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(54) Foldable chair capable of being overlapped with other chairs vertically

(57) A foldable chair capable of being overlapped with other chairs vertically comprises two front legs, two rear legs and a seat plate. An inner side of each front leg has a recess for assembling the rear leg and a T shape buckle; each of two sides of a top end of an outer side of each rear leg has a post for assembling the seat plate; and each of two outer ends of a rear side of the seat plate has a C shape tenon which can be assembled to the T shape buckle at the inner side of the front leg; and each of two ends of an inner side of the seat plate has a sliding groove for assembling the post of the rear leg. The chair can be assembled without screws, but it still has a firm structure and the assembly work can be positioned quickly and easily.

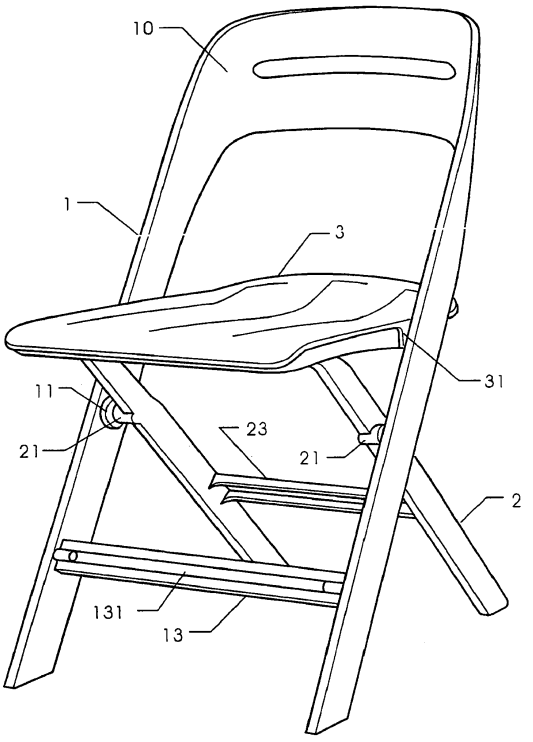

FIG. 1

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Description

FIELD OF THE INVENTION

[0001] The present invention relates to foldable chairs, in particular to a foldable chair capable of being overlapped with other chairs vertically, which is assembled screwlessly, while provides a steady structure.

BACKGROUND OF THE INVENTION

[0002] The prior art foldable chairs are made of metals or by using composite material. The welding, riveting or screwing is used in the manufacturing process. Time and labor are wasted in the manufacturing process. The processes of bending and embedding are needed. Thus the cost is high.

[0003] Furthermore, in the prior art foldable chair, it is unsuitable for overlapping the chairs for storage and transformation. Furthermore, it is difficult to position the overlapping chairs.

SUMMARY OF THE INVENTION

[0004] Accordingly, the object of the present invention is to provide a foldable chair capable of being overlapped with other chairs vertically, wherein in assembly of the chair, no screw is used.

[0005] To achieve above object, the present invention provides a foldable chair capable of being overlapped with other chairs vertically, comprising two front legs, two rear legs and a seat plate, wherein an inner side of each front leg has a recess for assembling the rear leg and a T shape buckle; each of two sides of a top end of an outer side of each rear leg has a post for assembling the seat plate; each of two outer ends of a rear side of the seat plate has a C shape tenon which can be assembled to the T shape buckle at the inner side of the front leg; each of two ends of an inner side of the seat plate has a sliding groove for assembling the post of the rear leg.

[0006] Therefore, the chair of the present invention can be assembled without screws, but it still has a firm structure and the assembly work can be performed quickly and easily with less time and higher efficiency. Moreover, the chairs can be overlapped vertically with less space so as to be transferred effectively and with lower transfer costs.

[0007] The various objects and advantages of the present invention will be more readily understood from the following detailed description when read in conjunction with the appended drawing.

BRIEF DESCTIPTION OF THE DRAWINGS:

[0008]

Fig. 1 is a perspective view of the present invention.
Fig. 2 is a front view of the present invention.
Fig. 3 is a left side view of Fig. 2.
Fig. 4 is an elevational view of Fig. 2.
Fig. 5 is a schematic view showing the combination of the present invention.
Fig. 6 shows the front leg of the present invention.
Fig. 7 is a left side view of Fig. 6.
Fig. 8 is a schematic view showing the combination of the hole of the front leg and the cover.
Fig. 9 is a cross sectional view along line 9-9 of Fig. 6.
Fig. 10 is a left side view of Fig. 8.
Fig. 11 is a schematic view showing the assembly of the cover in Fig. 10.
Fig. 12 is a schematic view showing the combination of the hole, cover and T shape buckle.
Fig. 13 shows the rear leg of the present invention.
Fig. 14 is a left side view of Fig. 13.
Fig. 15 is a cross sectional view along line 15-15 of Fig. 16.
Fig. 16 shows the seat plate of the present invention.
Fig. 17 is a left side view of Fig. 16.
Fig. 18 is a cross sectional view along line 18-18 of Fig. 17.
Fig. 19 is a cross sectional view along line 19-19 of Fig. 17.
Fig. 20 is schematic view showing the overlapping of the chairs of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0009] In order that those skilled in the art can further understand the present invention, a description will be provided in the following in details. However, these descriptions and the appended drawings are only used to cause those skilled in the art to understand the objects, features, and characteristics of the present invention, but not to be used to confine the scope and spirit of the present invention defined in the appended claims.

[0010] Referring to Fig. 1, the combination of the chair of the present invention has no screw, while it can provide a steady structure as a plurality of chairs are overlapped vertically. The chair has the following elements. The chair is made of polypropylene (PP) plastics mixing with fibers and is formed by air injection.

[0011] Referring to Figs. 6 to 12, two front legs are included. An inner side of each front leg has a recess 11 for assembling the rear leg 2 and a T shape buckle 12. A transversal rod 13 serves to connect the two front legs 1. The transversal rod 13 has a trench 131. A hole 111 is formed in the recess 11 for retaining a cover 14 (as shown in Figs. 11 and 12).

[0012] Referring to Figs. 13 to 15, two rear legs 2 are included. Each of two sides of a top end of an outer side of each rear leg 2 has a post 22 for assembling a seat plate 3. A transversal bar 23 is assembled between two inner sides of the two rear legs 2. Each of two ends of the transversal bar 23 has a strip 231 which can be embedded into the trench 131 of the transversal rod 13.

[0013] Referring to Figs. 16 to 19, each of two outer

ends of a rear side of the seat plate 3 has a C shape tenon 31 which can be assembled to the T shape buckle 12 at the inner side of the front leg 1. Each of two ends of an inner side of the seat plate 3 has a sliding groove 32 for assembling the post 22 of the rear leg 2.

[0014] Assembly of the present invention will be described herein.

[0015] The T shape buckles 22 are aligned to the recesses 11 of the front legs. Then the studs 21 are assembled into the recesses 11. Then the covers 14 cover upon the holes. The cover 14 has a plug 141 and the plug 141 has a hook 142. When the plug 141 of the cover 14 inserts into the hole 111 of the recess 11. The cover 14 is firmly secured to the front leg without loosing. Thus the assembly of the front legs to the rear legs 2 is completed.

[0016] Then the post 22 of the front leg slides into the sliding groove 32 of the seat plate 3. Finally, the C shape tenon 31 of the seat plate 3 is buckled to the T shape buckle 12 of the front leg 1. Thus the assembly of the whole chair is complete.

[0017] Therefore, the chair of the present invention can be assembled without-screws, but it still has a firm structure and the assembly work can be performed quickly and easily with less time and high efficiency. Moreover, the chairs can be overlapped vertically with less space so as to be transferred effectively and with lower transfer costs.

[0018] The present invention is thus described, it will be obvious that the same may be varied in many ways. Such variations are not to be regarded as a departure from the spirit and scope of the present invention, and all such modifications as would be obvious to one skilled in the art are intended to be included within the scope of the following claims.

Claims

1. A foldable chair capable of being overlapped with other chairs vertically, comprising two front legs 1, two rear legs 2 and a seat plate 3, wherein
   an inner side of each front leg 1 has a recess 11 for assembling the rear leg 2 and a T shape buckle 12;
   each of two sides of a top end of an outer side of each rear leg 2 has a post 22 for assembling the seat plate 3; and
   each of two outer ends of a rear side of the seat plate 3 has a C shape tenon 31 which can be assembled to the T shape buckle 12 at the inner side of the front leg 1; each of two ends of an inner side of the seat plate 3 has a sliding groove 32 for assembling the post 22 of the rear leg 2.

2. The foldable chair as claimed in claim 1, wherein the front legs 1, rear legs 2 and seat plate 3 are made of polypropylene (PP) plastics mixing with fibers and are formed by air injection.

3. The foldable chair as claimed in claim 1, wherein a transversal rod 13 serves to connect the two front legs 1 and the transversal rod 13 has a trench 131.

4. The foldable chair as claimed in claim 1, wherein a hole 111 is formed in the recess 11 for retaining a cover 14.

5. The foldable chair as claimed in claim 1, wherein a transversal bar 23 is assembled between two inner sides of the two rear legs 2; each of two ends of the transversal bar 23 has a strip 231 which can be embedded into the trench 131 of the transversal rod 13.

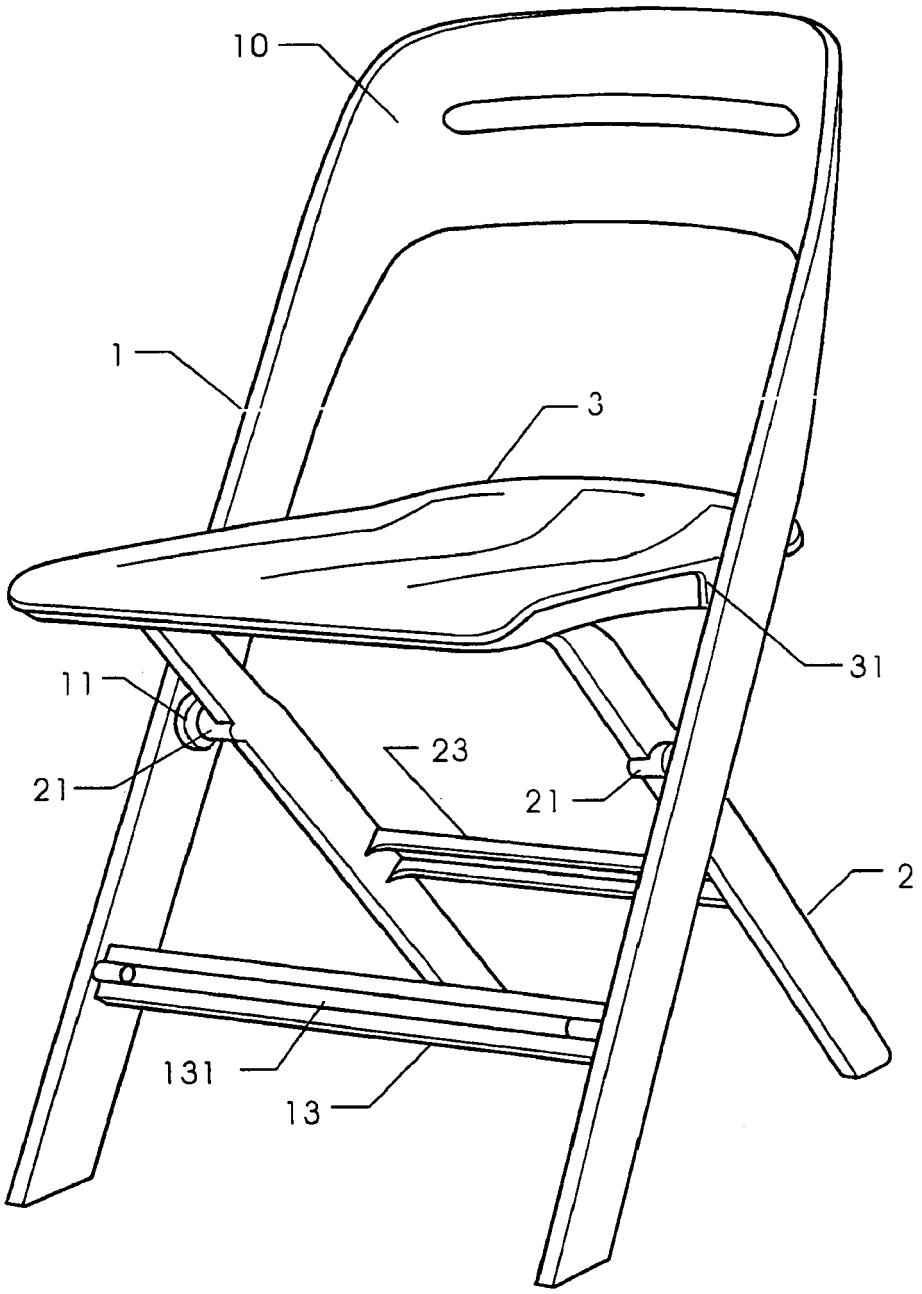


FIG. 1

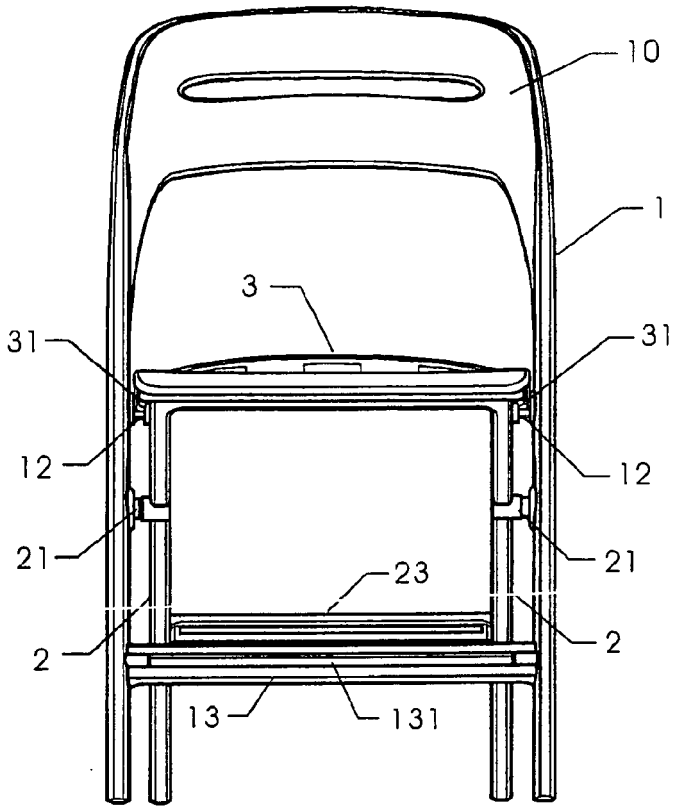


FIG. 2

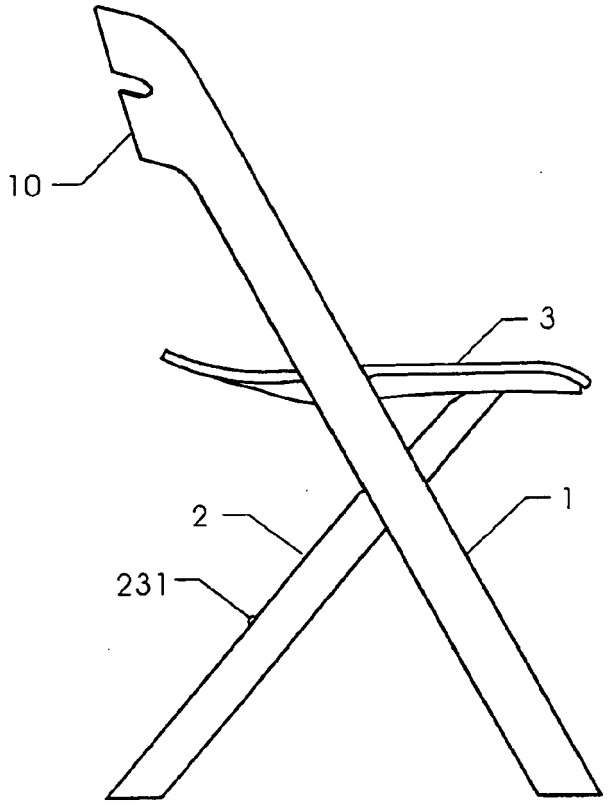


FIG. 3

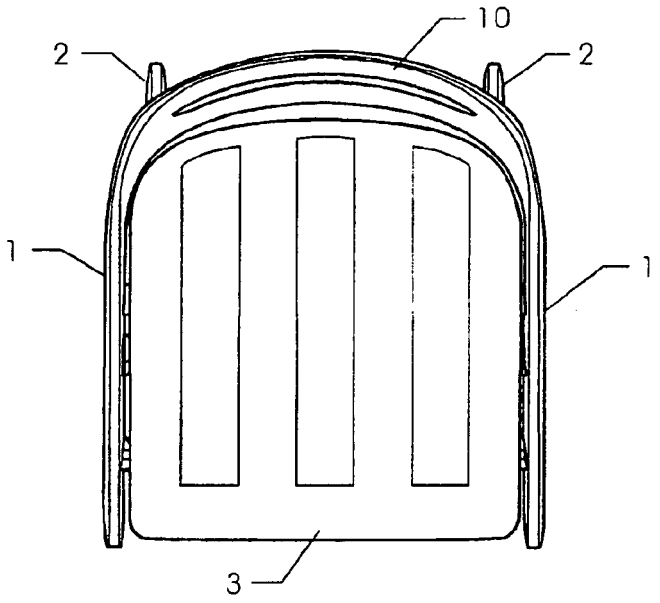


FIG. 4

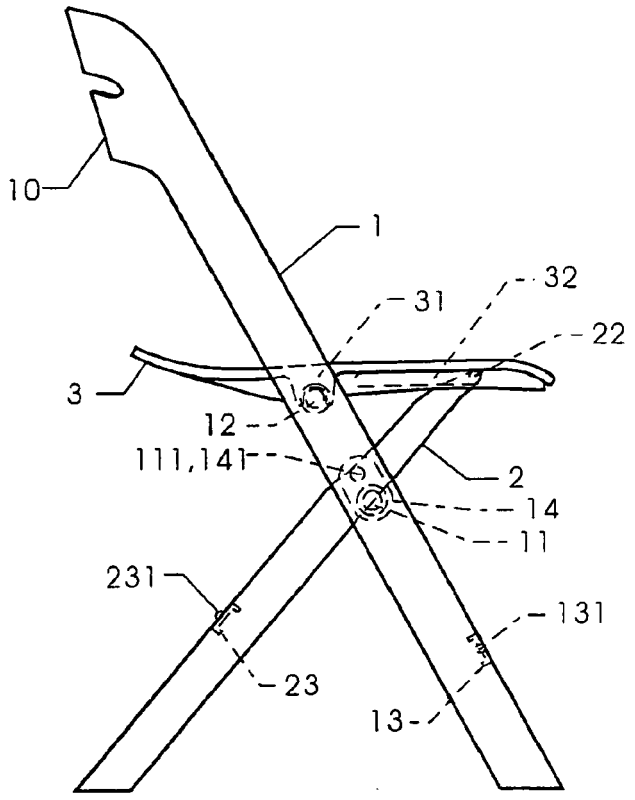


FIG. 5

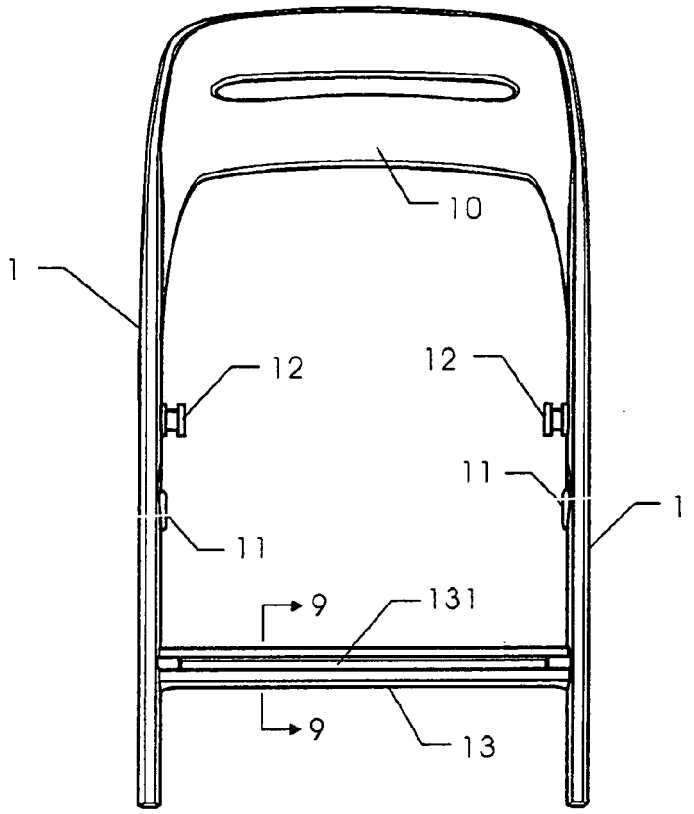


FIG. 6

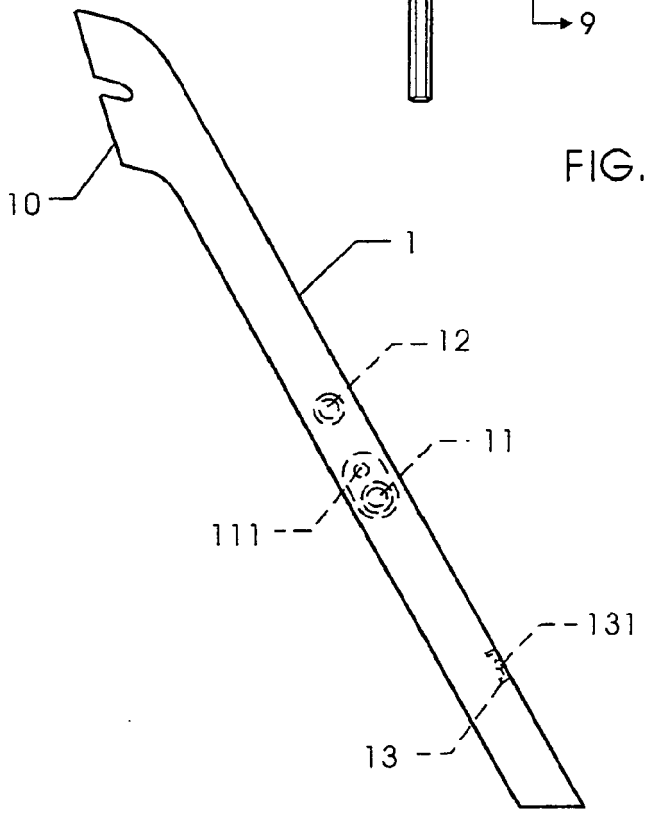


FIG. 7

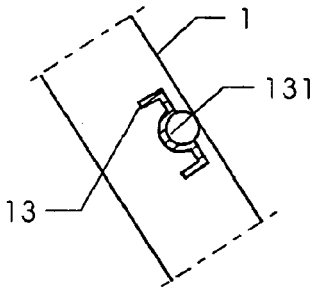
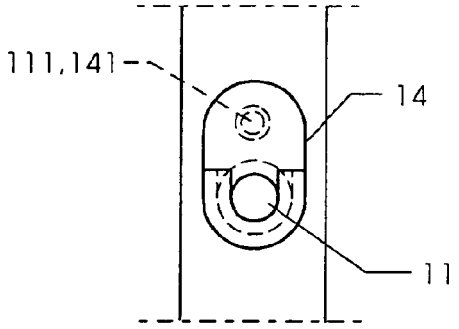


FIG. 9



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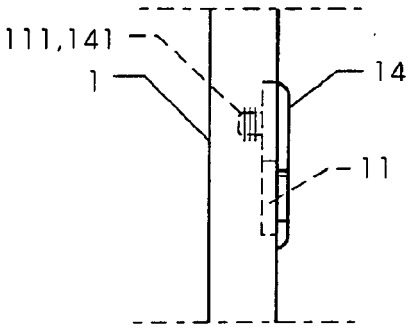

FIG. 10

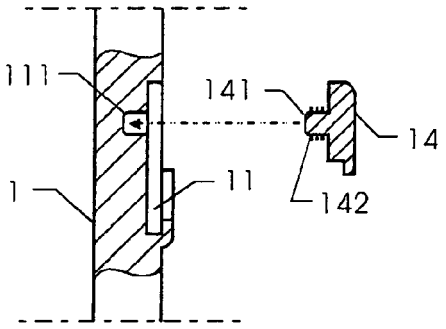

FIG. 11

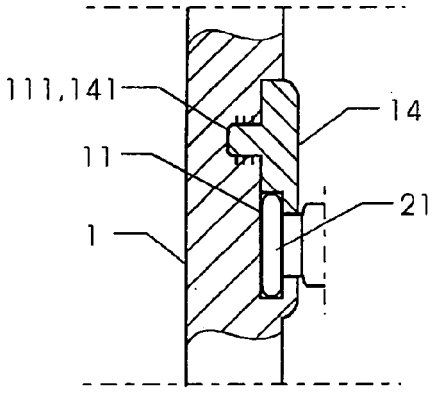

FIG. 12

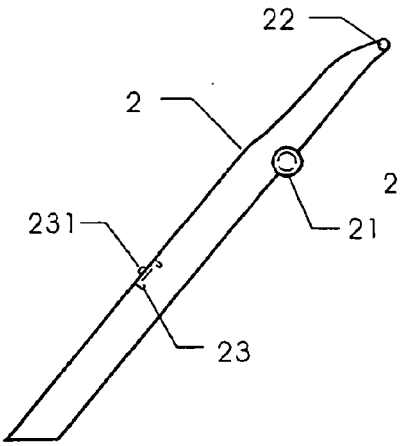

FIG. 14

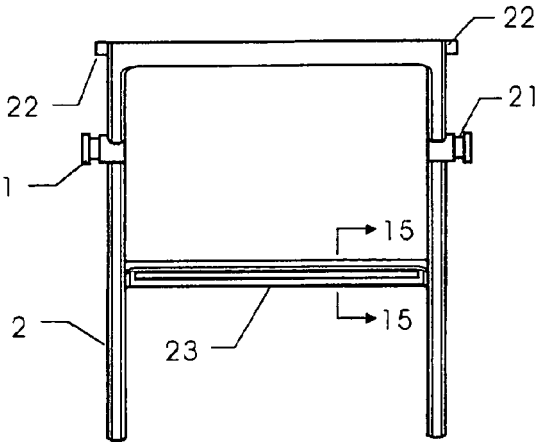

FIG. 13

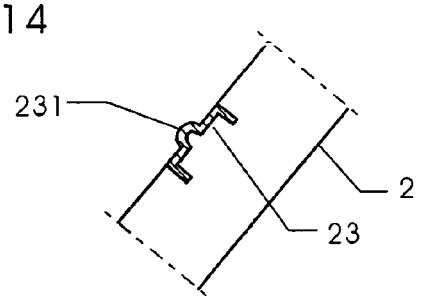

FIG. 15

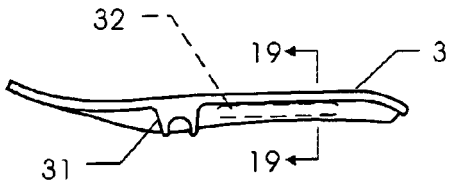

FIG. 17

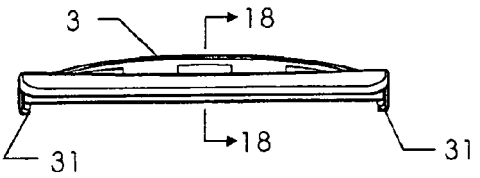

FIG. 16

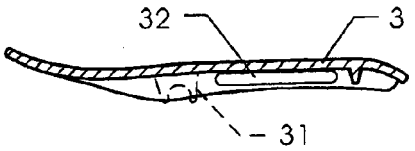

FIG. 18

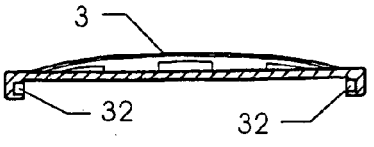

FIG. 19

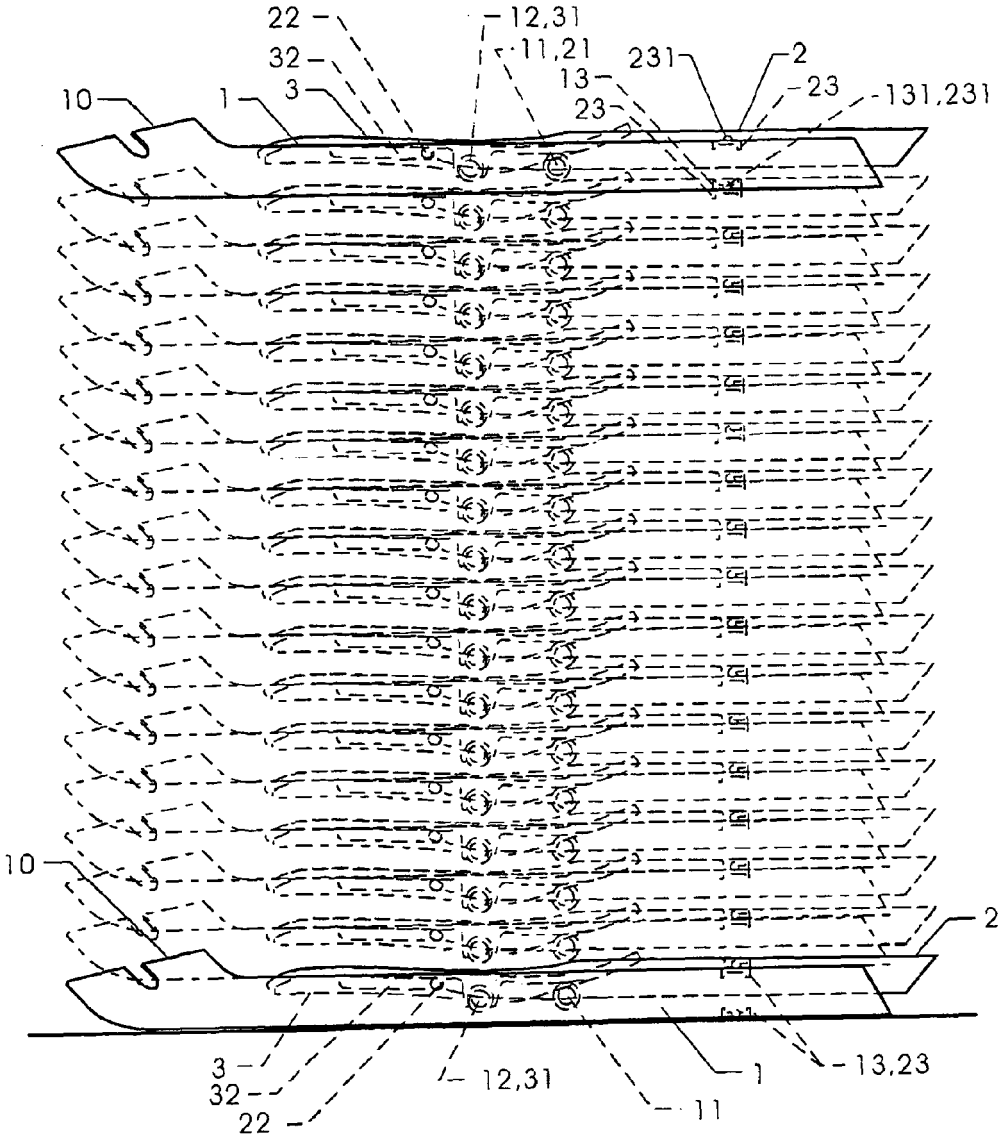
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FIG. 20

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EUROPEAN SEARCH REPORT

Application Number
EP 10 00 6010

DOCUMENTS CONSIDERED TO BE RELEVANT

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A	FR 594 992 A (ROSENKRANZ W) 24 September 1925 (1925-09-24) * abstract; figures *	1-5	
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A	FR 2 869 775 A3 (IF VERHASSELT SARL [FR]) 11 November 2005 (2005-11-11) * abstract; figures *	1-5	
A	US 7 080 877 B1 (TSAI HSIN-HUNG [TW]) 25 July 2006 (2006-07-25) * abstract; figures *	1-5	TECHNICAL FIELDS SEARCHED (IPC) A47C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	22 October 2010	MacCormick, Duncan

CATEGORY OF CITED DOCUMENTS

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22-10-2010

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