

(19)



(11)

EP 2 353 451 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:

10.08.2011 Bulletin 2011/32

(51) Int Cl.:

A47C 7/38 (2006.01)

(21) Application number: **11152619.0**

(22) Date of filing: **28.01.2011**

(84) Designated Contracting States:

**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

Designated Extension States:

BA ME

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(30) Priority: **01.02.2010 IT RN20100002**

(54) **Posture device for chairs**

(57) The present invention concerns a posture device for chairs, **characterised in that** it comprises an anchoring portion (30) to a chair (5) and a support portion for the head and/or the neck (33) of a person sat on the chair (5), the support portion for the head and/or neck (33) comprising a movement for adjusting its position with

respect to the anchoring portion (30). The adjustment movement comprises at least one rotation movement and a sliding movement independent from one another and locked or allowed through a single locking and unlocking device (35, 135, 435). The invention is particularly suitable for use with fold-up chairs.

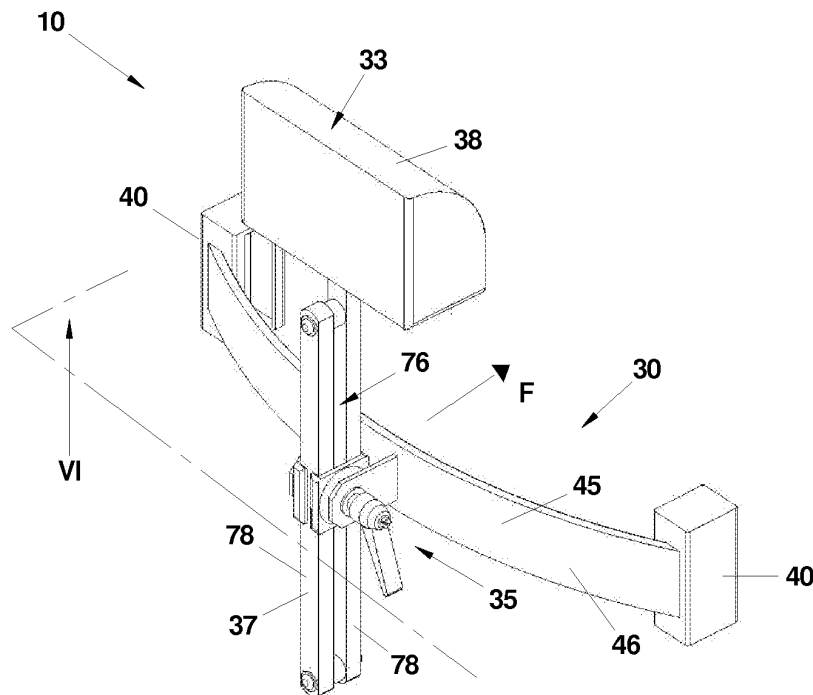


Fig. 3

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Description

[0001] The present invention concerns a posture device for chairs and a posture chair comprising such a device. The present invention is particularly studied to create a correct posture for make-up application, for example in film-making, photography or fashion modelling. However, this does not rule out its use on other fields as well.

[0002] In the field of professional make-up the professionals are continuously moving between one workplace and another, having to follow events in various parts of the world, for which reason it has become commonplace to use portable tools and accessories, including fold-up chairs. Those currently used are substantially standard fold-up chairs, i.e. with a static seated position given by a seat and by a support portion for the back that are fixed. The only evolution introduced to date has been the study of lighter materials. Current chairs are not therefore suitable for the requirements of professional make-up, where a worker, normally standing, works on the person sitting down for many hours. It is thus necessary to provide a more comfortable and ergonomic sitting position. However, these characteristics must be combined with the operative need to allow easy access to the face of the person sitting down. Posture chairs must also look nice. Finally, in the case of chairs intended to be transported, it is necessary to maintain a simple and light fold-up structure.

[0003] One of the general purposes of the present invention is to provide a sitting position that optimally satisfies the greatest number of the characteristics indicated above, preferably all.

[0004] In particular, a purpose of the present invention is to provide a sitting position that is comfortable for many hours without getting in the way of the work of the professional make-up artist.

[0005] Another general purpose of the present invention is to provide a posture device that is efficient and practical to use.

[0006] A further purpose of the present invention is to make a posture device that is cost-effective and easy to make.

[0007] A further purpose of the present invention is to provide a posture device that looks nice and is able to stay looking good over time.

[0008] A further purpose of the present invention is to provide a posture device able to be coupled with pre-existing chairs.

[0009] A further purpose of the present invention is to provide a posture chair that can easily be transported and is not very bulky.

[0010] A further purpose of the present invention is to provide a posture chair that is easy and cost-effective to make.

[0011] According to a first aspect thereof, the invention concerns a posture device for chairs as defined in claim 1, in other words a posture device for chairs, **character-**

ised in that it comprises an anchoring portion to a chair and a support portion for the head and/or neck of a person sitting on the chair, the support portion for the head and/or neck comprising a movement to adjust its position with respect to the anchoring portion. Since the head of the person sitting down is the main part on which work is carried out, it is also the part that must be focussed upon for a correct positioning for work that is also comfortable.

[0012] Preferably, the adjustment movement comprises at least one rotation movement and a sliding movement that are independent from one another, i.e. such that the first can occur also without the second taking place and vice-versa. In this way, advantageously, it is possible to obtain substantially any position of the head and/or to seat people of any height.

[0013] Again preferably, the rotation and sliding movement are locked or allowed through a single locking and unlocking device. This is particularly advantageous both for usefulness and for an easy construction.

[0014] In this case, the locking and unlocking device can preferably be actuated with a single hand. A particularly preferred and simple example embodiment comprises a sliding guide and a rotation guide, where again for the sake of simplicity of construction and functional practicality preferably the sliding guide is guided in rotation by the rotation guide. For example, the sliding guide can comprise at least one part of the rotation guide. In its most simple embodiment, the rotation guide comprises a pin and a hub rotating one with respect to the other and/or vice-versa, and the sliding guide comprises at least one portion made in a single piece with the pin or the hub.

[0015] The locking and unlocking device preferably comprises a pair of jaws that preferably acts on the support portion for the head and/or neck with the interposition of the sliding and rotation guides.

[0016] The jaws exert the locking action on the support portion for the head and/or neck when they are moved towards one another, or alternatively apart, the locking and unlocking device comprising a device for thrusting the jaws together or apart, preferably able to be actuated with a single hand.

[0017] For example, the device for thrusting the jaws comprises a screw inserted in a nut, the screw or the nut are rotated through a lever device comprising a lever with a first operative position in which it is able to rotate setting the nut or the screw in rotation and a second operative position in which it is free to rotate independently from the nut and from the screw.

[0018] The screw can also act as rotation pin around which the support portion for the head and/or neck rotates when the locking and unlocking device is in an unlocked configuration.

[0019] The support portion for the head and/or neck for example comprises at least one guide shaft able to slide with respect to the jaws when the locking and unlocking device is in an unlocked configuration, the at least one guide shaft having a longitudinal slot in which the

screw slides. This solution has the advantage of reducing the bulk of the entire posture device as much as possible, thus making it easier to transport, and it allows direct and uniformly distributed action of the jaws.

[0020] Preferably, the screw has a portion, inserted in the longitudinal slot, with a smaller diameter than the width of said slot, and while it slides it is kept in a centred position with respect to the longitudinal slot by the sliding guide. Since the posture device is intended for use in a field where a great deal of importance is placed on beauty, this provision allows the screw not to slide on the guide shaft thus avoiding it from being ruined. The guide shaft can thus be made from a high-quality material or with a high-quality finish, keeping its original appearance for a long time.

[0021] The anchoring portion, in its preferred embodiments, can be coupled and decoupled with respect to a chair. This is particularly useful in the case in which the posture device is used with more than one chair, and/or with fold-up chairs, since it makes interchangeability and transportation easier. Of course, this does not rule out solutions in which the anchoring portion is removable with respect to the chair, for example in a fixed or mobile coupling, and in this last case solutions are liked in which the device, whilst being inseparable from the chair, can take up a first use position and a second transportation position.

[0022] The embodiments that are most practically able to be coupled with the greatest number of existing chairs are those in which the anchoring portion comprises a pair of guides or anchoring elements able to be coupled with a chair, preferably the two guides are parallel to one another and each comprise a slot facing the slot of the other guide. Each guide preferably comprises a cavity for housing a chair portion. The cavity has two opposite ends in the direction of insertion and extraction of the chair portion, and both of the ends are open for the passage of said portion. Alternatively, one of the two ends comprises a closure element intended to go into abutment on the chair portion inserted in the cavity. This is advantageous for example to prevent undesired contact between the anchoring portion and parts of the chair, like possible armrests, which could be ruined and lose their nice appearance.

[0023] Preferably, the two guides are joined together by at least one stiffening bar of length substantially equal to the width of the back support portion of the chair with which the device is intended to couple. The advantage of this configuration is particularly noticeable when the support device is used together with fold-up chairs, particularly with a back support portion made from cloth, since it provides greater strength and stability.

[0024] In this case it is particularly advantageous to join the two guides with a single stiffening bar intended to face a back support portion of the chair. The locking and unlocking device can thus be coupled with the stiffening bar on a side opposite a side intended to face the back support portion of the chair. Even more preferably,

the stiffening bar is concave with a concavity such that its central portion in use is the farthest from the back support portion of the chair. These provisions prevent the locking and unlocking device from interfering with the back of the person sitting down, causing a level of discomfort, and allow a very wide movement of the guide shaft so as to increase the possibilities of adjustment.

[0025] According to a second aspect thereof, the invention concerns a posture chair according to claim 21, in other words a posture chair comprising a posture device according to the present invention.

[0026] According to a third aspect thereof, the invention concerns a fold-up posture chair as defined in claim 22, in other words a fold-up posture chair **characterised in that** it comprises a back support portion, at least partially deformable, and a posture device, comprising a support portion for the head and/or neck of a person sitting on the chair, said support portion for the head and/or neck having an adjustable position with respect to the back support portion.

[0027] The Applicant, after numerous tests, has worked out that advantageously the yielding material of the back support portion already allows correct and comfortable positioning of the back of the person sitting down if associated with the adjustment of the position of the head. The face is also thus correctly positioned without the need to equip the chair with further mobile parts. The chair is therefore simple to make and can thus be light and easy to transport, for example it is possible to keep the structure of standard fold-up chairs with a cloth seat and just add the posture device on which to rest the head, in a totally or partially removable manner from the other parts of the chair.

[0028] Preferably, the chair comprises a frame, and the posture device on which to rest the head comprises an anchoring portion to the frame of the chair and a reclinable portion with respect to the back support portion.

[0029] In general, the anchoring portion has an operative position in which it is anchored fixed to the frame and a non-operative position, in which it is anchored mobile or separate with respect to the frame, and in any case it preferably has an operative position in which it is anchored to the back support portion, since this reduces its size and its weight and simplifies its manufacture.

[0030] In its simplest embodiment, the invention exploits standard fold-up seats in which the back support portion comprises two rigid frame portions connected by a contact portion with the back that is at least partially deformable, preferably comprising a fabric. The anchoring portion can be able to be coupled and decoupled with respect to the two frame portions. Each frame portion can for example comprise a shaft able to be inserted and extracted by sliding into/from a corresponding guide of the anchoring portion.

[0031] Generally, the shafts of the two frame portions of standard chairs are joined together by a fabric, and the two corresponding guides preferably comprise a slot for it to pass through.

[0032] Preferably, the two guides each comprise a cavity for housing the relative shaft, the cavity having two opposite ends in the direction of insertion and extraction of the shaft. Both of the ends can be open for the passage of the shaft. Alternatively, and preferably, one of the two ends can comprise a closure element, intended to go into abutment on the free end of the shaft inserted in the cavity. This prevents the guide from going into abutment on a possible armrest stripping it down or pinching the arm of the person sat down.

[0033] Advantageously, the two guides can be joined together by at least one stiffening bar of length substantially equal to the width of the back support portion, and in this way the back support portion is more rigid and the chair is stronger.

[0034] Preferably, the two guides are joined by a single stiffening bar intended to be positioned, in the operative configuration, on the back of the deformable portion of the back support portion, a sufficient distance from it to prevent the contact between the two parts when a person is sitting down. This prevents the back from resting on the stiffening bar and thus stops the seat from being uncomfortable.

[0035] The support portion for the head preferably comprises a sliding movement and an oscillation movement with respect to the anchoring portion. In order to make these movements easier without blocking the seat, preferably the support portion for the head is anchored onto the rear side of the at least one stiffening bar.

[0036] In general, it is particularly handy to use a single locking and unlocking device to lock both the sliding movement and the oscillating movement of the support portion for the head with respect to the anchoring portion. Such a device is preferably lever-actuated, and can preferably be actuated with a single hand.

[0037] In the most simple embodiment the locking and unlocking device comprises a pair of jaws clamped together through the screwing of a screw to a nut.

[0038] Preferably, the screw or the nut are rotated through a lever device comprising a lever with a first operative position in which it is able to rotate setting the nut or the screw in rotation and a second operative position in which it is free to rotate independently from the nut and from the screw. In this way, advantageously, with a single hand a single operator can fix both the height position and the inclination of the support portion for the head.

[0039] In general, in order to make the locking and unlocking device less bulky it is preferable for the screw to also act as a rotation pin around which the support portion for the head oscillates in the unlocked configuration.

[0040] In this case, the support portion for the head preferably comprises a guide shaft capable of sliding between the jaws when it is in the unlocked configuration, and having a longitudinal slot in which the screw slides.

[0041] Preferably, the jaws each comprise a first portion coupled with the anchoring portion and a second portion able to rotate with respect to the first portion as a unit with the support portion for the head when the

locking and unlocking device is in an unlocked configuration. The second rotatable portion comprises, for example, at least one rotation guide and a sliding guide for the support portion for the head, preferably made from low friction coefficient material, like teflon.

[0042] The second portion of each jaw, when it is in an unlocked configuration, advantageously rotates around the axis of the screw.

[0043] According to a fourth aspect thereof, the invention concerns a posture device for chairs, **characterised in that** it comprises an anchoring portion to the back support portion of a chair, such an anchoring portion comprising at least two anchoring elements arranged a pre-determined distance apart, preferably substantially equivalent to the width of the back support portion of the chair, the at least two anchoring elements being joined together by a preferably concave stiffening bar.

[0044] Further characteristics and advantages of the present invention will become clearer from the following detailed description of preferred embodiments thereof, made with reference to the attached drawings and given for indicating and not limiting purposes. In such drawings:

- figures 1 and 2 schematically represent perspective views of a fold-up posture chair according to the present invention, according to a front and rear viewpoint, respectively;
- figure 3 schematically represents a perspective view of a posture device on which to rest the head belonging to the chair of figures 1 and 2;
- figure 4 schematically represents a perspective view of an enlarged detail of the device of figure 3, more specifically a guide for coupling with the frame of the chair;
- figure 5 schematically represents a view from below of the detail of figure 4;
- figure 6 schematically represents an enlarged section of a detail of the posture device according to the plane VI of figure 3, and more specifically it is a longitudinal section of the locking and unlocking device;
- figures 7 and 8 schematically represent respective sections of two alternative locking and unlocking devices to that of figure 6;
- figures 9 and 10 schematically represent posture chairs according to the present invention as alternatives to that of figures 1 and 2.

[0045] In the rest of the present description for the sake of simplicity we shall refer to fold-up chairs and to a posture device, suitable for defining the position of the head of a person, coupled or able to be coupled with such chairs to form, as a whole, a fold-up posture chair. Al-

though this combination is one of the preferred and particularly advantageous ones of the present invention, the man skilled in the art will realise that other embodiments are possible, for example the posture device can be coupled with other types of chairs, like for example fixed chairs or ones with a different folding scheme.

[0046] Moreover, in general by "chair" we mean a chair without a posture device according to the present invention, and by "posture chair" we mean a chair comprising such a device.

[0047] Initially with reference to figures 1 and 2, a fold-up posture chair 1 in accordance with the present invention is shown in its open configuration to receive a person.

[0048] The fold-up posture chair 1 comprises a chair or main support structure 5 and a posture device 10 to define the position of the head of a person sitting down.

[0049] The main support structure 5 and the posture device 10 can be separable, partially separable or inseparable, in any case by fold-up posture chair we mean the assembly of both.

[0050] The main support portion 5 comprises a frame 15 comprising two portions 17 and 18 joined together by a contact portion with the back 24 and by a seat 22. Both are at least partially deformable to allow passage from the open configuration of figures 1 and 2, in which the frame portions 17 and 18 are the maximum distance apart, to a closed configuration (not illustrated) in which the frame portions 17 and 18 are the minimum distance apart or are in contact with one another, and vice-versa. This is made possible, in the illustrated example, by the fact that the contact portion with the back 24 and the seat 22 for example comprise a fabric or a winding of cables.

[0051] The two frame portions 17 and 18 each comprise a rigid vertical shaft 42. The shafts 42 are connected together by the fabric 24 making a support portion for the back 20 that is partially deformable although with a non-reclinable frame, i.e. fixed with respect to the main structure 5 when a person is sitting down.

[0052] Optionally, the chair 1 can comprise a device on which to rest the feet 28 coupled with the frame 15.

[0053] As can be seen more clearly in figure 2, the posture device 10 comprises an anchoring portion 30 to the frame 15 and a support portion for the head or neck 33 of a person sat on the chair 5. The latter is reclinable with respect to the support portion for the back 20, and in particular it comprises an oscillation movement both in the frontward direction indicated by the arrow F and in the rearward direction indicated by the arrow P with respect to the chair 1. The support portion for the head 33 also comprises a vertical sliding movement according to the direction V with respect to the chair 1. The oscillation and sliding movements can be locked by a single locking and unlocking device 35 as will be described more clearly hereafter.

[0054] According to the embodiment illustrated in figures 1 and 2, the posture device 10 and the main support structure 5 are totally separable. In particular, the anchoring portion 30 comprises a pair of coupling guides 40 in

which the shaft 42 of the frame 15 are slidably inserted.

[0055] With reference to figure 3, just the posture device 10 is shown with an increased scale. It should be noted that the coupling guides 40 are joined together by a single stiffening bar 45 of substantially equal length to the width of the back support portion 20 and having a curved shape with the concavity facing the frontward direction F. In this way, the distance between bar 45 and fabric 24 is at its maximum at the centre of the bar so that their contact is avoided, or limited, even when the fabric 24 is deformed by the weight of the person sitting down. Alternatively, it is possible to use more than one stiffening bar with a smaller section, but this solution is less preferred since it hinders the oscillation of the support portion for the head 33.

[0056] The locking and unlocking device 35 is positioned on the rear side 46 of the bar 45, which in use is located opposite the side facing the fabric 24.

[0057] The support portion for the head 33 comprises a guide shaft 37, coupled in a sliding and oscillating fashion with the locking and unlocking device 35, and a cushion 38 arranged at an end of the guide shaft 37.

[0058] With reference to figure 4, a coupling guide 40 can be seen in detail, in particular it can be seen that it defines a cavity 50 for housing the relative shaft 42 (not shown). The cavity 50 has two opposite ends 52 and 53, one being open for the passage of the shaft 42 and the other being obstructed by a closure element 55 intended to go into abutment on the free end of the shaft 42 inserted into the cavity. A slot 58 connects together the two ends 52 and 53 to allow the passage of the fabric 24 (not shown) pulled tight between the shafts 42.

[0059] With reference to figure 5, a view from below of a guide 40 is shown where it is highlighted that the slot 58 has a width L1 that is smaller than the width L2 of the cavity 50 behind it, being defined by two tabs 60 that prevent the shafts 42 from coming out at the side. In order to anchor to other types of chairs, however, like for example chairs with a rigid backrest, it may be preferable to omit the tabs 60 and thus make the slot 58 with L1 = L2.

[0060] With reference to figure 6, the locking and unlocking device 35 is shown in section. In particular, it comprises a pair of jaws 65 projecting in the backward direction P from the stiffening bar 45 and clamped together, in the direction of the arrows G, through a thrusting device 43 comprising a screw 67, a nut 68 and a lever device 86 to screw the screw 67 into the nut 68. The guide shaft 37 is inserted between the jaws 65 and is able to slide and oscillate with respect to them when they are in an unclamped configuration, or else it is locked when the jaws 65 are in a clamped configuration. In order to increase the mechanical resistance, each jaw 65 comprises a first elastic portion 70, preferably metallic, on which the clamping force exerted by the screw 67 and by the nut 68 acts directly.

[0061] In order to make sliding easier, each jaw comprises a sliding guide 72, preferably made from teflon or another low friction coefficient material, arranged be-

tween the elastic portion 70 and the guide shaft 37. The sliding guide 72, preferably, is U-shaped so as to allow the guide shaft 37 to slide just in a predetermined direction, as will be explained hereafter.

[0062] In order to make the oscillation easier, each jaw 65 comprises a rotation guide 74, arranged between the elastic portion 67 and the guide shaft 37. Of course, the man skilled in the art will realise that one or both of the guides can be omitted without for this reason preventing the relative movement of the guide shaft 37.

[0063] The rotation guide 74 comprises a pin 77 and a hub 74a. In particular, the hub 74a can be in the form of a disc of teflon or another low friction coefficient material rotatably coupled with the sliding guide 72 and/or with the elastic portion 70. For example, the rotation guide 74 can comprise a hub 74a able to rotate around a pin consisting of the central portion 77 of the screw 67. For the sake of simplicity of construction it is preferably for the hub 74a and the sliding guide 72 to be in a single piece.

[0064] The guide shaft 37 comprises a central slot 76 (also visible in fig 3) extending for part of its length, preferably its entire length, and in which the central portion 77 of the screw 67 slides.

[0065] It should be observed that the central slot 76 has a greater width than the diameter of the central portion 77 of the screw 67, however the guide shaft 37 has a very limited clearance thanks to the sliding guide 72 that keeps the screw 67 at the centre of the central slot 76. The sliding guide 72, indeed, has holes 75 substantially of the same diameter as the screw portion 77 inserted in them - such portions 77 are preferably cylindrical and unthreaded so that the sliding guide 72 is guided in rotation. The sliding guide 72 finally is U-shaped with lateral abutments 79 that prevent the relative movement between it and the guide shaft 37, thus also carrying out the aforementioned centring with respect to the screw 67. Since the sliding guide 72 is made with a low friction coefficient material, it allows easy articulation of the guide shaft at the same time preventing the latter from becoming ruined by sliding on the screw. It is thus possible to make a guide shaft 37 with a high-quality and good-looking finish.

[0066] The jaws 65 exert a substantially uniform pressure on the guide shaft 37 on both sides of the central slot 76 through the sliding guide 72.

[0067] In the illustrated example, the guide shaft 37 has a rectangular section, however this does not rule out other types of section, such as a square section, a section according to another polygon, or round. Moreover, for the sake of making the slot 76 simple to make, the guide shaft 37 is made by coupling two rectilinear elements 78 a predetermined distance apart, corresponding to the width of the slot 76, one or both of the elements 78 having their end coupled with the cushion 38.

[0068] The screw 67 comprises a first threaded end 80, coupled with the nut 68, and a second manoeuvring end 82. The screw completely passes through the two

jaws 65 passing into aligned holes 83 of the elastic portions 70, and into the holes 75 of the sliding guides 72 and of the hubs 74a and is of a length such that its ends 80 and 82 project out from the elastic portions 70. The manoeuvring end 82 and the nut 68 have a greater diameter than the diameter of the holes 83, so that when the screw 67 is screwed into the nut 68 they thrust one jaw towards the other to carry out the clamping of the guide shaft 37.

[0069] The manoeuvring end 82 comprises a head 84 shaped for a shape coupling with a clamping tool comprising a lever device 86. The lever device 86 comprises a lever 88 with a first operative position in which it is able to rotate setting the shaped head 84 of the screw in rotation, and a second operative position in which it is free to rotate independently from the screw 67. This is possible thanks to the fact that the lever 88 comprises a shaped cavity 90 suitable for engaging the shaped head 84, and also the lever possesses a movement towards and away from the centre of the screw 67 along its rotation axis X. When the lever 88 is in the closest position it engages the shaped head 84, and when it is in the farthest position it is free to rotate with respect to the screw 67. Normally, a spring 92, or other elastic element, keeps the lever 88 in the operative position corresponding to the position closest to the screw 67.

[0070] The nut 68 is preferably coupled with the jaws 65 so as not to be able to rotate with respect to them, so as to be able to carry out the clamping with a single hand acting on the lever 88.

[0071] Of course, the man skilled in the art will realise that the lever 88 can alternatively act with the same principle on the nut 68 while the screw 67 is kept fixed with respect to the jaws 65.

[0072] Hereafter some alternative embodiments of the invention will be described where identical or similar elements will be indicated with the same reference numerals used above and increased by 100 or by a multiple thereof.

[0073] With reference to figure 7, an locking and unlocking device 135 alternative to the locking and unlocking device 35 of figure 6 is illustrated.

[0074] The locking and unlocking device 135 differs from the previous one in that the guide shaft 137 oscillates around a different axis Y from the axis X of the screw 167. In this case, the guide shaft 137 does not need to have a slot for the sliding of the screw 167, and thus it is simpler to make. In the locking and unlocking device 135, the sliding and oscillation guides are unified in a single element 172 for each jaw 165, each comprising a pin portion 173 inserted into a hole 183 of the elastic portion 170 according to the rotation axis Y. The remaining parts are the same as those of the locking and unlocking device 35 of figure 6.

[0075] With reference to figure 8, a further locking and unlocking device 435 alternative to the locking and unlocking device 35 of figure 6 is illustrated.

[0076] The locking and unlocking device 435 inverts

the direction of action of the jaws on the guide shaft with respect to the locking and unlocking device 35, indeed in this case there are two guide shafts 437 outside of the jaws 465 and the jaws are active on them with an outward thrusting action of the device instead of inwards. In other words, the jaws 65 of figure 6 have a clamping action towards the inside of the device 35, whereas the jaws 465 have a clamping action towards the outside of the device 435, i.e. according to the arrows E. This can be carried out for example with a screw 467 that passes through the aligned holes 483 of the jaws 465 in such a way that the ends of the screw 480 are able to slide in the central slots 476 of the shafts 437.

[0077] The screw 467 has a thrusting head 484 arranged in abutment on the inner side 466 of one of the jaws 465, and moreover the screw 467 is inserted into a nut 468 arranged in abutment on the inner side 466 of the other jaw 465, and in this way when the screw 467 is given an unscrewing movement with respect to the nut 468 the thrusting head 484 and the nut 468 exert the thrust to open out the jaws 465.

[0078] The screw 467 can be set in rotation by a lever-operated device like the one of the previous embodiments, or alternatively by a control wheel 488 rotating as a unit with the screw 467.

[0079] Of course, the man skilled in the art will realise that any type of locking and unlocking device can be used as an alternative to those illustrated. For example, it is possible to replace the screw mechanism with a cam mechanism to clamp the jaws. In any case, the locking devices able to be actuated with a double-acting lever are the preferred ones since they allow the locking and unlocking device to be easily actuated even if positioned very close to the stiffening shaft 45, and consequently its bulk is less and the entire posture device is easier to transport and store.

[0080] With reference to figure 9, a fold-up posture chair 201 is shown that is an alternative to that of figure 1 because the posture device 210, instead of comprising two anchoring guides to the frame 215, is fixed to the back support portion 220 through a pintle 240a and an attachment device 240b, for example a screw or a peg, arranged at respective ends of the stiffening bar 245.

[0081] Whereas the posture device 10 of figure 1 has an operative configuration in which it is anchored fixed to the frame 15 through the insertion of the guides 40 in the shafts 42, and a non-operative position in which it is completely separate from the frame 15, the posture device 210 is never completely separable from the frame 215, but comprises a first operative position in which it is anchored fixed to it through the screw 240b, and a non-operative position in which it is only free to rotate according to the arrow T thanks to the pintle 240a in order to be able to be positioned in a convenient position for the transportation of the closed chair.

[0082] Of course, the man skilled in the art will realise that numerous other configurations are possible, for example those in which the posture device is again coupled

with the frame 15, and the stiffening shaft has pintles to allow it to be folded when the chair is closed for transportation. Of course, the man skilled in the art will also realise that the connection between the posture device and the frame can also take place at different points from the back support portion.

[0083] A further alternative embodiment of a fold-up posture chair 301 is illustrated in figure 10. It differs from the chair 1 of figure 1 solely in that the guides 340 of the posture device 310 have openings at both ends of the cavity 350 so that they go into abutment on the armrests 351 instead of on the top of the shafts 342.

[0084] In use, when a person sits down, for example on the chair 1 of figure 1, the fabric 24 of the back support portion 20, due to its deformability, moulds under the weight of the person sitting down, taking on the characteristic fold or squashing on the upper edge. This already *per se* allows a comfortable position, which can be maintained for a long time simply with the help of the posture device 10, which allows an adjustment of the position of the head of the person sat down.

[0085] Of course, the embodiments described and illustrated up to now are given purely as examples and a man skilled in the art, in order to satisfy specific and contingent requirements, can bring numerous modifications and variants, including for example the combination of said embodiments, all of which are in any case covered by the scope of protection of the present invention as defined by the following claims.

Claims

1. Posture device for chairs, **characterised in that** it comprises an anchoring portion (30) to a chair (5) and a support portion for the head and/or the neck (33) of a person sat on the chair (5), the support portion for the head and/or neck (33) comprising a movement for adjusting its position with respect to the anchoring portion (30).
2. Posture device according to claim 1, **characterised in that** the adjustment movement comprises at least one rotation movement and a sliding movement independent from one another.
3. Posture device according to claim 2, **characterised in that** the rotation and sliding movement are locked or allowed through a single locking and unlocking device (35, 135, 435) .
4. Posture device according to claim 3, **characterised in that** it comprises a sliding guide (72, 172) and a rotation guide (74).
5. Posture device according to any one of claims 3 to 4, **characterised in that** the locking and unlocking device (35, 135, 435) comprises a pair of jaws (65,

- 165, 465).
6. Posture device according to claim 5, **characterised in that** the pair of jaws (65, 165, 465) acts on the support portion for the head and/or the neck (33) with the interposition of the sliding and rotation guides (72, 74, 172). 5
 7. Posture device according to claim 5 or 6, **characterised in that** the jaws (65, 165, 465) exert the locking action on the support portion for the head and/or neck (33) when they are pushed towards, or alternatively away from, one another, the locking and unlocking device (35, 135, 435) comprising a device (43) for thrusting the jaws (65, 165, 465) together or apart, preferably able to be actuated with a single hand. 10
 8. Posture device according to claim 7, **characterised in that** the device (43) for thrusting the jaws (65, 165, 465) comprises a screw (67, 167, 467) inserted in a nut (68, 468), the screw (67, 167, 467) or the nut (68, 468) are rotated through a lever device (86) comprising a lever (88) with a first operative position in which it is able to rotate setting the nut (68) or the screw (67, 167) in rotation and a second operative position in which it is free to rotate independently from the nut (68) and from the screw (67, 167). 15 20 25
 9. Posture device according to claim 8, **characterised in that** the screw (67, 167, 467) also acts as a rotation pin (77) about which the support portion for the head and/or the neck (33) rotates when the locking and unlocking device (35, 135, 435) is in an unlocked configuration. 30 35
 10. Posture device according to claim 9, **characterised in that** the support portion for the head and/or the neck (33) comprises at least one guide shaft (37, 467) able to slide with respect to the jaws (65, 465) when the locking and unlocking device (35, 135, 465) is in an unlocked configuration, the at least one guide shaft (37, 437) having a longitudinal slot (76, 476) in which the screw (67, 467) runs. 40 45
 11. Posture device according to any one of the previous claims, **characterised in that** the anchoring portion (30) is able to be coupled and uncoupled with respect to a chair (5). 50
 12. Posture device according to claim 11, **characterised in that** the anchoring portion (30) comprises a pair of guides (40, 340) able to be coupled with a chair (5), preferably the two guides (40, 340) are parallel to one another and each comprises a slot (58) facing the slot (58) of the other guide (40, 340). 55
 13. Posture device according to claim 12, **characterised in that** each guide (40, 340) comprises a cavity (50, 350) for housing a chair portion (42, 342), the cavity (50, 350) having two opposite ends (52, 53) in the direction of insertion and extraction of the chair portion (42, 342), both of the ends (52, 53) being open for the passage of the chair portion (42), or one of the two ends (53) comprising a closure element (55) intended to go into abutment on the chair portion (42, 342) inserted in the cavity (50, 350).
 14. Posture device according to claim 13, **characterised in that** the two guides (40, 340) are joined together by at least one stiffening bar (45, 245) of a length substantially equal to the width of the support portion of the back (20) of the chair (5) with which the posture device (10, 210, 310) is intended to couple.
 15. Posture device according to claim 14, **characterised in that** the two guides (40, 340) are joined by a single stiffening bar (45, 245) intended to face a support portion of the back (20) of the chair (5), the locking and unlocking device (35, 135, 435) being coupled with the stiffening bar (45, 245), preferably such a device (35, 135, 435) is placed on a side of the stiffening bar (45, 245) opposite a side intended to face the support portion of the back (20) of the chair (5), even more preferably the stiffening bar (45, 245) is concave with a concavity such that its central portion in use is the farthest from the support portion of the back (20) of the chair (5).

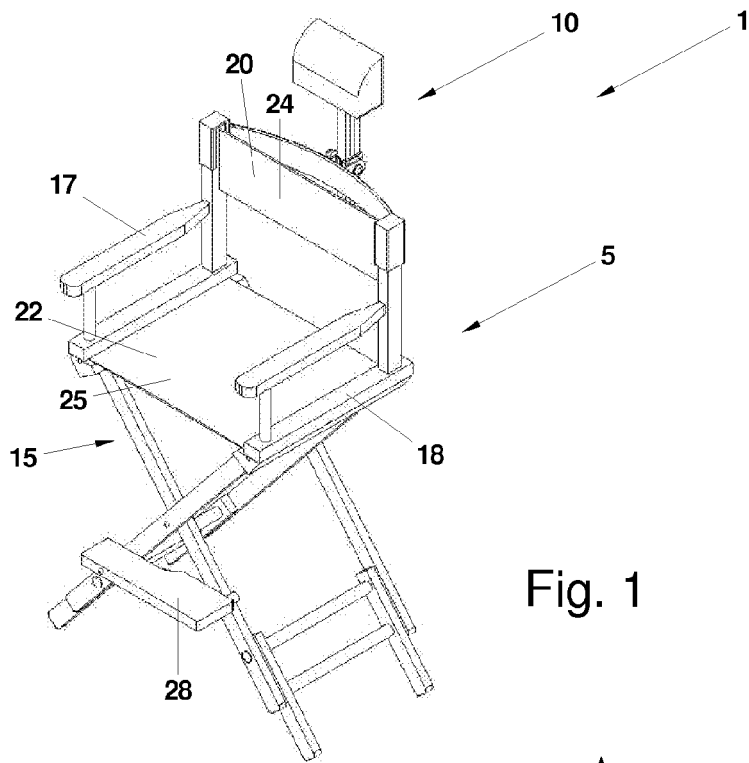


Fig. 1

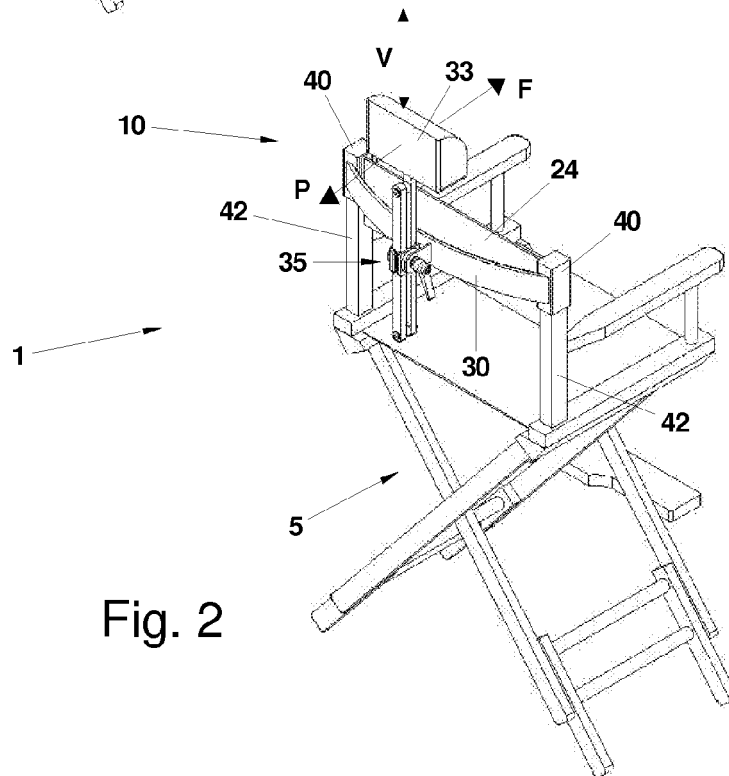


Fig. 2

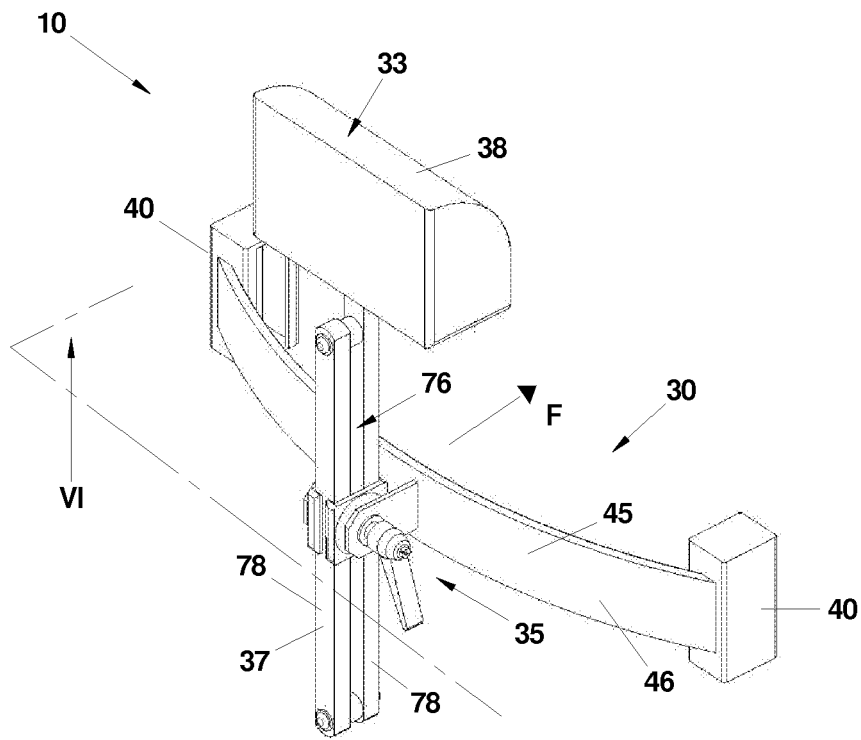


Fig. 3

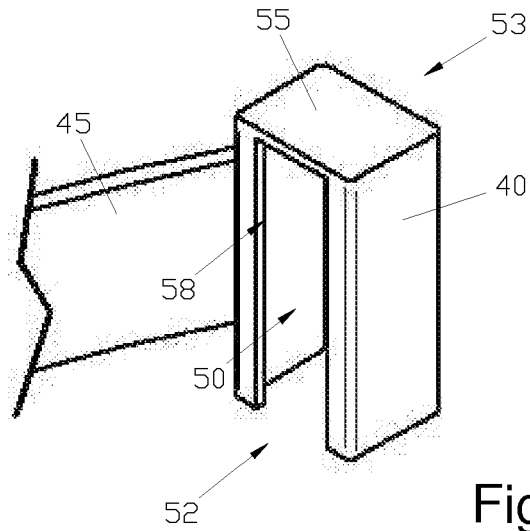


Fig. 4

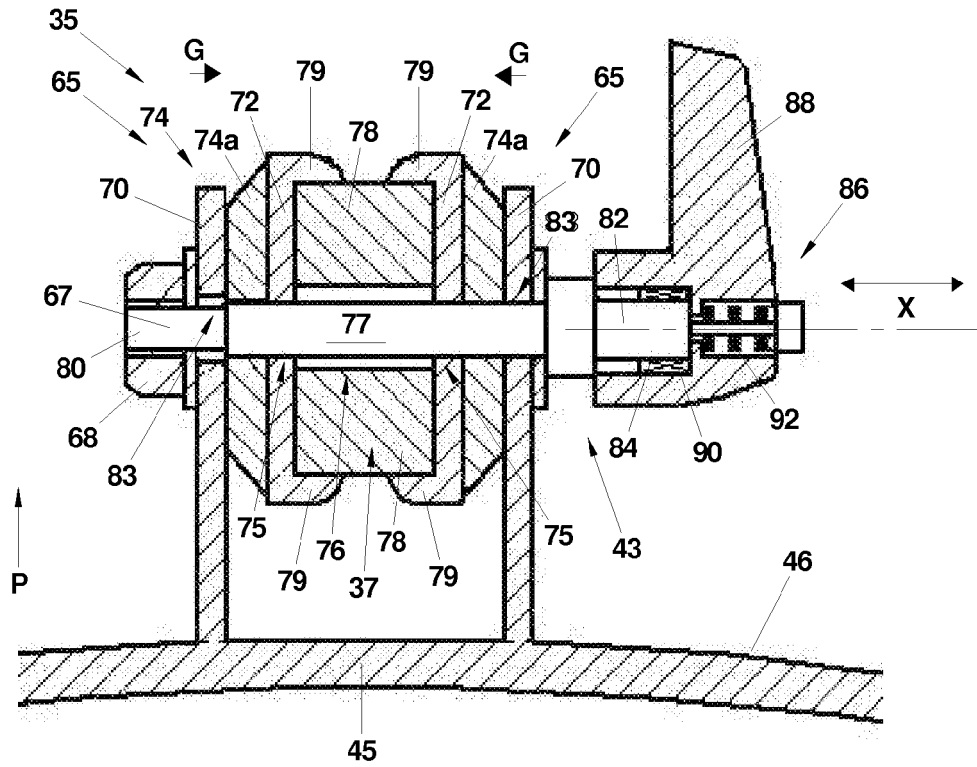
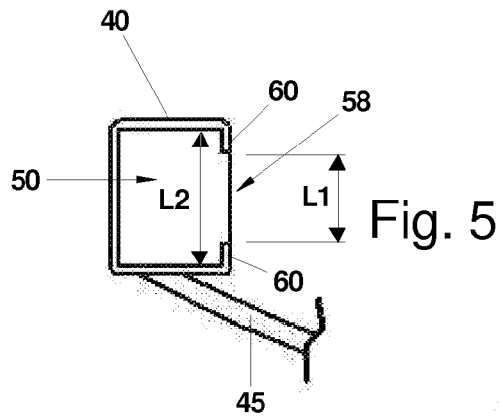


Fig. 6

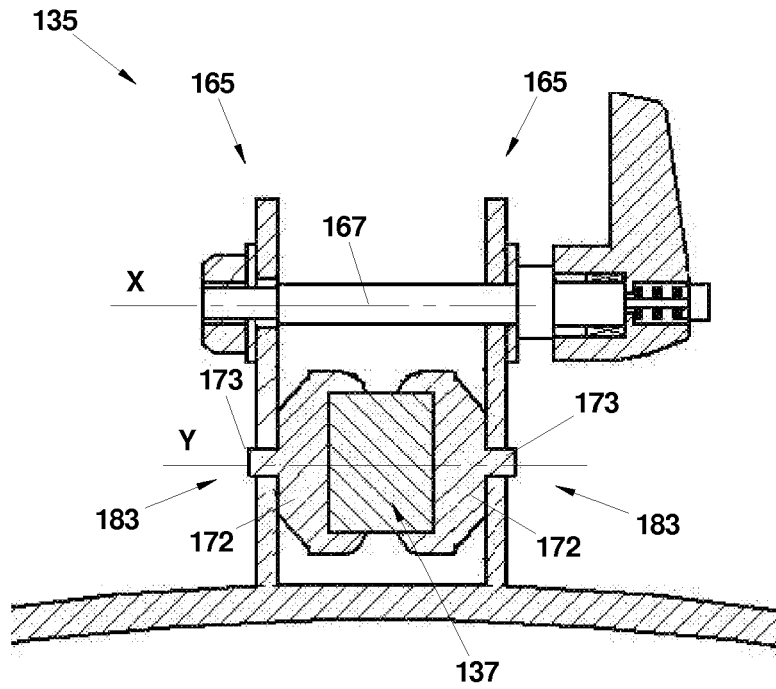


Fig. 7

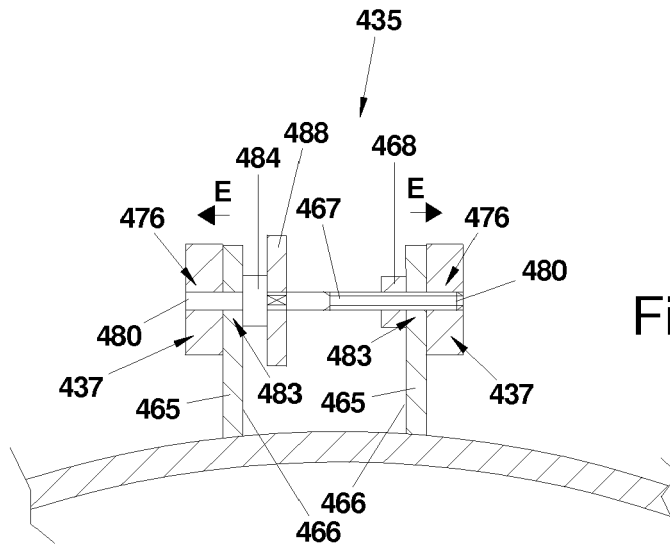


Fig. 8

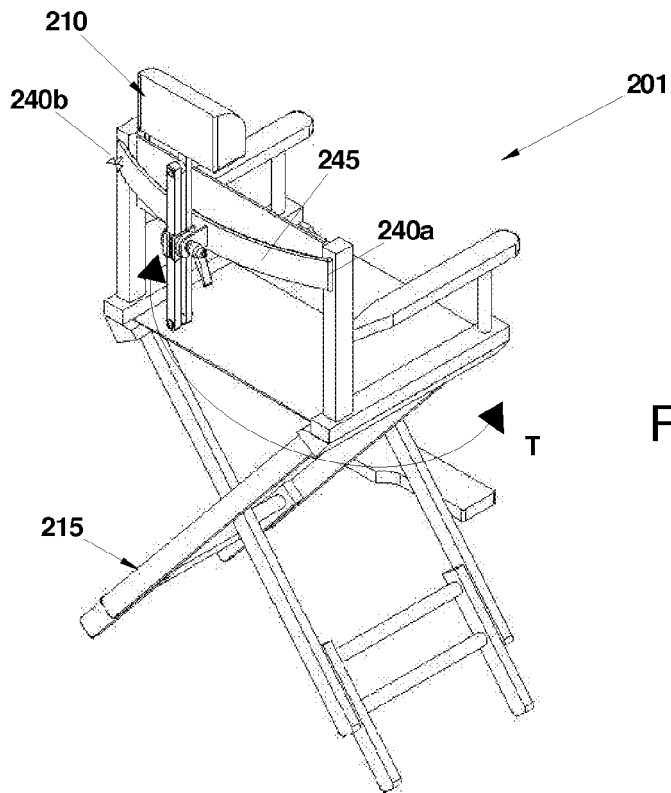


Fig. 9

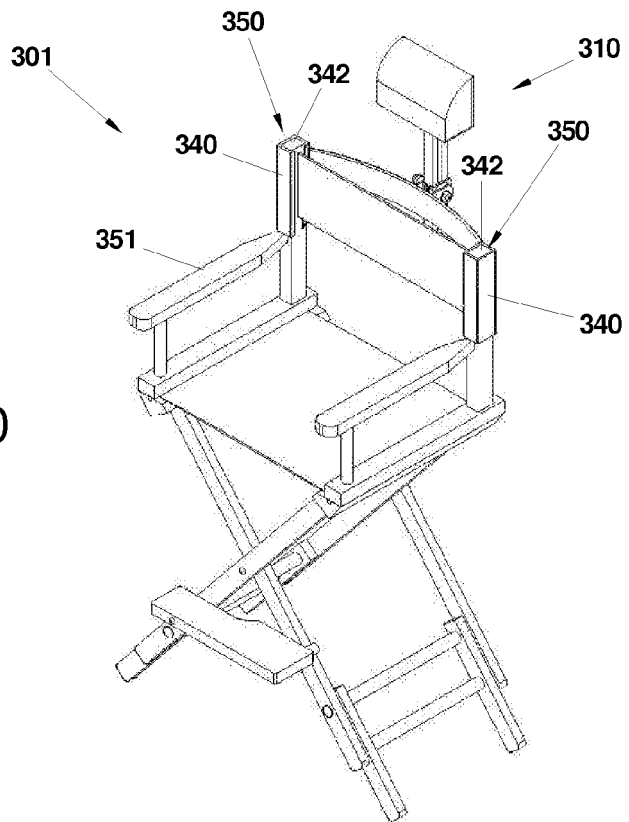


Fig. 10



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EUROPEAN SEARCH REPORT

Application Number
EP 11 15 2619

| DOCUMENTS CONSIDERED TO BE RELEVANT | | | |
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| 1 | Place of search The Hague | Date of completion of the search 6 May 2011 | Examiner Kis, Pál |
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06-05-2011

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