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(54) Modularized bamboo frame member set

(57) A modularized bamboo frame member set is disclosed in which bamboo poles are cut into straight bamboo strip elements and then the bamboo strip elements are processed into π-shaped, L-shaped and arched bamboo rod members through a compression molding press so that the π-shaped, L-shaped and arched bamboo rod members are selectively used and connected end-to-end to construct rectangular, circular and oval bamboo frame members for making bamboo baskets.

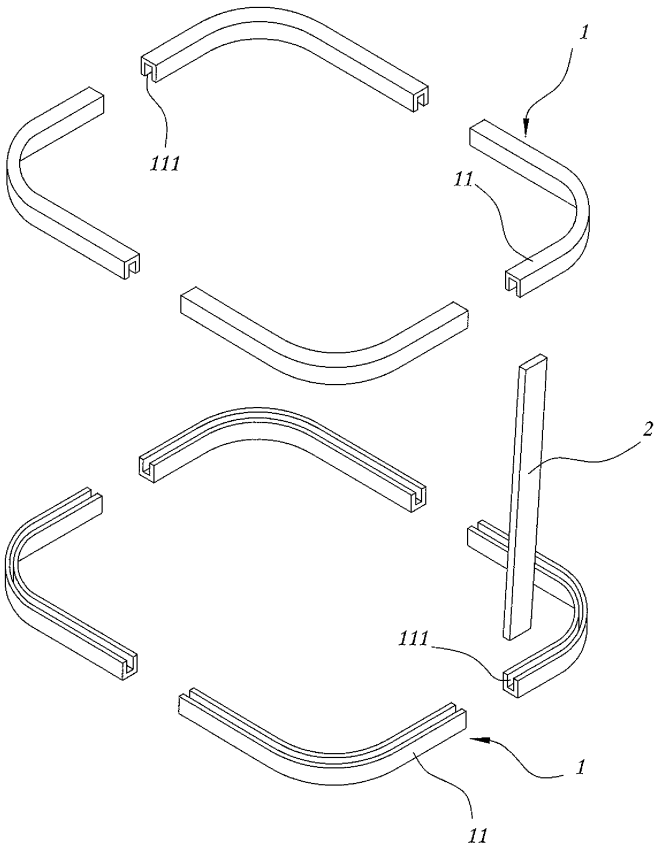

FIG. 7

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Description

BACKGROUND OF THE INVENTION

1. Field of the Invention:

[0001] The present invention relates to bamboo baskets and more particularly, to the fabrication of modularized bamboo frame member set for bamboo baskets.

2. Description of the Related Art:

[0002] Various materials including ceramics, glass, wood, plastics, stainless steel, and etc. may be used for making tables, chairs, cabinets, storage containers, and many other furniture. To show an antique sense of beauty, wood and bamboo are intensively used to make furniture and storage containers.

[0003] A conventional bamboo furniture is known comprising a frame structure and a plurality of wall panels formed of bamboo strips by weaving. These bamboo panels have open spaces, and are fastened to the frame structure by an adhesive or by means of binding wires There is known another structure of bamboo furniture in which the bamboo panels are formed of transverse bamboo slats and longitudinal bamboo slats, and the transverse and longitudinal bamboo slats are fastened together by rattan cords. The fabrication of this structure of bamboo furniture requires much time and labor, and therefore the cost of this structure of bamboo furniture is high.

[0004] There is also another design of bamboo storage container invented by the present inventor, which comprises a top frame, a bottom frame, and a plurality of bamboo slats connected between the top frame and the bottom frame. The bamboo slats have the respectively top and bottom ends respectively fastened to respective bottom mounting holes on the top frame and respective top mounting holes on the bottom frame. Because the bamboo slats are springy, it requires much time and labor to fasten the bamboo slats to the top frame and the bottom frame. Further, the top frame and the bottom frame are each formed of four bamboo slats, and the four bamboo slats are connected to one another end to end to form a rectangular open frame. The fabrication of this design of bamboo storage container also requires much time and labor. Therefore, this design of bamboo storage container is not suitable for mass production. Further, the top frame and the bottom frame have sharp angles, having less sense of beauty.

SUMMARY OF THE INVENTION

[0005] The present invention has been accomplished under the circumstances in view. It is therefore the main object of the present invention to provide a bamboo frame member fabrication method, which is practical for mass production of bamboo frame members for making bamboo baskets that cause an unique sense of beauty.

[0006] According to one aspect of the present invention, bamboo poles are cut into straight bamboo strip elements and then the bamboo strip elements are processed into curved bamboo rod members through a compression molding press so that the curved bamboo rod members are selectively used and connected end-to-end to construct rectangular, circular and oval bamboo frame members for making bamboo baskets.

[0007] According to another aspect of the present invention, the curved bamboo rod members can be selectively connected together end-to-end to construct rectangular, circular and oval bamboo frame members by means of an adhesive, plug joint, or fastener means.

[0008] According to still another aspect of the present invention, the bamboo rod members include Π-shaped and L-shaped bamboo rod members. Four L-shaped bamboo rod members, two Π-shaped bamboo rod members, or one Π-shaped bamboo rod members with two L-shaped bamboo rod members can be connected together end-to-end to construct a rectangular bamboo frame member.

[0009] According to still another aspect of the present invention, the bamboo rod members include arched bamboo rod members. Four 45° arched bamboo rod members, or two 90° arched bamboo rod members, or one 90° arched bamboo rod members with two 45° arched bamboo rod members can be connected together end-to-end to construct a circular bamboo frame member.

[0010] According to still another aspect of the present invention, the bamboo rod members include arched bamboo rod members. 2, 3, or 4 arched bamboo rod members can be connected together end-to-end to construct an oval bamboo frame member.

[0011] According to still another aspect of the present invention, the number of bamboo rod members that construct one bamboo frame member can be 2, 3, 4, or more without limitation.

[0012] According to still another aspect of the present invention, the rectangular, circular and/or oval bamboo frame members can be used and connected with slats and/or blocks to construct bamboo baskets.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] Preferred embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:-

FIG. 1 is an exploded view of two Π-shaped bamboo rod members for a rectangular bamboo frame member according to the present invention.

FIG. 2 is an exploded view of four L-shaped bamboo rod members for a rectangular bamboo frame member according to the present invention.

FIG. 3 is an exploded view of a Π-shaped bamboo rod member and two L-shaped bamboo rod members for a rectangular bamboo frame member according to the present invention.

FIG. 4A is a top plain view of a rectangular bamboo frame member formed of one Π-shaped bamboo rod member and two L-shaped bamboo rod members according to the present invention.

FIG. 4B is a top plain view of a rectangular bamboo frame member formed of two Π-shaped bamboo rod members according to the present invention.

FIG. 4C is a top plain view of a rectangular bamboo frame member formed of two Π-shaped bamboo rod members according to the present invention.

FIG. 4D is a top plain view of a rectangular bamboo frame member formed of one Π-shaped bamboo rod member and two L-shaped bamboo rod members according to the present invention.

FIG. 5A is a top plain view of a circular bamboo frame member formed of four arched bamboo rod members according to the present invention.

FIG. 5B is a top plain view of a circular bamboo frame member formed of two arched bamboo rod members according to the present invention.

FIG. 5C is a top plain view of a circular bamboo frame member formed of three arched bamboo rod members according to the present invention.

FIG. 6A is a top plain view of an oval bamboo frame member formed of four arched bamboo rod members according to the present invention.

FIG. 6B is a top plain view of an oval bamboo frame member formed of two arched bamboo rod members according to the present invention.

FIG. 6C is a top plain view of an oval bamboo frame member formed of two arched bamboo rod members according to the present invention.

FIG. 6D is a top plain view of an oval bamboo frame member formed of three arched bamboo rod members according to the present invention.

FIG. 7 is an exploded view of a part of a rectangular bamboo basket based on longitudinally grooved L-shaped bamboo rod members.

FIG. 8 is an exploded view of a part of a circular bamboo basket based on longitudinally grooved arched bamboo rod members.

FIG. 9 illustrates a rectangular bamboo basket made of rectangular bamboo frame members according to the present invention.

FIG. 10 illustrates a circular bamboo basket made of circular bamboo frame members according to the present invention.

FIG. 11 illustrates an oval bamboo basket made of oval bamboo frame members according to the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0014] The main feature of the present invention is to process bamboo strip elements into curved bamboo rod members by means of compression molding, and then bonding curved bamboo rod members into bamboo frame members

[0015] Referring to FIG. 1, bamboo poles are cut into straight bamboo strip elements subject to a predetermined size, and then the bamboo strip elements are processed into Π-shaped bamboo rod members **11** through a compression molding press, and each two Π -shaped bamboo rod members **11** are fixedly connected together end-to-end to form a respective a bamboo frame member **1** having the shape of a rectangular open frame. The ends of each two Π -shaped bamboo rod members **11** may be fixedly connected together by means of an adhesive, plug joint, or a fastener.

[0016] Referring to FIG. 2, bamboo poles are cut into straight bamboo strip elements subject to a predetermined size, and then the bamboo strip elements are processed into L-shaped bamboo rod members **11** through a compression molding press, and each **4** L-shaped bamboo rod members **11** are fixedly connected together end-to-end to form a respective a bamboo frame member **1** having the shape of a rectangular open frame.

[0017] Referring to FIG. 3, bamboo poles are cut into straight bamboo strip elements subject to a predetermined size, and then the bamboo strip elements are processed into Π-shaped and L-shaped bamboo rod members **11** through a compression molding press, and each Π-shaped bamboo rod members **11** is fixedly connected with two L-shaped bamboo rod members **11** end-to-end to form a respective bamboo frame member **1** having the shape of a rectangular open frame.

[0018] Referring to FIG. 4A, 4L-shaped bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of a rectangular open frame, and a joint face **A** is disposed between each two adjacent L-shaped bamboo rod members **11.** Therefore, the bamboo frame member **1** has **4** joint faces **A**.

[0019] Referring to FIG. 4B, 2 Π-shaped bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of a rectangular open frame, and two j oint faces **A** are respectively disposed between the ends of the two Π-shaped bamboo rod members **11**.

[0020] Referring to FIG. 4C, 2 Π-shaped bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of a rectangular open frame, and two joint faces **A** are respectively disposed between the ends of the two Π-shaped bamboo rod members **11**. This embodiment is substantially similar to the embodiment shown in FIG. 4B with the exception of the size of the Π-shaped bamboo rod members **11**.

[0021] Referring to FIG. 4D, one Π-shaped bamboo rod member **11** and two L-shaped bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of a rectangular open frame, and three joint faces A are respectively disposed between the ends of the two Π-shaped bamboo rod member **11** and one end of each of the L-shaped

bamboo rod members **11** and between the other end of each of the two L-shaped bamboo rod members **11**. Therefore, the bamboo frame member **1** of this embodiment has total three joint faces **A**.

[0022] Referring to FIG. 5A, 4 arched bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of a circular open frame, and a joint face **A** is respectively disposed between each two adjacent arched bamboo rod members **11**. Therefore, the bamboo frame member **1** of this embodiment has total 4 joint faces **A**.

[0023] Referring to FIG. 5B, 2 arched bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of a circular open frame, and two joint faces **A** are respectively disposed between the ends of the two arched bamboo rod members **11.** Therefore, the bamboo frame member **1** of this embodiment has total 2 joint faces **A**.

[0024] Referring to FIG. 5C, 3 arched bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of a circular open frame, and two joint face **A** is respectively disposed between each two adjacent arched bamboo rod members **11**. Therefore, the bamboo frame member **1** of this embodiment has total 3 joint faces **A**. According to this embodiment, the three arched bamboo rod members **11** include one 90° arched bamboo rod member and two 45 ° arched bamboo rod members.

[0025] Referring to FIG. 6A, 4 arched bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of an oval open frame, and a joint face **A** is respectively disposed between each two adjacent arched bamboo rod members **11**. Therefore, the bamboo frame member **1** of this embodiment has total 4 joint faces **A**.

[0026] Referring to FIG. 6B, 2 arched bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of an oval open frame, and two joint faces **A** are respectively disposed between the ends of the two arched bamboo rod members **11**. Therefore, the bamboo frame member **1** of this embodiment has total 2 joint faces **A**.

[0027] Referring to FIG. 6C, 2 arched bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of an oval open frame, and two joint faces **A** are respectively disposed between the ends of the two arched bamboo rod members **11**. Therefore, the bamboo frame member **1** of this embodiment has total 2 joint faces **A**. This embodiment is substantially similar to the embodiment shown in FIG. 6B with the exception of the size of the arched bamboo rod members **11**.

[0028] Referring to FIG. 6D, 3 arched bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of an oval open frame, and two joint face **A** is respectively disposed between each two adjacent arched bamboo rod members **11**. Therefore, the bamboo frame member **1** of this embodiment has total 3 joint faces **A**. According to this embodiment, the three arched bamboo rod members **11** include one 90° arched bamboo rod member and two 45 ° arched bamboo rod members.

[0029] Referring to FIG. 7, the L-shaped bamboo rod members **11** each have a mounting groove **111** extending on one side along the length. When the L-shaped bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of an oval open frame, the mounting grooves **111** of the L-shaped bamboo rod members **11** constitute an endless mounting groove. Two bamboo frame members **1** of this design can be mounted with a number of slats **2** to construct a rectangular bamboo basket by reversely arranging the two bamboo frame members **1** at the top and bottom sides and then vertically inserting the two ends of each slat **2** into the endless mounting grooves of the two bamboo frame members **1**.

[0030] Referring to FIG. 8, the arched bamboo rod members **11** each have a mounting groove **111** extending on one side along the length. When the arched bamboo rod members **11** are fixedly connected together end-to-end to form a bamboo frame member **1** having the shape of a circular open frame, the mounting grooves **111** of the L-shaped bamboo rod members **11** constitute an endless mounting groove. Two bamboo frame members **1** of this design can be mounted with a number of slats **2** to construct a circular bamboo basket by reversely arranging the two bamboo frame members **1** at the top and bottom sides and then vertically inserting the two ends of each slat **2** into the endless mounting grooves of the two bamboo frame members **1**.

[0031] FIG. 9 illustrates a rectangular bamboo basket constructed according to the present invention. According to this embodiment, Π-shaped and L-shaped bamboo rod members **11** are used to construct bamboo frame members **1** having the shape of a rectangular open frame, and the bamboo frame members **1** thus obtained are mounted with slats and block members to form a rectangular bamboo basket.

[0032] FIG. 10 illustrates different sizes of bamboo frame members **1** having the shape of a rectangular open frame are mounted with slats and block members to form a circular bamboo basket that has a diameter gradually increasing from the bottom side toward the top side.

[0033] FIG. 11 illustrates a plurality of bamboo frame members **1** having the shape of an oval open frame are mounted with slats and block members to form an oval bamboo basket.

[0034] Although particular embodiments of the inventions have been described in detail for purposes of illustration, various modifications and enhancements may be made without departing from the spirit and scope of the invention. Accordingly, the invention is not to be limited except as by the appended claims.

Claims

1. A modularized bamboo frame member set comprising a plurality of rectangular bamboo frame members, a plurality of circular bamboo frame members, and a plurality of oval bamboo frame members respectively formed of a plurality of bamboo rod members, said bamboo rod members including Π-shaped bamboo rod members and L-shaped bamboo rod members and arched bamboo rod members respectively prepared straight bamboo strip elements through a compression molding press, said rectangular bamboo frame members including one formed of four said L-shaped bamboo rod members that are connected together end-to-end and one formed of two said n -shaped bamboo rod members that are fixedly connected together end-to-end and one formed of one said Π-shaped bamboo rod members and two said L-shaped bamboo rod members that are fixedly connected together end-to-end, said circular bamboo frame members including one formed of four said arched bamboo rod members that are fixedly connected together end-to-end and one formed of three said arched bamboo rod members that are fixedly connected together end-to-end and one formed of two said arched bamboo rod members that are fixedly connected together end-to-end, said oval bamboo frame members including one formed of four said arched bamboo rod members that are fixedly connected together end-to-end and one formed of three said arched bamboo rod members that are fixedly connected together end-to-end and one formed of two said arched bamboo rod members that are fixedly connected together end-to-end.

2. The modularized bamboo frame member set as claimed in claim 1, wherein said bamboo rod members are solid members.

3. The modularized bamboo frame member set as claimed in claim 1, wherein said bamboo rod members each have a mounting groove longitudinally extending to along the length thereof, and the mounting grooves of the bamboo rod members of each of said rectangular bamboo frame members and said circular bamboo frame members and said oval bamboo frame members are connected to one another to form an endless mounting groove.

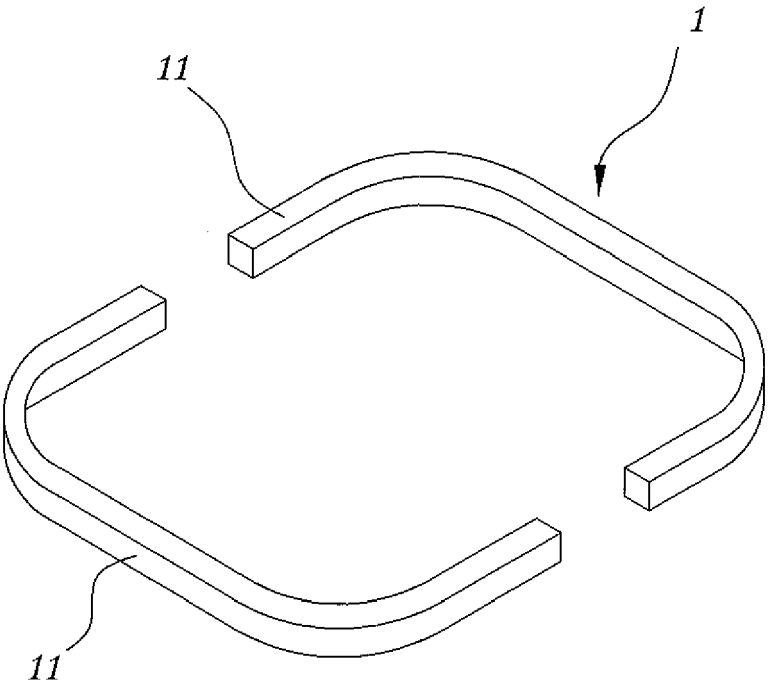

FIG. 1

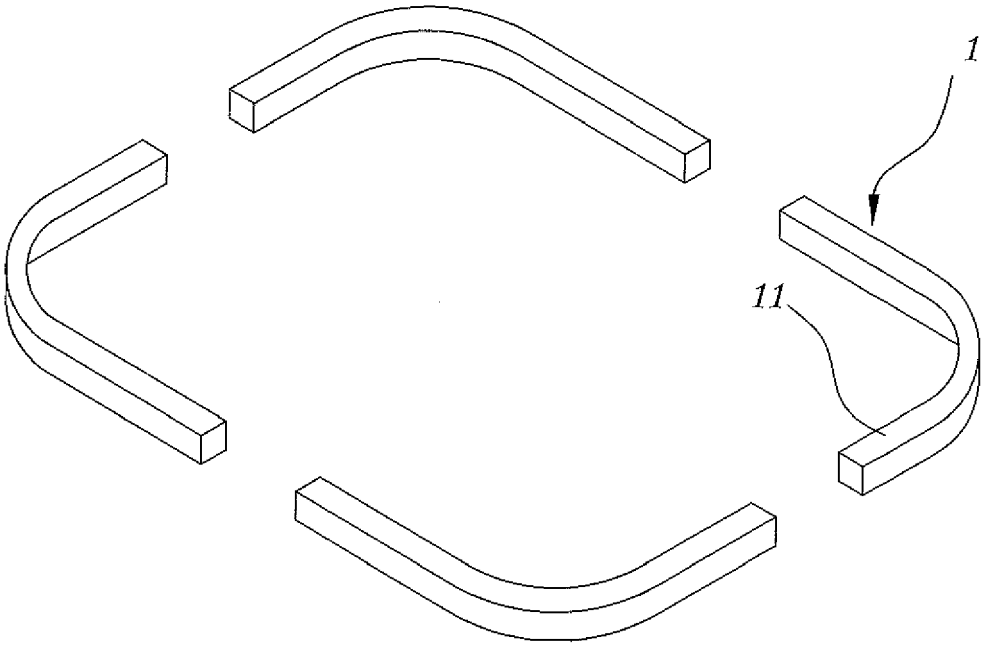

FIG. 2

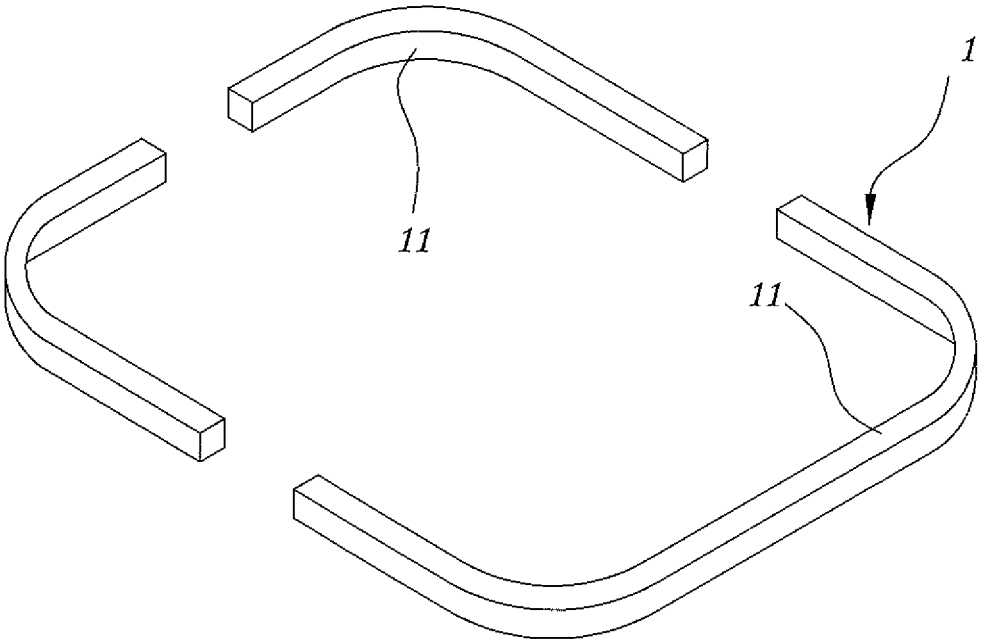

FIG. 3

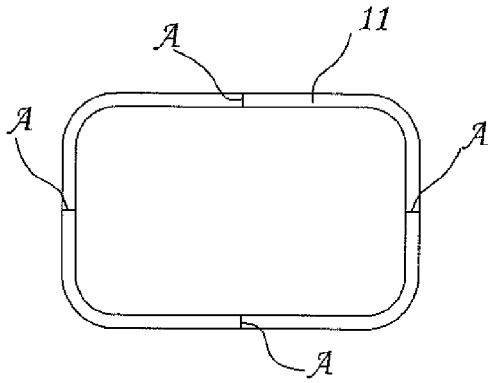

FIG. 4A

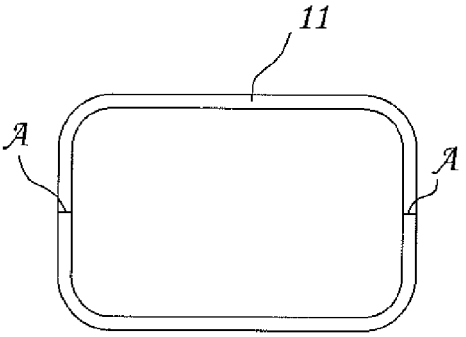

FIG. 4B

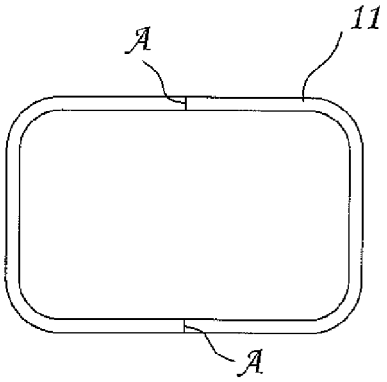

FIG. 4C

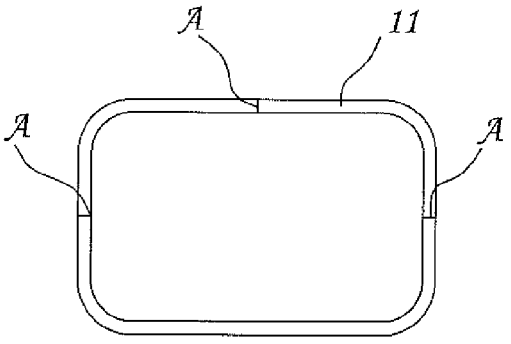

FIG. 4D

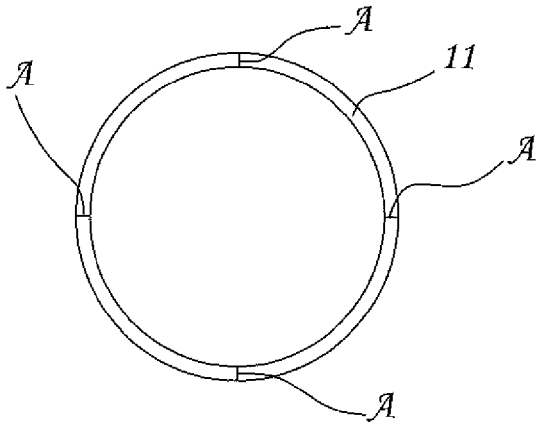

FIG. 5A

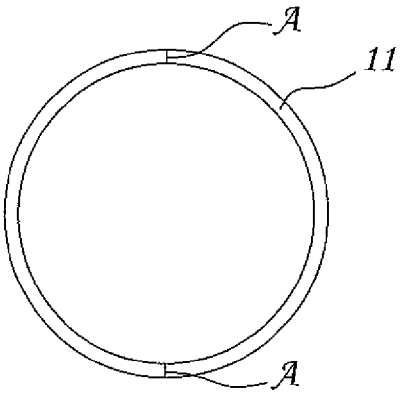

FIG. 5B

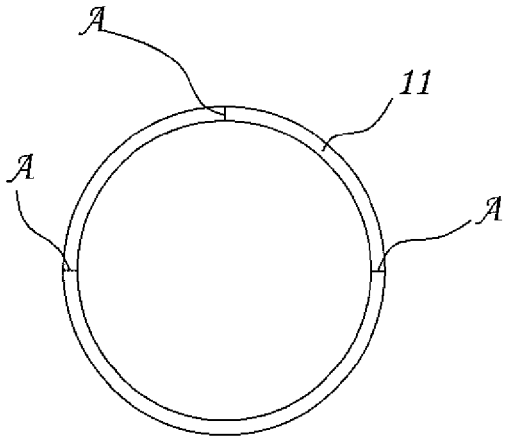

FIG. 5C

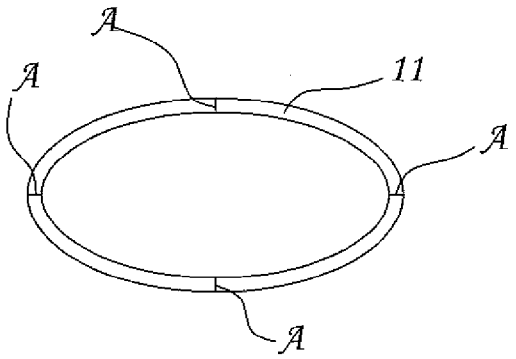

FIG. 6A

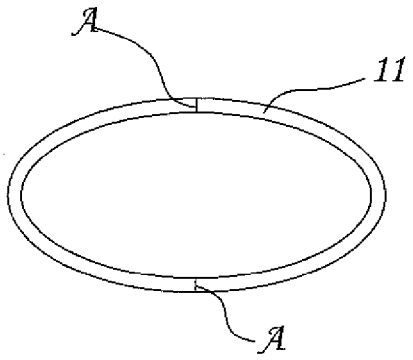

FIG. 6B

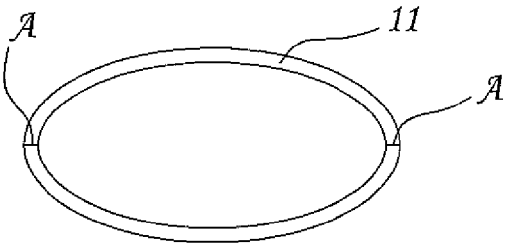

FIG. 6C

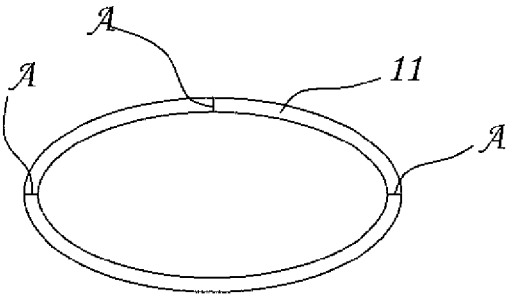

FIG. 6D

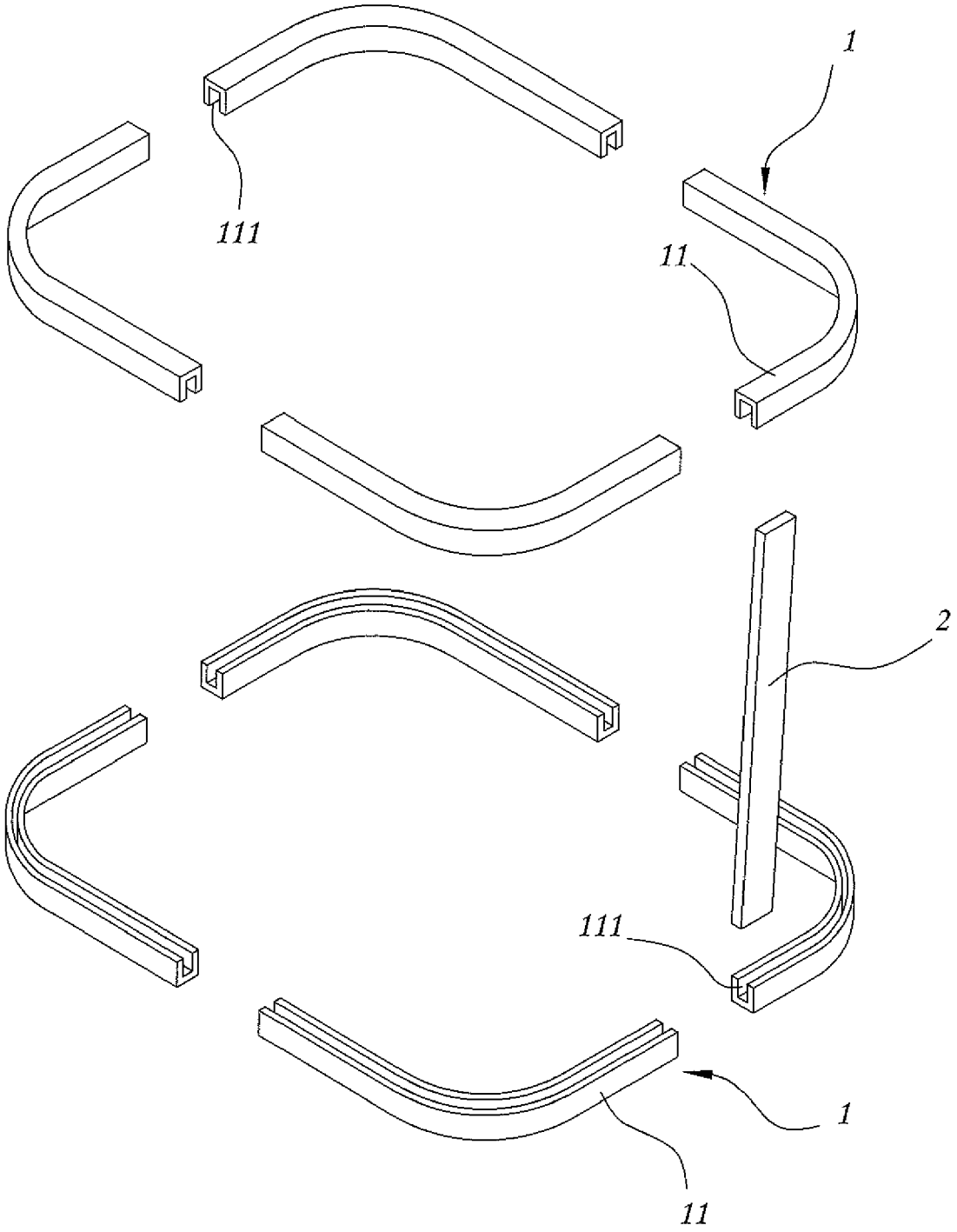

FIG. 7

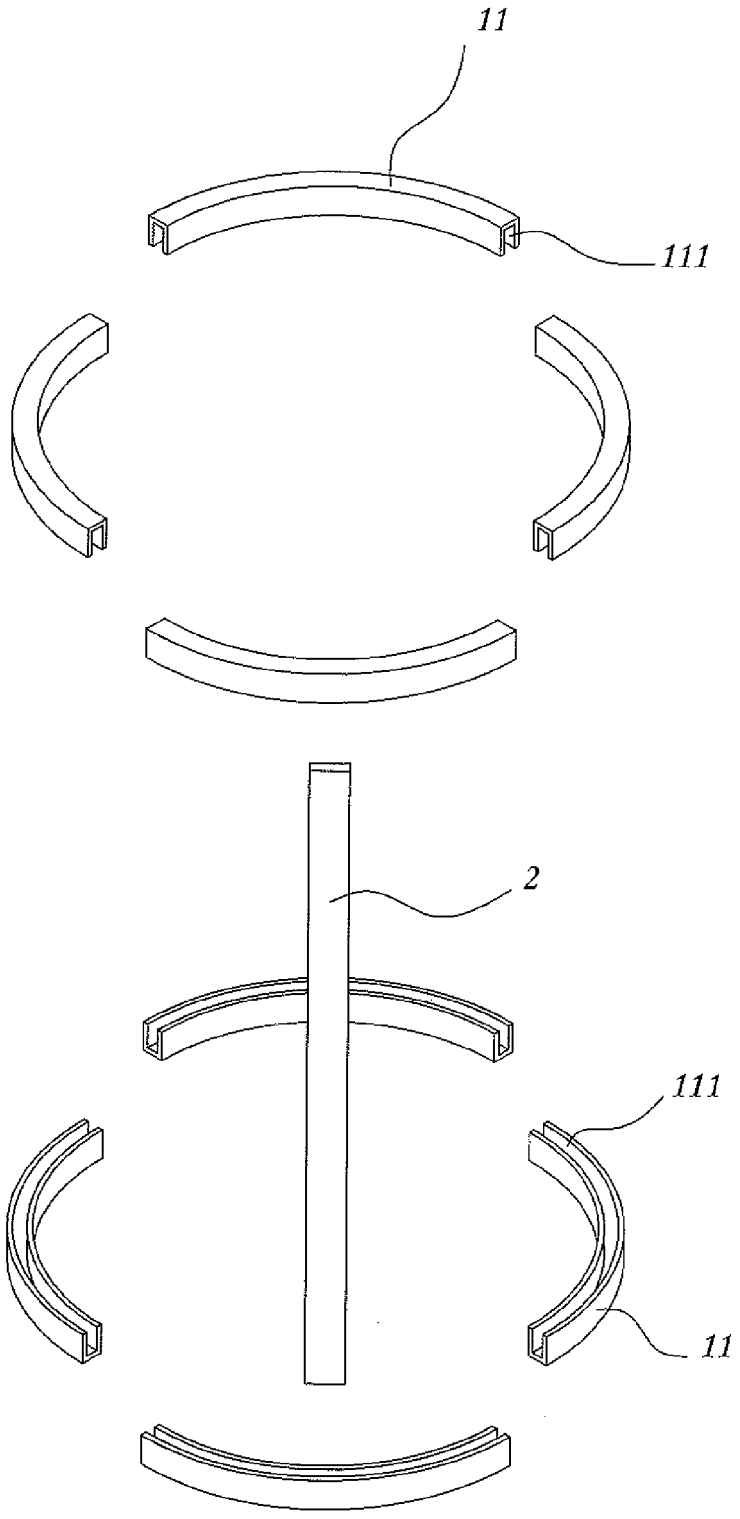

FIG. 8

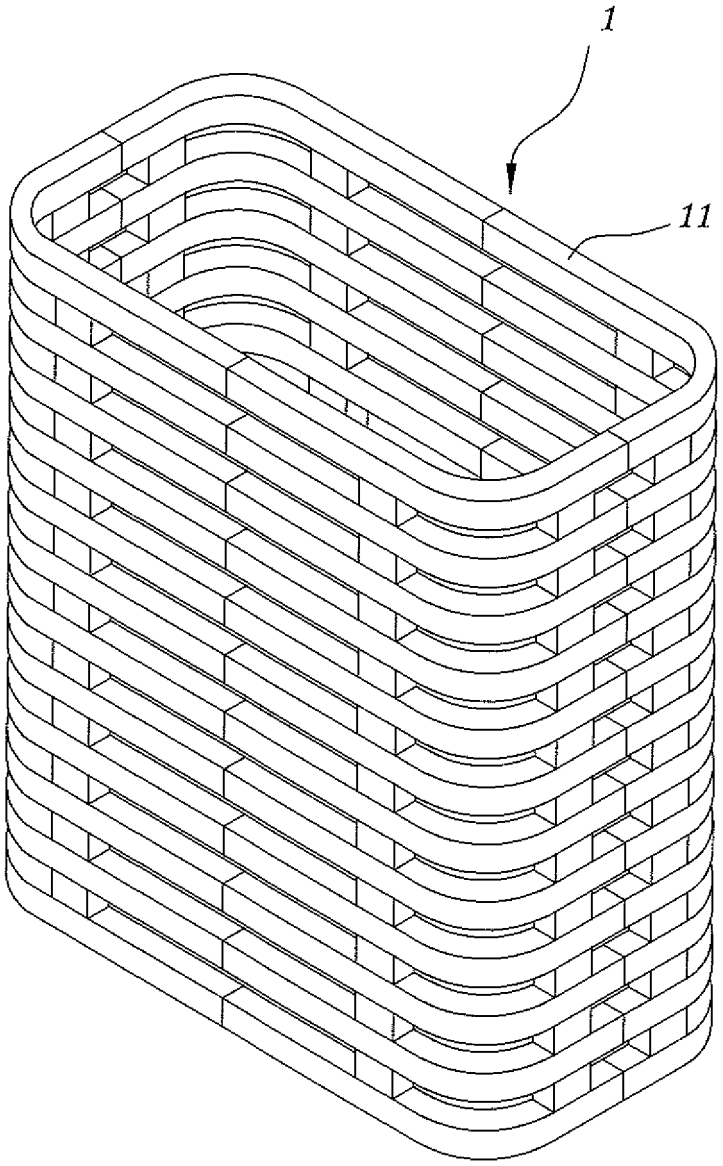

FIG. 9

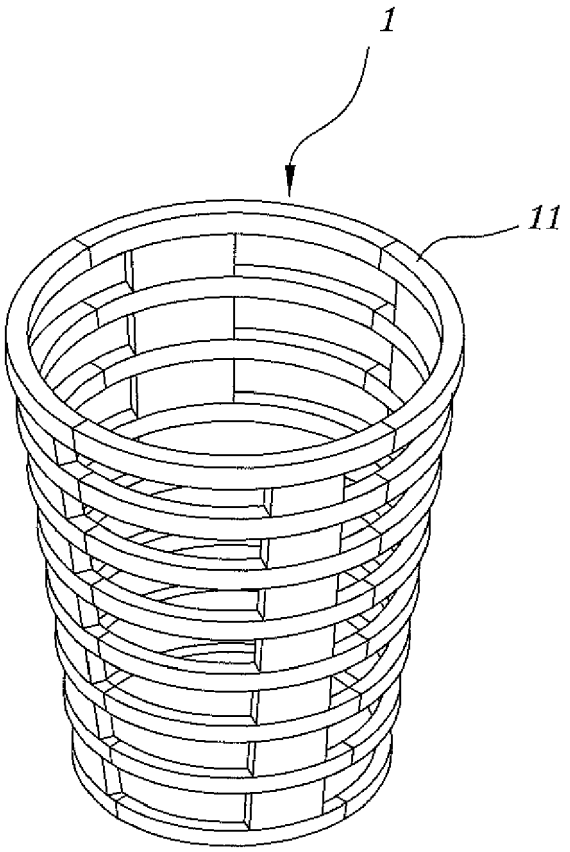

FIG. 10

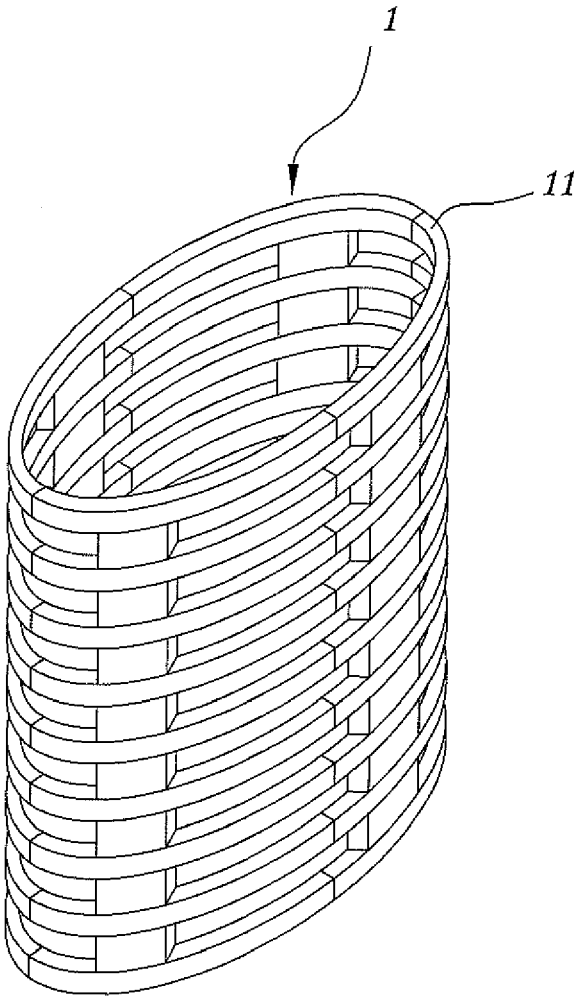

FIG. 11

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European Patent Office
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EUROPEAN SEARCH REPORT

Application Number
EP 08 10 5021

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	EP 1 452 659 A (WASSMER MARKUS [DE]; KURZ JAN [DE]) 1 September 2004 (2004-09-01) * abstract; figures * -----	1	INV. B27H1/00 B27J1/00
A	JP 2001 071303 A (OKUHO SOGO KOGYO KOFUN YUGENKO) 21 March 2001 (2001-03-21) * abstract; figures * -----	1	

TECHNICAL FIELDS SEARCHED (IPC)

B27H
B27J
B27M

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	20 October 2008	Meritano, Luciano

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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EPO FORM 1503 03.82 (P04C01)

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ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 08 10 5021

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
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20-10-2008

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1452659 A	01-09-2004	DE 10308628 A1	16-09-2004
JP 2001071303 A	21-03-2001	NONE	

EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82