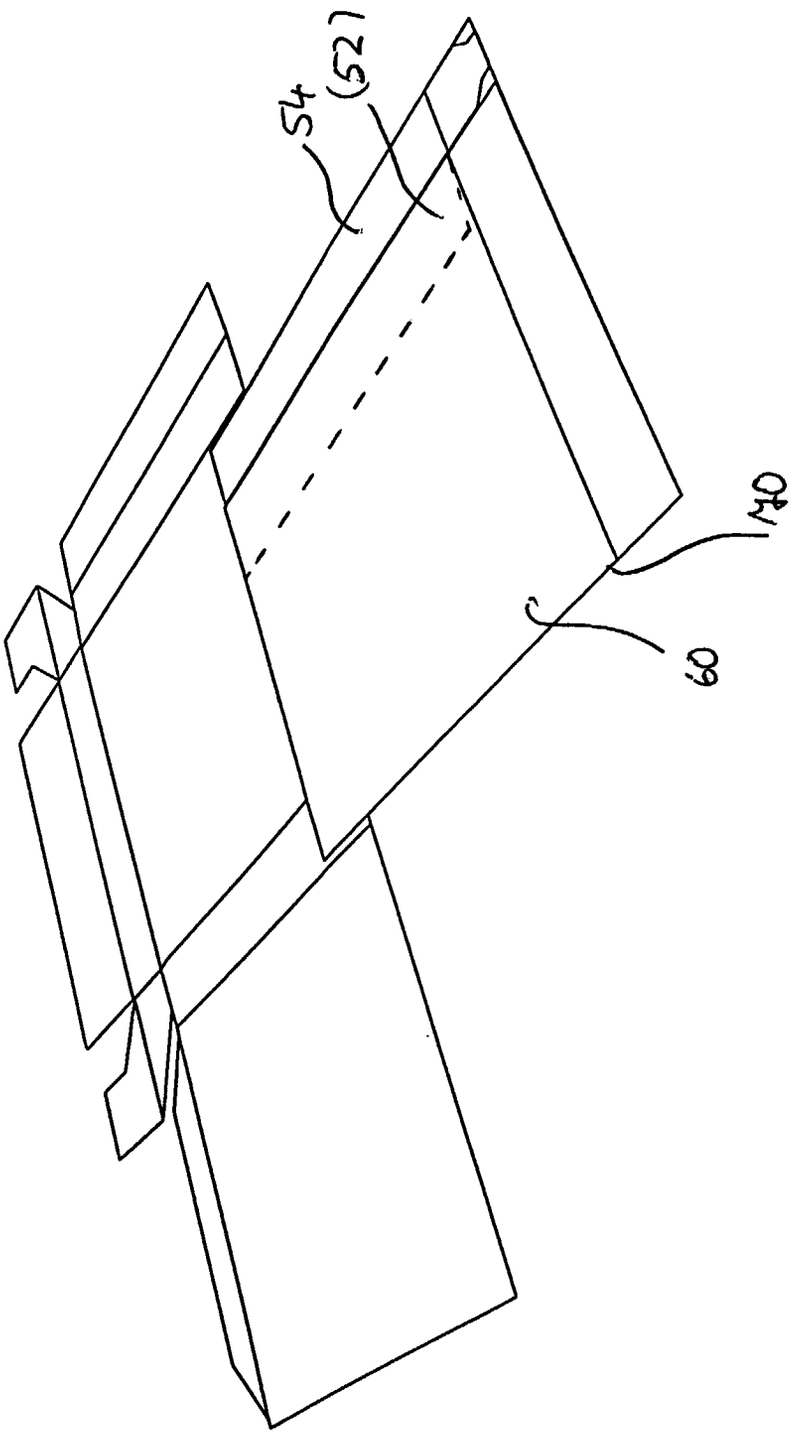


FIG. 5

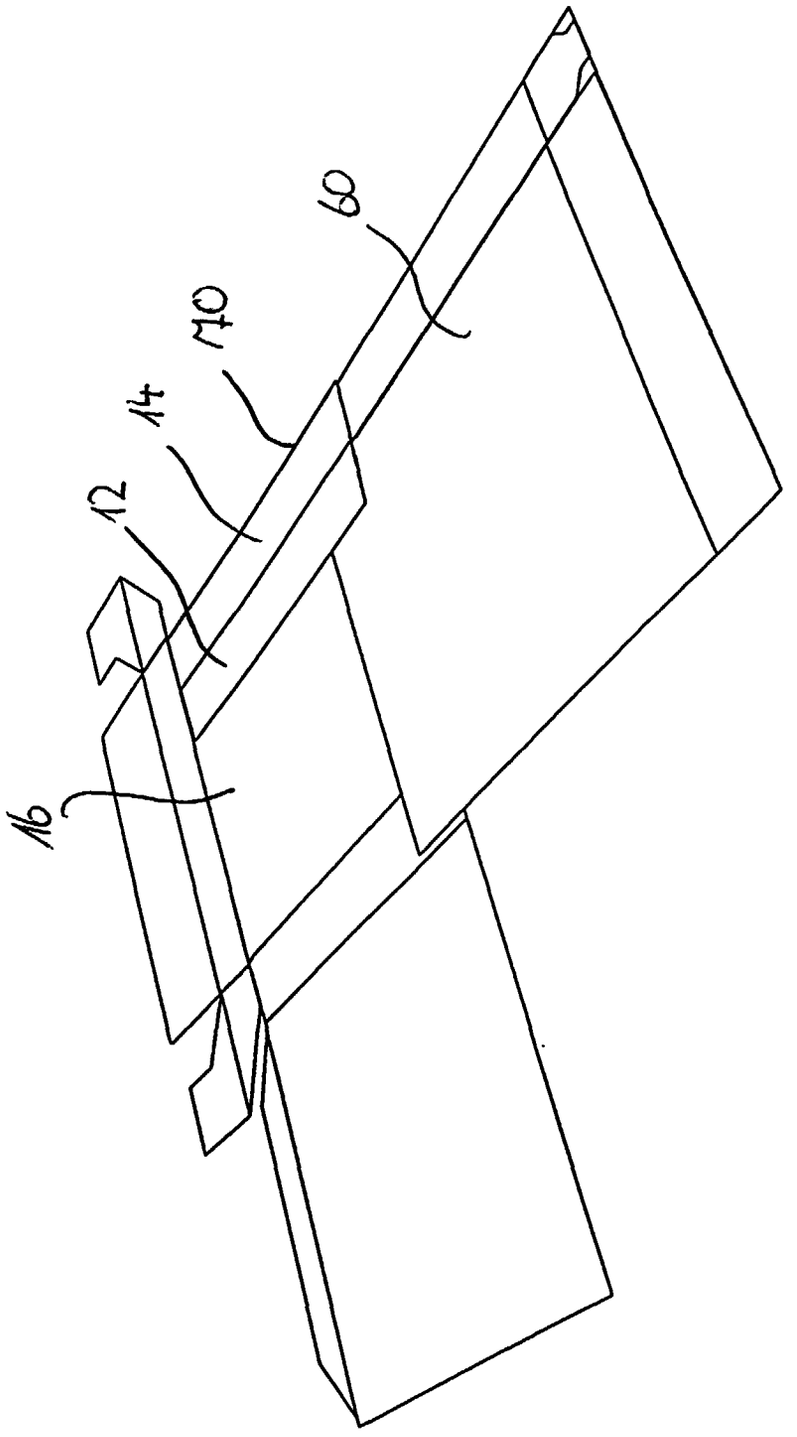


FIG. 6

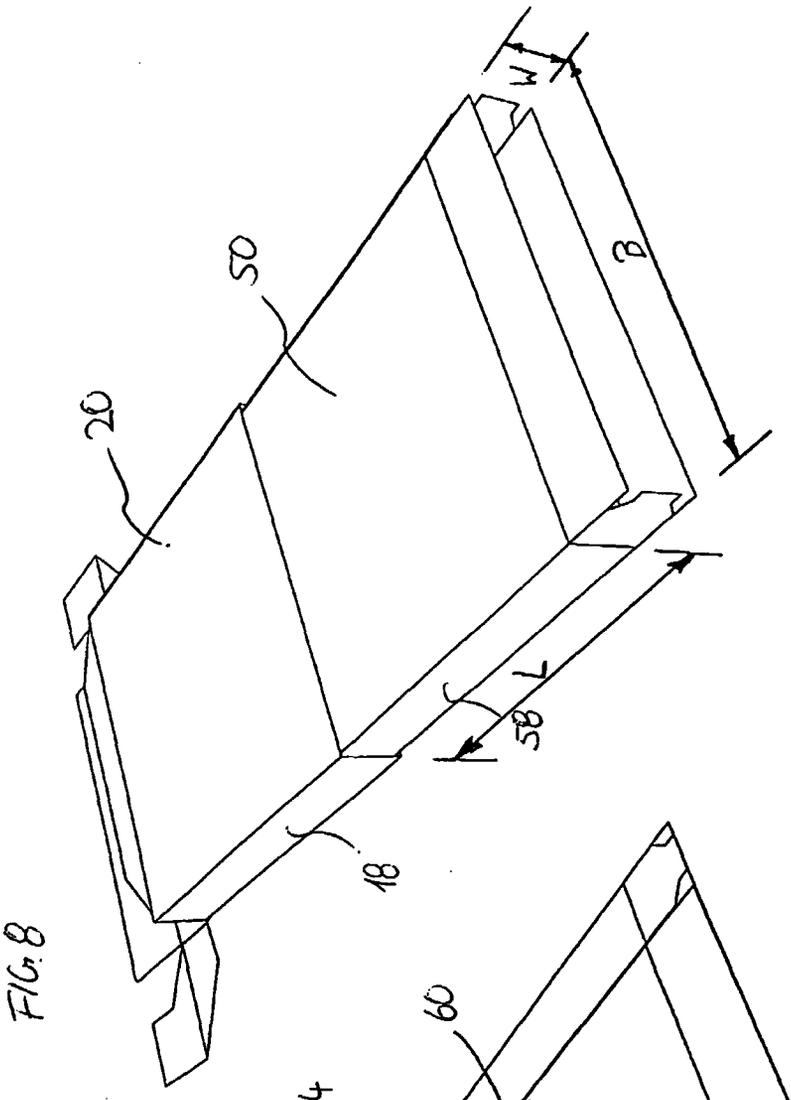


FIG. 8

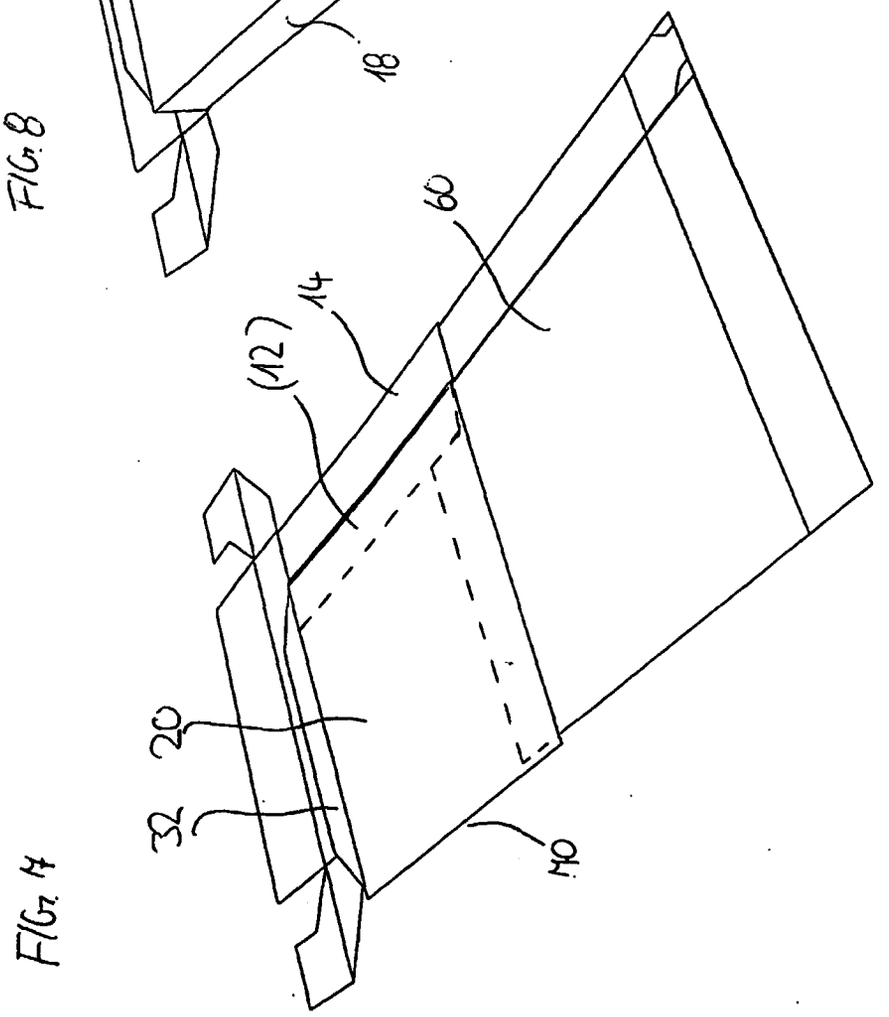


FIG. 4

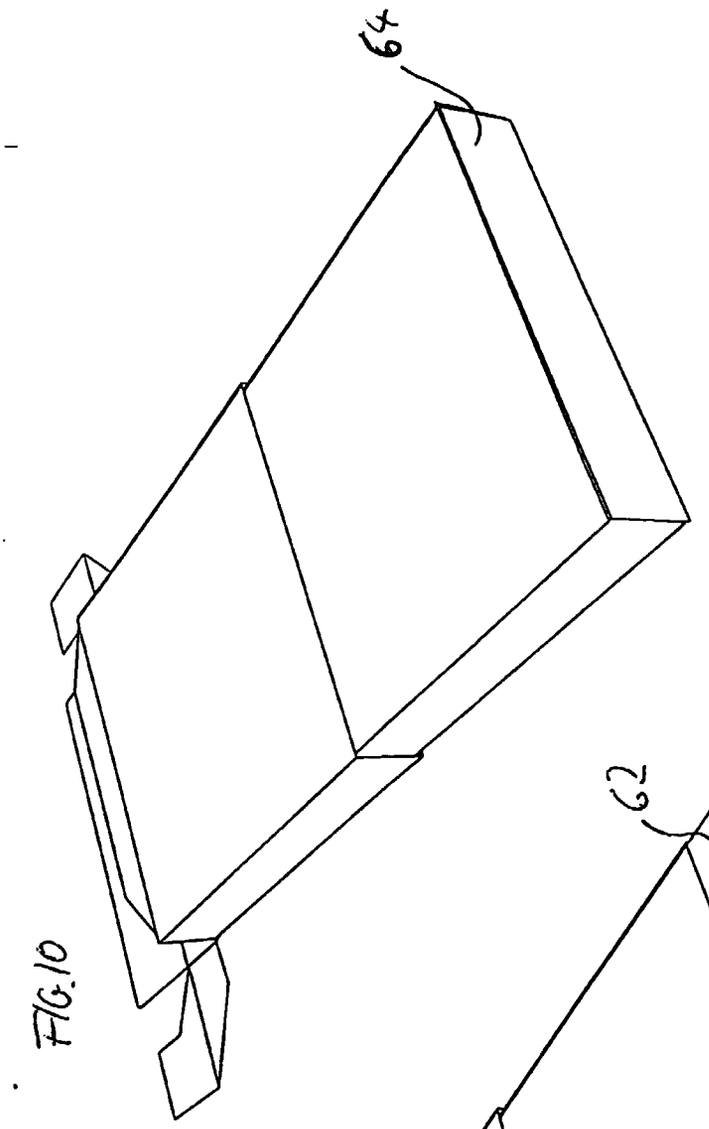


FIG. 10

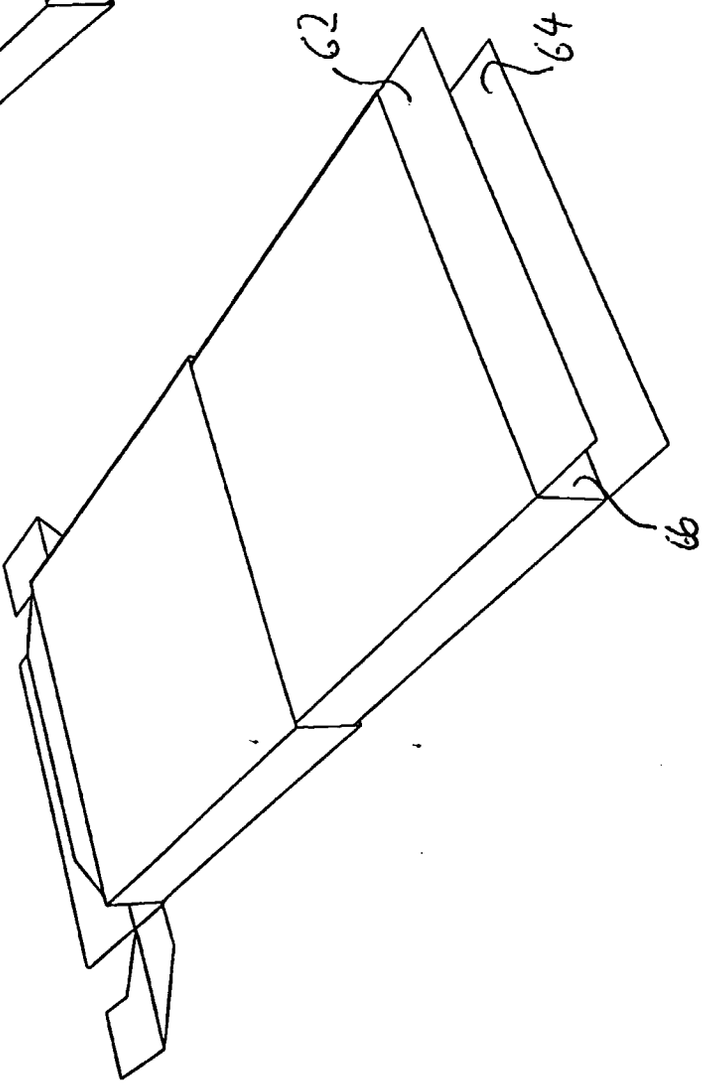


FIG. 9

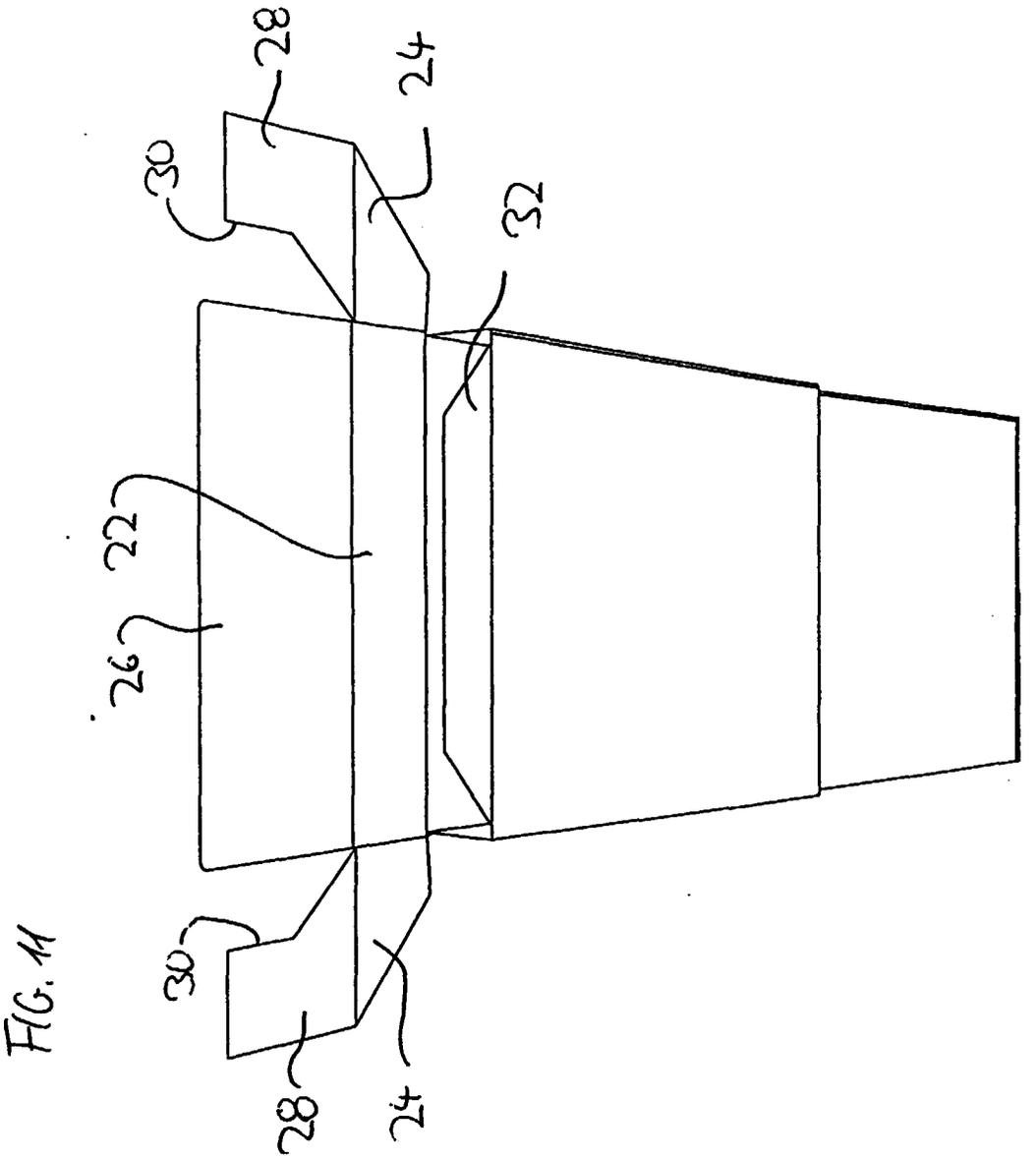


FIG. 11

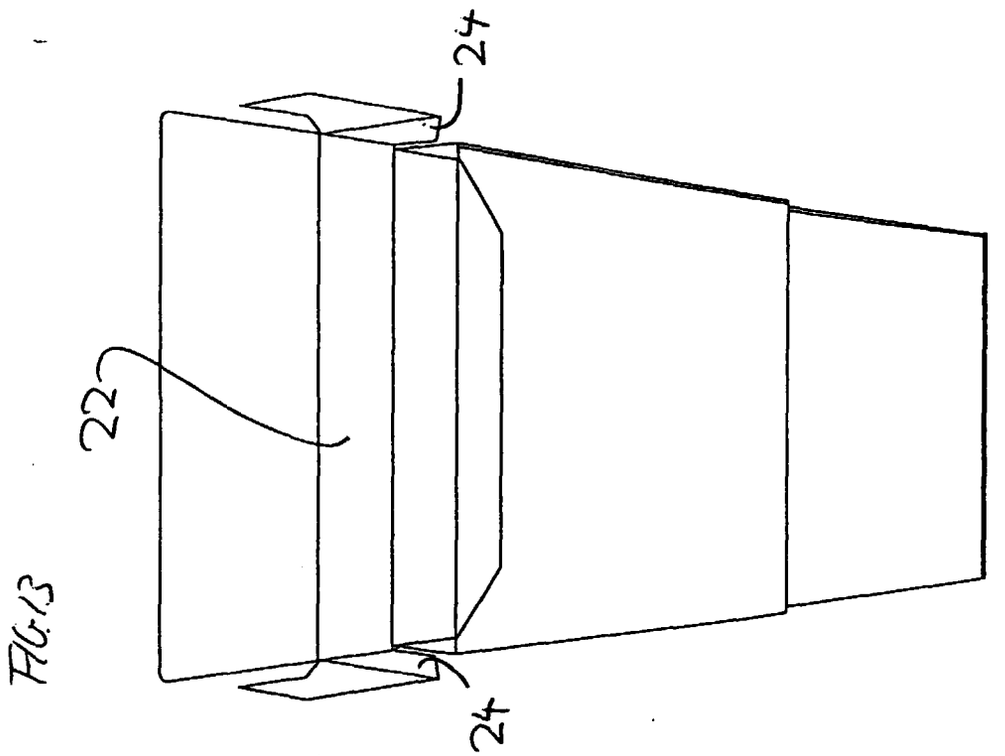


FIG. 13

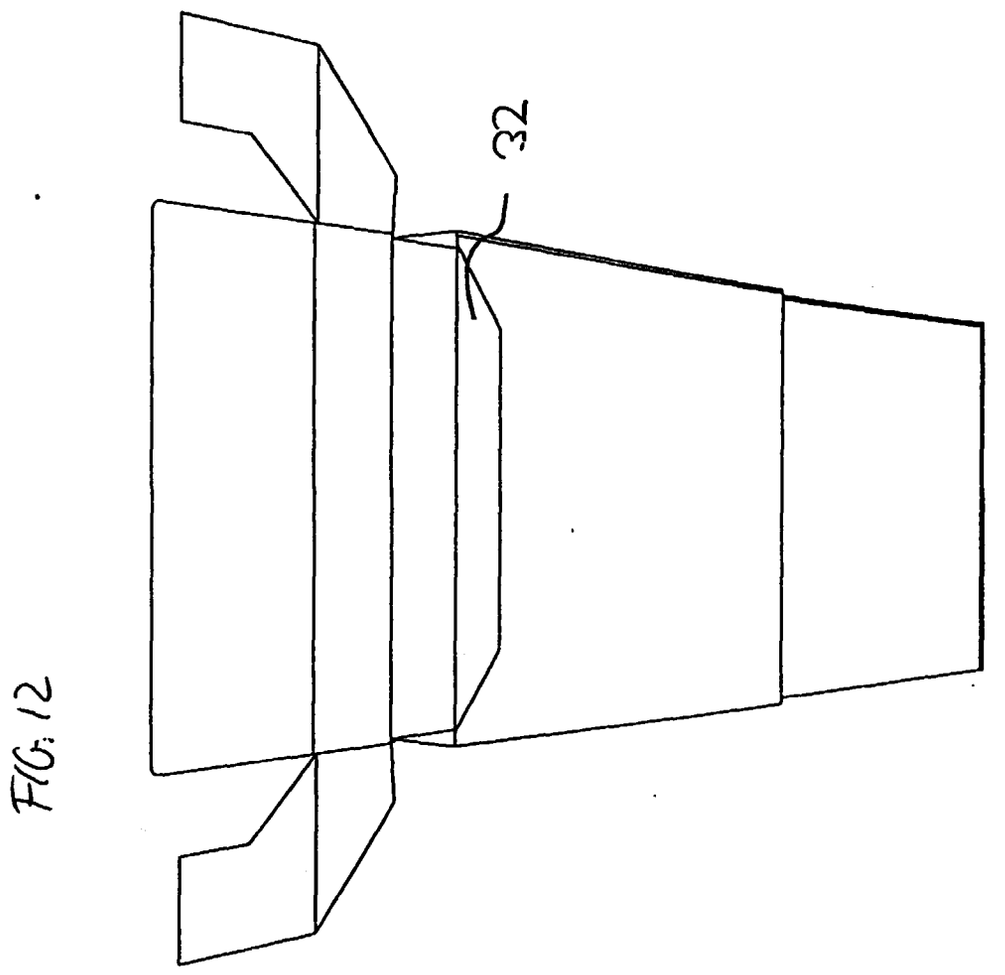


FIG. 12

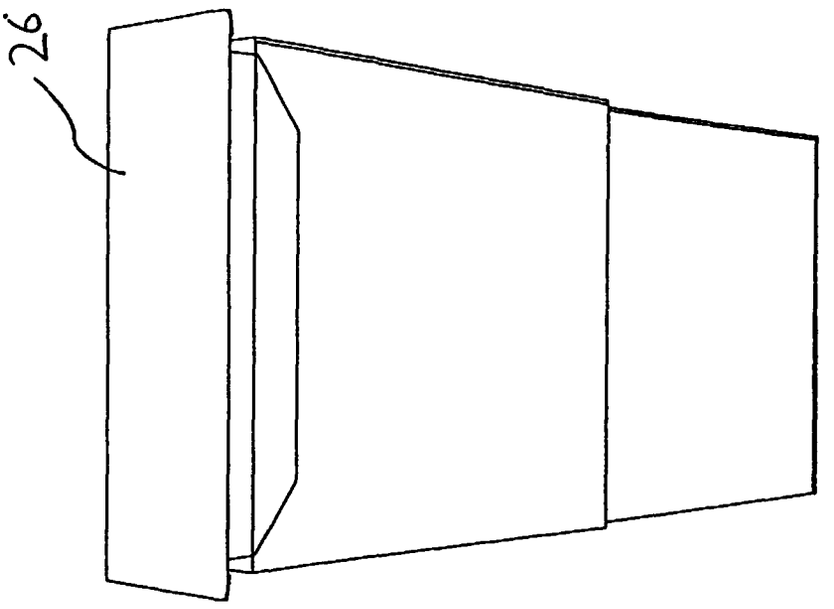


FIG. 15

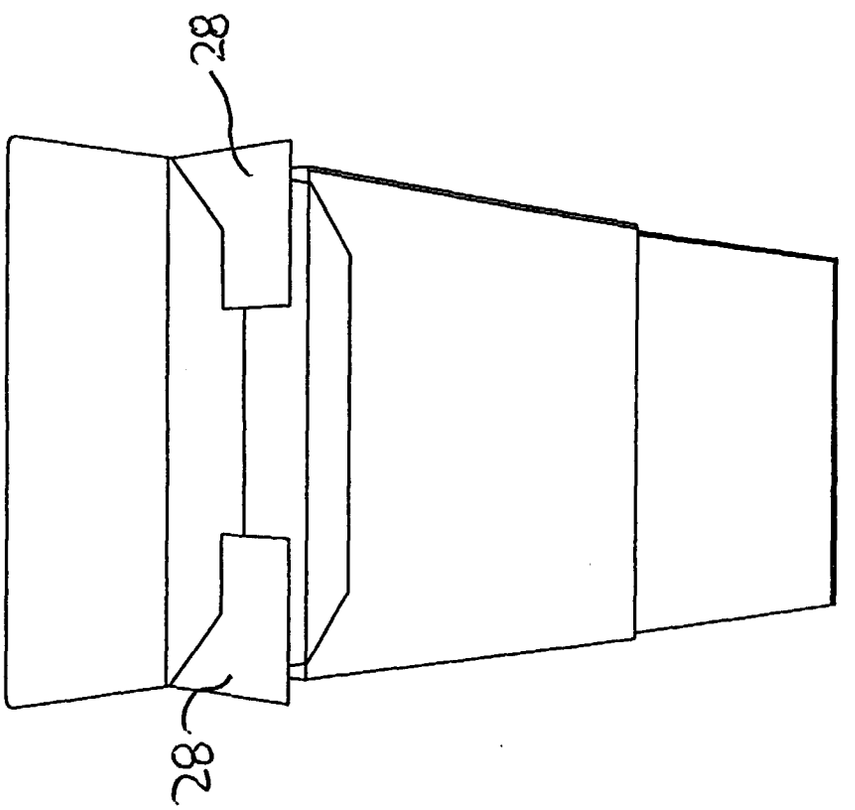


FIG. 14

FIG. 12

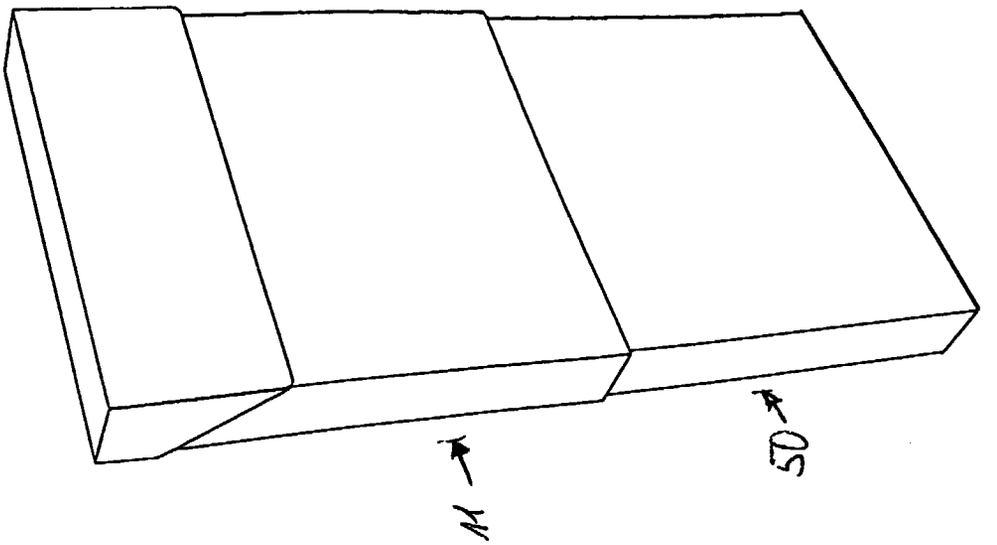
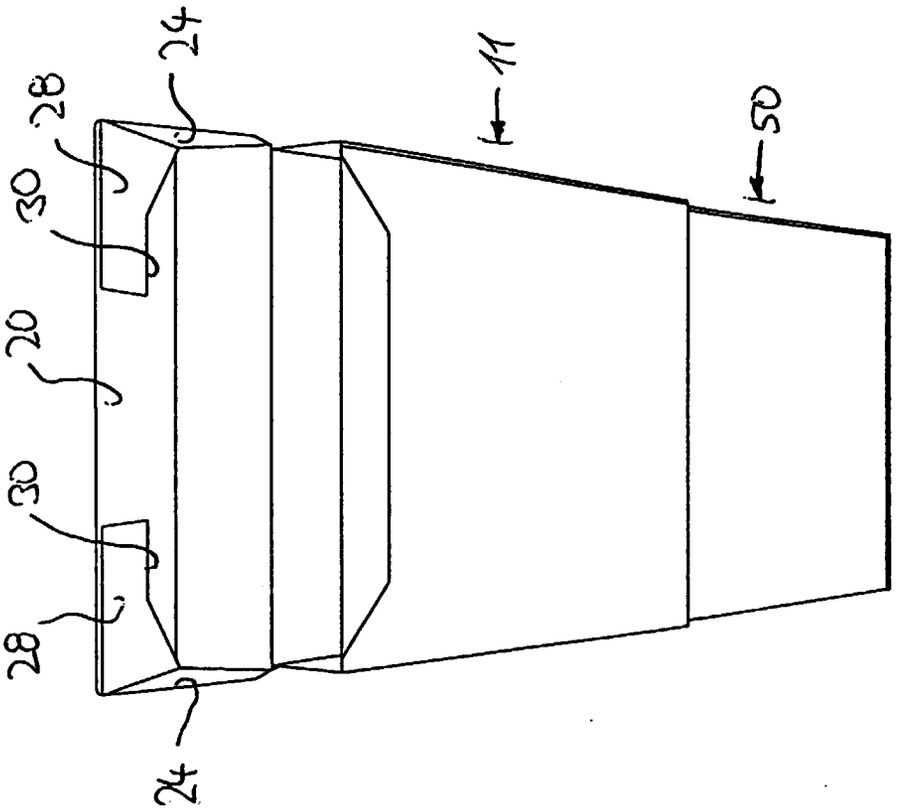


FIG. 16



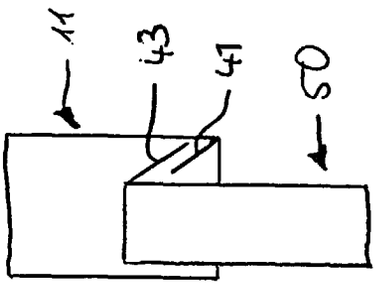


FIG. 19

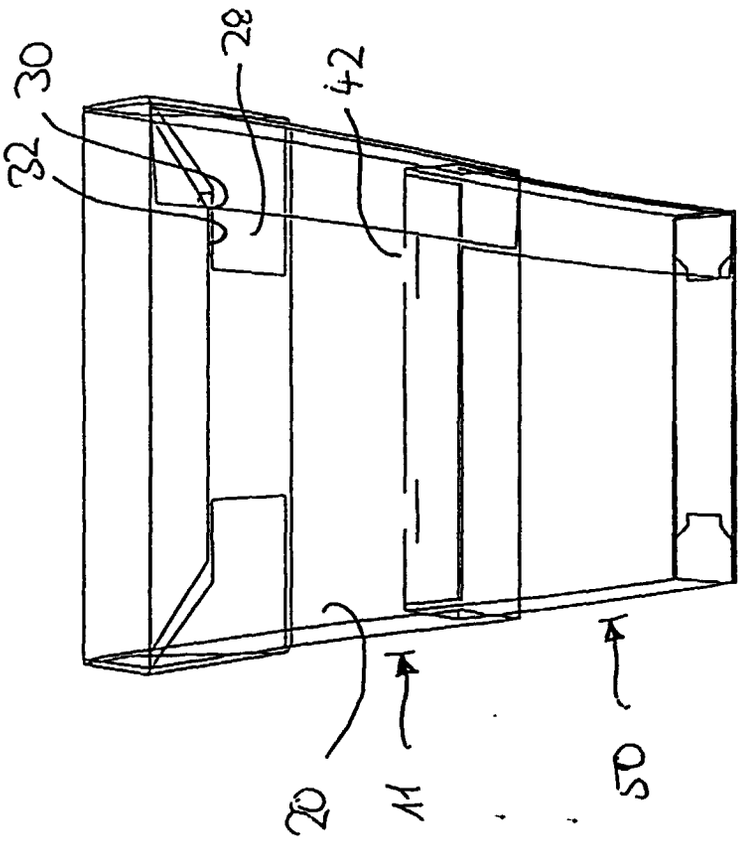


FIG. 18

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 97 11 7248

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.6)
X A	DE 25 38 845 A (SAARINEN) * page 3, line 10 - page 6, line 8; figures 1-4 *	1-8, 15-18 9-14, 19-22	B65D5/54 B65D5/38
A	EP 0 773 169 A (PAREIKE) * column 3, line 22 - column 4, line 44; figure 1 *	1-8, 15-18	
A	DE 295 17 933 U (CD CARTONDRUCK) * page 5, line 15 - page 8, line 2; figures 1-7 *	1-6, 12-20	
A	FR 2 649 672 A (HEISSAT) * page 2, line 19 - page 5, line 18; figures 1-5 *	1-6,15, 16	
A	FR 2 337 666 A (SHIMADA) * page 1, line 30 - page 4, line 9; figures 1-4 *	1-6, 12-20	TECHNICAL FIELDS SEARCHED (Int.Cl.6) B65D
A	US 2 361 984 A (WILLIAMSON) * page 2, column 1, line 28 - page 4, column 2, line 17; figures 1-18 *	1-6, 15-18	

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	27 February 1998	Vantomme, M

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