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(54) **Chair or the like with facilitated assembly**

Stuhl oder dergleichen mit vereinfachtem Zusammenbauverfahren

Siège ou similaire avec procédé d'assemblage facilité

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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] A chair according to the preamble of claim 1 is disclosed in document US-A-3 054 643.

[0008] 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.

[0009] 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.

[0010] 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.

[0011] 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.

[0012] 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.

[0013] This aim, these objects and others which will become apparent hereinafter are achieved by a chair or the like with facilitated assembly, comprising 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.

[0014] 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.

[0015] 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.

[0016] 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.

[0017] 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.

[0018] 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.

[0019] 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.

[0020] 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.

[0021] Moreover, in this embodiment, two pins 26 pro-

trude 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.

[0022] Correspondingly, a hole 28 is formed in each final portion of the posts 15.

[0023] 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.

[0024] 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.

[0025] 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.

[0026] 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.

[0027] 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.

[0028] 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.

[0029] 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.

[0030] In practice it has been observed that the present invention has achieved the intended aim and objects.

[0031] It should in fact be noted that the chair or the like executed according to the present invention allows rapid, safe and precise assembly.

[0032] 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.

[0033] 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.

[0034] 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.

[0035] 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.

[0036] The present invention is susceptible of numerous modifications and variations, all of which are within the scope of the inventive concept as defined by the claims.

[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, comprising components which are adapted to form at least one seat (12) and at least one back (13) which are applied exclusively with interlocking couplings, **characterized by** 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 (20,21) 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.

Patentansprüche

1. Stuhl oder dergleichen mit vereinfachtem Zusammenbau, mit Bestandteilen, die dafür eingerichtet sind, mindestens einen Sitz (12) und mindestens eine Rücklehne (13) auszubilden, die ausschließlich mit Verriegelungs-Verbindungen angebracht sind, **dadurch gekennzeichnet, dass** die Rücklehne (13) mindestens eine starre Stütze (14), die mittels erster Eingriffselemente (20, 21) an Stangen (15) befestigt ist, die von einem Gestell (11) vorstehen, und einen Körper (16a) aufweist, der eine Schicht Polsterung (16) stützt, die durch Verriegelungs-Verbindung an der starren Stütze (14) angebracht ist, wobei der Sitz (12) eine starre Basis (17) aufweist, die durch verriegelungs-Verbindung an einem flachen Stützelement (18) befestigt ist, wobei die Basis (17) und das Stützelement (18) der Reihe nach durch Verriegelungs-Verbindung über zweite Eingriffselemente (30) an mindestens zwei horizontalen Quergliedern (19) des Gestells (11) befestigt sind.

2. Stuhl nach Anspruch 1, **dadurch gekennzeichnet, dass** jedes der ersten Eingriffselemente (20, 21) zwei einander gegenüberliegende Reihen von Anhängseln (20) aufweist, die dafür eingerichtet sind, als Ganzes eine Gleitführung (21) auszubilden, in die ein entsprechender Stangenteil eingeführt werden kann.

3. Stuhl nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** Verbindungsstifte (22) von der starren Stütze (14) auskragen, auf der Seite, die dafür eingerichtet ist, mit dem Körper (16a), der die Schicht Polsterung (16) stützt, verbunden zu werden, wobei jeder der Stifte (22) einen pilzförmigen Kopf (23) hat, an dem Kerben für elastisches Biegen vorgesehen sind, wobei jeder Stift (22) dafür eingerichtet ist, durch Verriegelungs-Verbindung in einen entsprechenden rohrförmigen Sitz (25) eingeführt zu werden, der in dem Körper (16a) ausgebildet ist.

4. Stuhl nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** mindestens zwei Positionierungsstifte (26) von dem Körper (16a) auskragen, der die Schicht Polsterung (16) stützt, wobei jeder Positionierungsstift (26) dafür eingerichtet ist, bei einem entsprechenden Sitz, der durch eine aus der Reihe von Anhängsel (20) und an dem entsprechenden Teil der darin eingeführten Stange (15) ausgebildet ist, durch jeweilige Löcher (27) hindurchzugehen, die in der starren Stütze (14) ausgebildet sind.

5. Stuhl nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die starre Basis (17) und/oder das flache Stützelement (18) mit zweiten Eingriffselementen (30) versehen sind, die klemmenartige Elemente (30) aus flexiblem Material aufweisen, die zum Verankern durch Verriegelungs-Verbindung an einem entsprechenden Querglied (19) eingerichtet sind.

6. Stuhl nach Anspruch 5, **dadurch gekennzeichnet, dass** die Klemmelemente (30) von der starren Basis (17) vorstehen und zum Verankern durch Ver-

riegelungs-Verbindung an den entsprechenden Quergliedern (19) durch jeweilige Öffnungen (29) hindurchgehen, die in dem Stützelement (18) ausgebildet sind.

7. Stuhl nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** Verbindungsstifte (22) entweder von der starren Basis (17) oder dem flachen Stützelement (18) auskragen und einen pilzförmigen Kopf (23) mit Kerben (24) für elastisches Biegen aufweisen, wobei jeder Kopf (23) dafür eingerichtet ist, durch verriegelungs-Verbindung in einen entsprechenden rohrförmigen Sitz (25) eingeführt zu werden, der in dem anderen der Teile (17, 18) ausgebildet ist.

8. Stuhl nach Anspruch 7, **dadurch gekennzeichnet, dass** die Verbindungsstifte (22) von dem flachen Stützelement (18) vorstehen und die entsprechenden rohrförmigen Sitze (25) in der starren Basis (17) ausgebildet sind.

9. Stuhl nach einem oder mehreren der vorhergehenden Ansprüche, **dadurch gekennzeichnet, dass** die Querglieder (19) parallel sind.

Revendications

1. Chaise ou similaire avec procédé d'assemblage facilité, comprenant des composants qui sont conçus pour former au moins un siège (12) et au moins un dossier (13) qui sont appliqués exclusivement avec des couplages par verrouillage réciproque, **caractérisée en ce que** ledit dossier (13) comprend au moins un support rigide (14) qui est fixé, à l'aide de premiers éléments de mise en prise (20, 21), à des montants (15) dépassant d'un cadre (11), un corps (16a) qui supporte une couche matelassée (16) étant appliquée par couplage par verrouillage réciproque sur ledit support rigide (14), ledit siège (12) comprenant une base rigide (17) qui est fixée par couplage par verrouillage réciproque à un élément de support plat (18), ladite base (17) et ledit élément de support (18) étant, à leur tour, fixés par couplage par verrouillage réciproque, par l'intermédiaire de seconds éléments de mise en prise (30) à au moins deux éléments transversaux horizontaux (19) dudit cadre (11).

2. Chaise selon la revendication 1, **caractérisée en ce qu'**un desdits premiers éléments de mise en prise (20, 21) comprend deux séries mutuellement opposées de pattes (20) qui sont conçues pour former, comme un tout, un guide coulissant (21) dans lequel une partie du montant correspondant peut être insérée.

3. Chaise selon une ou plusieurs des revendications précédentes, **caractérisée en ce que** des goupilles de serrage (22) dépassent en porte à faux dudit support rigide (14), sur le côté qui est conçu pour être couplé audit corps (16a) qui supporte la couche matelassée (16), chacune desdites goupilles (22) ayant une tête (23) en forme de champignon sur laquelle des encoches pour flexion élastique sont prévues, chaque goupille (22) étant conçue pour être insérée, par couplage par verrouillage réciproque, dans un siège tubulaire correspondant (25) formé dans ledit corps (16a).

4. Chaise selon une ou plusieurs des revendications précédentes, **caractérisée en ce qu'**au moins deux goupilles de positionnement (26) dépassent en porte à faux depuis ledit corps (16a) qui supporte ladite couche matelassée (16), chaque goupille de positionnement (26) étant conçue pour passer à travers des trous respectifs (27) qui sont formés dans ledit support rigide (14) au niveau d'un siège correspondant formé par une desdites séries de pattes (20) et sur la partie correspondante du montant (15) inséré dans celui-ci.

5. Chaise selon une ou plusieurs des revendications précédentes, **caractérisée en ce que** ladite base rigide (17) et/ou ledit élément de support plat (18) sont pourvus de seconds éléments de mise en prise (30) qui comprennent des éléments de type pince (30) constitués d'un matériau flexible conçus pour ancrer, par couplage par verrouillage réciproque, un élément transversal correspondant (19).

6. Chaise selon la revendication 5, **caractérisée en ce que** lesdits éléments de pince (30) dépassent de ladite base rigide (17) et passent, afin d'ancrer, par couplage par verrouillage réciproque, les éléments transversaux correspondants (19) à travers des ouvertures respectives (29) formées dans ledit élément de support (18).

7. Chaise selon une ou plusieurs des revendications précédentes, **caractérisé en ce que** les goupilles de connexion (22) dépassent en porte à faux soit de ladite base rigide (17), soit dudit élément de support plat (18) et ont une tête (23) en forme de champignon avec des encoches (24) pour flexion élastique, chaque tête (23) étant conçue pour être insérée, par couplage par verrouillage réciproque, dans un siège tubulaire correspondant (25) formé dans l'autre desdites parties (17,18).

8. Chaise selon la revendication 7, **caractérisée en ce que** les goupilles de connexion (22) dépassent depuis ledit élément de support plat (18) et les sièges tubulaires correspondants (25) sont formés dans ladite base rigide (17).

9. Chaise selon une ou plusieurs des revendications précédentes, **caractérisée en ce que** lesdits éléments transversaux (19) sont parallèles.

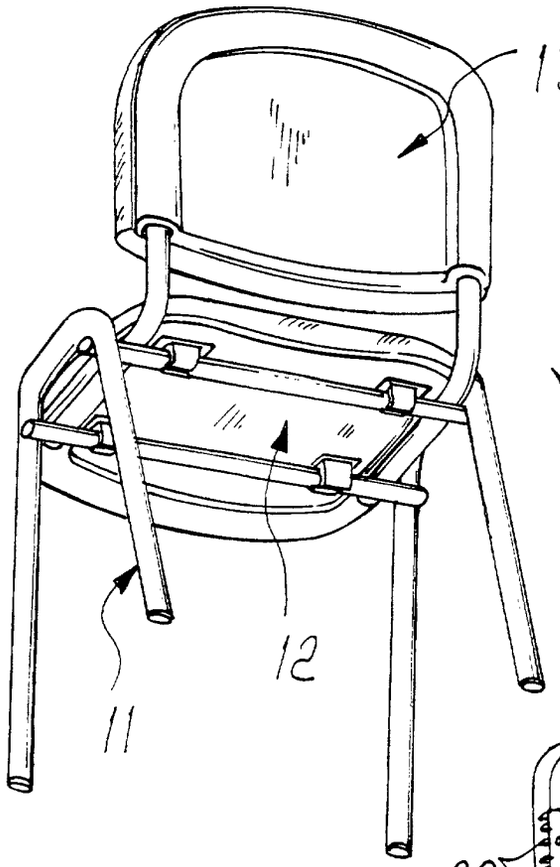

FIG. 1

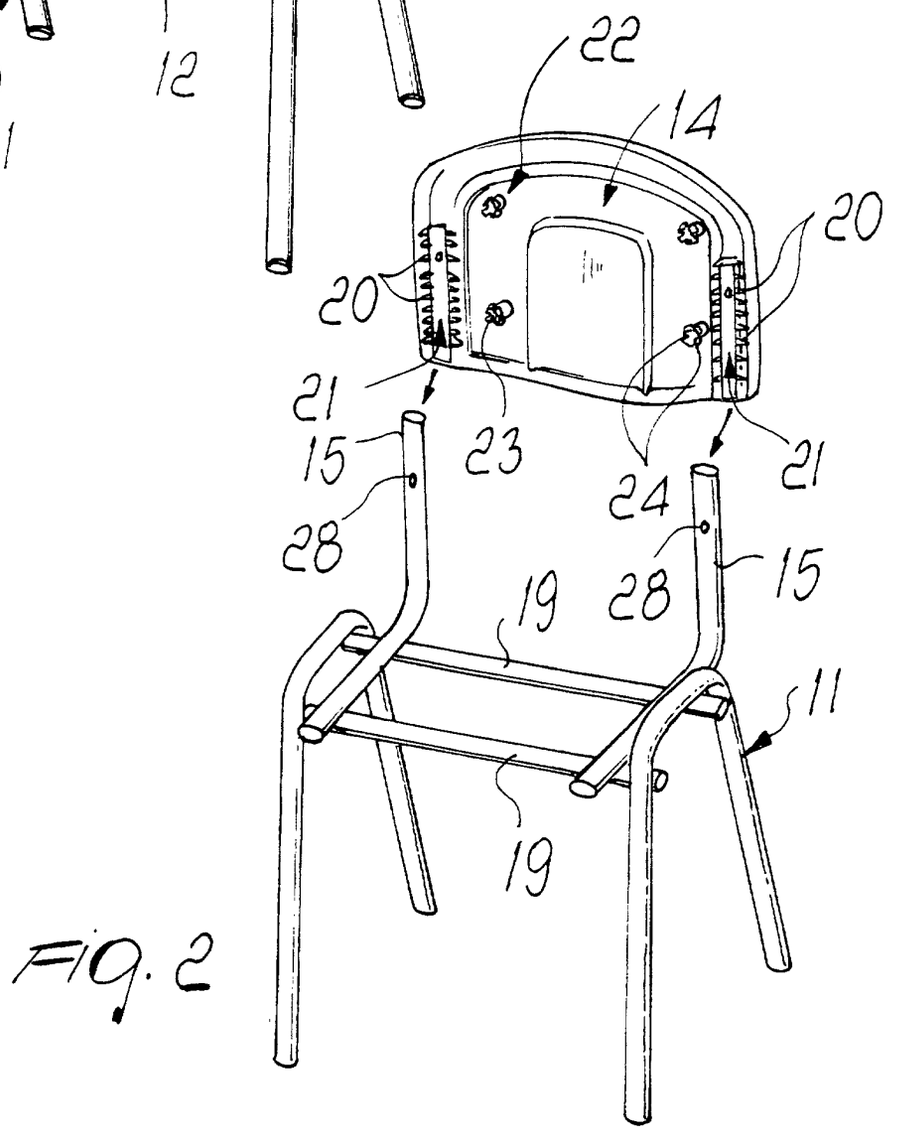

FIG. 2

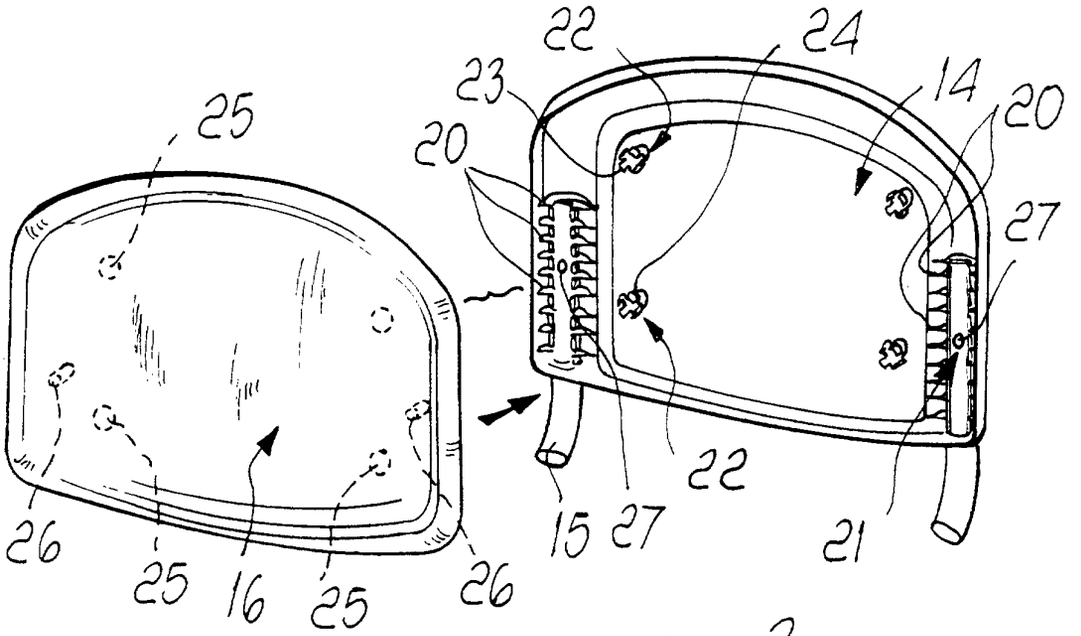

FIG. 3

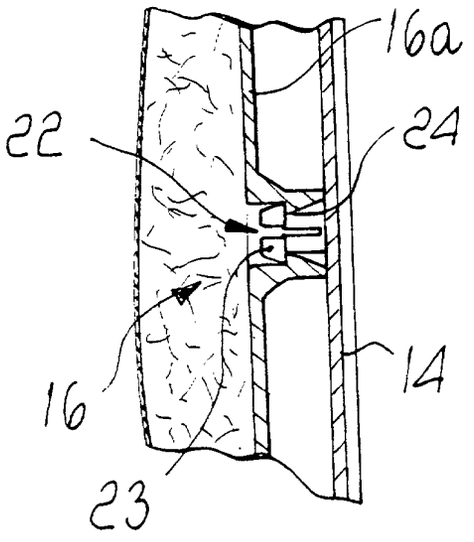

FIG. 4

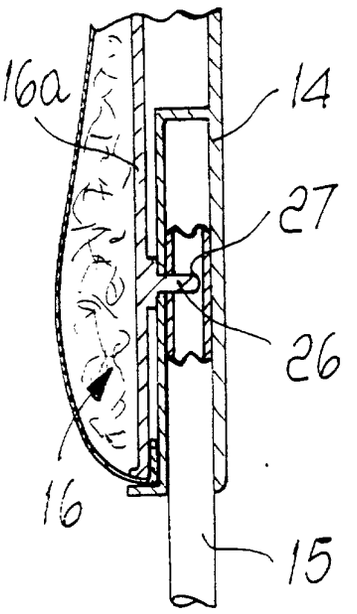

FIG. 5

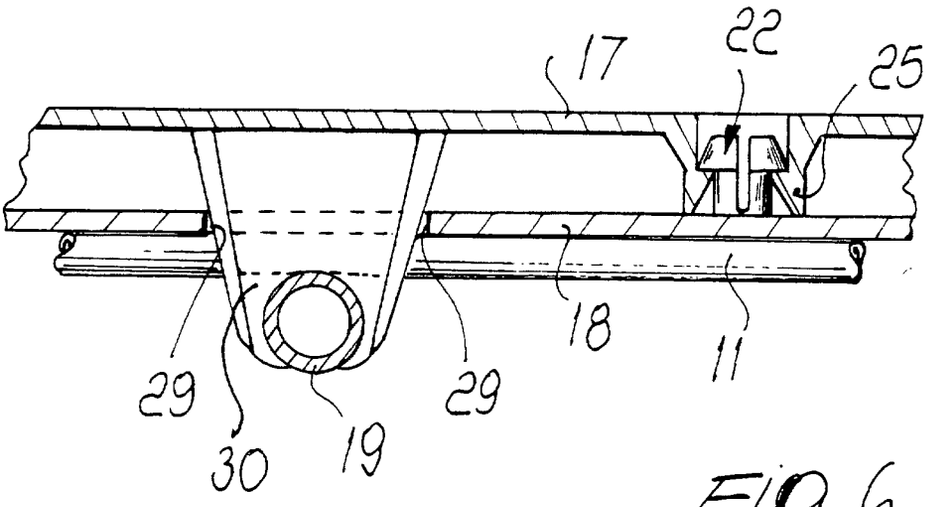

FIG. 6

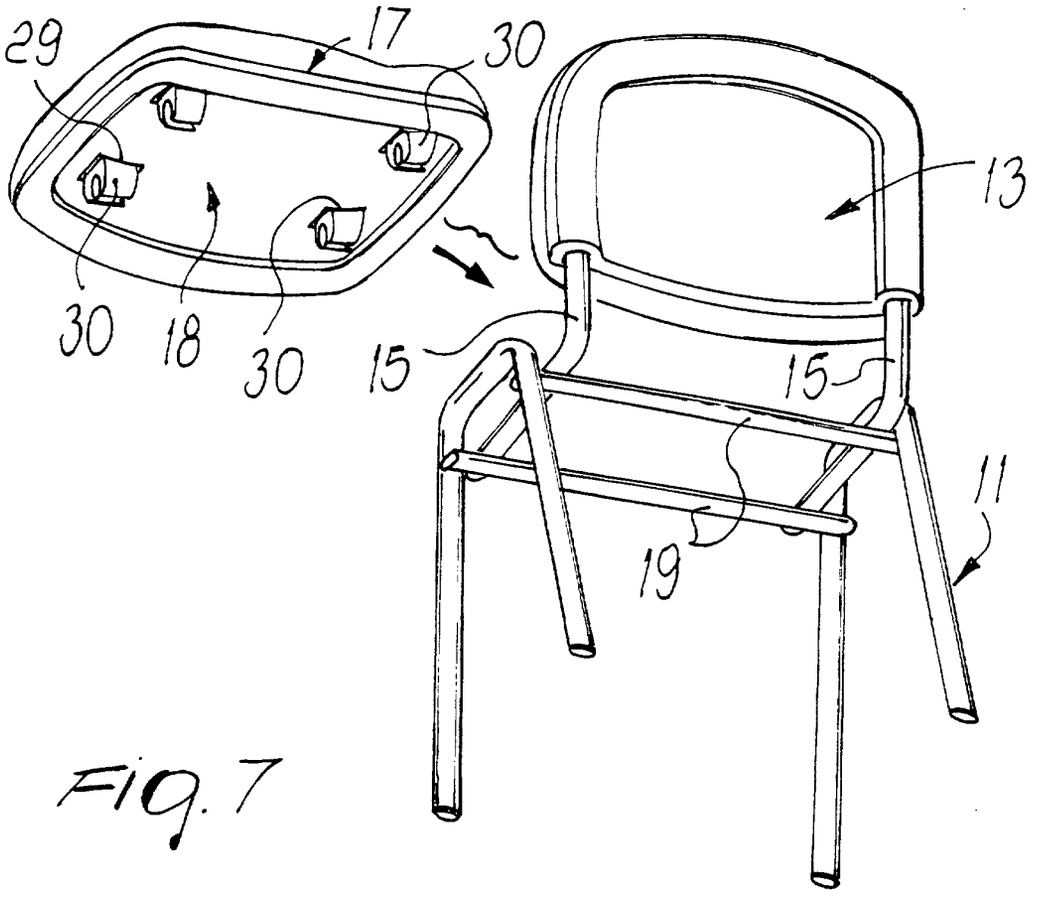

FIG. 7

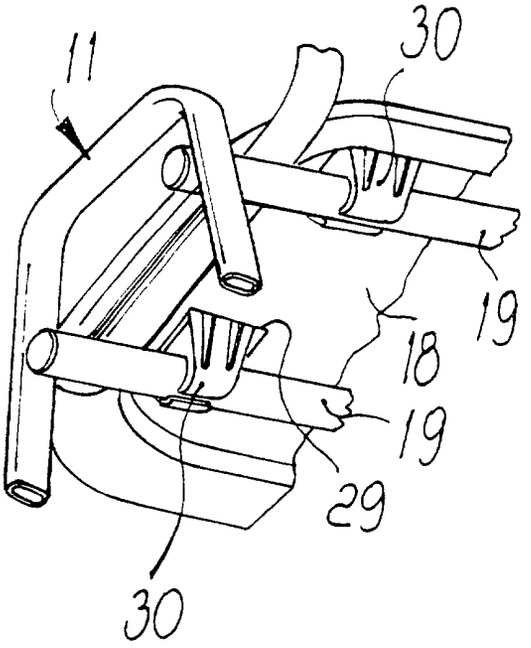

FIG. 8

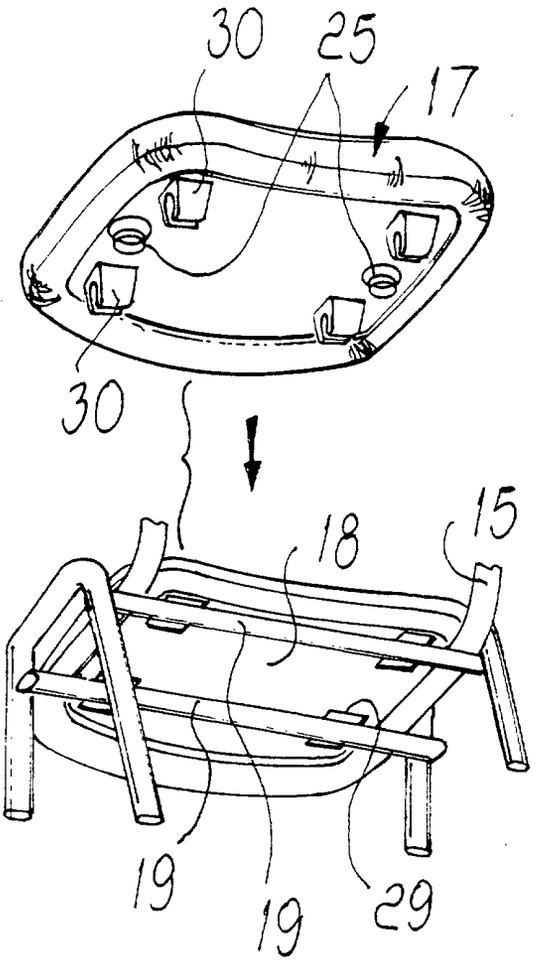

FIG. 9