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(72) Inventor: **Nielsen, Frank**
4571, Grevinge (DK)

(74) Representative: **Holme Patent A/S**
Vesterbrogade 20
1620 Copenhagen V (DK)

(71) Applicant: **Mindfolding ApS**
4571 Grevinge (DK)

(54) **A blank for a foldable chair**

(57) A blank stamped out of a sheet is formed with a number of folding lines dividing up the blank (1) into a number of panels which by being bended about their respective folding lines form a foldable chair whereby a seat panel (3) and front panel (4) are interconnected via a first transverse folding line (5), a backrest panel (6) and back panel (7) are interconnected via a second transverse folding line (8) and the seat panel (3) and backrest panel (6) are interconnected via a third transverse folding line (11). The blank can be folded up to a strong and stable schair without utilizing any adhesive or other connection and/or strengthening means and the finished chair offers moreover the user a very high comfort since the seat and backrest of the chair are forming an integral unit.

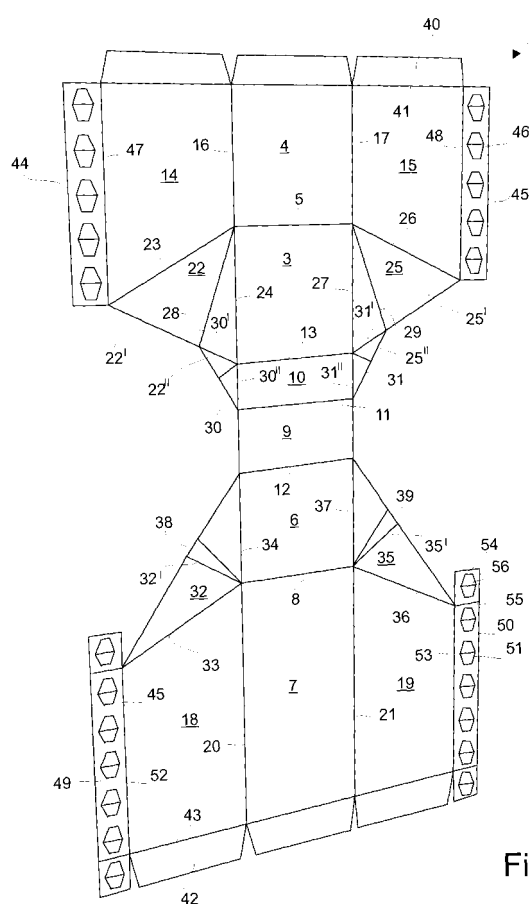


Fig. 1

Description

[0001] The invention relates to a blank for a foldable chair, said blank is formed with folding lines dividing the blank in a number of panels comprising a seat panel, a backrest panel, a front panel, and a back panel. The invention also relate to a foldable chair made from the blank and a method of folding said chair.

[0002] It is from the prior art known to make chairs by folding a stamped blank with a specific pattern having a number of panels limited by folding lines. The material utilized is typically cardboards or similar stiff materials.

[0003] Such chairs are easy to transport in its compact condition and is therefore ideal for being used at festivals, rock concerts, and as garden furniture. However the chairs can just as well be a supplement to furniture in the home.

[0004] Foldable chairs are known from e.g. U.S. Patent 4,877,292 and U.S. Patent 2,049,659. The panels forming the front and back of these chairs are extending from a common base line with the disadvantageous that the seat and the backrest will not be connected. That implies the drawback that these known chairs are uncomfortable to use unless costly and labour-intensive special actions are taken. As consequence the known chairs are difficult and time-consuming to fold from their blanks.

[0005] Another drawbacks with the known foldable chairs consist of the fact that the prior art technique requires utilization of adhesives like glue for finishing the joining of the chair, which makes the chairs unsuitable for being completely unfolded again.

[0006] The above-mentioned disadvantages of the prior art foldable chairs are according to the invention remedied by,

in a first aspect of the present invention providing an foldable chair which easily and quickly can be folded from a blank.

in a second aspect of the present invention providing an foldable chair where the seat and the backrest automatically cohere when folding the blank.

in a third aspect of the present invention providing an foldable chair which is comfortable to use.

in a fourth aspect of the present invention providing a strong and stabile foldable chair which can be folded from a blank without utilizing joining means like e.g. glue, sheet-formed joining means or other means for reinforcing the chair.

in a fifth aspect of the present invention providing an foldable chair which has a significantly reduced thickness and which occupies a relatively small amount of storage space when unfolded.

[0007] The novel and unique features of the invention consists in the fact that in the blank for folding the chair are the seat panel and front panel interconnected via a first transverse folding line, the backrest panel and back panel via a second transverse folding line and the seat panel and backrest panel via a third transverse folding line.

[0008] Thereby is advantageously obtained that the seat and the backrest automatically cohere and form an integral unity when folding the blank. The chair of the invention is therefore stronger and more comfortable to use than the prior art foldable chairs.

[0009] The folding up of the blank can moreover take place easily and quickly and without utilizing other joining means like e.g. glue.

[0010] The blank is preferably cut from a single sheet of cardboard, paper board, plastics or plywood as this will render a flat blank according to the invention which is not only inexpensive to fabricate, but also light and therefore easy to carry.

[0011] In the unfolded state the blank has a relatively small thickness and the blank will therefore occupy a relatively small amount of storage space when unfolded.

[0012] Furthermore, due to the specific design of the blank according to the invention, the blank can be folded into a very comfortable and strong chair without requiring any additional reinforcement means, such as an additional sheet-part added to a specific section of the blank by e.g. glue in order to provide a reinforced back panel.

[0013] The invention will be explained in greater details below, giving further advantageous features and technical effects and describing exemplary embodiments with reference to the drawing, in which

Fig. 1 is a top plane view of a blank for a foldable chair according to the invention,

Fig. 2 shows in perspective the chair according to the invention in a first folding step,

Fig. 3 shows the same in a second folding step,

Fig. 4 shows the same in a third folding step,

Fig. 5 shows the same in a fourth folding step, and

Fig. 6 shows the same in a fifth folding step.

[0014] The blank 1 shown in fig. 1 is in the steps shown in fig. 2 through 6 folded up to the nearly finished chair 2 of the invention shown in fig. 6.

[0015] The blank is at least mainly flat and may be stamped out of a sheet of e.g. cardboards and it comprises a number of folding lines between a number of panels having each their function in the folded chair.

[0016] The seat panel 3 is connected to the front panel 4 via a first transverse folding line 5, while the backrest panel 6 is connected to the back panel 7 via a second transverse folding line 8.

[0017] In the embodiment shown are the seat panel 3 and the backrest panel 6 interconnected by means of a first and second transition panel 9 and 10, which are interconnected via a third transverse folding line 11, whereby the first transition panel 9 is connected to the backrest panel 6 via a fourth transverse folding line 12 and the

second transition pane 10 is connected to the seat panel 3 via a fifth transverse folding line 13.

[0018] In another embodiment according to the invention may the seat panel and backrest panel be directly interconnected via a common transverse folding line, (not shown).

[0019] The front panel 4 is connected to a first and second side front panel 14 and 15 via a first and second lateral front folding line 16 and 17, while the back panel 7 is connected to a first and second side back panel 18 and 19 via a first and second lateral back folding line 20 and 21.

[0020] A first front joining panel 22 is connected to the first side front panel 14 via an oblique first front joining folding line 23 and to the seat panel 3 via a lateral first front joining folding line 24, and a second front joining panel 25 is connected to the second side front panel 15 via an oblique second front joining folding line 26 and to the seat panel 3 via a lateral second front joining folding line 27.

[0021] The first front joining panel 22 consists of two first joining parts 22' and 22" which are interconnected by means of a third front joining folding line 28 while the second front joining panel 25 consists of two second joining parts 25' and 25" which are interconnected by means of fourth joining folding line 29.

[0022] The joining part 22" is connected to the second transition panel 10 via a foldable front fixing panel 30, which is connected to the second transition panel 10 and to the second joining part 22" via other fixing folding lines 30' and 30".

[0023] The joining part 25" is connected to the second transition panel 10 via a foldable front fixing panel 31, which is connected to the second transition panel 10 and the second joining part 25" via other fixing folding lines 31' and 31".

[0024] A first back joining panel 32 is connected to the first side back panel 18 via an oblique first back joining folding line 33 and to the backrest 6 via a lateral first back joining folding line 34, and a second back joining panel 35 is connected to the second side back panel 19 via an oblique second back joining folding line 36 and to the backrest panel 6 via a lateral second back joining folding line 37.

[0025] The first back joining panel 32 is foldable about two oblique back joining folding lines 32', while the second back joining panel 35 is foldable about two other oblique back joining folding lines 35'.

[0026] The folding lines 32' and 35' are limiting each a fixing panel 38 and 39, respectively.

[0027] The front panels, 4,16,17 are each connected to a front base panel 40 via a transverse front base folding line 41 and the back panels 7, 18, 19 are each connected to a back base panel 42 via a transverse back base folding line 43.

[0028] A first and second flab 44 and 45 with closing means 46 is connected with the first and second side front panel 14 and 15 via lateral flap folding lines 47 and

48.

[0029] A third and fourth flab 49 and 50 with closing means 51 is connected with the first and second side back panel 18 and 19 via lateral flap folding lines 52 and 53.

[0030] The third and fourth flab 49 and 50 are each extending into free tabs 54 which each is connected to the remainder of the respective flab via a tab folding line 55 and is equipped with a closing means 56.

[0031] The folding up of the blank 1 takes place in the following way.

[0032] In fig. 2 has the front and back of the chair been bent against each other about the fourth transverse folding line 12.

[0033] In fig. 3 has the front and back of the finished chair been fixed to each other as the closing means 46 on the flaps 44,45 of the front are engaging the closing means 51 on the flaps 49,50 of the back.

[0034] The free tabs 54 of the flaps 49 and 50 of the back have moreover been bent about their tab folding lines 55 and been attached to the flaps 44,46 of the front as the closing means 56 of the free tabs are engaging the closing means 46 on the flaps 44,45 of the front.

[0035] In fig. 4 have the front joining panels 22,25 been bent inwards about their respective front joining folding lines 28,29, simultaneous with being bent about the lateral front joining folding line 24,27 at the seat panel 3 and the oblique front joining folding lines 23,26 at the side front panels 14,15.

[0036] The back joining panels 32,35 have been bent inwards about their respective oblique back joining folding lines 32', 35', simultaneous with being bent about the lateral back joining folding line 34,37 at the backrest panel 6 and the oblique back joining folding lines 33,36 at the side back panel 18 and 19.

[0037] The inwards bending of the joining panels 22,25 and 32,35 causes at the same time the transitions panels 9 and 10 to bend about their transverse folding lines 12,11,13.

[0038] Owing to the above-mentioned folding of the panels is the blank now assuming a three-dimensional shape. The contour of the chair is starting to appear.

[0039] Fig. 5 shows a further step of the folding up of the blank.

[0040] The backrest panel 6 now have been bended about the second transverse folding line 8 and the first back joining panel 32 is going to be bended further about the oblique back joining folding lines 32' and into the space now formed between the backrest panel 6 and the transition panels 9,10. The fixing panel 38 has at the same time been bended about the oblique back joining folding lines 32'.

[0041] The first front joining panel has been bended further about the front joining folding line 28 and the front fixing panel 30 has been bended further about the fixing folding line 31.

[0042] The folding up of the chair is in fig. 6 nearly complete. The back joining panel 32 has been bended

behind the seat 6 into a shape which is fixed by bending the fixing panel 38 about its folding lines 32' to a flat or nearly flat shape.

[0043] The front joining parts 22,25 is going to be bent so that the first joining parts 21',25' of the front joining parts 22,25 is extending downwards from the seat panel 3 while the second joining parts 21",25" are extending upwards from the front joining lines 28,29 and past the seat panel 3.

[0044] The front joining parts 22,25 are in their bended position fixed by folding the front fixing panels 30,31.

[0045] The base panels 40,42 are bended inwards about their transverse base folding lines 41,43 so that they form a solid base for the chair and at the same time are stiffening the front and back panels.

[0046] By means of the above described construction of the chair according to the invention is obtained a strong an stable chair which easily and quickly can be folded up from the associated blank without utilizing any adhesive or other connection and/or strengthening means.

[0047] The seat panel and the backrest panel are advantageous merging into each other so that they form an integral unity. The chair of the invention therefore offers the user a higher comfort than is possible when using a prior art foldable chair,

Claims

1. A blank for a foldable chair (2), said blank (1) is formed with folding lines dividing the blank (1) in a number of panels, comprising a seat panel (3), a backrest panel (6), a front panel (4), and a back panel (7), **characterized in that** the seat panel (3) and front panel (4) are interconnected via a first transverse folding line (5), the backrest panel (6) and back panel (7) via a second transverse folding line (8) and the seat panel (3) and backrest panel (6) via a third transverse folding line (11) or via at least one transition panel (9;10) and associated folding lines (11,12,13).
2. The blank according to claim 1, **characterized in that** the front panel (4) is connected to a first and second side front panel (14;15) via a first and second lateral front folding line (16; 17) .
3. The blank according to claim 1 or 2, **characterized in that** the back panel (7) is connected to a first and second side back panel (18;19) via a first and second lateral back folding line (20;21).
4. The blank according to claim 2 or 3, **characterized in that** a first front joining panel (22) is connected to the first side front panel (14) via an oblique first front joining folding line (23) and to the seat panel (3) via a lateral first front joining folding line (24), and that a second front joining panel (25) is connected to the second side front panel (15) via an oblique second front joining folding line (26) and to the seat panel (3) via a lateral second front joining folding line (17).
5. The blank according to claim 3 or 4, **characterized in that** a first back joining panel (32) is connected to the first side back panel (18) via an oblique first back joining folding line (33) and to the seat panel (3) via a lateral first back joining folding line (34), and that a second back joining panel (35) is connected to the second side back panel (19) via an oblique second back joining folding line (36) and to the seat panel (3) via a lateral second back joining folding line (37).
6. The blank according to any of the preceding claims, **characterized in that** the front panels (4;16;17) each is connected to a front base panel (40) via a transverse front base folding line (41).
7. The blank according to any of the preceding claims, **characterized in that** the back panels (7;18;19) each is connected to a back base panel (42) via a transverse back base folding line (42).
8. The blank according to any of the preceding claims, **characterized in that** the front base panels (40) and back base panels (42) together form a base of the folded chair (2).
9. The blank according to any of the claims 2 -8, **characterized in that** a flap (44;45) with closing means (46) is connected to the side panels (14; 15; 18; 19) via lateral folding lines (47;48;52;53).
10. The blank according to any of the preceding claims, **characterized in that** the seat panel (3) and the backrest panel (6) are interconnected by means of a first and second transition panel (9;10), which are interconnected via a third transverse folding line (11), whereby the second transition panel (9;10) is connected to the seat panel (3) via a fifth transverse folding line (13).
11. The blank according to any of the preceding claims 1 -10, **characterized in that** the blank (1) is cut from a single sheet of cardboard, paper board, plastic or plywood.
12. A chair folded of the blank (1) according to any of the claims 1 - 11.
13. The chair according to claim 12, **characterized in that** the chair folded into a complete chair without the use of adhesive and/or strengthening means.
14. A method of folding the chair (2) from the blank (1) according to claims 1 - 10, **characterized in that** said method comprises to fold the panels about their

folding lines so that they form the chair without using any adhesive or strengthening means.

15. A method of manufacturing the blank according to any of the claims 1 - 10, **characterized in that** said method comprises 5

- stamping a blank out of a sheet, and
- placing a number of folding lines in said blank, dividing the blank into a number of panels having each their function in the finished chair. 10

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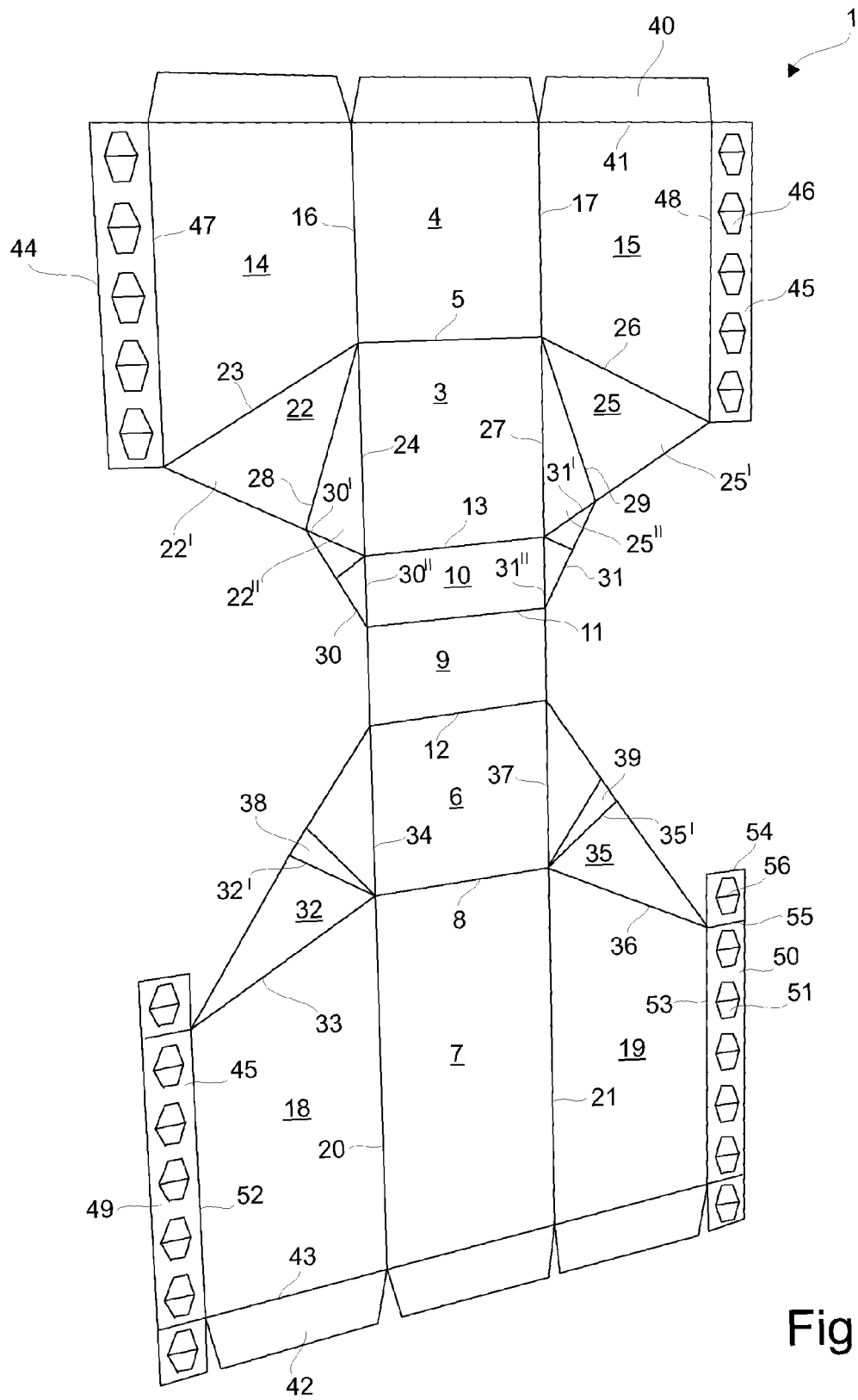


Fig. 1

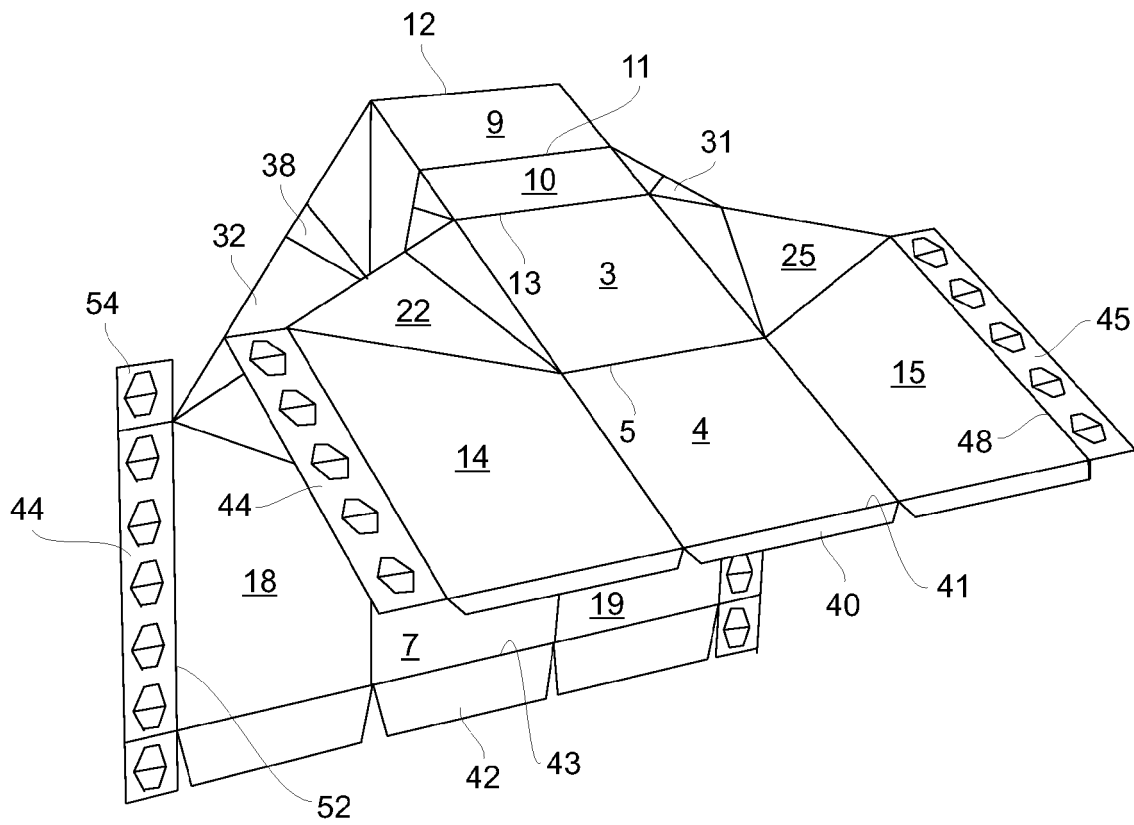


Fig. 2

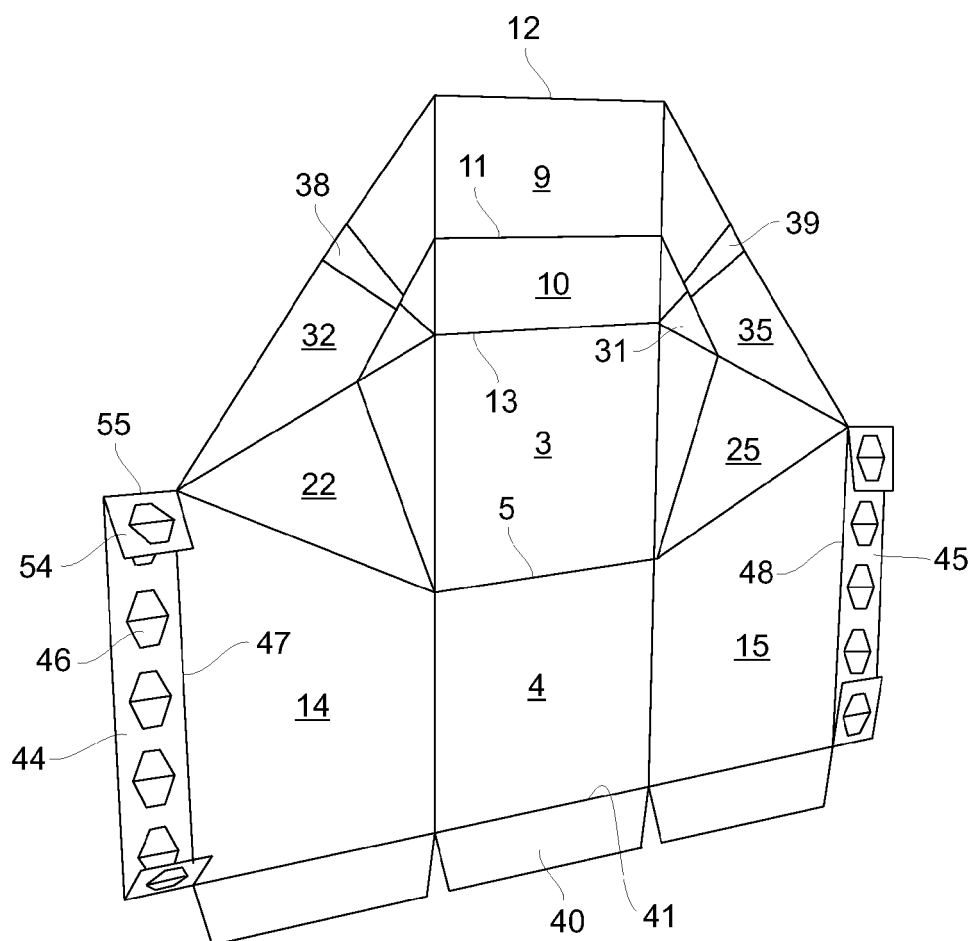


Fig. 3

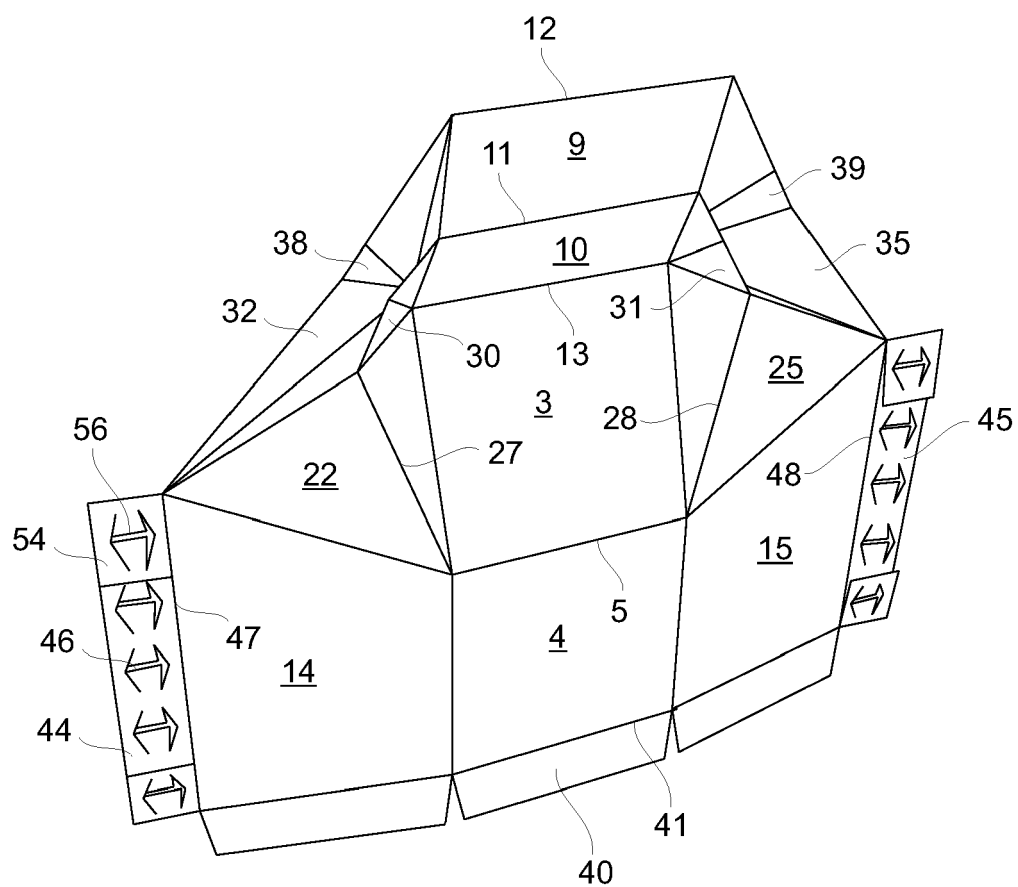


Fig. 4

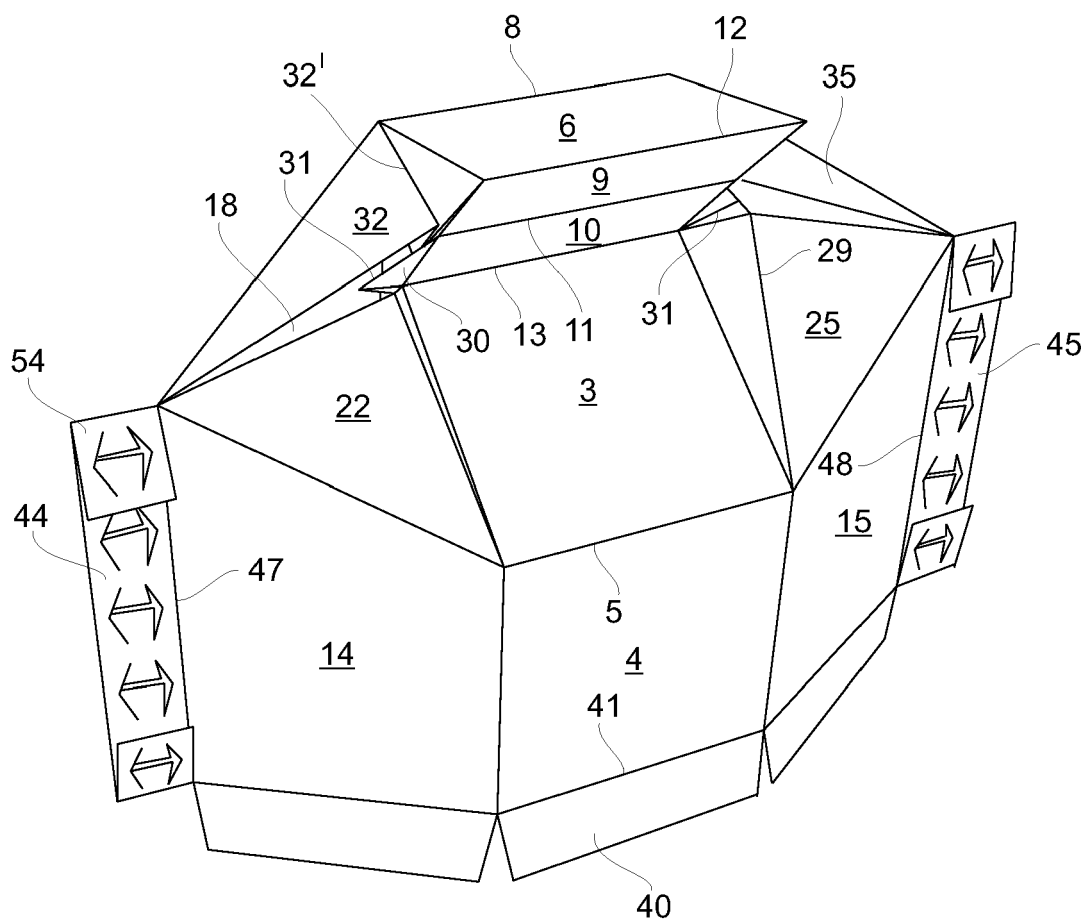


Fig. 5

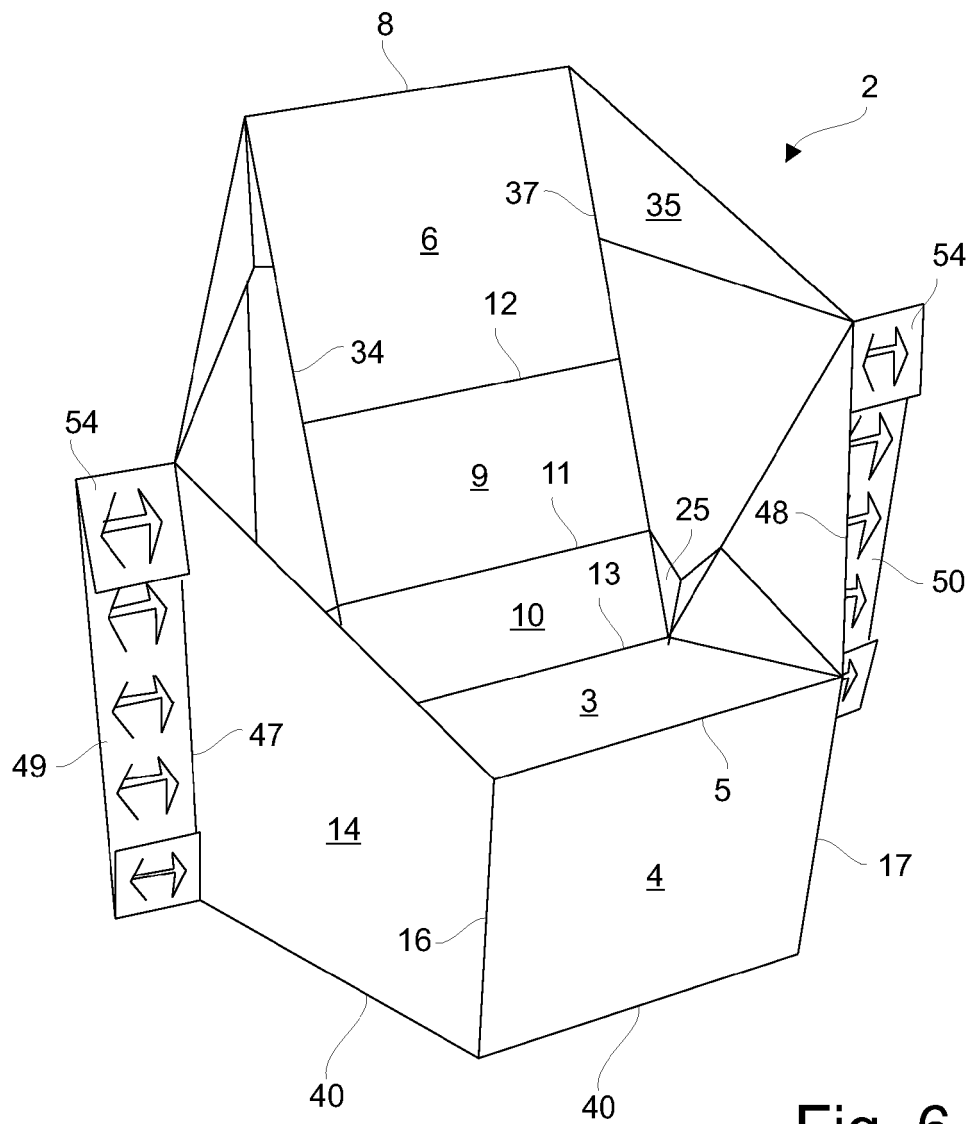


Fig. 6



EUROPEAN SEARCH REPORT

Application Number
EP 09 15 9089

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	BE 729 698 A (ARDOULLIE) 18 August 1969 (1969-08-18) * page 2, paragraph 1; claim 1; figures * * page 8, paragraph 1 * -----	1-3,9, 11-15	INV. A47C5/00
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A			
			TECHNICAL FIELDS SEARCHED (IPC)
			A47C
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 22 September 2009	Examiner Kis, Pál
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EPO FORM 1503.03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 09 15 9089

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22-09-2009

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REFERENCES CITED IN THE DESCRIPTION

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