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(72) Inventor: **Tomins, Nicolas**
21337 Lüneburg (DE)

(74) Representative: **Kloiber, Thomas et al**
Vonnemann Kloiber & Kollegen
Patentanwälte
An der Alster 84
20099 Hamburg (DE)

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(71) Applicant: **Dedon GmbH**
21337 Lüneburg (DE)

(54) **An article of furniture**

(57) The present invention relates to an article of furniture comprising a furniture body (11) formed by interconnected frame members (12) defining spaced portions (13) between said frame members (12) and at least a rigid casing member (14) being secured partially or entirely on said furniture body (11), and weaving works (15) provided on said furniture body (11), **characterized in**

that said furniture body (11) being provided with a running and protruding shaping element (16) secured on the surface portions thereof to form an ergonomically-shaped profile and anthropometric contour that is independent and different from the profile, contour and shape initially defined by said frame members (12), spaced portions (13) and casing member (14) of said furniture body (11).

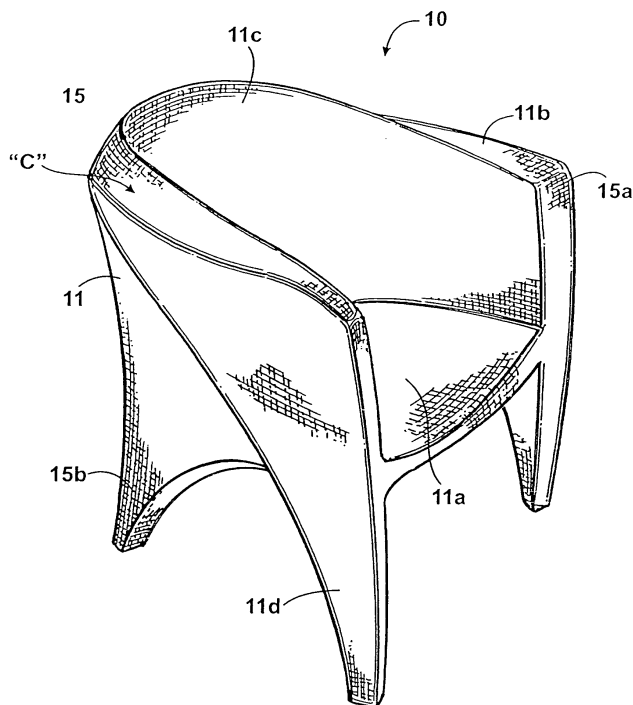


Fig. 1

Description

FIELD OF THE INVENTION

[0001] The present invention relates in general to articles of furniture, but more particularly to an article of furniture provided with a shaping element secured along the furniture body to form any desired ergonomic profile on the furniture structure.

BACKGROUND OF THE INVENTION

[0002] Heretofore, the shape of articles of furniture, especially those made of wicker are generally dependent upon and determined by the form created by the frame members and weaving works applied thereon. As such, the of furniture designs are restricted by the cumbersome, flat or linear forms of frame members which are devoid of running pointed and protruding portions and free flowing contours and silhouettes. Limited by the shape of the framing members, it is extremely difficult to incorporate running curvilinear edges and protrusions in otherwise flat surfaces designed to fit and correspond with the human body, or parts thereof, and create a desired ergonomic and anthropometric irregularly three dimensional shape in furniture and other parts of the body resting on the furniture.

[0003] Attempts to achieve the above technical effects on prior existing and conventional articles of furniture of this type were made by bending or twisting the frames as seen in various article of furniture. However, such bending or twisting of the frames of the aforementioned prior art can not provide optimal ergonomic qualities on the furniture and do not further define, form and create a true anthropometric body and contour, for lack of running pointed and protruding portions in irregularly three dimensional shape on the article of furniture. The bending or twisting of frames and the subsequent application of weaving works in-between bended or twisted frames do not solve the technical problem of providing the desired ergonomic-profile on the furniture, and moreover, do not provide true anthropometric body and contour, a silhouette effect or the desired irregularly three dimensional shapes on the article of furniture. Instead a linear or angular and flat appearance or contour of the article of furniture in the absence of any ergonomic contribution to the furniture is still maintained.

SUMMARY OF THE INVENTION

[0004] To overcome the aforementioned technical problem of existing article of furniture as previously discussed, it is the main object of the present invention to provide for an article of furniture capable of forming an ergonomic profile comprising a furniture body supported by interconnected frame members defining spaced portions formed between said frame members, at least a rigid casing member being secured partially or entirely

on said furniture body, and weaving works provided on said furniture body, characterized in that said furniture body being provided with a running and protruding shaping element secured along the surface thereof to form an ergonomically-shaped profile and an anthropometric contour that is independent and different from the profile, contour and shape initially defined by said frame members, spaced portions and casing member of said furniture body.

[0005] Another object of the present invention is to provide a running protruding shaping element secured on the article of furniture, and in combination with a casing member and frames members to further strengthen and rigidify the whole furniture structure.

[0006] These and other objects and advantages of the present invention will become apparent upon a reading of the ensuing detailed description taken in conjunction with the appended drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007]

Figure 1 is a perspective of the present invention for an article of furniture;

Figure 2 is a perspective view of the present invention showing the frame structure of the furniture body (unweave) thereof;

Figures 2a, 2b and 2c show portions of the frame structure of the article of furniture of the present invention;

Figure 3 is a detailed view showing how the running and protruding shaping element and the weaving works are interconnected to the furniture body;

Figure 4 is a sectional view taken along line A-A of Figure 1;

Figure 5 is sectional view showing another embodiment of the present invention;

Figure 6 is sectional view showing another embodiment of the shaping element;

Figures 7, 8 and 9 show other embodiments of the shaping element.

DETAILED DESCRIPTION

[0008] Before describing a preferred embodiment of the invention in detail, it is to be understood that the phraseologies and terminologies used herein are for the purposes of description and should not be regarded as limiting.

[0009] Referring now to the different views of the drawings, wherein like reference numerals designate same parts throughout the ensuing enabling description, there is shown the present invention for an article of furniture designated as 10.

[0010] For purposes of further elucidating the enabling description of the present invention in conjunction with the scope of the appended claims, the herein article of

furniture 10 will particularly refer, by way of example, to an arm chair type of furniture as shown in the drawings. However, it will be appreciated that other types of furniture with varied shapes other than that of the arm chair presented herein as an example may be made and constructed in the practice of the present invention and that the novel features and inventive concept thereof may be applied and extended to articles of furniture as defined by the scope of the appended claims.

[0011] As shown in the drawings, article of furniture 10 as constructed in accordance with the present invention generally comprises of an irregularly shaped furniture body 11 simulating the general contour of an arm chair type of furniture. Furniture body 11 is formed by a seat rest 11a, arm rest 11b extending contiguously in an enclosing manner to form back rest 11c, and leg members 11d extending from arm rest 11b.

[0012] Referring now to figure 2, furniture body 11 comprises of a plurality of interconnected frame members 12 defining spaced portions 13 formed between the frame members 12. The interconnected frame members 12 further define the initial shape of furniture body 11. Each of the spaced portions 13 are shaped irregularly following the contour of an arm chair. For instance, spaced portion 13a varies in shape from spaced portions 13b and 13c and so forth and so on.

[0013] As further shown in figure 2, the furniture body 11 is further provided with at least a rigid casing member 14 secured partially or entirely on the furniture body 11 preferably between the spaced portions 13 to define varied contoured portions on the arm chair, and weaving works 15 provided on the surface of the furniture body 11. Likewise, the rigid casing member 14 may have a contoured shape that protrudes outwardly or inwardly from the furniture body 11. In the present embodiment of an arm chair as shown in figure 1, the weaving works 15 substantially encloses the entire furniture body 11.

[0014] In accordance with the present invention, the furniture body 11 is provided with a running and protruding shaping element 16 secured along the surface thereof to form an ergonomically-shaped profile and anthropometric contour that is independent and different from the profile and shape initially defined by the frame members 12, spaced portions 13 and casing member 14 of the furniture body 11.

[0015] As shown in figures 3, 4 and 5, the shaping element 16 comprises of an elongated body 16a having at least a crest portion 16b thereby defining a protruding bump "P", and extending to a pair of opposed leg portions 16c and 16d which can be secured to the frame members 12 and/or the rigid casing member 14 depending on the ergonomic and anthropometric requirements of the article of furniture. Preferably, shaping element 16 which is formed by an elongated body is further defined by an upright curved configuration, and which is preferably substantially protruding triangular in shape. Shaping element 16 is secured to the frame members 12 and/or in combination with portions of the rigid casing member 14, or

in the rigid casing member 14 only, by fastening means such as rivets, nails and the like.

[0016] Referring now to figures 2, 2a, 2b and 2c, to obtain a desired ergonomic profile and anthropometric contour, the shaping element 16 may be secured in a uniform or regular direction along the surface of the frame member 12 of the furniture body 11 as shown in ergonomic portion "X" or in an irregular direction as shown in ergonomic portions "Y" and "Z", or secured using a combination of both directions on the different parts of the furniture body 11. Ergonomic portions "X" is formed by the regular direction of the shaping element 16, while ergonomic portions "Y" and "Z" are formed by intertwining pairs of frame members 12.

[0017] As again shown in figure 2, frames members 12 are defined by generally curved frame members 12a, substantially vertical frame members 12b, horizontal frame members 12c and a circular frame member 12d which serves as the seat rest 11a of the arm chair 10. A supporting rail 17 is provided within the furniture body to provide rigid support to the backrest 11c and further define an internal shape thereon.

[0018] As particularly shown in figure 2, a pair of contoured rigid casing member 14 is provided at the lower side portion of furniture body 11 defining the leg members 11d thereof. The rigid casing member 14 may be contoured outwardly or inwardly with respect to the furniture body 11.

[0019] In accordance again with the invention, the rigid casing member 14 is secured between at least a spaced portion 13 formed by frame members 12 to define the initial profile, contour and external shape of the furniture body 11, and the shaping element 16 further defining the ergonomic-profile and anthropometric contour of the furniture body 11 in a manner that is independent and different from the profile, contour and shape initially defined by the frame members 12, spaced portions 13 and casing member 14.

[0020] More particularly, the frame members 12 are preferably made of metal material, and the rigid casing member 14 is preferably made of fiberglass material and is secured on the frame members 12 by means of conventional attaching devices such as nails, tacks and the like as previously described. Furthermore, the rigid casing member 14 is formed by either an inwardly or outwardly contoured shape which initially defines and establishes the profile, contour and shape together with the frame members 12 and spaced portions 13.

[0021] To form the weaved covering on the furniture body 11, a weaving works 15 is provided and secured thereon. In another aspect of the present invention, at least a first weaving work 15a and second weaving work 15b are provided and secured on the surface of the rigid casing member 14 and in-between the spaced portions 13 (please refer to figure 4) to form a weaved covering on the furniture body 11. Preferably, the weaving works 15 which comprises of flexible strips are weaved on the surface of the casing member 14 using the supporting

rail 17 as a base support for turning into different directions as the same are weaved across the surface of the casing member 14.

[0022] The weaving works 15a and 15b are formed using similar weaving patterns. However, different weaving patterns may be applied to weaving works 15a and 15b. Weaving works 15a and 15b may be weaved to the casing member 14 and over frame members 12 and spaced portions 13 which are exposed and not covered by said casing member 14. Moreover, weaving works 15a and 15b may have different or similar weaving patterns to obtain a desired visual effect in the overall appearance of the article of furniture 10. Various colors may also be applied on the weaving materials to be used in the weaving works.

[0023] To form the article of furniture 10 of the present invention, frames 12, which are preferably made of metal materials are interconnected by suitable conventional securing means such as welding or riveting. The rigid casing member 14 is then prepared, preferably subjected to grinding to smoothen out the surfaces thereof, painted, and then cut to the desired contour that will give the technical effect of creating a body to the article of furniture in accordance with the concept of the present invention. The casing member 14 which is cut to the shape and dimension of the portion area of the article of furniture 10 where it will be secured is provided with a drilled hole using a driller device. Rivets are then provided using a riveting device to secure the casing member 14 to the metal frame members 12. The weaving strips of weaving work 15 (i.e., first and second weaving works 15a and 15b) as applied over the surface of the casing member 14 are preferably secured on the casing member 14 by using suitable fastening means such as nails or tacks. The shaping element 16, (16') is then secured along the frame members 12 or casing member 14 (for shaping element 16') or on both frame and casing members depending on the desired ergonomic profile.

[0024] The resulting ergonomic profile and anthropometric contour in accordance with the present invention is shown by the curves "C" provided on essential portions of the furniture body such as the arm rest, seat rest and back rest where the corresponding body parts of the user will be supported on as shown in figure 1.

[0025] Another embodiment of the present invention as shown in figure 5 will now be described.

[0026] Figure 5 shows the running and protruding shaping element 16' being secured directly only on the casing member 14 to form the desired ergonomically-shaped profile on the article of furniture. Shaping element 16' also comprises of an elongated body 16a' having at least a crest portion 16b' thereby defining the protruding bump "P", and extending to a pair of opposed leg portions 16c' and 16d' which are secured only to the casing member 14 to attain the ergonomic and anthropometric requirements of the particular article of furniture. Preferably, shaping element 16' which is formed by an elongated body is further defined by an upright curved configuration

and which is preferably substantially protruding and triangular in shape. In this particular embodiment according to the present invention, shaping element 16' is secured to the casing member 14 by means of fastening means such as rivets, nails and the like.

[0027] In another embodiment of the present invention as shown in figure 6, there is provided a running and protruding shaping element 18 being secured directly on the casing member 14 to form the desired ergonomically-shaped profile on the article of furniture. Shaping element 18 also comprises of an elongated body 18a having at least an abbreviated curved crest portion 18b thereby defining the protruding bump "P", and extending to a pair of opposed leg portions 18c and 18d which are secured to the casing member 14 to attain the ergonomic and anthropometric requirements of the particular article of furniture. The leg portions 18c and 18d of the shaping element 18 can also be secured on the frame members 12, or on portions of the frame members 12 in combination with portions of the rigid casing member 14.

[0028] In other featured embodiments according to the present invention, figures 7, 8 and 9 show the different profiles of the running and protruding shaping element that can be applied to the herein furniture body in manner as described in the present invention.

[0029] Figure 7 shows a shaping element 19 which comprises of an elongated body 19a having at least a crest portion 19b thereby defining the protruding bump "P", and extending to a pair of curved opposed leg portions 19c and 19d which are secured to the casing member 14 to attain the ergonomic and anthropometric requirements of the particular article of furniture. In this particular embodiment as shown in figure 7, leg portion 19c is longer than leg portion 19d and curves in a tilting manner to the left side direction thereof to form in a slanting profile the abbreviated curved crest portion 19b. The leg portions 18c and 18d of the shaping element 18 can also be secured on the frame members 12, or on portions of the frame members 12 in combination with portions of the rigid casing member 14.

[0030] Figure 8 shows a shaping element 20 which comprises of an elongated body 20a having at least a uniformly curved crest portion 20b thereby defining the protruding bump "P", and extending to a pair of curved opposed leg portions 20c and 20d which are secured to the casing member 14 to attain the ergonomic and anthropometric requirements of the particular article of furniture. In this particular embodiment as shown in figure 8, the shaping element 20 has an abbreviated body 20e extending from the crest portion 20b and terminating to the opposed leg portions 20c and 20d. The leg portions 20c and 20d of the shaping element 20 may also be secured on the frame members 12, or on portions of the frame members 12 in combination with portions of the rigid casing member 14.

[0031] And lastly, figure 9 shows a shaping element 21 which comprises of an elongated body 21a having at least a substantially horizontal crest portion 21b thereby

defining the protruding bump "P", and extending to a pair of curved opposed leg portions 21c and 21d which are secured to the casing member 14 to attain the ergonomic and anthropometric requirements of the particular article of furniture. The leg portions 21c and 21d of the shaping element 21 can also be secured on the frame members 12, or on portions of the frame members 12 in combination with portions of the rigid casing member 14.

[0032] Additional advantages and modifications of the present invention will readily occur to those skilled in the art in view of these teachings. The present invention in its broader aspects is not limited to the specific details, representative contrivances, and illustrative examples shown and described herein. Accordingly, various modifications may be made without departing from the spirit and scope of the general inventive concept as defined in the appended claims and their equivalents.

Claims

1. An article of furniture (10) comprising a furniture body (11) formed by interconnected frame members (12) defining spaced portions (13) between said frame members (12) and at least a rigid casing member (14) being secured partially or entirely on said furniture body (11), and weaving works (15) provided on said furniture body (11), **characterized in that** said furniture body (11) being provided with a running and protruding shaping element (16) secured on the surface portions thereof to form an ergonomically-shaped profile and anthropometric contour that is independent and different from the profile, contour and shape initially defined by said frame members (12), spaced portions (13) and casing member (14) of said furniture body (11).
2. An article of furniture according to claim 1, **characterized in that** said shaping element (16) comprising an elongated body (16a) having at least a crest portion (16b) and opposed leg portions (16c, 16d) being secured to said frame members (12).
3. An article of furniture according to claim 1, **characterized in that** said shaping element (16) comprising an elongated body (16a') having at least a crest portion (16b') and opposed leg portions (16c', 16d') being secured to said casing member (14).
4. An article of furniture according to claim 1, **characterized in that** said shaping element (16) comprising an elongated body (16a) having at least a crest portion (16b) and opposed leg portions (16c, 16d) being secured to surface portions of said frame members and surface portions of said casing member (14).
5. An article of furniture according to any one of the preceding claims 1, 2, or 3, 4 **characterized in that** said shaping element (16) having a substantially upright curved configuration.
6. An article of furniture according to claim 1, **characterized in that** said shaping element (16) is secured in an irregular direction on the surface of said furniture body (11).
7. An article of furniture according to claim 1, **characterized in that** said shaping element (16) is secured in a uniform direction on the surface of said furniture body (11).
8. An article of furniture according to claim 1, **characterized in that** said rigid casing member (14) has a contoured shape protruding outwardly from said furniture body (11).
9. An article of furniture according to claim 1, **characterized in that** said rigid casing member (14) has a contoured shape protruding inwardly from said furniture body (11).
10. An article of furniture according to claim 1, **characterized in that** said weaving works (15) comprising at least a first weaving work (15a) being provided over and secured to the external surface of said casing member (14) to cover and define the outer texture of said casing member (14), and a second weaving work (15b) being provided over frame members (12) and spaced portions (13) which are exposed and not covered by said casing member (14).
11. An article of furniture according to claim 9, **characterized in that** first weaving work (15a) has a different weaving pattern with respect to said second weaving work (15b).
12. An article of furniture according to claim 9, **characterized in that** first weaving work (15a) has the same weaving pattern with respect to said second weaving work (15b).
13. An article of furniture according to claim 1, **characterized in that** said weaving works (15) comprising at least a weaving work being provided over and secured to the external surface of said casing member (14) to cover and define the outer texture of said casing member (14).
14. An article of furniture according to claim 1, **characterized in that** said weaving works (15) comprising at least a weaving work provided over frame members (12) and spaced portions (13) which are exposed and not covered by said casing member (14).

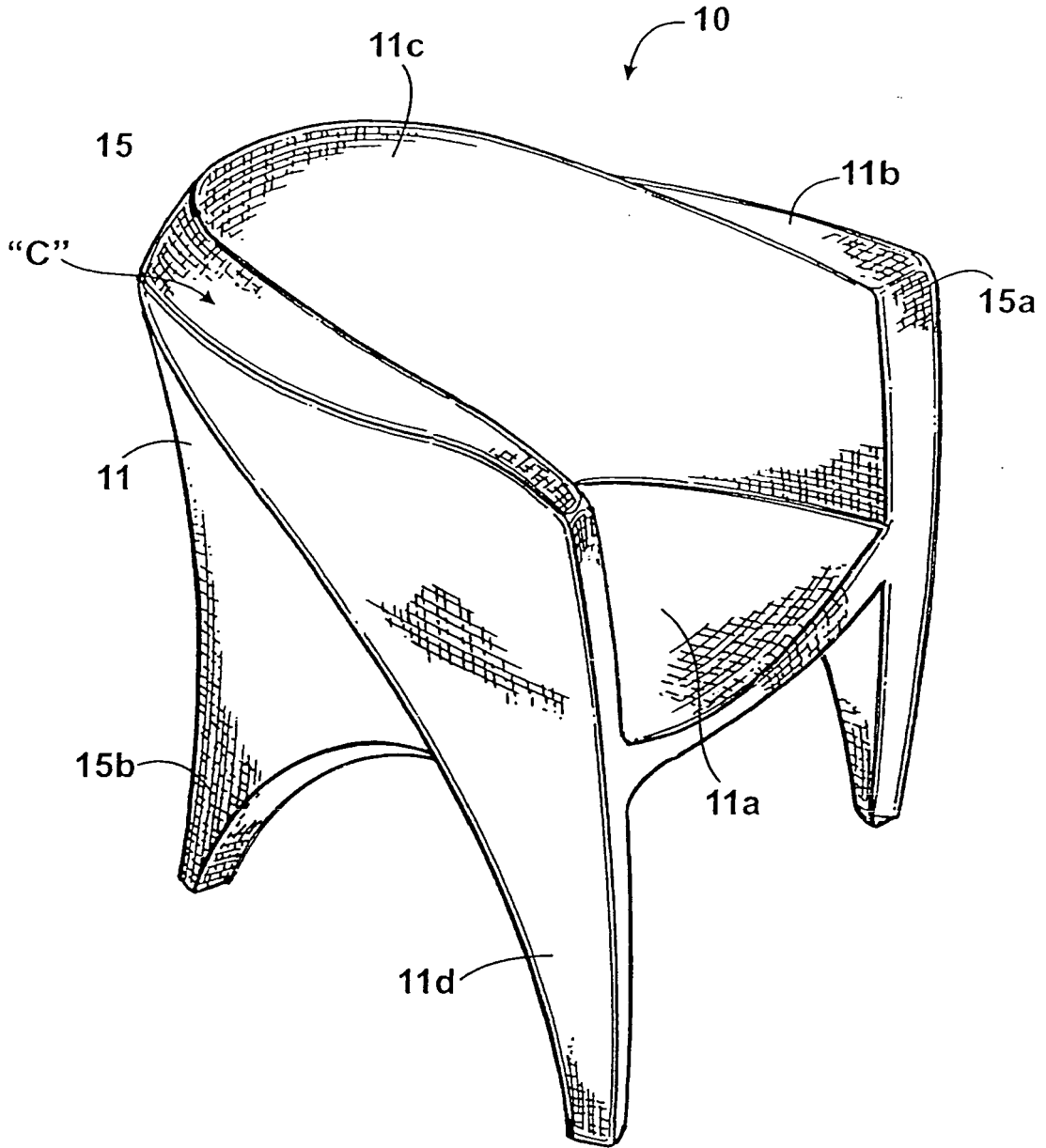


Fig. 1

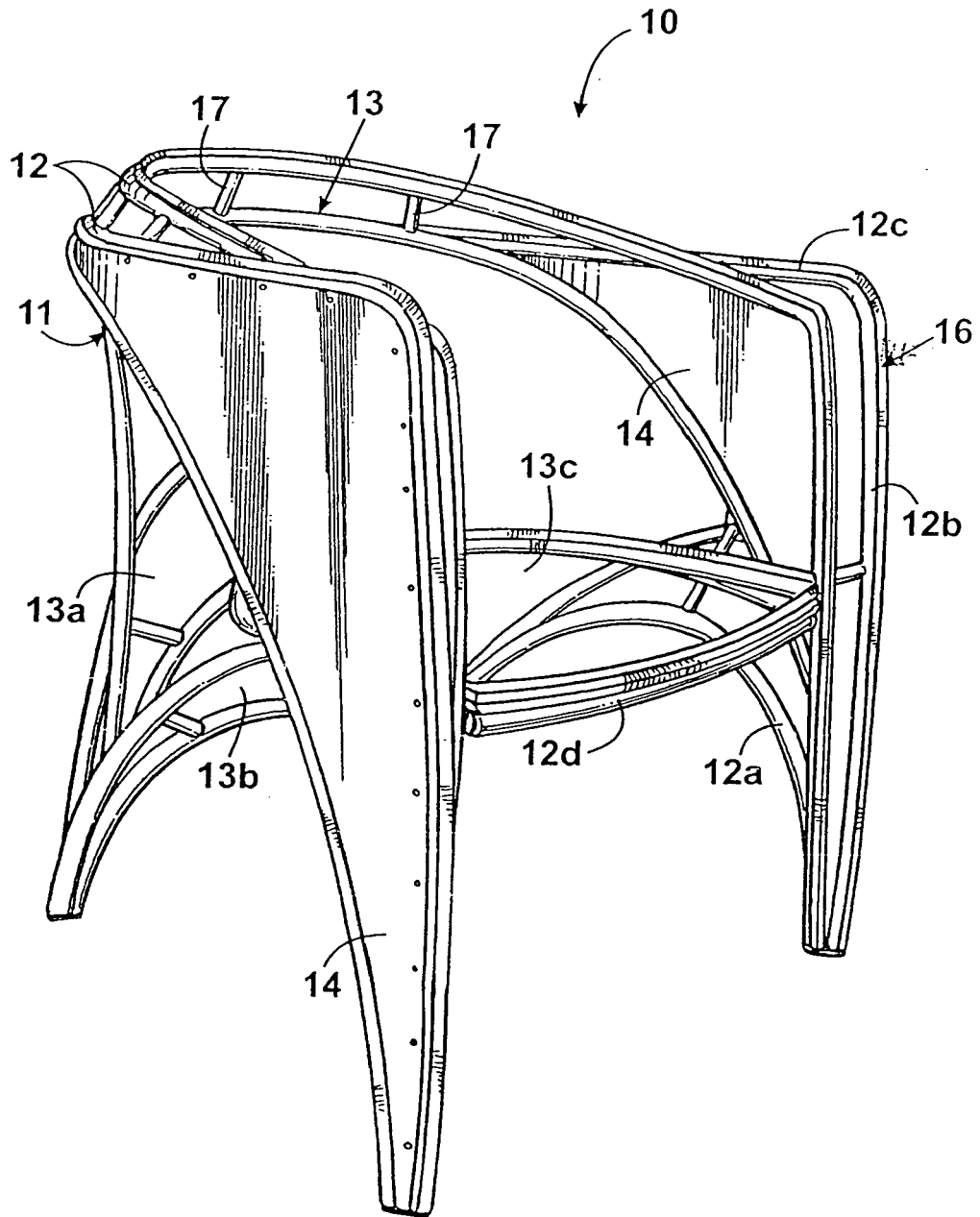


Fig. 2

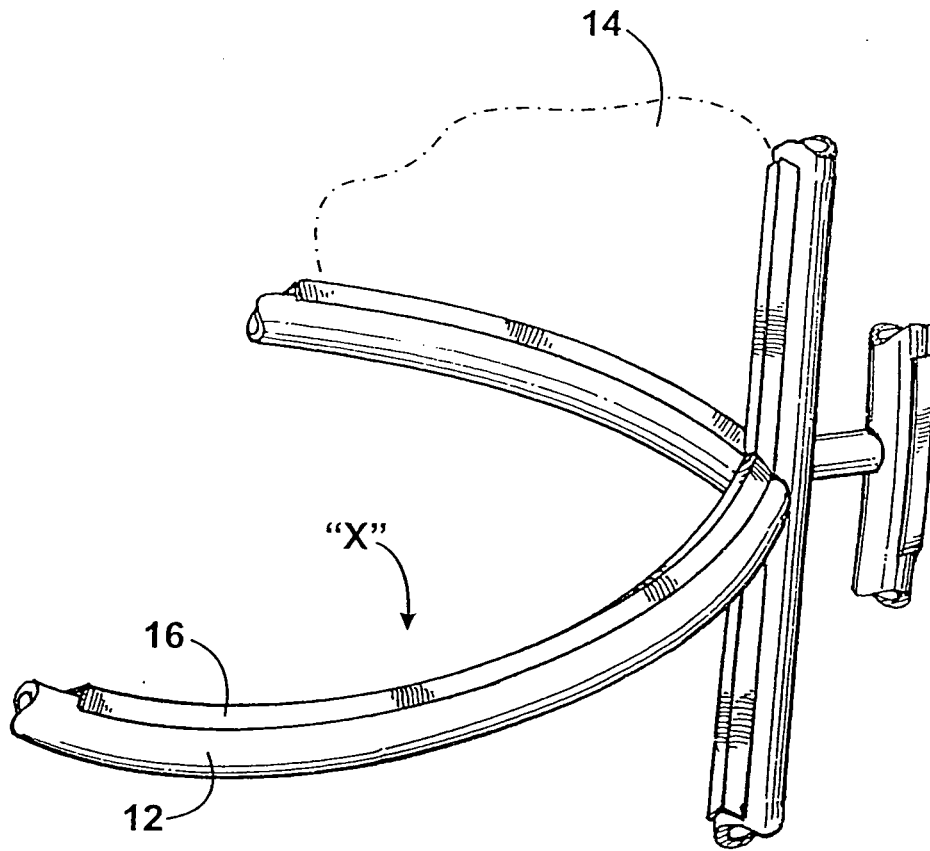


Fig. 2a

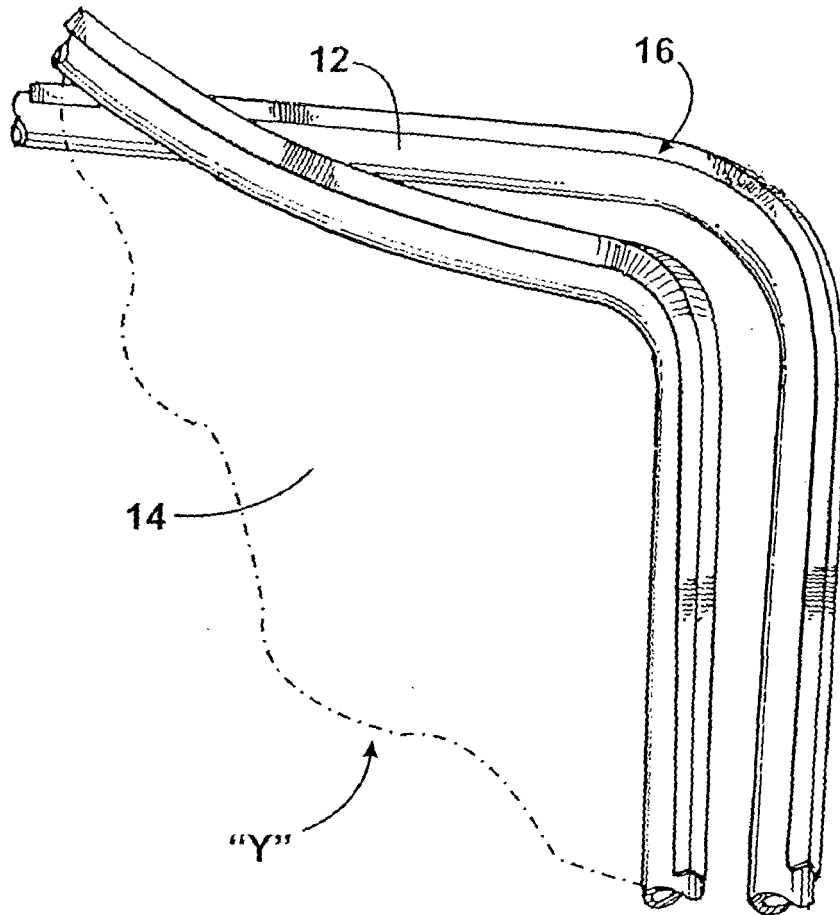


Fig. 2b

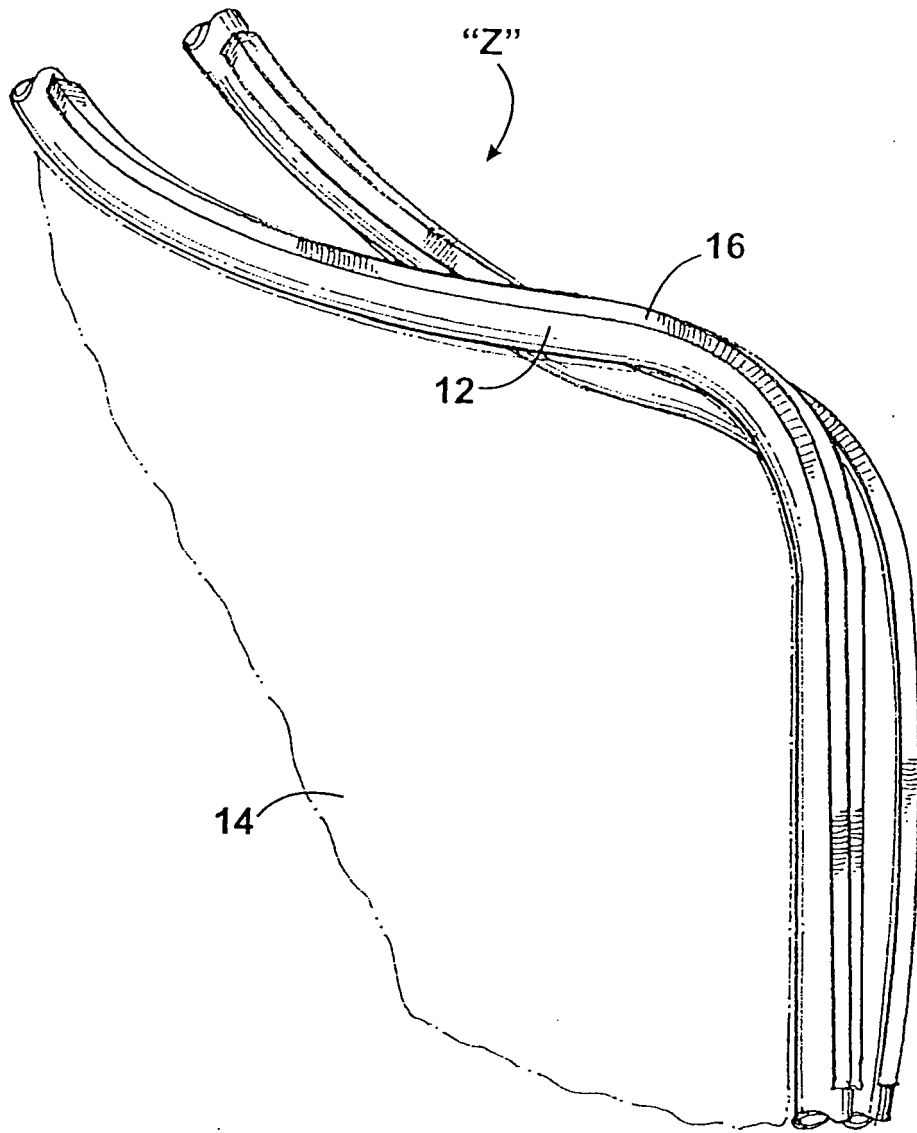


Fig. 2c

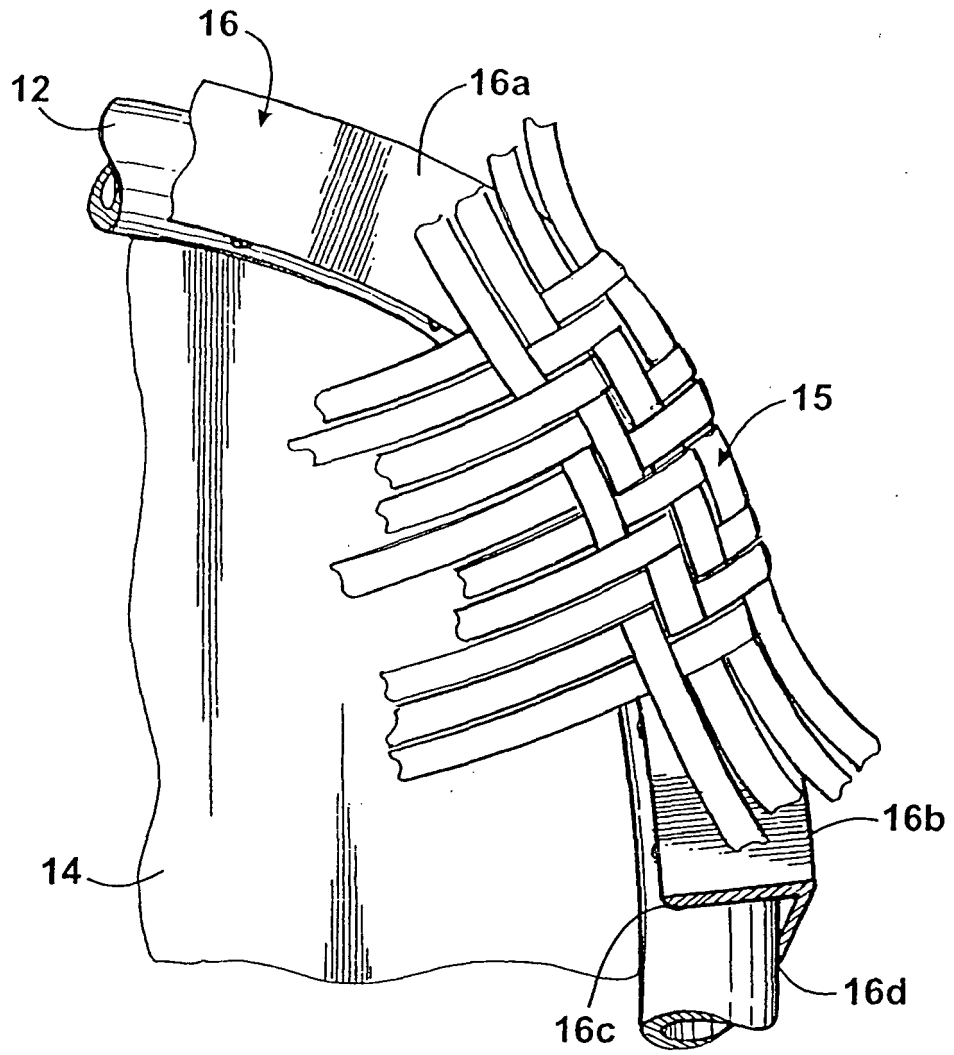


Fig. 3

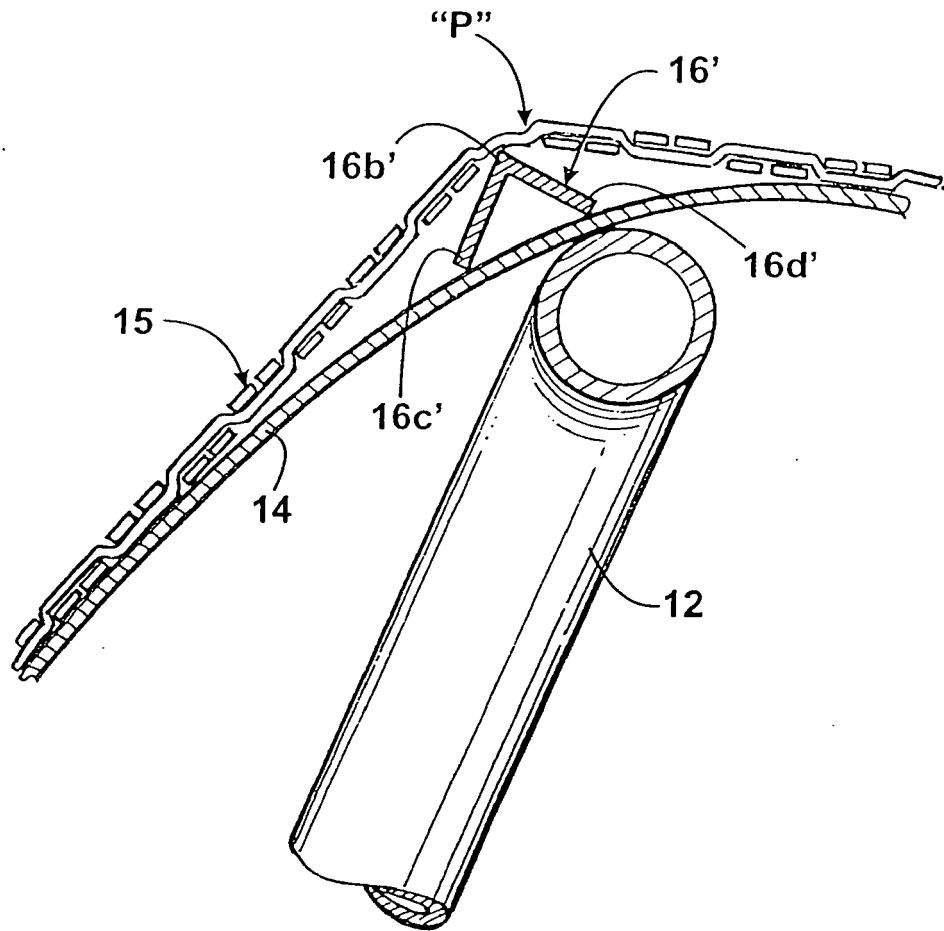


Fig. 5

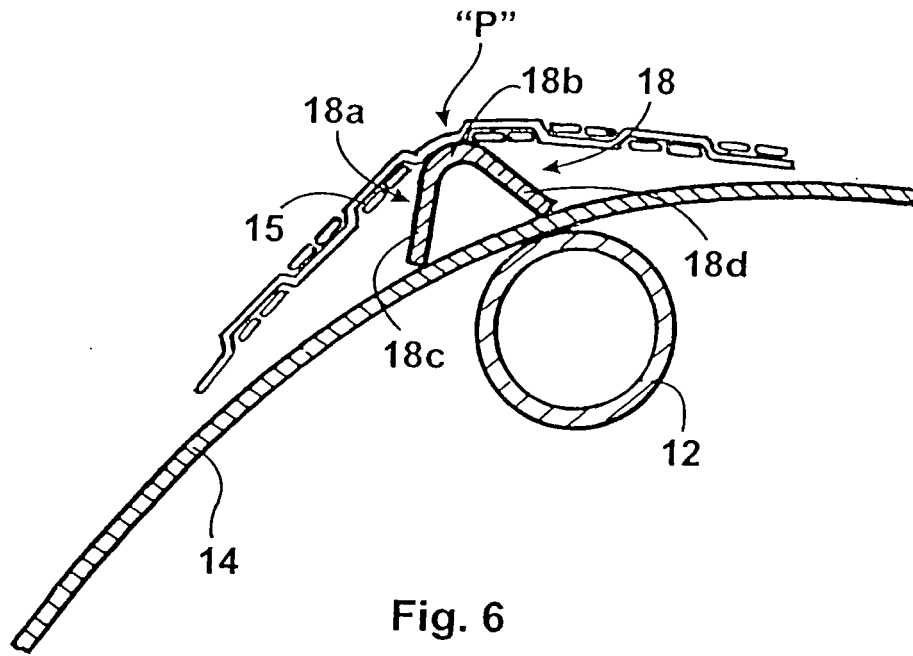


Fig. 6

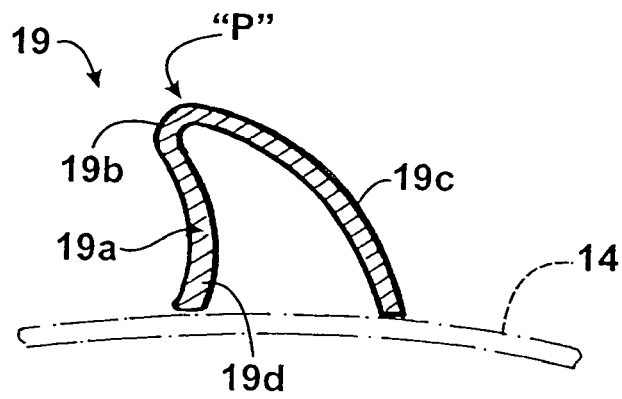


Fig. 7

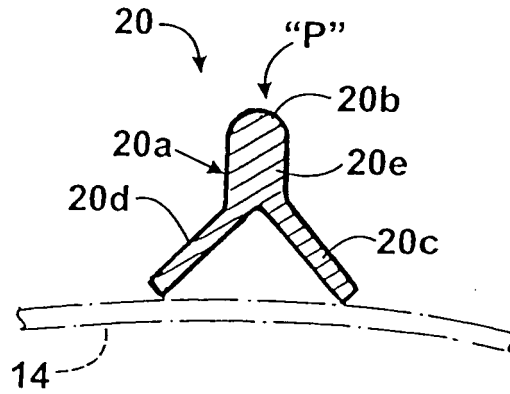


Fig. 8

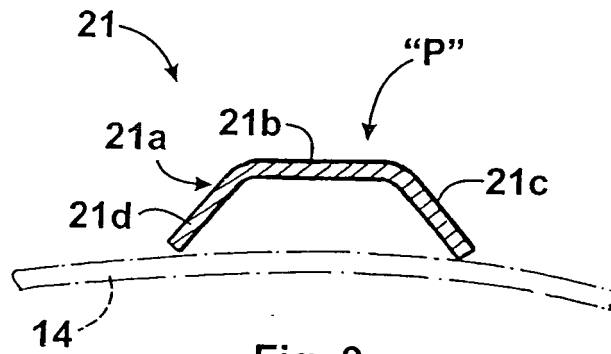


Fig. 9



| 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 | WO 2004/043208 A (AQUINO JORGE B [PH]) 27 May 2004 (2004-05-27) * page 2, line 16 - page 3, line 8 * * figures 1,2 * | 1,5-9,14 | INV. A47C5/02 |
| X | GB 451 422 A (WILLIAM KENNARD LUSTY) 5 August 1936 (1936-08-05) * page 2, line 95 - page 3, line 92 * * figures 1-5 * | 1-8,14 | |
| A | DE 100 41 302 A1 (CANE LINE AS ODENSE M [DK]) 7 March 2002 (2002-03-07) * abstract * * figures * | 1-14 | |
| A | EP 0 039 053 A (OKE HEYDE & TILLNER V D [DE]) 4 November 1981 (1981-11-04) * abstract * * figures * | 1-14 | |
| A | EP 1 533 407 A (SUN ISLE CASUAL FURNITURE LLC [US]) 25 May 2005 (2005-05-25) * abstract * * figures * | 1-14 | TECHNICAL FIELDS SEARCHED (IPC) A47C B05D |
| The present search report has been drawn up for all claims | | | |
| Place of search Munich | | Date of completion of the search 6 June 2008 | Examiner MacCormick, Duncan |
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EPC FORM 1503 03.82 (P/04C01)

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

EP 08 00 4842

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

06-06-2008

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|--|------------------|-------------------------|------------------|
| WO 2004043208 A | 27-05-2004 | AU 2002368349 A1 | 03-06-2004 |
| GB 451422 A | 05-08-1936 | NONE | |
| DE 10041302 A1 | 07-03-2002 | NONE | |
| EP 0039053 A | 04-11-1981 | DE 3016644 A1 | 05-11-1981 |
| EP 1533407 A | 25-05-2005 | CN 1673449 A | 28-09-2005 |
| | | US 2007113956 A1 | 24-05-2007 |
| | | US 2005106966 A1 | 19-05-2005 |

EPO FORM P0459

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