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(54) **Multifunction chair for stadiums and the like and process for producing said chair**

(57) There is provided a multifunction chair (1) for stadiums and the like comprising a seat (2) having an upper sessile surface (2a) and a lower profile (2b) defining a bearing plane (1a) of the chair (1), suitable to allow the chair (1) to be supported on a base, and comprising

at least two casings (4) positioned on the opposite surface to the upper sessile surface (2a) and substantially on the front vertices (2c) of the seat (2); the casings also define two housings (4a) for two couplings (51) and have a lower surface substantially coincident with the bearing plane (1a).

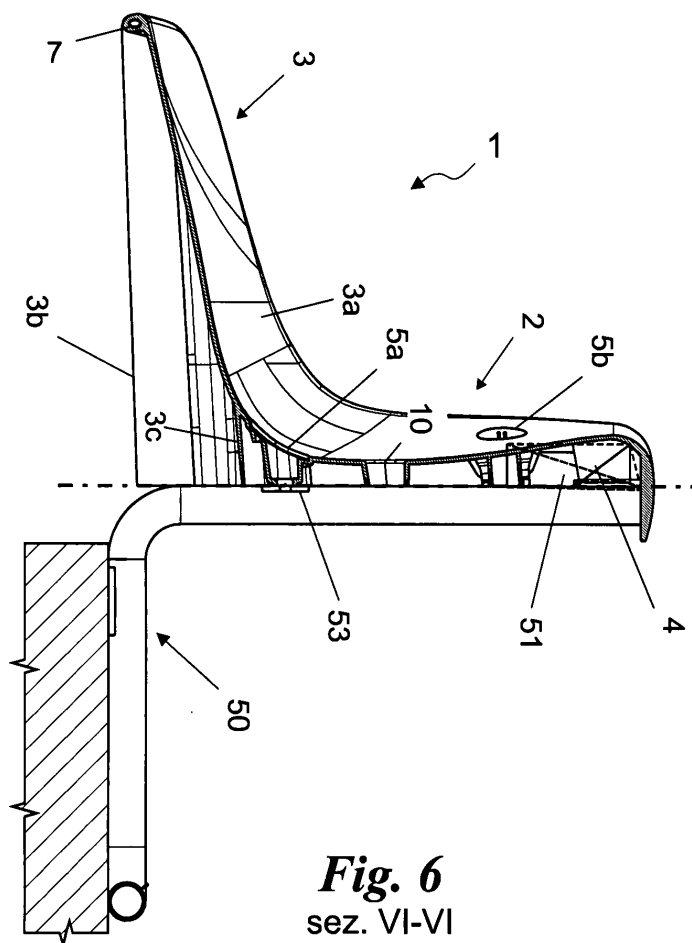


Fig. 6
sez. VI-VI

Description

[0001] The present invention relates to a multifunction chair for stadiums and the like, such as theatres, event spaces, gymnasiums and the like, and to a process for producing said chair of the type specified in the preamble of the independent claims.

[0002] There are currently known different types of chairs positioned on stadium steps and in similar positions.

[0003] They are frequently disposed substantially resting on and constrained to the tread of the steps, i.e. to the surfaces that extend along the horizontal plane of these steps.

[0004] Differently, the chairs can be associated with a supporting structure that allows them to be constrained to the riser of the steps, i.e. to the surface of the steps that extends along the vertical plane.

[0005] These latter chairs present different advantages, in particular they allow better cleaning of the steps and are more comfortable and easy to use.

[0006] The first type of chair is instead more economical and easy to install.

[0007] The two types of chair present different structures and different systems to constrain them to the steps and to the supporting structure that sustains them.

[0008] The aforesaid known art has some important drawbacks.

[0009] In fact, as described, it is necessary to provide a different type of chair according to the type thereof and in particular according to whether it must be constrained to the tread or to the riser of the step.

[0010] Moreover, it is necessary to provide a different chair based on the space available on the steps.

[0011] These needs translate into a considerable increase in costs, as the manufacturer must provide different moulds and different connection systems according to the type of chair to be fitted and to the depth of the steps.

[0012] In fact, chairs associated with a supporting structure present a form integrable with this structure, while chairs constrained directly to the steps are frequently constrained simply by means of simple screws and bolts.

[0013] Moreover, chairs associated with a supporting structure must have a stronger structure comprising various reinforcements. Consequently, these types of chairs are often very costly.

[0014] In this situation the technical aim of the present invention is to create a multifunction chair for stadiums and the like that is capable of substantially overcoming the aforesaid drawbacks.

[0015] Within said technical aim an important object of the invention is to produce a multifunction chair for stadiums and the like suitable to be disposed either directly on the steps or in combination with a supporting structure.

[0016] Another important object of the invention is to produce a multifunction chair for stadiums and the like

that can be associated with a supporting structure and that presents a simple and safe coupling system, suitable to strengthen this chair.

[0017] A further object of the invention is to obtain a multifunction chair for stadiums and the like that can be positioned on steps having different depths.

[0018] Last but not least object of the invention is to create a process for producing a chair for stadiums and the like that allows a chair that can be disposed on different types of steps to be obtained economically.

[0019] The technical aim and objects specified are achieved by a multifunction chair for stadiums and the like and by a process for producing said chair according to the appended independent claims.

[0020] Preferred embodiments are highlighted in the dependent claims.

[0021] Further characteristics and advantages of the invention are better specified below by the detailed description of a preferred embodiment of the invention, with reference to the accompanying drawings, wherein:

Fig. 1 shows a three-dimensional top view of the chair according to the invention;

Fig. 2 shows a three-dimensional bottom view of the chair according to the invention;

Fig. 3 shows a three-dimensional view of a supporting structure for the chair according to the invention;

Fig. 4 shows a top view of the chair according to the invention, associated with a supporting structure;

Fig. 5 shows a bottom view of the chair according to the invention, associated with a supporting structure;

Fig. 6 shows the section VI-VI indicated in Fig. 4;

Fig. 7 shows a top view of a first embodiment of the chair according to the invention;

Fig. 8 shows a side view of a first embodiment of the chair according to the invention;

Fig. 9 shows a top view of a second embodiment of the chair according to the invention;

Fig. 10 shows the section X-X indicated in Fig. 9; and

Fig. 11 shows the section XI-XI indicated in Fig. 9.

[0022] With reference to the aforesaid Figures, the multifunction chair according to the invention is indicated as a whole with the number **1**.

[0023] It is suitable to be positioned in stadiums, indoor sports arenas, gymnasiums, concert venues, theatres, open-air spaces such as racetracks, parks and the like and other locations.

[0024] The chair **1** is suitable to be positioned directly on steps or the like of stadiums or other spaces, and in particular on the tread of said steps, either to be utilized in association with a supporting structure **50**, or also to be positioned on the riser of steps or the like.

[0025] The multifunction chair **1** is preferable made of polymer material and comprises a seat **2** having a sessile upper surface **2a**, suitable to define a seat surface for a user, and also preferably a back **3** appropriately pro-

duced in one piece with the seat 2.

[0026] The back 3 can be composed of a single surface 3a suitable to allow comfortable support for the back of a user, as shown in Figs. 9 - 11, or of two surfaces 3a and 3b, as shown in Figs. 2, 7 - 8.

[0027] In the first case there is produced a rear lip 3c, shown in Fig. 11, suitable to reinforce the structure of the chair 1.

[0028] The seat 2, together with the back 3, also has a lower profile 2b defining a bearing plane 1a of the chair 1, suitable to allow the chair 1 to be supported on a substantially flat base surface.

[0029] More in detail, the lower profile 2b, is defined by two side profiles of the seat 2 and by the rear profile of the seat 2 which can be considered part of the seat 2 or of the back 3.

[0030] This rear profile is realized by the rear surface 3b composing the back 3, in the case in which the back 3 is composed of a single surface 3a, or by the rear lip 3c, in the case in which the back 3 is composed of two surfaces 3a and 3b.

[0031] Differently, the front part of the seat 2 preferably comprises a front lip 6 that extends under the bearing plane 1a. This front lip 6 is suitable to constrain the front portion of the chair 1 to a step or the like, as shown in Fig. 8.

[0032] The seat 2 also comprises at least two casings 4, or tubular box-like bodies, positioned on the opposite surface to the sessile upper surface 2a, i.e. positioned on the lower part of the seat 2, and positioned substantially at the front vertices 2c of this seat 2, as shown in Figs. 2 and 6.

[0033] The casings 4 each define a housing 4a, preferably quadrilateral, for a coupling 51 of a supporting structure 50.

[0034] Moreover, these housings 4a have a lower surface substantially coincident with the bearing plane 1a, as shown in Figs. 10 and 11.

[0035] The housings 4a are thus suitable either to allow the chair 1 to be constrained in a lateral direction to the supporting structure 50 or to a different base, or to allow the chair 1 to be supported vertically along the bearing plane 1a.

[0036] The seat 2 also preferably comprises at least a housing 5 suitable to house means for releasable connection of the chair 1 to a base, such as in particular a step or a supporting structure 50.

[0037] The releasable connection means are appropriately realized by screws or the like, the housings 5 are thus appropriately realized by concavities protruding toward the base of the chair 1.

[0038] The lower surface of these housings 5 is also appropriately substantially coincident with the bearing plane 1a of the chair 1, as shown in particular in Figs. 10 and 11.

[0039] Moreover, the housings 5 can be optionally covered with specific caps, which can bear the company name or the like. These caps make the sessile surface

2a more homogeneous.

[0040] In detail, there is provided a principal housing 5a, positioned centrally in proximity of the rear side of the seat 2, and proximal to the back 3. This principal housing 5a preferably also has a shape elongated in lateral direction suitable to allow several constraining means to be constrained or allow fine adjustment of the position of these constraining means.

[0041] There can also be provided two further auxiliary housings 5b, positioned in proximity of the front vertices 2c of the seat 2.

[0042] The seat 2 also preferably comprises supporting elements 9, realized by elements protruding from the lower surface of the seat 2 and having a lower surface substantially coincident with the bearing plane 1a, as shown in Fig. 2.

[0043] Moreover, the seat 2 preferably comprises, in particular if the chair is intended for stadiums or open-air facilities, a hole 10 for draining water disposed in a central position and/or on the portion with minimum distance from the base of the upper sessile surface 2a.

[0044] The seat 2 and the back 3 also comprise a hollow tubular body 7 to reinforce the chair 1, appropriately produced by means of a coinjection process to inject gas into a shell made of polymer material.

[0045] The chair 1 can also comprise at least an armrest 8, preferably made of metal, fastened to the lateral edges of the back 3 and of the seat 2, as shown in Figs. 7 and 8.

[0046] The armrest 8 is preferably fastened at or in proximity of the hollow tubular body 7, and can also be fastened to two chairs 1 at the same time.

[0047] The use of a chair 1 according to the invention, the structure of which is described above, is as follows.

[0048] The chair 1 can be positioned directly on the tread of a step or the like.

[0049] In this case it preferably comprises both the principal housing 5a and the auxiliary housings 5b.

[0050] The chair is then placed so that the front lip 6 is resting on the riser of this step, as shown in Fig. 8.

[0051] It is also constrained preferably by means of three screws positioned in the principal 5a and auxiliary 5b housings.

[0052] This chair 1 is then placed along the bearing plane 1a on the tread of the steps, and in particular rests thereon with the lower profile 2b, the housings 5, the casings 4 and the supporting elements 9.

[0053] Differently, the chair 1 can be associated with a supporting structure 50, shown in Fig. 3.

[0054] In particular, the supporting structure 50 is realized by a tubular section 52 appropriately made of metal.

[0055] Constrained to the tubular section 52 there is a supporting crossbar 53, suitable to support the chair 1 and having an upper surface that realizes, together with the upper surface of this tubular section 52, the supporting base along the bearing plane 1a of the chair 1. For the purpose of constraining the chair 1 to the structure

50, the supporting crossbar 53 comprises a housing 53a for specific releasable constraining means, such as a bolt or a screw.

[0056] The supporting structure 50 also comprises a constraining crossbar 54, suitable to allow the supporting structure 50 to be constrained to a vertical wall, also provided with specific housings 54a for releasable constraining means such as screws and the like. These housings 54a can also be disposed along the same tubular section 52.

[0057] Finally, the supporting structure 50 comprises the two couplings 51 for the housings 4a of the chair 1.

[0058] In the case in which the chair 1 is associated with the supporting structure 50, it preferably comprises only one housing 5a for a screw, and in particular the principal housing 5a, associable with the housing 53a of the supporting crossbar 53.

[0059] The chair 1 is in fact also constrainable to the couplings 51, in particular these are positioned inside the housings 4a produced in the casings 4.

[0060] The chair 1 is therefore, also in this case, supported along the bearing plane 1a. In particular, it is supported along part of the lower profile 2b and the central housing 5a by the supporting crossbar 53, and along the casings 4 by the tubular section 52, as shown in Figs. 2 and 6.

[0061] After the chair 1 has been constrained to the base, the housings 5 can be covered with specific caps also made of polymer material and which cannot be removed without specific tools, and moreover the armrests 8 suitable to connect various chairs to one another can also be assembled.

[0062] The invention comprises a new process for producing a multifunction chair 1 for stadiums and the like, as described above.

[0063] This process provides for production of this chair 1 by injecting polymer material into a mould.

[0064] The mould is therefore structured according to the previously described characteristics of the chair 1.

[0065] Moreover, to allow rapid and economical variation of some details of the mould, it can comprise releasable portions that can be inserted in or removed from this mould according to the applicative requirements of the chair.

[0066] These removable portions are in particular realized by some housings 5, and in particular by the auxiliary housings 5b, and by the rear surface 3b of the back 3, so that the back can be easily produced by one or by two surfaces and comprise, in the first case, the rear lip 3c.

[0067] The invention achieves important advantages.

[0068] In fact, the chair 1 can be positioned without distinction either on the tread or on the riser of the steps, in the second case in combination with the supporting structure 50.

[0069] Said advantage is due in particular to the shape of the chair 1 and to the fact that it rests in both cases on a single bearing plane 1a.

[0070] A further advantage is realized by the particular structure of the casings 4 which are suitable either to support the chair 1 along the bearing plane 1a or to allow rapid and safe connection of the chair 1 to the supporting structure 50.

[0071] Yet another advantage is given by the fact that the chair can be rapidly structured according to different configurations, and in particular it can comprise the back 3 realized by one or two planes, so as to have different dimensions according to the depth of the steps on which this chair is positioned.

Claims

1. Multifunction chair (1) for stadiums and the like comprising a seat (2) having an upper sessile surface (2a), and a lower profile (2b) defining a bearing plane (1a) of said chair (1), suitable to allow said chair (1) to be supported on a base, and **characterized in that** said seat (2) comprises at least two casings (4) positioned on the opposite surface to said upper sessile surface (2a) and substantially on the front vertices (2c) of said seat (2), said casings defining two housings (4a) for two couplings (51) and having a lower surface substantially coincident with said bearing plane (1a).
2. Chair according to claim 1, wherein said seat (2) comprises at least a housing (5) for means for releasable connection of said chair (1) to said base, said housing (5) being realized by a concavity having a lower surface substantially coincident with said bearing plane (1a).
3. Chair according to claim 2, comprising a housing (5) realized by a principal housing (5a) positioned centrally and in proximity of the rear side of said seat.
4. Chair according to claim 3, comprising two further housings (5) realized by two auxiliary housings (5b) positioned in proximity of the front vertices (2c) of said seat (2).
5. Chair according to one or more of the preceding claims, comprising a back (3) produced in one piece with said seat (2).
6. Chair according to claim 5, wherein said back (3) is realized by a single surface (3a).
7. Chair according to claim 5, wherein said back (3) is realized by a double surface (3a, 3b).
8. Chair according to claim 5, wherein the side edges of said back (3) and of said seat (2) include a hollow tubular reinforcing body (7).

9. Chair according to one or more of the preceding claims, wherein the front of said seat (2) comprises a front lip (6) extending under said bearing plane (1a). 5
10. Chair according to one or more of the preceding claims, comprising at least an armrest (8), fastened to the lateral edges of said back (3) and of said seat (2). 10
11. Supporting structure (50) associable with a chair (1) according to one or more of the preceding claims, suitable to allow support of said chair (1) comprising a tubular section (52) and a supporting crossbar (53), defining a bearing plane for said chair and **characterized in that** it comprises two couplings (51) positioned on top of said bearing plane and suitable to constrain the chair in a lateral direction. 15
12. Process for producing a multifunction chair for stadiums and the like wherein said chair is obtained by injecting a polymer material into a mould, and **characterized in that** said mould comprises releasable portions that can be inserted in and removed from said mould. 20
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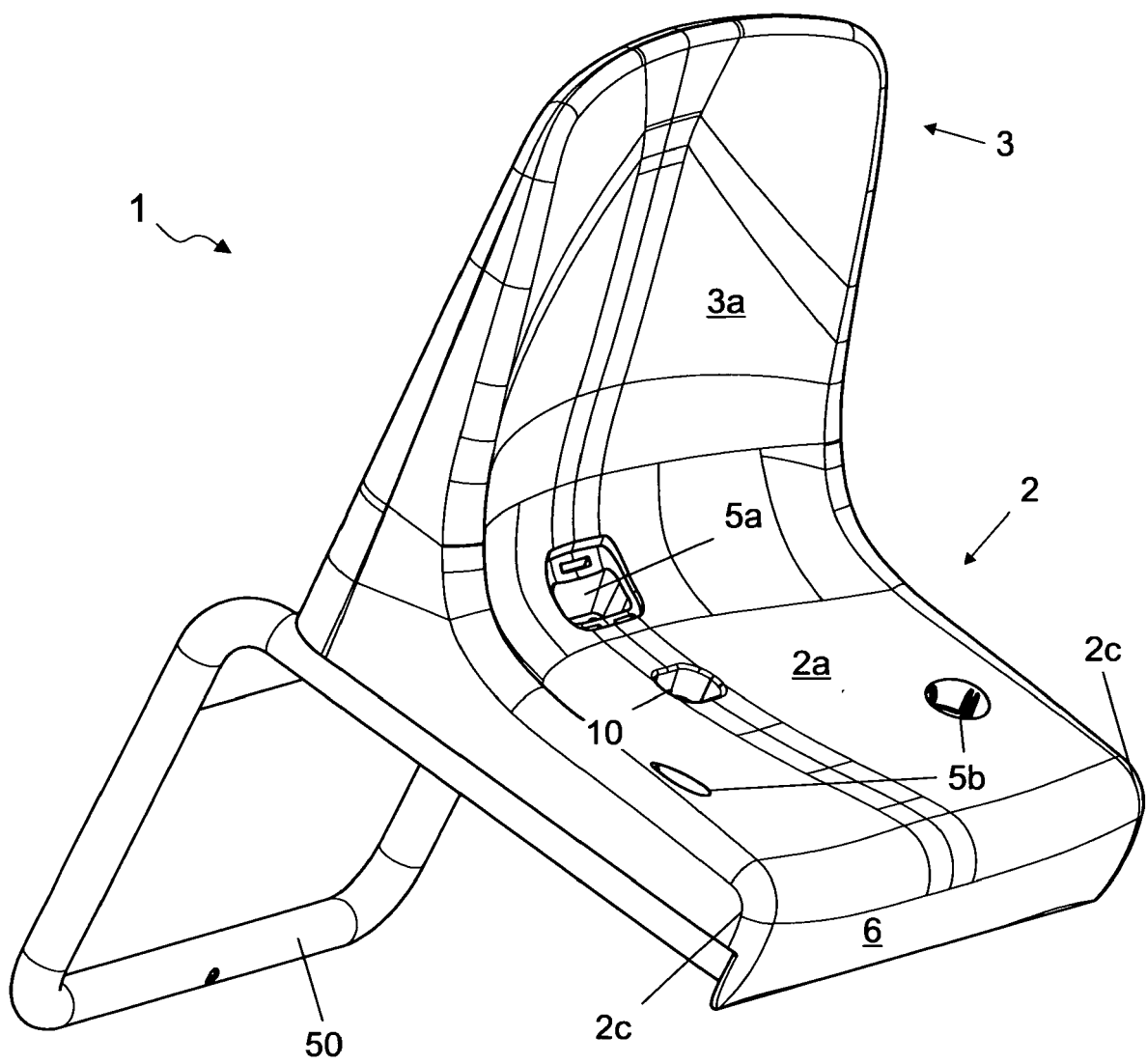


Fig. 1

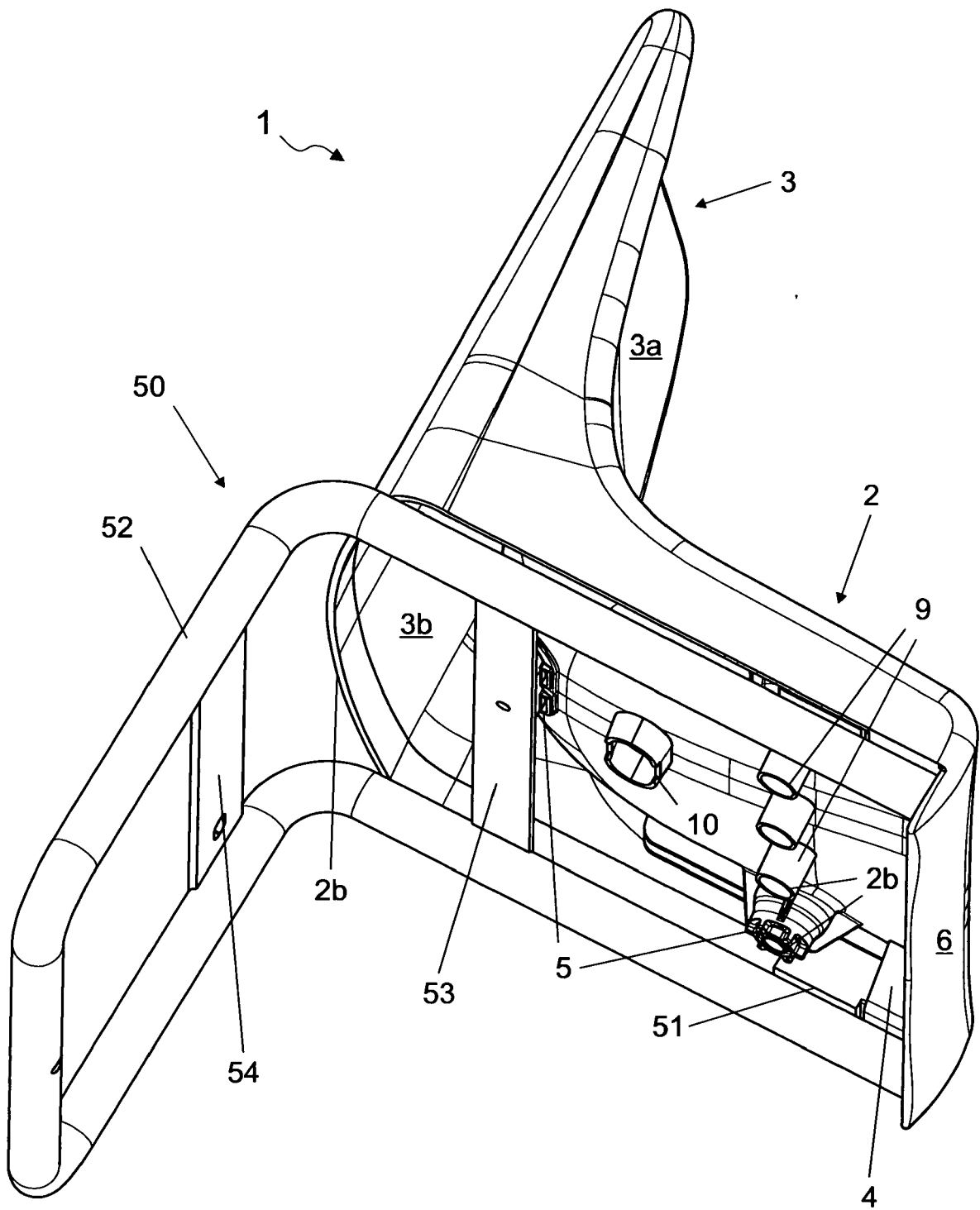


Fig. 2

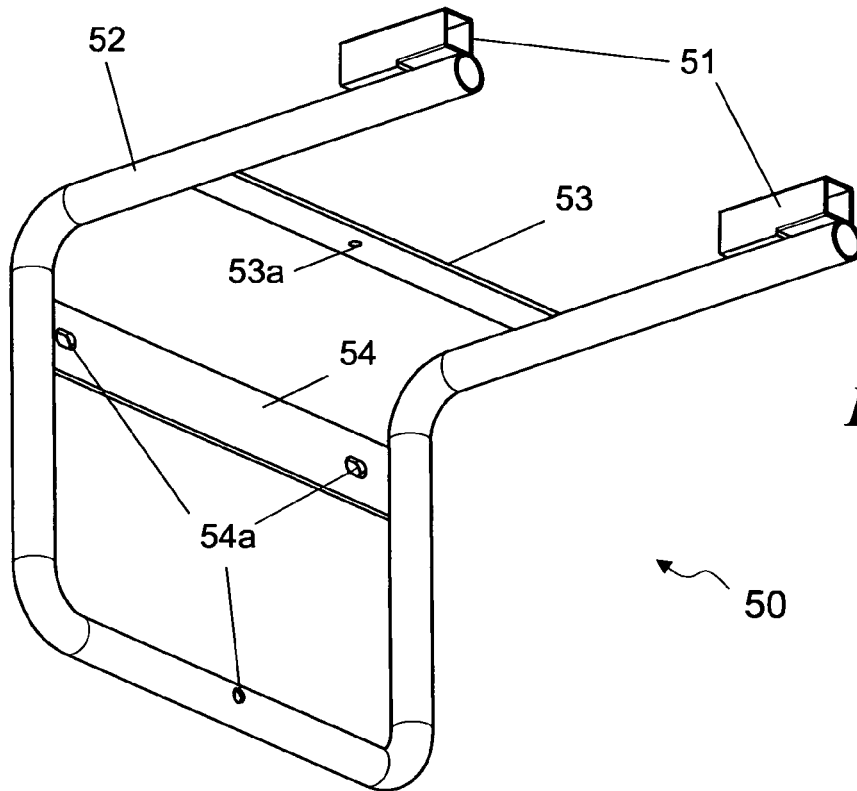


Fig. 3

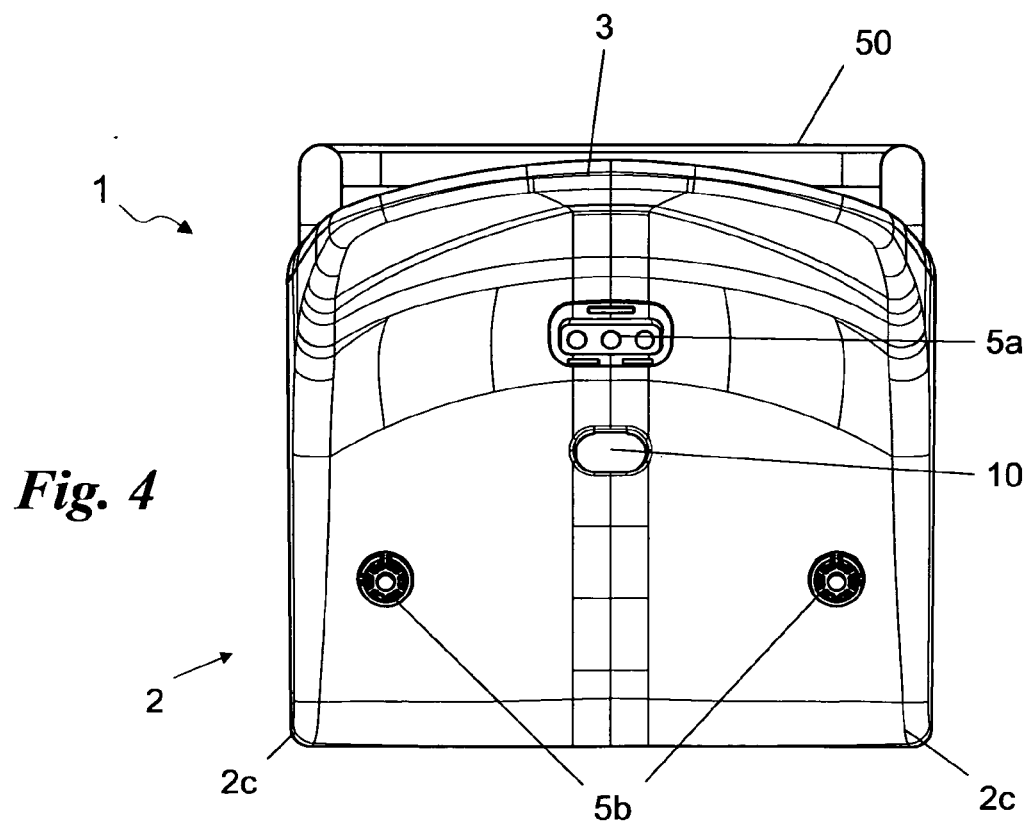


Fig. 4

Fig. 5

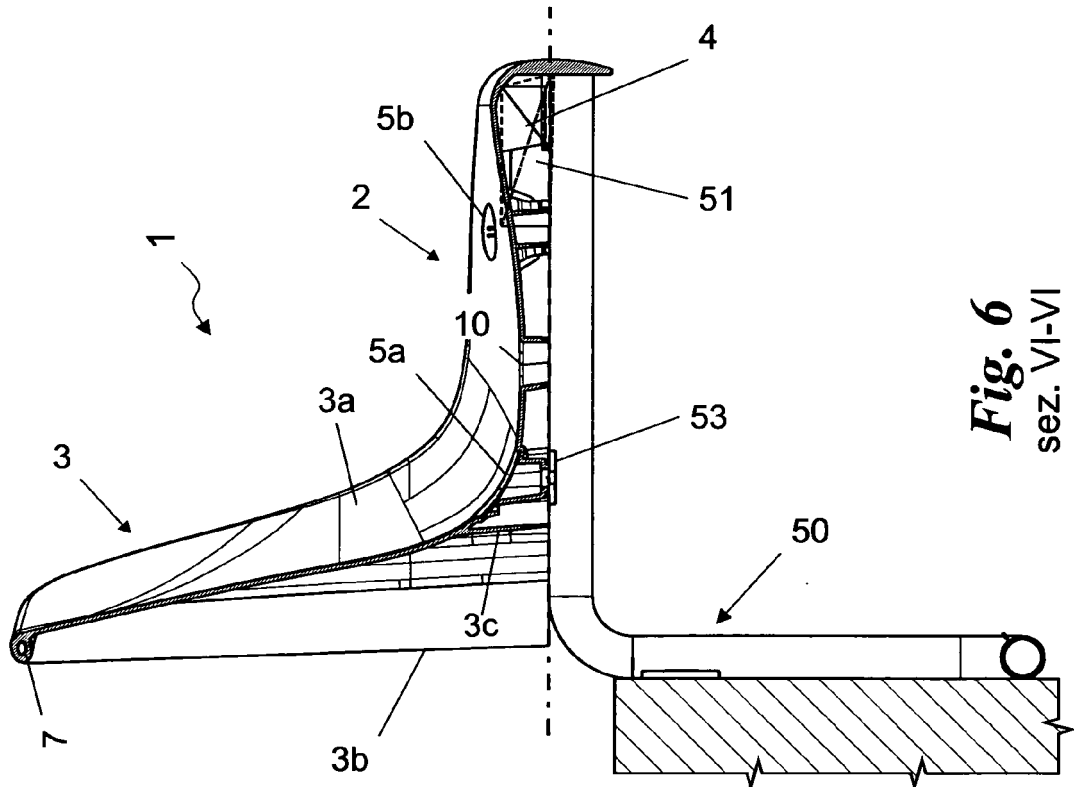
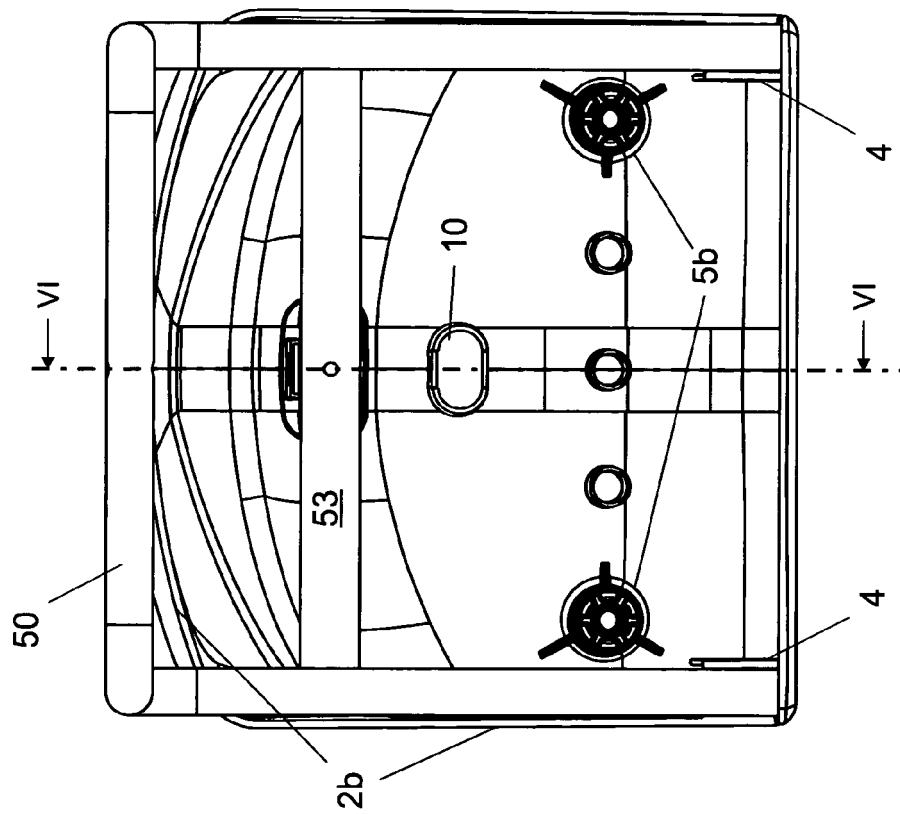


Fig. 6
sez. VI-VI

Fig. 7

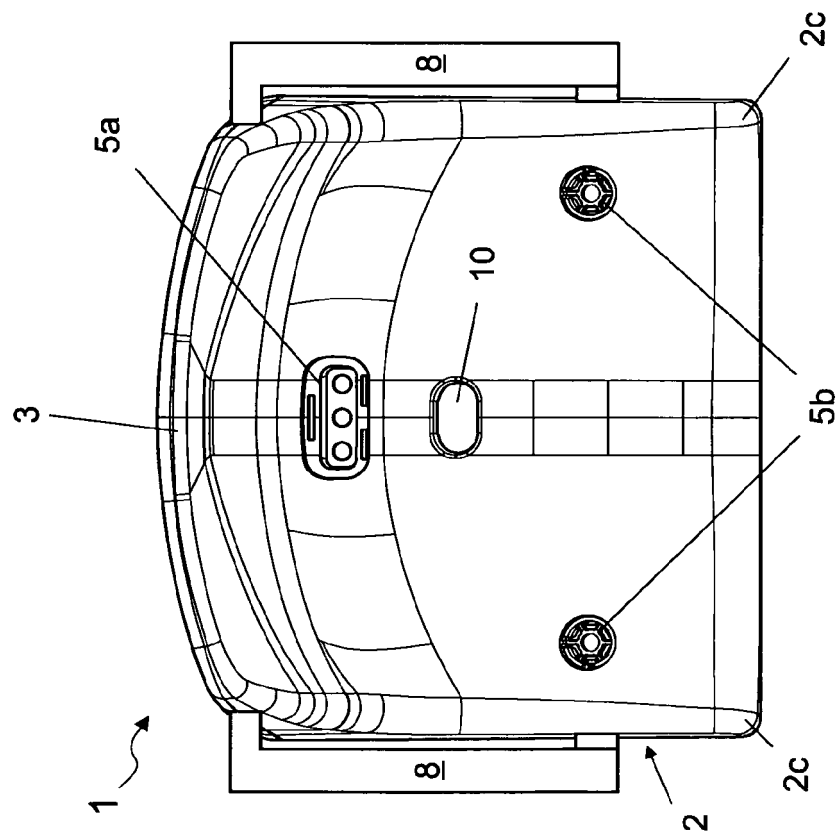


Fig. 8

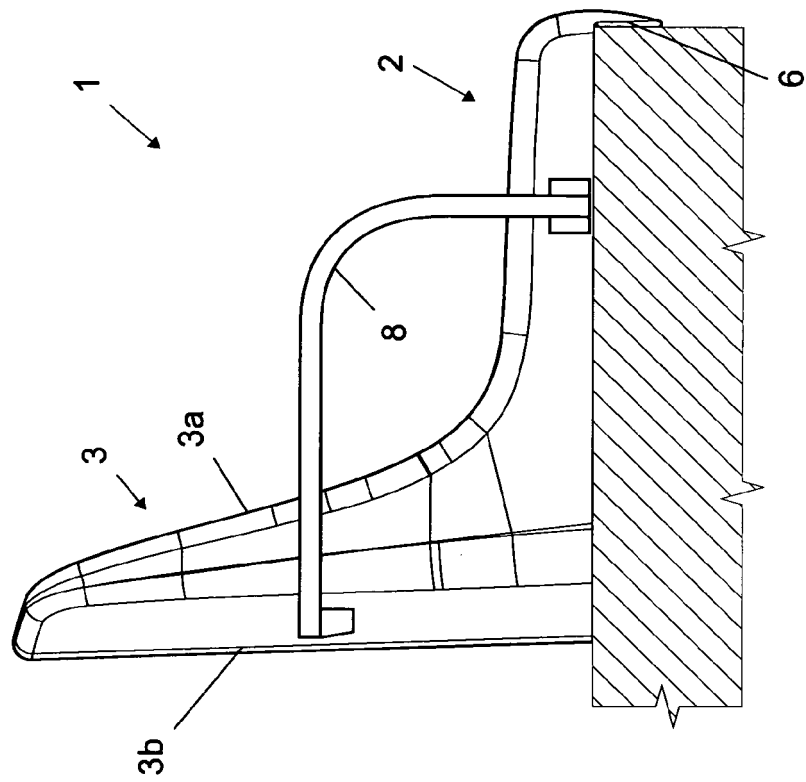


Fig. 11
sez. XI-XI

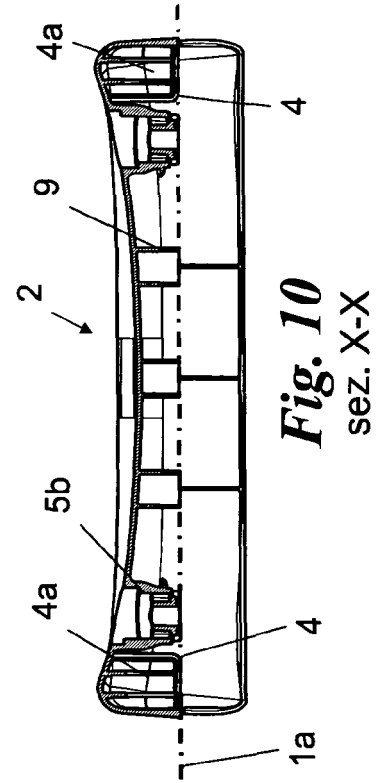
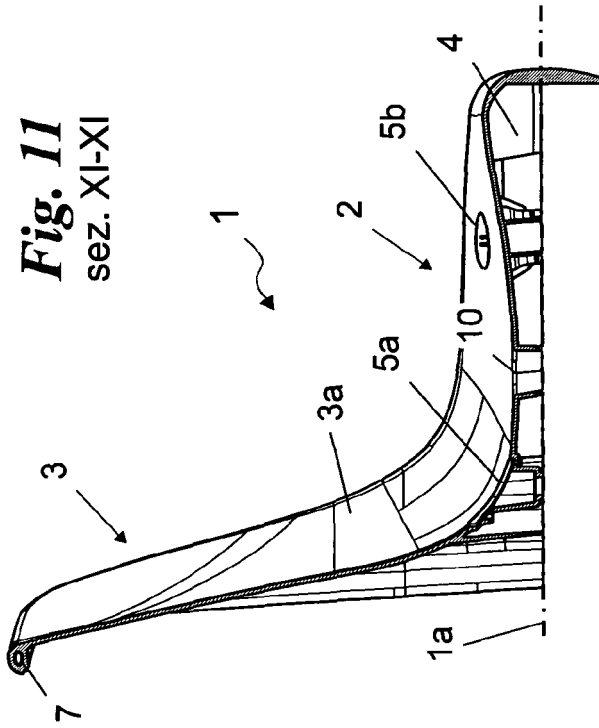
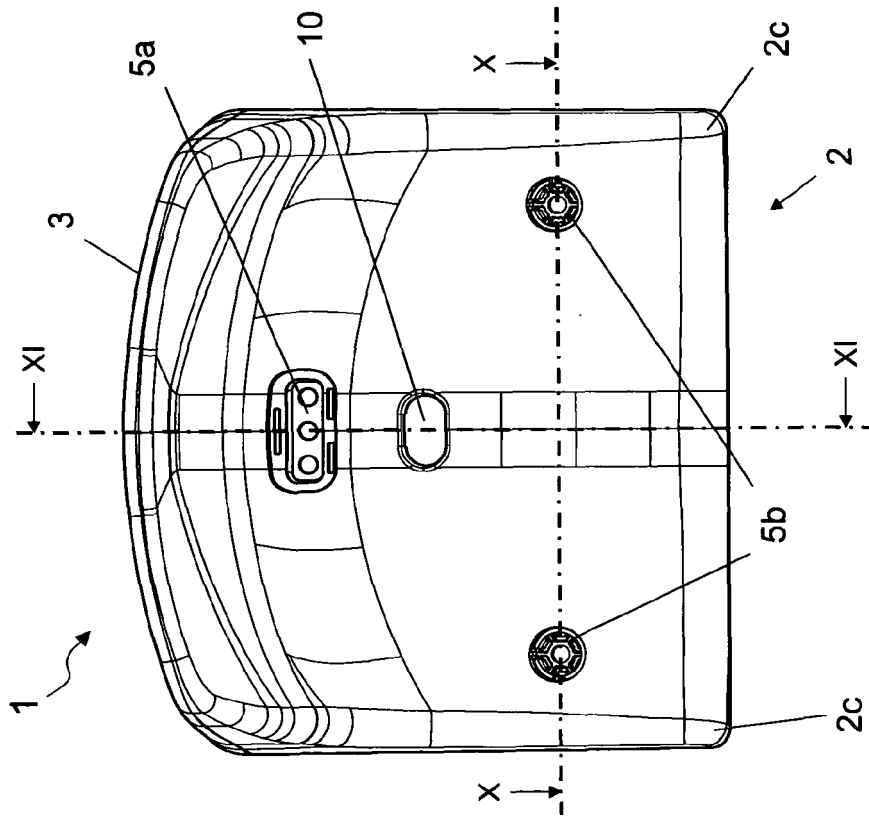


Fig. 9





European Patent
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EUROPEAN SEARCH REPORT

Application Number
EP 08 42 5037

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The present search report has been drawn up for all claims			
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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
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