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(54) Chair or armchair with adjustable headrest.

(57) The invention is a chair (1) of the type comprising: a seat (2) associated with a bearing structure (3) resting on the ground and in which it is possible to identify uprights (4, 5); a backrest (6) supported by the uprights (4, 5); a headrest (7) associated with the backrest (6). The headrest (7) is provided with insertion elements (8) slidingly housed in corresponding seats (9) made in the backrest (6), wherein the insertion elements (8) and the seats (9) interact through first coupling and adjusting means (10) provided in the insertion elements (8) and second coupling and adjusting means (11) made in the seats (9) and cooperating with the first coupling and adjusting means (10) to define different positions of the headrest (7) with respect to the backrest (6).

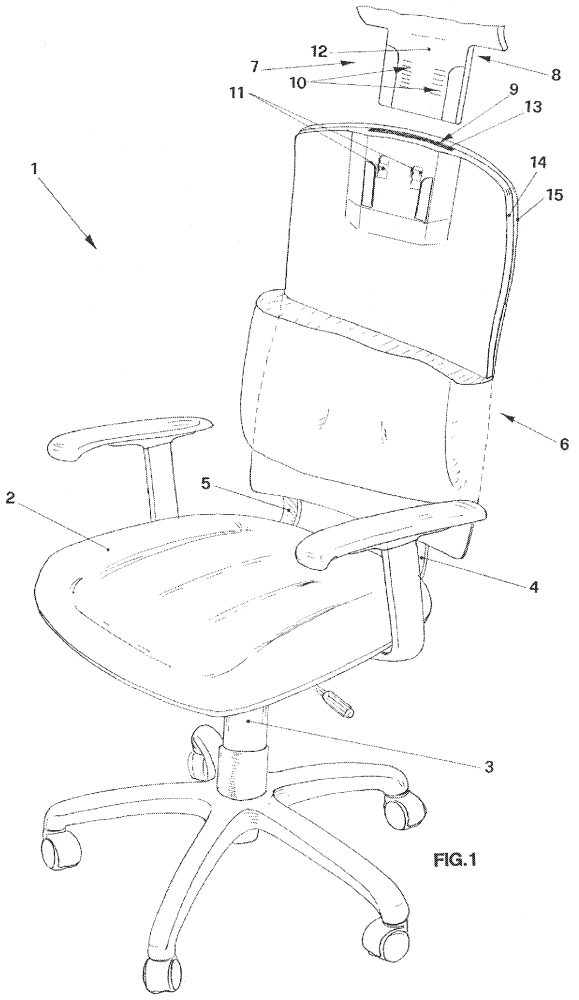

FIG.1

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Description

[0001] The invention concerns a chair or armchair with adjustable headrest.

[0002] It is known that chairs and armchairs are important elements in the furnishing of a room.

[0003] These, however, besides being aesthetically pleasant, must have particular ergonomic characteristics, in order to ensure that the person who uses them is comfortable.

[0004] For this purpose, the chairs and armchairs made according to the known art include elements, such as armrests and headrests, which increase the comfort of the user.

[0005] These elements, as well as other elements of the chair, like for example the backrest, comprise adjusting units that allow them to be set in the position that is most suited to the physical characteristics of the person who seats on the chair/armchair.

[0006] As regards headrests, for example, many known embodiments of the adjusting unit comprise a first element, substantially laminate and protruding from the headrest, and a second element, also laminate and belonging to the backrest, which are mutually pressure-fitted through screw means.

[0007] These screw means usually comprise a tightening knob for the user.

[0008] These known embodiments all present some recognised drawbacks.

[0009] In particular, a first recognised drawback is represented by the fact that the means for coupling and adjusting the headrest project from the body of the chair, and therefore are an unpleasant element in the overall appearance of the chair.

[0010] Furthermore, another recognised drawback is represented by the fact that these protrusions are generally positioned in points where they are uncomfortable to reach.

[0011] The aim of the present invention is to overcome all the drawbacks described.

[0012] In particular, a first aim of the invention is to produce a chair having coupling and adjusting means for regulating the position of the headrest with respect to the backrest that are integrated in the profile of the backrest, differently from the equivalent chairs carried out according to the known art.

[0013] It is a further aim of the present invention to produce a chair where the coupling and adjusting means are arranged in positions that are more comfortable for use compared to the equivalent chairs belonging to the known art.

[0014] The aims mentioned above have been achieved through the implementation of a chair that, according to the main claim, comprises:

- a seat associated with a bearing structure that rests on the ground and in which it is possible to identify at least one upright;
- a backrest supported by said upright;
- a headrest associated with said backrest,

and is characterized in that said headrest comprises one or more insertion elements slidingly housed in corresponding seats made in said backrest, wherein said insertion elements and said seats interact through first coupling and adjusting means present in said insertion elements and second coupling and adjusting means present in said seats and cooperating with said first coupling and adjusting means to define different positions of said headrest with respect to said backrest.

[0015] According to the preferred embodiment of the invention, the first coupling and adjusting means are constituted by a plurality of recesses present in the insertion elements of the headrest and the second coupling and adjusting means are constituted by protrusions that are housed in said recesses and that are located in the seats made in the backrest.

[0016] To advantage, since the coupling and adjusting means are completely housed in the backrest, the chair subject of the invention is not provided with knobs for the user or other projecting elements, thus achieving a more pleasant appearance than the equivalent chairs carried out according to the known art.

[0017] Still advantageously, the coupling and adjusting means carried out according to the invention simplify the vertical movement of the headrest and therefore make it easier to find the optimal position for the user.

[0018] The aims and advantages described above will be highlighted in greater detail in the descriptions of preferred embodiments of the invention that are supplied as indicative, non-limiting examples with reference to the enclosed drawings, wherein:

- Figure 1 is an exploded axonometric view of a partial cross section of the chair subject of the invention;
- Figures from 2 to 5 represent some details of the chair subject of the invention.

[0019] The chair that is the subject of the invention is represented in Figure 1, where it is indicated as a whole by **1** and where it is possible to see that it comprises:

- a seat **2** associated with a bearing structure **3** that rests on the ground and in which it is possible to identify two uprights **4, 5;**
- a backrest **6** supported by said uprights **4, 5;**
- a headrest **7** associated with the backrest **6.**

[0020] It is important to observe that the uprights, which in the preferred embodiment of the invention described herein are two, can be present in a number different from two and do not constitute a limitation for different embodiments of the chair subject of the invention.

[0021] According to the invention, the headrest **7** is provided with an insertion element **8** slidingly housed in a seat **9** made in the backrest **6** and interacting with it

through first coupling and adjusting means **10** provided in the insertion element **8** and second coupling and adjusting means **11** made in the seat **9** and cooperating with the first coupling and adjusting means **10** to define different positions of the headrest **7** with respect to the backrest **6.**

[0022] As regards the insertion element **8** that projects from the headrest **7,** in the preferred embodiment of the invention described herein and represented in Figure 1, it is constituted by a single laminate element **12** and the seat **9,** in which it is slidingly housed, is constituted by a pocket **13** formed within the backrest **6.**

[0023] Said pocket **13** is delimited by a pair of laminate frame units **14, 15,** facing each other, that form the backrest **6** and that are joined, as can be seen in Figure 2, with fastening means **16.**

[0024] The latter, in the preferred embodiment of the invention described herein, are constituted by a plurality of through holes **17** present in a first frame unit **14** and such as to allow the shaped protrusions **18** projecting from the second frame unit **15** of the pair of frame units to be fixed into them.

[0025] The second frame unit **15** has the front surface **19** that is substantially continuous and faces the corresponding surface **20** of the first frame unit **14** that presents a shaped portion **21** which, when joined to said second frame unit **15,** defines the pocket **13.**

[0026] In a different embodiment of the invention, not represented herein, the pocket may be formed by a pair of shaped portions facing each other, each made in one of the frame units that form the backrest.

[0027] In a further different embodiment of the invention, the backrest may be constituted by a single frame unit where the pocket is formed.

[0028] In other different embodiments of the invention, the insertion elements may be more than one and have a substantially tubular shape, so that the corresponding seats may be dead holes made in the profile of the backrest in a number and position corresponding to said insertion elements.

[0029] As regards the pocket **13,** as shown in Figure 3, it comprises a pair of rails **22** in which the lateral edges **23** of the insertion element **8** of the backrest **7** are fitted.

[0030] In the preferred embodiment of the invention, each of said rails **22** is constituted by a tang **24** projecting towards the inside of the pocket **13** and arranged parallel to the surface defined by the backrest **6.**

[0031] The chair **1** carried out according to the invention comprises also means **25** suited to stop the sliding movement of the headrest 7, comprising in one direction the end **26** of the rails **22,** and in the other direction a pair of stop teeth **27** belonging to the laminate element **12** and slidingly fitted in a corresponding slot **28** made in the backrest **6,** in front of and parallel to each tang **24.**

[0032] As regards the stop tooth **27,** it has a concave part suited to be coupled with the upper edge **29** of the corresponding slot **28** when the headrest **7** is completely extracted from the backrest **6.**

[0033] As to the first coupling and adjusting means **10,** they comprise to rows **40, 41** of recesses **42,** both made in the insertion element **8** of the headrest **7** and arranged along two longitudinal axes **U, T** substantially parallel to each other and to the sliding direction **V** of the headrest **7** in the pocket **13** in the backrest **6.**

[0034] As to the second coupling and adjusting means **11,** they comprise, with reference to Figure 4, two protrusions **30** belonging to corresponding laminate sections **31.**

[0035] These laminate sections are obtained in the backrest **6,** where they are created by making two parallel slots **32** defining two longitudinal axes **X, Y** substantially parallel to the longitudinal axis Z of the backrest **6.**

[0036] Said slots **32** are suited to make the laminate sections **31**, and therefore also the protrusions **30** present on them, elastically yielding.

[0037] Each protrusion **30,** as can be seen in the detail of Figure 5, is suited to be housed in one of the recesses **42** present in the insertion element **8** of the headrest **7** to define a constraint on the sliding movement of the headrest **7** in the backrest **6.**

[0038] According to different embodiments of the invention, the protrusions can be made in each one of the insertion elements of the headrest and will be suited to house the second coupling and adjusting means that comprise at least one plurality of recesses positioned in one or more laminate sections obtained in the backrest and defined between two slots defining two longitudinal axes substantially parallel to the longitudinal axis defined by the backrest.

[0039] Also in this case the slots will be suited to make the corresponding laminate sections and recesses elastically yielding.

[0040] In practice, to adjust the height of the headrest **7** correctly, the user exerts on the headrest **7** a traction or compression force, lifting or lowering it.

[0041] Thanks to the yielding nature of the laminate sections **31** on which the protrusions **30** are obtained, said force makes the protrusions **30** come out of the recesses **42** present on the laminate element **12** of the headrest **7,** thus practically eliminating the constraint posed by them.

[0042] The headrest **7** thus slides along its longitudinal axis **V** in the direction desired by the user.

[0043] It should be observed that during the vertical movement of the headrest **7,** the protrusions **30** continue to move in and out of the recesses **42** with a pawl movement due to the position of the recesses **42,** to the elasticity of the laminate sections **31** on which the protrusions **30** are obtained, and to the continuity of the force exerted by the user.

[0044] As soon as the headrest **7** reaches the position desired by the user, the latter stops lifting or lowering it and allows the protrusions **30** to stop inside the corresponding recesses **42** just reached, thus reestablishing the fixing constraint that prevents further movements of the headrest **7.**

[0045] During the vertical movement, the headrest **7** may reach its end-of-stroke positions.

[0046] If the headrest **7** is lowered with respect to the backrest **6,** the end of stroke is represented by the end **26** of the rail **22,** while if the headrest **7** is lifted with respect to the backrest **6,** the end of stroke is represented by the interaction between each stop tooth **27** and the upper edge **29** of the corresponding slot **28** in which it slides.

[0047] In particular, when the tooth **27** comes in contact with the upper edge **29** of the slot **28,** the concave part of the tooth **27** counteracts the edge **29,** thus creating a constraint that cannot be overcome.

[0048] According to the above, the chair carried out according to the invention achieves the set aims.

[0049] In particular, the chair subject of the invention achieves the aim to comprise coupling and adjusting means for regulating the position of the headrest that are completely integrated in the profile of the backrest, since the first and second coupling and adjusting means are fully defined inside the seat formed in the profile of the backrest itself.

[0050] The chair subject of the invention also achieves the aim to make the use of the coupling and adjusting means more comfortable compared to the chairs belonging to the known art, since the adjustment is carried out exclusively by exerting a force on the headrest itself.

[0051] Upon implementation, further changes may be made to the chair that is the subject of the invention which, although not represented in the drawings and not described herein, must all be considered protected by the present patent, provided that they fall within the scope of the following claims.

Claims

1. Chair (1) of the type comprising:

- a seat (2) associated with a bearing structure (3) that rests on the ground and in which it is possible to identify at least one upright (4, 5);
- a backrest (6) supported by said upright (4, 5);
- a headrest (7) associated with said backrest (6),

characterized in that said headrest (7) comprises one or more insertion elements (8) slidingly housed in corresponding seats (9) made in said backrest (6), wherein said insertion elements (8) and said seats (9) interact through first coupling and adjusting means (10) present in said insertion elements (8) and second coupling and adjusting means (11) present in said seats (9) and cooperating with said first coupling and adjusting means (10) to define different positions of said headrest (7) with respect to said backrest (6).

2. Chair (1) according to claim 1), **characterized in that** said first coupling and adjusting means (10) comprise a plurality of recesses (42) made in said insertion elements (8) of said headrest (7) and suited to house said second coupling and adjusting means (11) that comprise one or more protrusions (30) belonging to corresponding laminate sections (31) obtained in said backrest (6) and defined between two slots (32) defining two longitudinal axes (X, Y) substantially parallel to the longitudinal axis (Z) defined by said backrest (6), said slots (32) being suited to make said laminate section (31) and said protrusion (30) elastically yielding.

3. Chair according to claim 1), **characterized in that** said first coupling means comprise at least one protrusion made in each one of said insertion elements of said headrest and suited to be housed in said second coupling and adjusting means that comprise at least one plurality of recesses located in one or more laminate sections obtained in said backrest and defined between two slots defining two longitudinal axes substantially parallel to the longitudinal axis defined by said backrest, said slots being suited to make said laminate section and said recess elastically yielding.

4. Chair (1) according to claim 1), **characterized in that** said insertion elements (8) comprise a single laminate element (12) suited to be slidingly housed in a seat (9) constituted by a pocket (13) formed within said backrest (6).

5. Chair (1) according to claim 4), **characterized in that** said pocket (13) is delimited by a pair of laminate frame units (14, 15) facing each other to define said backrest (6) and mutually joined through fastening means (16).

6. Chair (1) according to claim 5), **characterized in that** said fastening means (13) comprise a plurality of through holes (17) present in a first frame unit (14) of said pair of frame units (14, 15) and suited to allow shaped protrusions (18) projecting from the second frame unit (15) of said pair of frame units (14, 15) to be fitted into them.

7. Chair (1) according to claim 5), **characterized in that** at least one of said laminate frame units (14, 15) features a shaped portion (21) forming said pocket (13).

8. Chair (1) according to claim 7), **characterized in that** said pocket (13) is formed by said shaped portion (21) made in one of said frame units (14, 15) only.

9. Chair according to claim 7), **characterized in that** said frame units are provided with a pair of shaped portions facing each other, each one of which is

made in one of said frame units to form said pocket.

10. Chair (1) according to claim 4), **characterized in that** in said pocket (13) there is at least one rail (22) in which the lateral edge (23) of said laminate element (12) is fitted.

11. Chair (1) according to claim 10), **characterized in that** each one of said rails (22) is constituted by at least one tang (24) projecting towards the inside of said pocket (13) and arranged parallel to the surface defined by said backrest (6).

12. Chair (1) according to claim 11), **characterized in that** it is provided with means (25) suited to stop the sliding movement of said headrest (7), comprising at least one stop tooth (27) belonging to said laminate element (12) and slidingly fitted in a corresponding slot (28) made in said backrest (6), in front of and parallel to said tang (24).

13. Chair (1) according to claim 12), **characterized in that** said tooth (27) has its concave part suited to be coupled with the upper edge (29) of said slot (28) when said headrest (7) is completely extracted.

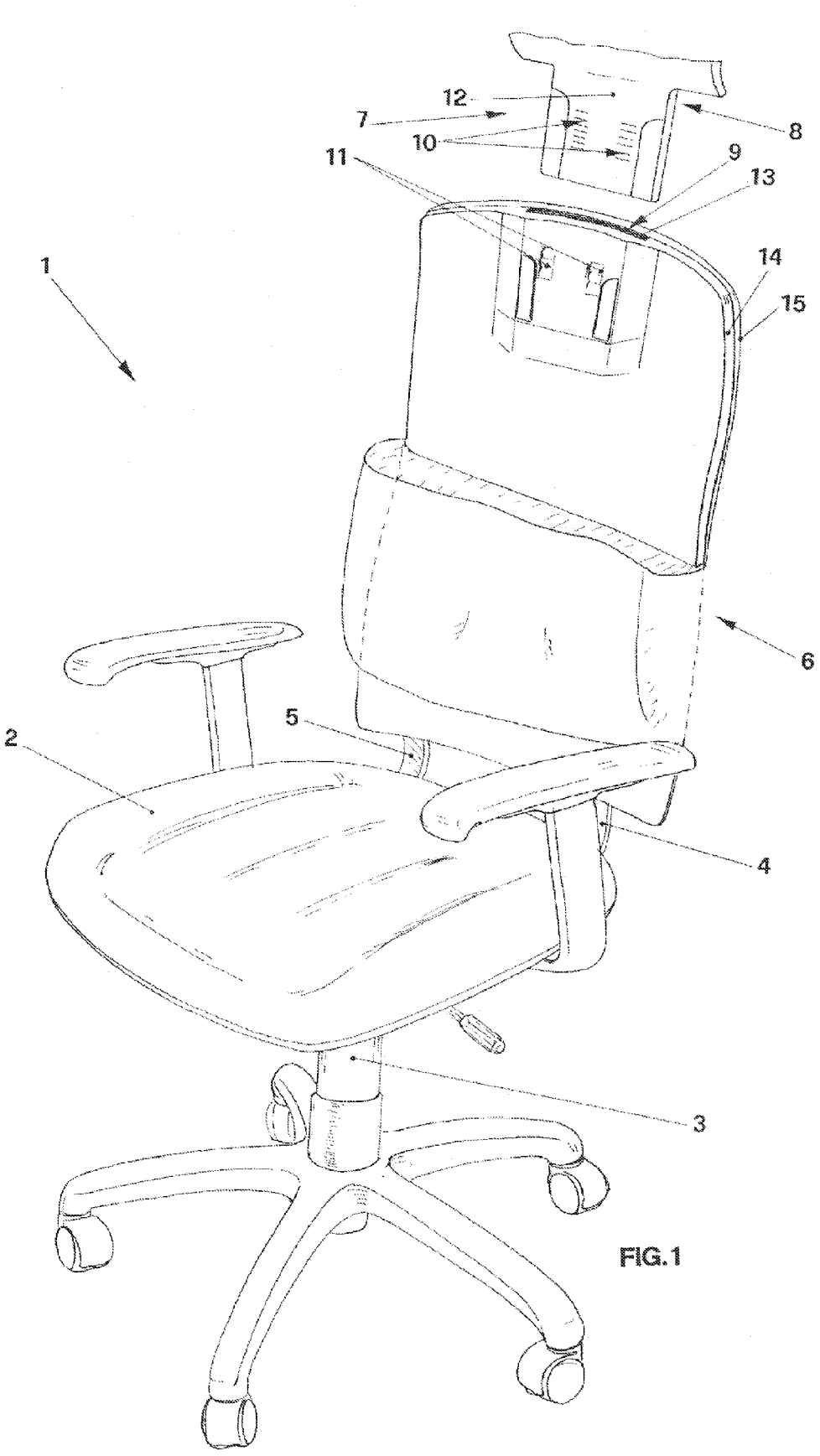

FIG.1

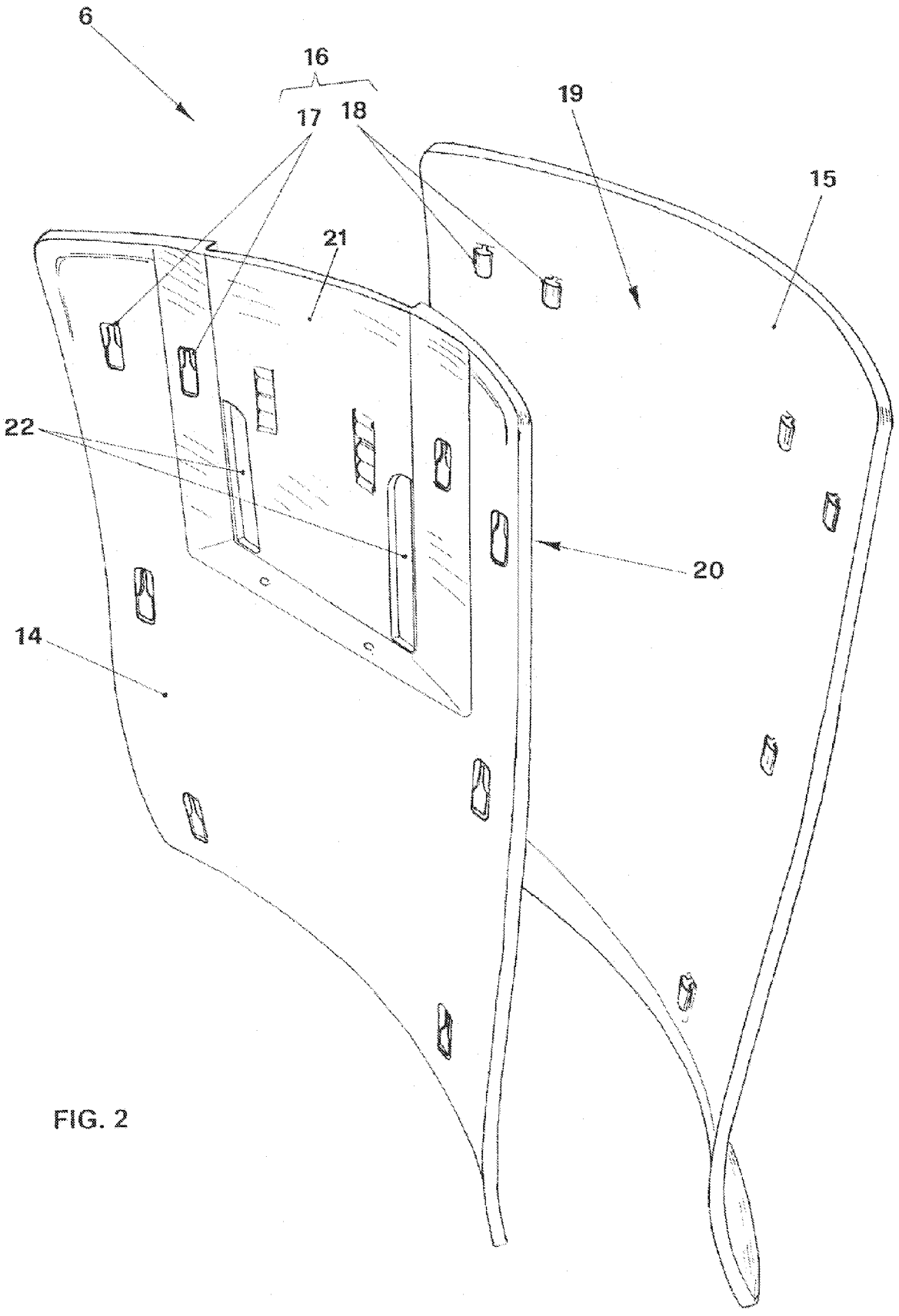

FIG. 2

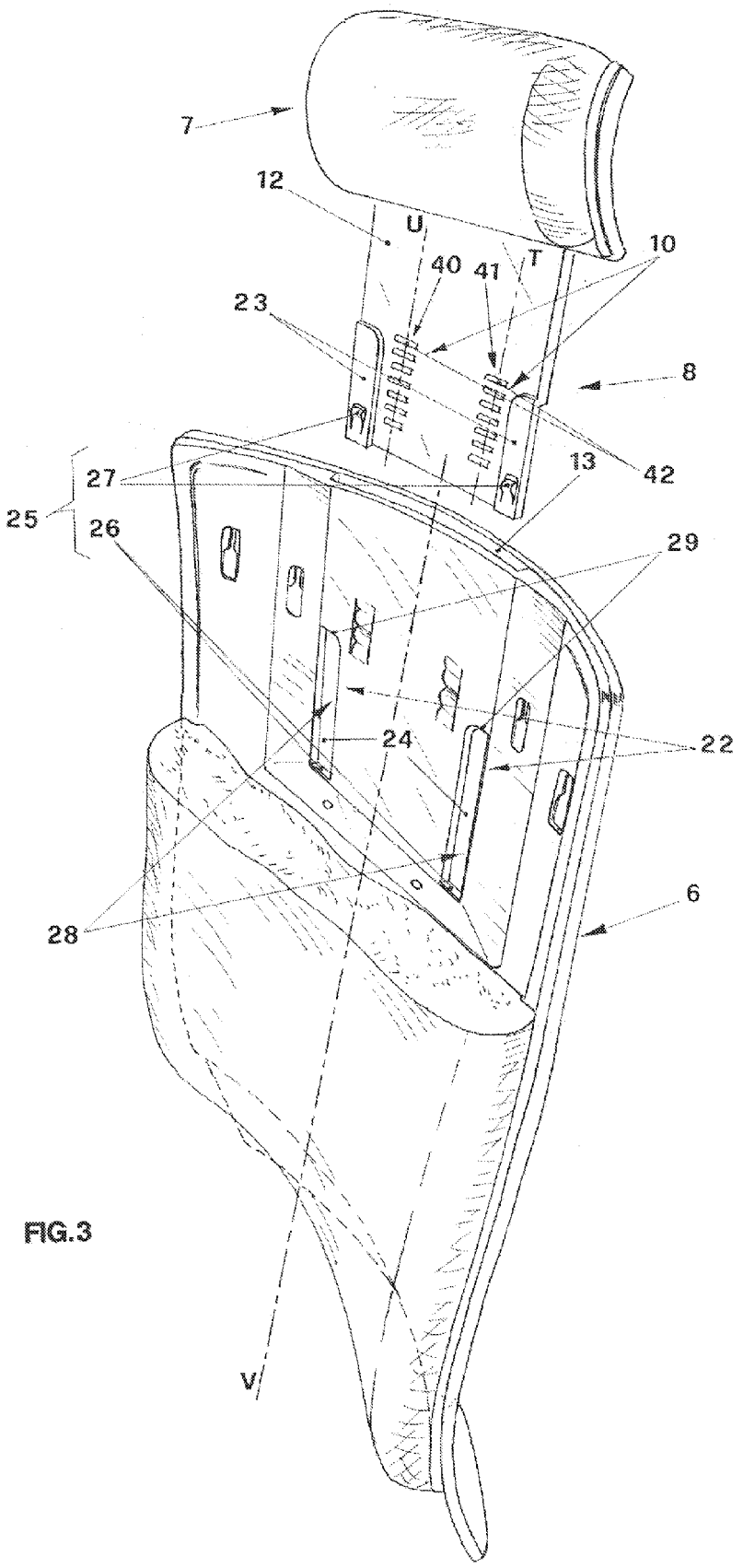

FIG.3

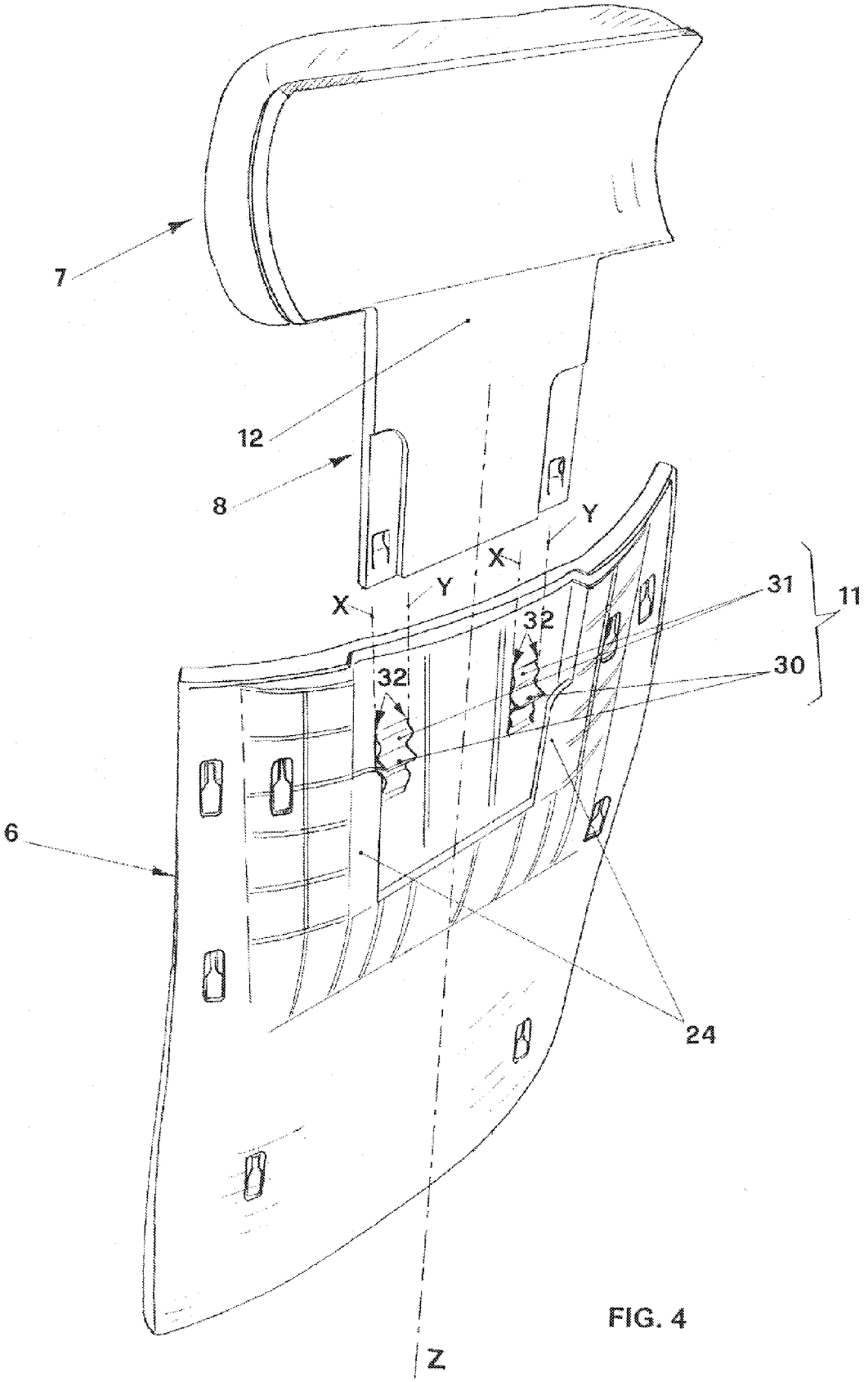

FIG. 4

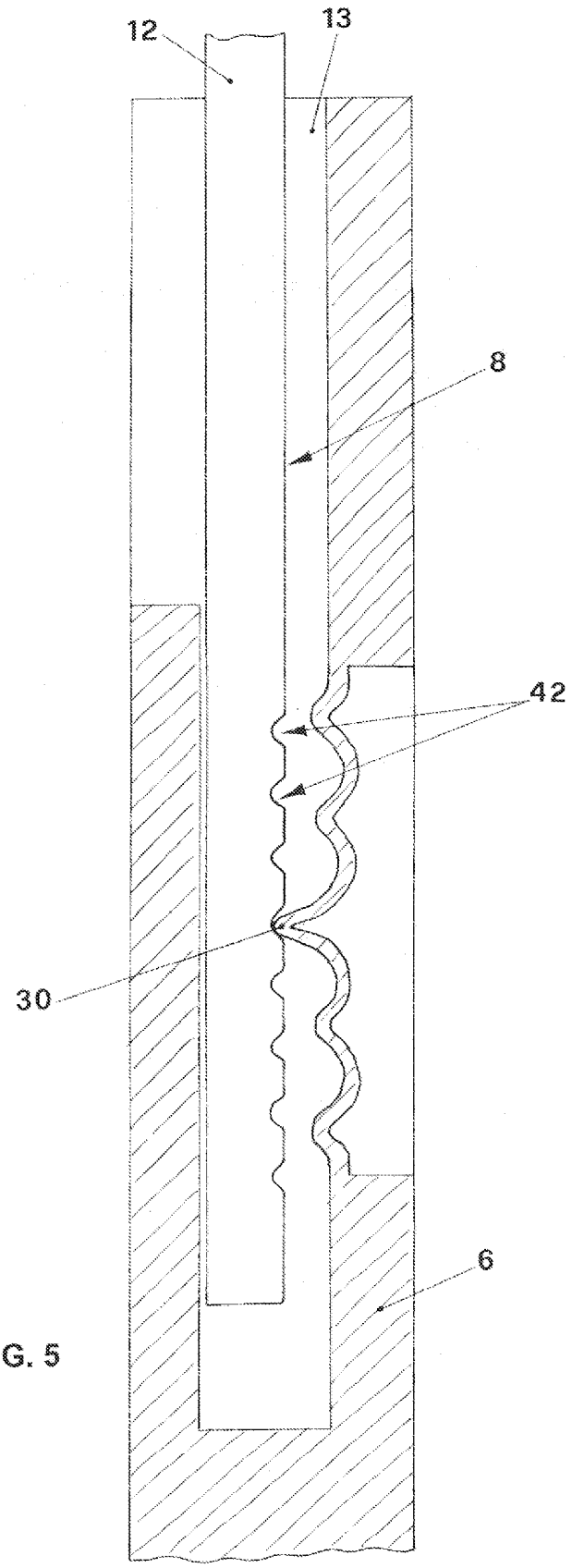

FIG. 5

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EUROPEAN SEARCH REPORT

Application Number
EP 06 11 3324

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	23 August 2006	Kus, S

CATEGORY OF CITED DOCUMENTS

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