(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) EP 1 042 976 A1

(12) EUROPEAN PATENT APPLICATION

(43) Date of publication:
11.10.2000 Bulletin 2000/41

(51) Int. Cl.[7]: **A47C 3/00**, A47C 7/00

(21) Application number: **00107055.6**

(22) Date of filing: **04.04.2000**

(84) Designated Contracting States:
AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **08.04.1999 IT PD990072**

(71) Applicant:
Challenger Gestao E Consultadoria Sociedade Unipessoal Limitada
Funchall (PT)

(72) Inventor:
Gomes Correia, Carlos Marcelo
Funchal (PT)

(74) Representative:
Modiano, Guido, Dr.-Ing. et al
Modiano & Associati SpA
Via Meravigli, 16
20123 Milano (IT)

(54) Chair or the like with facilitated assembly

(57) A chair or the like which comprises components adapted to form at least one seat (12) and at least one back (13) which are applied exclusively with interlocking couplings. The back (13) comprises at least one rigid support (14) fixed, by means of first engagement elements (20,21), to posts (15) protruding from the frame (11). A body (16a) which supports a layer (16) of padding is applied by interlocking coupling on the rigid support (14). The seat (12) comprises a rigid base (17) fixed by interlocking coupling to a flat resting element (18). These base (17) and resting element (18) are in turn fixed by interlocking coupling, by way of second engagement elements (30), to at least two horizontal cross-members (19) of the frame (11).

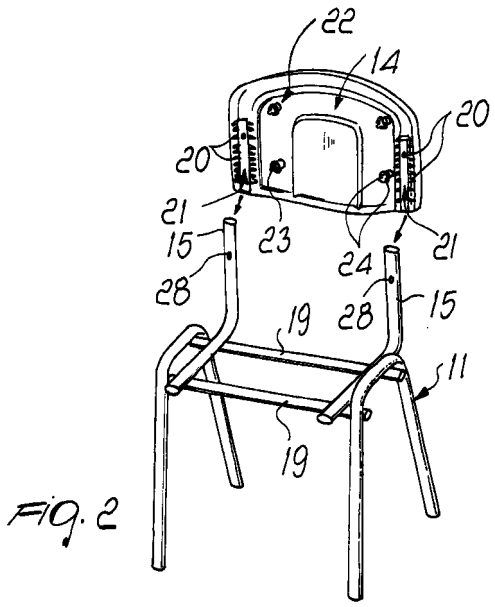

Fig. 2

EP 1 042 976 A1

Description

[0001] The present invention relates to a chair or the like with facilitated assembly.

[0002] It is known that chairs designed for various uses, such as for example office furniture, currently comprise several components which are assembled directly in the factory or at the installation site by specialized operators or even by the user.

[0003] The components that constitute chairs usually provide for interlocking couplings and, particularly for accessory components, couplings provided by threaded elements or equivalent connections.

[0004] Currently, even chairs having a rather simple structure obtained by means of a small number of components require time to be assembled.

[0005] It is in fact well-known that the operations for assembly performed by using threaded elements are troublesome and time-consuming.

[0006] Applying a threaded element in awkward positions, may in fact entail a significant degree of difficulty and in any case always entails a certain waste of time even for skilled users.

[0007] The aim of the present invention is to provide a chair or the like whose structure comprises components connected without using threaded elements or similar types of coupling.

[0008] Within the scope of this aim, an important object of the present invention is to provide chairs or the like whose structure is particularly solid and functional and allows highly ergonomic use.

[0009] Another object of the present invention is to provide chairs or the like whose structure is particularly flexible and can be manufactured in different shapes and configurations, having also a high aesthetic and styling value.

[0010] Another object of the present invention is to provide a chair or the like with a structure that is easy and quick to assemble even for personnel lacking specific experience.

[0011] Another object of the present invention is to provide a chair or the like with a structure that can be manufactured at competitive costs, despite resorting to conventional equipment, with respect to chairs or the like having a similar functionality.

[0012] This aim, these objects and others which will become apparent hereinafter are achieved by a chair or the like with facilitated assembly, characterized in that it comprises components which are adapted to form at least one seat and at least one back which are applied exclusively with interlocking couplings, said back comprising at least one rigid support which is fixed, by means of first engagement elements, to posts protruding from said frame, a body which supports a layer of padding being applied by interlocking coupling on said rigid support, said seat comprising a rigid base which is fixed by interlocking coupling to a flat supporting element, these last being in turn fixed by interlocking coupling, by second engagement elements, to at least two horizontal cross-members of said frame.

[0013] Further characteristics and advantages of the present invention will become apparent from the description of an embodiment thereof, illustrated only by way of non-limitative example in the accompanying drawings, wherein:

Figure 1 is a perspective view of a chair having the structure according to the invention;
Figure 2 is a partially exploded perspective view of the chair of Figure 1;
Figure 3 is an exploded view of a detail of the chair of Figure 1;
Figures 4 and 5 are sectional orthographic projection views of a corresponding number of details of the chair of Figure 1;
Figure 6 is a sectional orthographic projection view of another detail of the chair of Figure 1;
Figure 7 is a partially exploded perspective view of the chair of Figure 1;
Figure 8 is a perspective view of a detail of the chair of Figure 1;
Figure 9 is a perspective exploded view of another detail of the chair of Figure 1.

[0014] With reference to the above Figures, a chair with facilitated assembly having the structure according to the invention is generally designated by the reference numeral 10 and comprises components which are applied exclusively by interlocking coupling to a frame 11 and are adapted to form a seat, generally designated by the reference numeral 12, and a back, generally designated by the reference numeral 13.

[0015] The back 13 comprises a contoured rigid support 14 which is applied by means of respective first engagement elements, described in greater detail hereinafter, to two posts 15 protruding from the frame 11.

[0016] In particular, said first engagement elements, in this embodiment, are constituted by two guides 21 which are formed on the rigid support 14, each guide comprising the combination of two mutually opposite series of tabs 20 so as to form a receptacle for the corresponding end portion of a corresponding post 15.

[0017] A layer of padding 16 is applied by interlocking coupling to the rigid support 14 and is supported by a body 16a, as described in detail hereinafter.

[0018] Pins 22 cantilever out from the rigid support 14 of the back 13; each pin is provided with a mushroom-shaped head 23 on which there are notches 24 which ensure the appropriate elastic flexing.

[0019] Each one of said pins 22 is adapted to be inserted by interlocking coupling in a corresponding tubular seat 25 formed in the body 16a that supports the layer of padding 16.

[0020] Moreover, in this embodiment, two pins 26 protrude from said body 16a; the position of each one of

said pins corresponds to a hole 27 formed in the rigid support 14 at each one of the corresponding guides 21.

[0021] Correspondingly, a hole 28 is formed in each final portion of the posts 15.

[0022] In this manner, once the two portions of post 15 have been inserted in the respective guides 21, the fixing of the layer of padding 16 to the rigid support 14 allows to simultaneously fix it to the frame 11, since the two pins 26 pass through the corresponding holes 27 and 28 formed respectively in the rigid support 14 and in the posts 15.

[0023] The seat 12 of the chair 10 comprises a contoured rigid base 17 which is designed to support a layer of padding, which is not shown for the sake of simplicity.

[0024] Said rigid base 17 is fixed by interlocking coupling to a flat supporting element 18 and, at the same time, to two cross-members 19 of the frame 11.

[0025] In this embodiment, said flat supporting element 18 has four openings 29 which are adapted to be crossed by second engagement elements protruding monolithically from said rigid base 17.

[0026] Said second engagement elements comprise clamp-like elements 30 which are made of a flexible material and protrude from the rigid base 17 on the side designed to be fixed, by interlocking coupling, to the flat element 18 and to the cross-members 19.

[0027] Each one of said clamp-like elements 30 is in fact adapted to pass through a corresponding opening 29 formed in the flat element 18 in order to anchor, by interlocking coupling, to a corresponding cross-member 19.

[0028] In this embodiment, connecting pins 22 cantilever out from the flat supporting element 18; said pins are fully similar to those described earlier for the back 13 and are adapted to be inserted, by interlocking coupling, in corresponding tubular seats 25 formed in the rigid base 17 on the side directed toward the flat element 18.

[0029] In practice it has been observed that the present invention has achieved the intended aim and objects.

[0030] It should in fact be noted that the chair or the like executed according to the present invention allows rapid, safe and precise assembly.

[0031] All the components that constitute the chair according to the present invention can in fact be connected by means of a guided and very simple assembly which does not require particular tools.

[0032] Attention is also drawn to the possibility to assemble the chair in a highly simplified manner with respect to conventional chairs, eliminating the costs of threaded studs and screws and the cost for their assembly.

[0033] Another advantage is that the ease of assembly achieved by means of interlocking couplings in no way damages the overall safety and structural solidity of the chair according to the present invention.

[0034] Attention is also drawn to the fact that the constructive simplicity allows to provide chairs and the like at costs which are competitive with respect to currently commercially available chairs and the like having a similar functionality.

[0035] The present invention is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept.

[0036] All the technical details may be replaced with other technically equivalent elements.

[0037] The materials used, so long as they are compatible with the contingent use, as well as the dimensions, may be any according to requirements.

[0038] The disclosures in Italian Patent Application No. PD99A000072 from which this application claims priority are incorporated herein by reference.

[0039] Where technical features mentioned in any claim are followed by reference signs, those reference signs have been included for the sole purpose of increasing the intelligibility of the claims and accordingly, such reference signs do not have any limiting effect on the interpretation of each element identified by way of example by such reference signs.

Claims

1. A chair or the like with facilitated assembly, characterized in that it comprises components which are adapted to form at least one seat (12) and at least one back (13) which are applied exclusively with interlocking couplings, said back (13) comprising at least one rigid support (14) which is fixed, by way of first engagement elements (20,21), to posts (15) protruding from a frame (11), a body (16a) which supports a layer of padding (16) being applied by interlocking coupling on said rigid support (14), said seat (12) comprising a rigid base (17) which is fixed by interlocking coupling to a flat supporting element (18), said base (17) and supporting element (18) being in turn fixed by interlocking coupling, through second engagement elements (30), to at least two horizontal cross-members (19) of said frame (11).

2. The chair according to claim 1, characterized in that each one of said first engagement elements comprises two mutually opposite series of tabs (20) which are adapted to form, as a whole, a sliding guide (21) in which a corresponding post portion can be inserted.

3. The chair according to one or more of the preceding claims, characterized in that connecting pins (22) cantilever out from said rigid support (14), on the side that is adapted to be coupled to said body (16a) that supports the layer of padding (16), each one of said pins (22) having a mushroom-shaped head (23) on which notches for elastic flexing are provided, each pin (22) being adapted to be

inserted, by interlocking coupling, in a corresponding tubular seat (25) formed in said body (16a).

4. The chair according to one or more of the preceding claims, characterized in that at least two positioning pins (26) cantilever out from said body (16a) that supports said layer of padding (16), each positioning pin (26) being adapted to pass through respective holes (27) which are formed in said rigid support (14) at a corresponding seat formed by one of said series of tabs (20) and on the corresponding portion of post (15) inserted therein.

5. The chair according to one or more of the preceding claims, characterized in that said rigid base (17) and/or said flat supporting element (18) are provided with second engagement elements (30) which comprise clamp-like elements (30) made of flexible material adapted to anchor, by interlocking coupling, to a corresponding cross-member (19).

6. The chair according to claim 5, characterized in that said clamp elements (30) protrude from said rigid base (17) and pass, in order to anchor by interlocking coupling to the corresponding cross-members (19), through respective openings (29) formed in said supporting element (18).

7. The chair according to one or more of the preceding claims, characterized in that connecting pins (22) cantilever out from either said rigid base (17) or said flat supporting element (18) and have a mushroom-shaped head (23) with notches (24) for elastic flexing, each head (23) being adapted to be inserted, by interlocking coupling, in a corresponding tubular seat (25) formed in the other one of said parts (17,18).

8. The chair according to claim 7, characterized in that said connecting pins (22) protrude from said flat supporting element (18) and the corresponding tubular seats (25) are formed in said rigid base (17).

9. The chair according to one or more of the preceding claims, characterized in that said cross-members (19) are parallel.

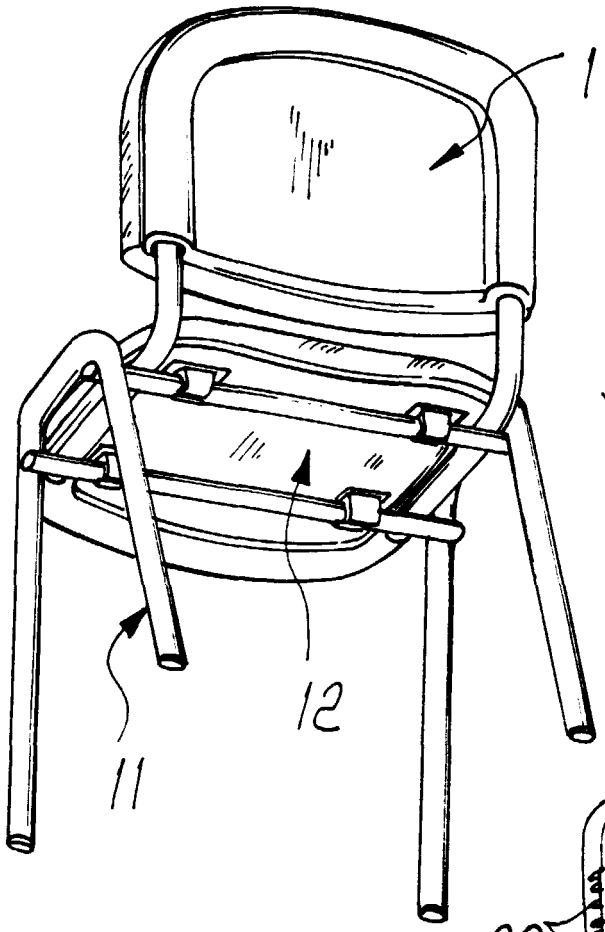

FIG. 1

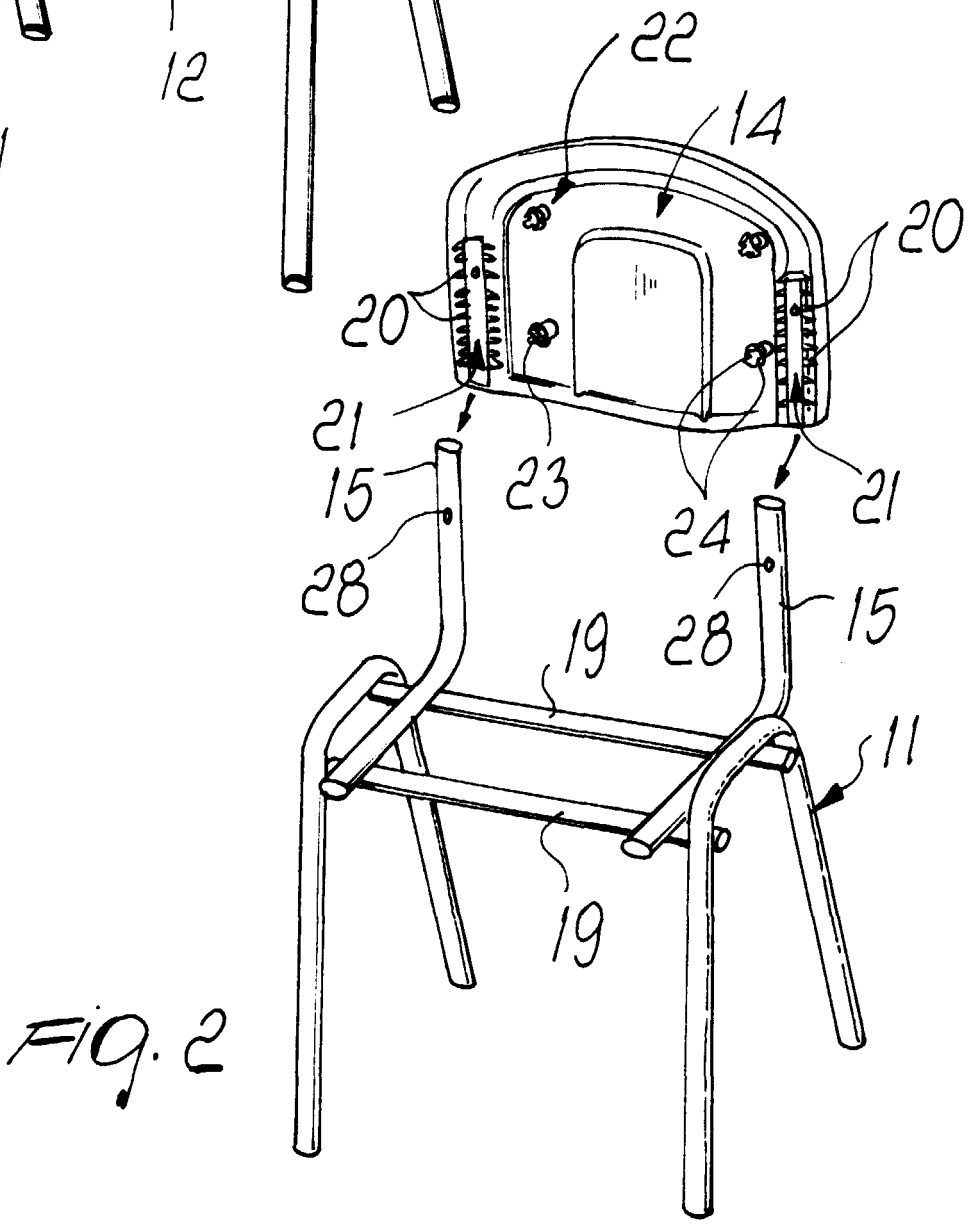

FIG. 2

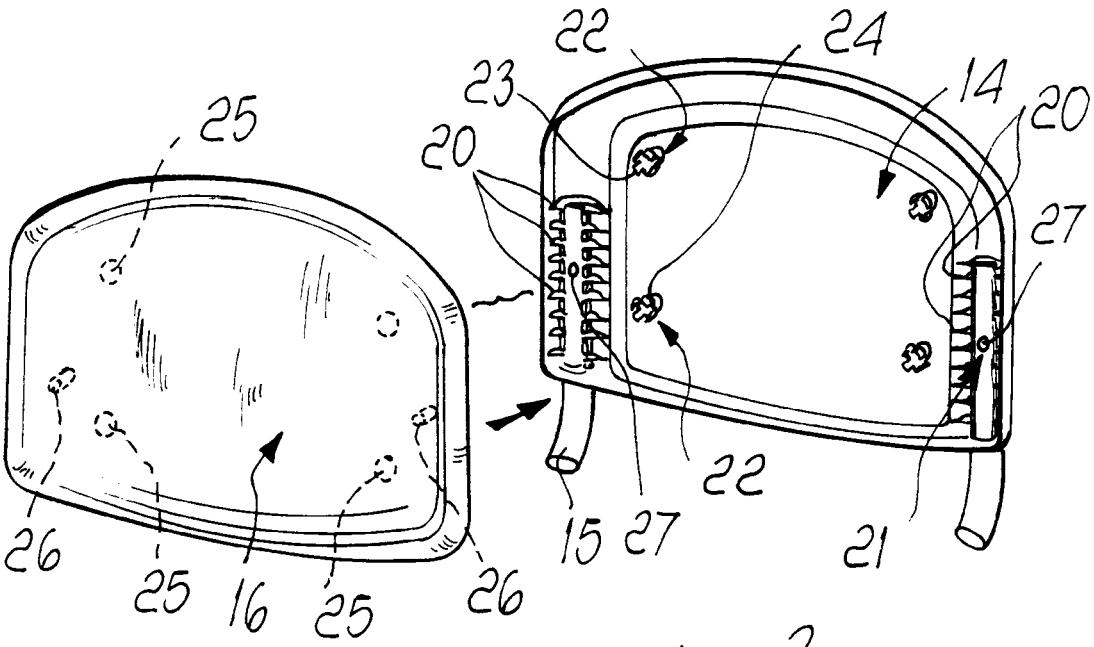

FIG. 3

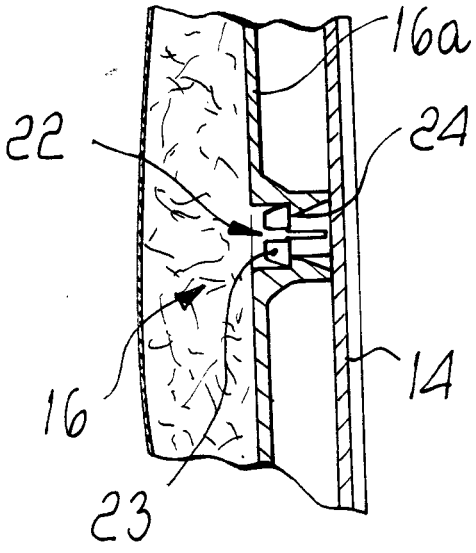

FIG. 4

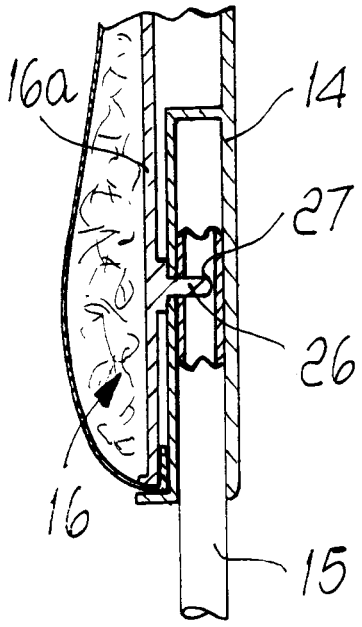

FIG. 5

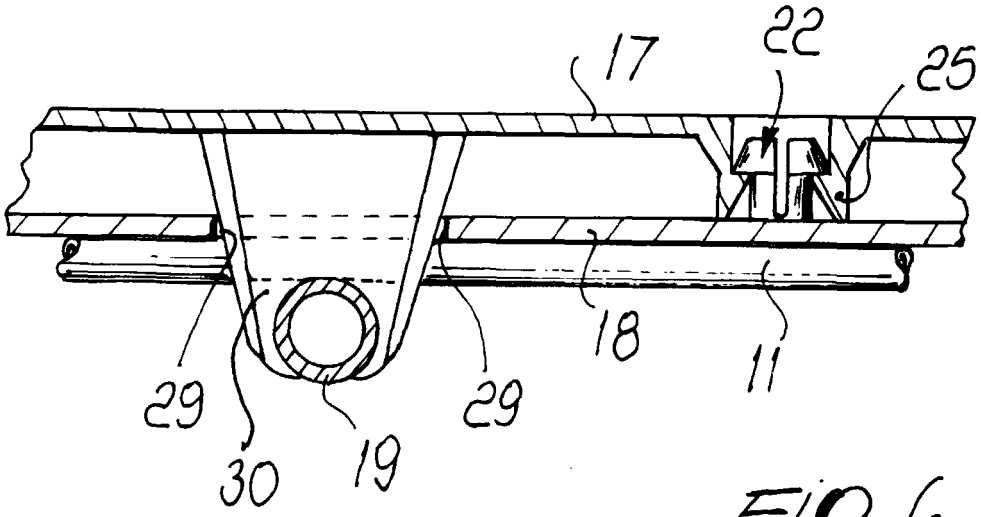

FIG. 6

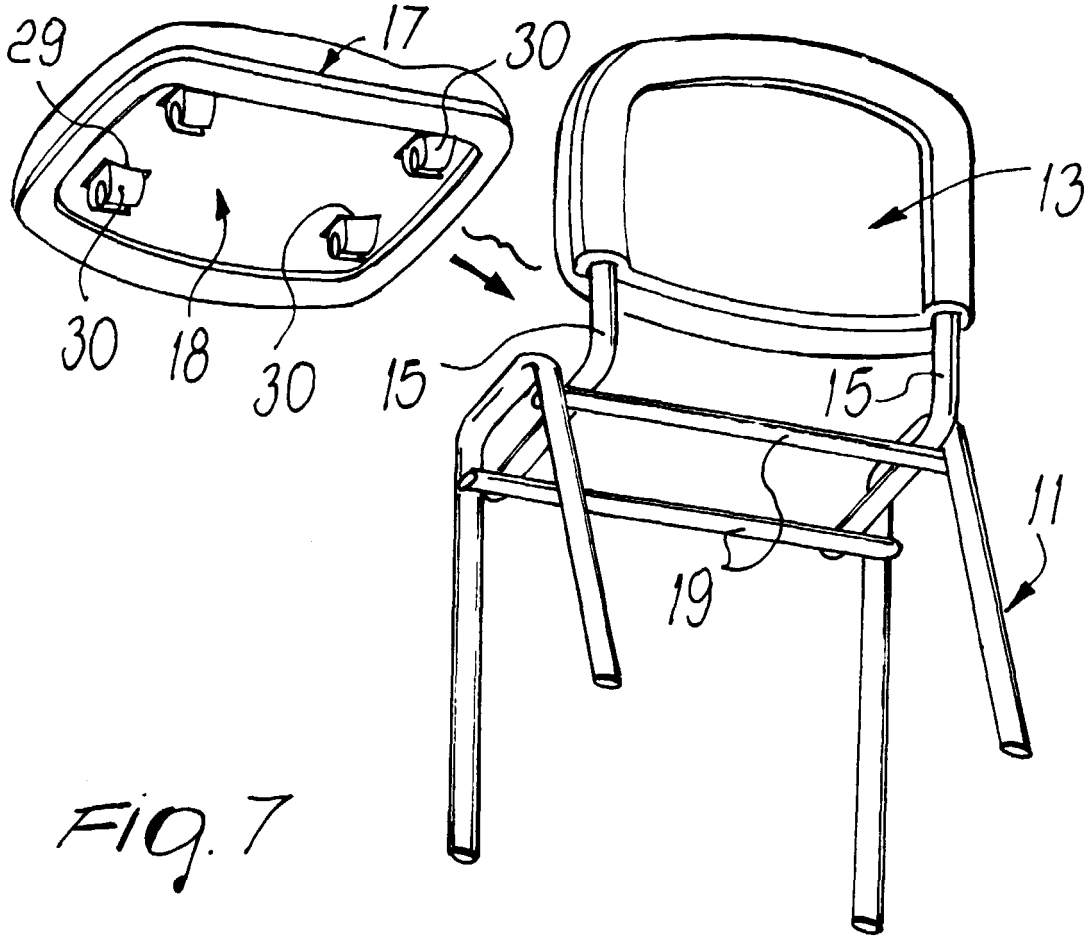

FIG. 7

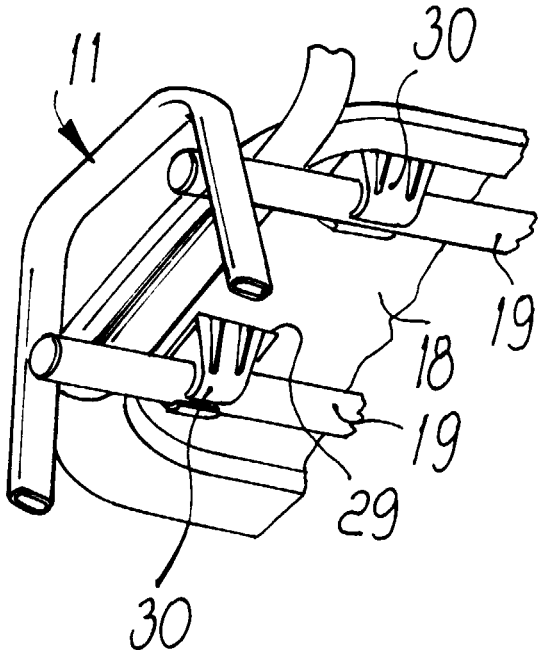

FIG. 8

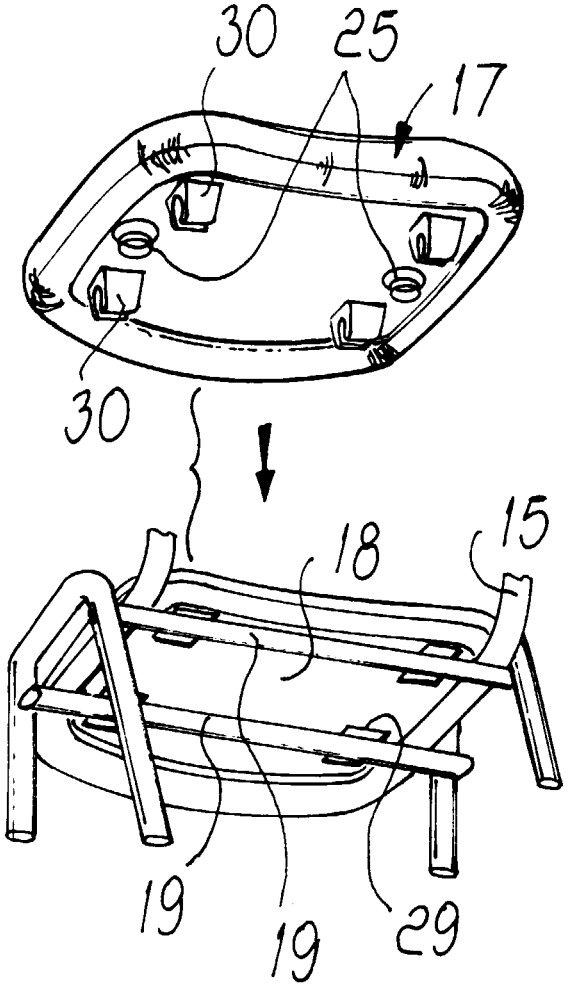

FIG. 9

European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 00 10 7055

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.7)
Y	FR 2 556 194 A (WINKLER FORMHOLZ & KUNSTSTOFFW) 14 June 1985 (1985-06-14) * page 1, line 23 - line 28; figures 1,4,6 * ---	1,3,5, 7-9	A47C3/00 A47C7/00
Y	GB 1 123 881 A (GROSFILLEX FRERES) * claim 1; figures 1-3 * ---	1,3,5, 7-9	
A	FR 1 143 819 A (SOCIETE FURANIA) 4 October 1957 (1957-10-04) * claim 1; figures 1,2,4 * ---	1	
A	US 4 892 355 A (FEND FRITZ M) 9 January 1990 (1990-01-09) * figures 1,2 * ---	1	
A	US 3 054 643 A (MILITANO, V.) 18 September 1962 (1962-09-18) * column 4, line 21 - line 27; figure 3 * -----	4	
			TECHNICAL FIELDS SEARCHED (Int.Cl.7) A47C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	29 June 2000	Joosting, T

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO FORM 1503 03.82 (P04C01)

ANNEX TO THE EUROPEAN SEARCH REPORT ON EUROPEAN PATENT APPLICATION NO. EP 00 10 7055

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.

29-06-2000

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
FR 2556194 A	14-06-1985	NONE	
GB 1123881 A		BE 693621 A	17-07-1967
		CH 454381 A	
		DE 1299818 B	
		DK 130813 B	21-04-1975
		NL 6701701 A,B	08-08-1967
		OA 109 E	15-12-1970
		SE 354568 B	19-03-1973
FR 1143819 A	04-10-1957	NONE	
US 4892355 A	09-01-1990	DE 3609591 A	21-01-1988
		CA 1274166 A	18-09-1990
		WO 8705479 A	24-09-1987
US 3054643 A	18-09-1962	NONE	

EPO FORM P0459

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