US 20020043841A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2002/0043841 A1**

Giacinto (43) **Pub. Date: Apr. 18, 2002**

(54) **ERGONOMIC CHAIR-ARMCHAIR STRUCTURE, PARTICULARLY FOR OFFICE, OF THE TYPE EQUIPPED WITH ADJUSTABLE KIDNEYREST AND HEADREST**

(75) Inventor: **Bordin Giacinto**, Longare (IT)

Correspondence Address:
HARRISON & EGBERT
1018 Preston St., Suite 100
Houston, TX 77002 (US)

(73) Assignee: **SITTING snc de Bordin Giacinto e Mauro**

(21) Appl. No.: **09/899,427**

(22) Filed: **Jul. 5, 2001**

(30) **Foreign Application Priority Data**

Jul. 21, 2000 (IT) TV2000A000084

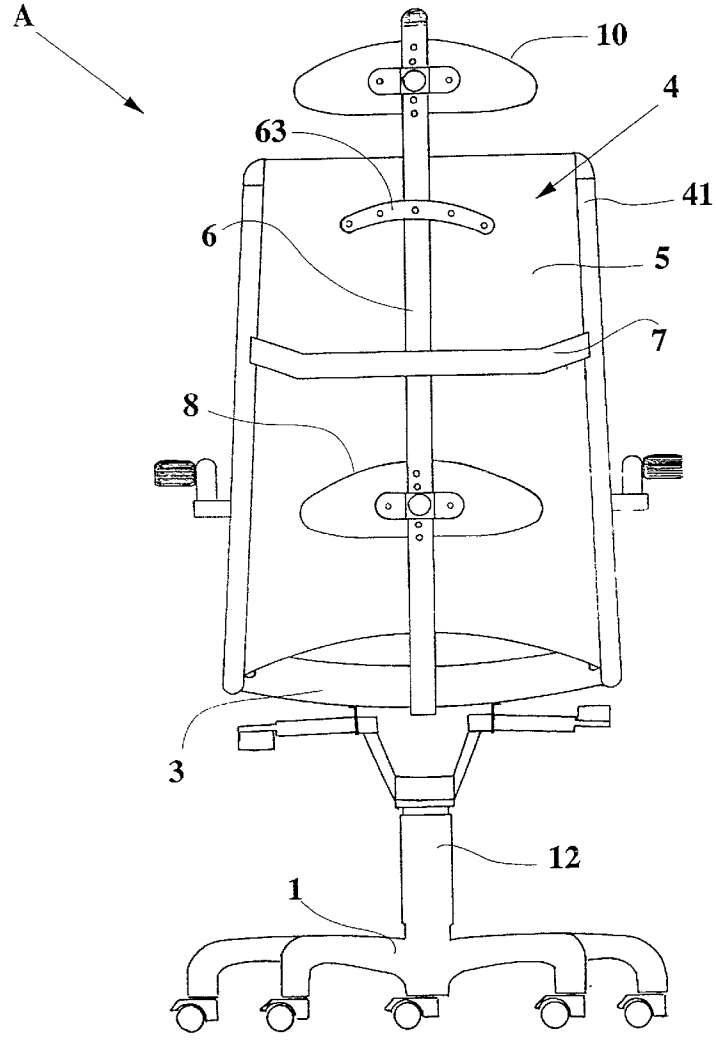
Publication Classification

(51) **Int. Cl.**[7] **A47C 7/46**

(52) **U.S. Cl.** **297/284.4**; 297/284.7

(57) **ABSTRACT**

Ergonomic chair-armchair structure, particularly for office, of the type with an adjustable kidneyrest and headrest, including a base with related support vertical column of a seat and a back, the latter of the type obtained by a tensioned sheet between the two sides of the chair-armchair, in which a support element of the headrest and of the kidneyrest, extended according to the profile of the back is closed to the back side of the latter, being, on one side, downwardly fixed to the seat, and on the other to a connecting cross element between the sides of the armchair; and furthermore in which said kidneyrest and headrest are adjustable along the said support element, providing selective locking means.



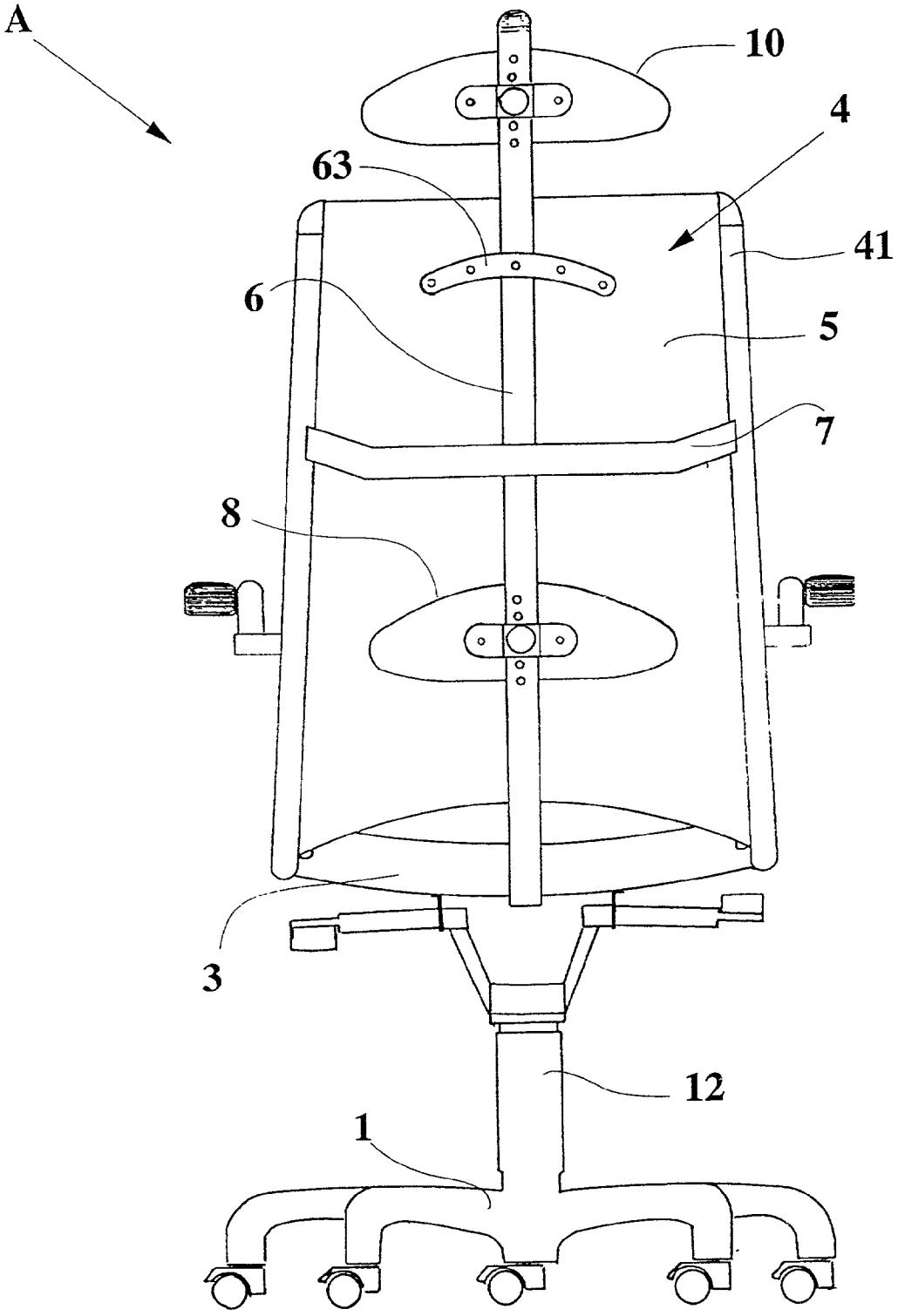


FIG. 1

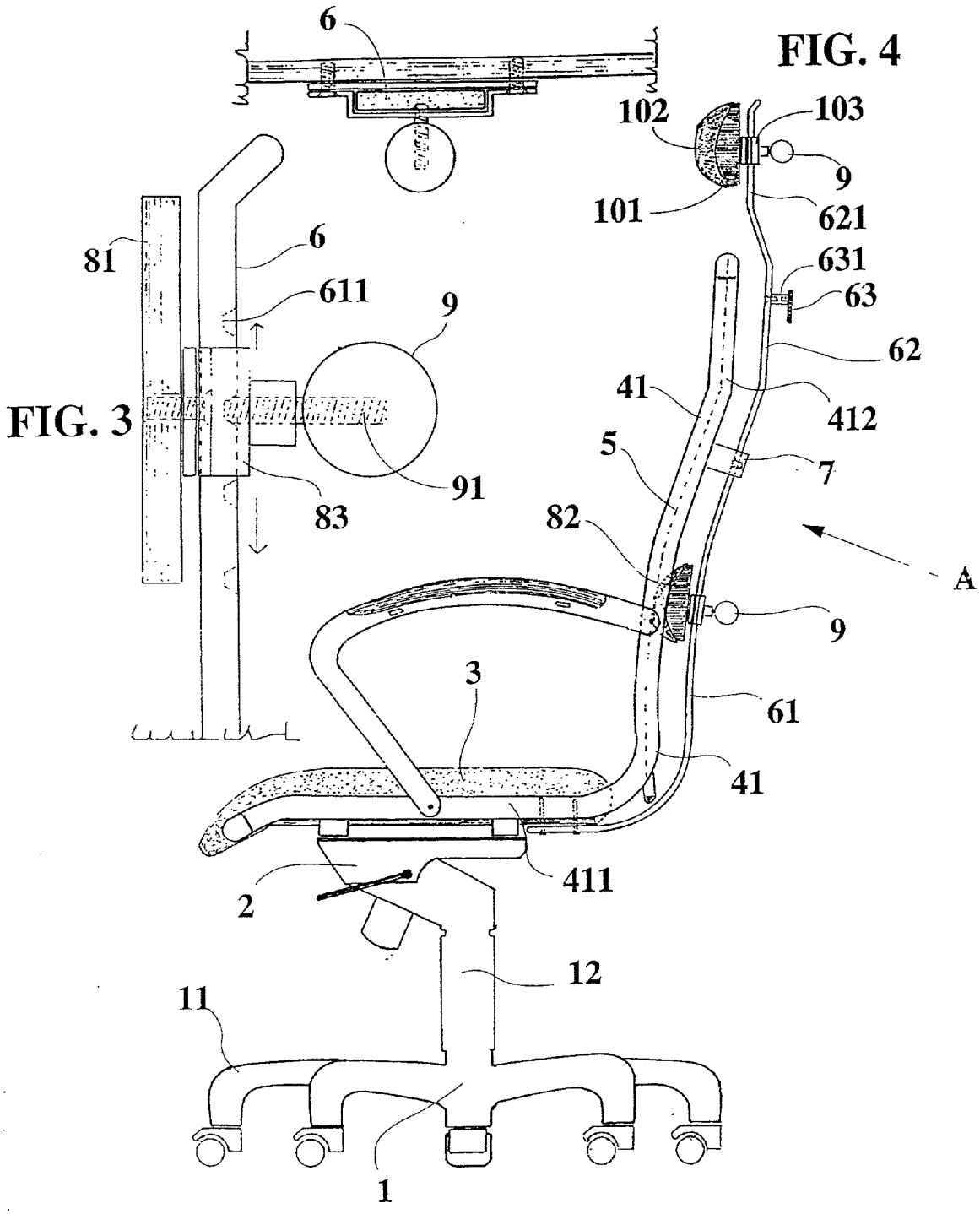


FIG. 3

FIG. 4

FIG. 2

ERGONOMIC CHAIR-ARMCHAIR STRUCTURE, PARTICULARLY FOR OFFICE, OF THE TYPE EQUIPPED WITH ADJUSTABLE KIDNEYREST AND HEADREST

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] This invention refers to an ergonomic chair-armchair structure, particularly for office, of the type equipped with adjustable kidneyrest and headrest.

[0003] The innovation finds particular even if not exclusive application in the field of office-furniture implements.

[0004] 2. Description of Related Art

[0005] It is well known that the chairs are made up generally of a structure or better of a frame, obtained in different material, able to support the seat and the back.

[0006] Said frame, includes seat legs, sometimes with less than four legs, eventually providing transverse support means and connecting means between the front and back couples of legs, as well as of supports applied on the back, which have the purpose to support almost perpendicularly the back.

[0007] In other versions, as for example for armchairs, arm rests which are anchored sideways to the frame that holds up the plan seat can be provided, sometimes, with an end also to the back.

[0008] Well known, are also the devices able to optimise the sitting in ergonomic way, that characterize said chairs-armchairs and chairs, devices that, because of the need to confer greater comfort to the user, are present on the market in large number and in different variations.

[0009] They, substantially, are intended to allow the sole adjusting of the height and of the inclination of the seat or of the back, or, favour certain movements of the seat, of the back or of both, as the oscillations of movements of the last ones, that moreover can be more or less synchronous.

[0010] Other prerogatives just of office armchairs/chairs are not known, finalized to favour a correct sitting.

[0011] Headrest are known. These, substantially, can be of two kinds. A first is fixed, and usually, for example in an armchair is obtained monolithically directly from the body that bears the padded back, prolonging of the necessary amount for the same, in correspondence of the top bearing and forming it as a frame.

[0012] Of it, there is a wide diffusion in the field of motor-vehicles, but also in the sector of the furniture, as evidenced before, with almost minimum structural or shape variations.

[0013] A second type is adjustable, in height, and recently also in the inclination.

[0014] This use, is known with greater recurrence in the field of motor vehicles, where the movement of headrest can be power-operated and manual.

[0015] In these cases, however, one observes that the rods, which sustain the padded support and are integral with this, are introduced through the stuffing and along the back structure, in such a way to be movable axially respect to the same.

[0016] Known, particularly in the sector of the motor vehicle, is also a second adjusting system, this regards the so-called lumbar adjusting device.

[0017] This one, in good substance, allows to intervene almost manually, modifying the profile of the back of a seat, just little over the lower rachis, that allows, substantially, to go to fill out that area that usually and otherwise, would be hardly adaptable, because of the different anatomical conformations of single users.

[0018] And indeed, usually, the position of the rachis is, for example in the female sex subjects much more advanced as regards gluteus, that determines some lumbar cavities decidedly more accentuated that in the masculine subjects.

[0019] Such devices, have therefore the function to obviate this inconvenience, modifying the profile of the stuffing of the back in such a way to accumulate or deform part of the stuffing in that lumbar defined area of pre-eminent interest for the user.

[0020] Such function, in conclusion, can relieve those common pains from defined position as back-pain.

[0021] For example, between the contrivances usually utilized, finalized to modify the profile of the back, the interposition between the stuffing and the bearing structure of the back is known, said interposition is a net or laminar, structure with a low-curved arc.

[0022] Connecting the two arched ends, by means of the use of a contrivance able to approach them or vice-versa between them, a variation of the thickness is obtained, in the point in which the said structure is introduced, imposing the desired variation of the profile.

[0023] A first contrivance finalized to close the ends of said structure, consisted in providing cables, stretched between guide supports, sometimes introduced in convenient sheaths, whose tension is modified connecting a support, which by means of the action of a worm realizes a given stroke along an axis.

[0024] The reduced energetic efficiency of the worm, had to assure the stability of the conferred shape, on the basis that this is not subjected to external forces.

[0025] Adjusting lumbar devices are not known, even if complex, mutual from other sections or however applied in the office chairs/armchairs, nor for other directions close devices to these always with respect to office chairs are known.

[0026] However, traditionally, some typist chairs, used to provide a support stanchion of a back, with the curved lower end, which on one side, was engaged in a convenient seat, obtained below the seat, to be interested by locking perpendicular means and vice versa, that allowed the adjusting in depth.

[0027] On the other hand, the said stanchion, supported the back, in an adjustable condition, being made movable in respect of said fixed stanchion.

[0028] About stanchion, it has been made reference to a plate, shaped, which was introduced coaxially to a seat with a ring integral with the support of the back.

[0029] Through this seat was made operative a screw, where acting manually, the unlock of the position was caused.

[0030] Said screw, could interest the thickness of the stanchion, being extractable, contrasted by elastically yielding means, or in other cases, could simply persist with the point in convenient obtained counterbores along a side of said stanchion which defined the single attainable positions.

[0031] In this case, one tells that some prior users, used to use the back as kidney-rest because of the particular function to which were called to do, namely the typists.

[0032] This was made possible, shifting intentionally the back, by one high position with a very low, almost in proximity of the seat, position that, that however was hardly attainable because of the shape downwardly curved of the stanchion, necessary to confer a certain strength and in the same time elasticity to the structure.

[0033] In this case however, it is evident that, on the other hand the chair could not have possibility to offer any valid support for the back, which if went back result without of any support, overall with the risks of relative accidents.

[0034] It is necessary to premise that the solutions of chairs/armchairs and chairs, today adopted, for the office furniture, provide in large extent, the use of self-supporting sheets, particularly in correspondence of the back.

[0035] These, in short, allow to reduce the production costs of the chair, because they avoid the recourse to expensive support structures, as for example the body in plastic material, without to renounce the comfort.

[0036] At the same time, also the predisposition of the stuffing is avoided, which further allows the cost reduction.

[0037] However, the use of said self-supporting sheets, involves problems, which essentially refer to the necessary and correct tension of the sheet, between the two elements or sides of the back, along which the said sheet is fixed.

[0038] An excessive tension, involves a stiffening of the plane of support as obtained, vanishing the function of the greater comfort that one should obtain adapting the sheet to the profile of the body.

[0039] On contrary, an insufficient tension, surely causes an excessive deformation of the same.

[0040] In practice, the profile of the back would trend to belly in unproportionate way towards the back part of the same, ending up having to sack the body of the person.

[0041] The search of an optimal tension is therefore very difficult operation, it is not always attainable, also because of the natural and not predictable yielding and however degradation for wearing of the material.

[0042] Furthermore, the yielding of the sheet cannot be provided uniform along the whole surface, but should be differentiated in function of the different areas of the body provided each one of a proper profile more or less accentuated.

[0043] Therefore, it results that the tendency of makers to individuate a mean tension, in the back, but uniform, is certainly useful with some areas, other on contrary penalizes it.

[0044] All of these, it is just the lumbar area, that, in this case, when stressed towards the exterior from the surface of the body, results too yielding or vice versa, originating a sitting not completely correct.

BRIEF SUMMARY OF THE INVENTION

[0045] The aim of this invention is also to avoid the above-mentioned drawbacks.

[0046] This and other aims are reached with this innovation according to the characteristics as in the included claims solving the arising problems by means of an ergonomic chair-armchair structure, particularly for office, of the type with adjustable kidneyrest and headrest, including a base with related support vertical column of a seat and a back, the latter of the type obtained by a tensioned sheet between the two sides of the chair-armchair, in which, a support element of the headrest and of the kidneyrest, developed according to the profile of the back is under lee of the back side of the latter, being, on one side, downwardly fixed to the seat, from the other to a connecting cross element between the sides of the armchair; and furthermore in which said kidneyrest and headrest are adjustable along the said support element, providing selective locking means.

[0047] In this way, across the considerable creative contribution which effect constitutes an immediate technical progress different advantages are achieved, with particular reference to the chairsarmchairs, provided with a support sheet with back function.

[0048] Firstly, one selected seat ergonomy is obtained, particularly comfortable, in order to simultaneously have as much of a headrest as the adjustable kidneyrest, adapting the position to the different anatomical conformations of single users.

[0049] Secondarily, it is made possible to check locally the deformation of the profile of the back, in sitting, particularly in lumbar position, giving an effective support for the part of the interested body, furthermore extremely easy.

BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWINGS

[0050] These and other advantages will appear from the following specific description of a preferred solution with the aid of schematic drawings included whose details of execution are not to be considered limitative but preferably illustrative.

[0051] **FIG. 1.**, represents a back view of a chair-armchair, provided with an adjustable support structure of the headrest and of the kidneyrest.

[0052] **FIG. 2.**, represents a side view of the chair-armchair of **FIG. 1**.

[0053] **FIG. 3.**, represents a side view of the adjusting device applied to the headrest and to the kidneyrest, of the chair as in **FIGS. 1**. and **2**.

[0054] Finally, **FIG. 4.**, represents a plan view of the same adjusting device of **FIG. 3**.

DETAILED DESCRIPTION OF THE INVENTION

[0055] With respect also to the figures, one detects that a chairarmchair (A) particularly for the office furniture, is made up of a turning base (1), of the type with five spokes (11), from which one raises a column (12), finalized to the support of a mechanical device (2) for the synchronous oscillation of the seat (3) and of the back (4), commanded by related levers.

[0056] In this case, the chair structure, provides two specular "L" shaped tubular elements (41 respectively constituting the right side and left side.

[0057] The bottom (411) of these, interacts with the seat (3), while, the side upwards directed (412), to curvilinear shape, constitutes the side profile of anchorage of a sheet (5), perfectly tensioned between said two specular sides (41).

[0058] Under lee of the back (4), therefore lightly deviated from this, an accessory is present, made up of a support rod (6) of a kidneyrest (8) and of a headrest (10).

[0059] Said support rod (6), essentially made up with a metallic plate, shaped according to the profile of the same back (4), provides the lower end (61) bent to insinuate oneself below the seat (3) and be anchored to the same by means of traditional screws.

[0060] The opposed side (62), upwards directed that exceeds with the section (621) the height of the back (4), is set and so engaged, in intermediate position, to a cross-piece (7), that joins the sides (41 of the chair (A).

[0061] Function of said support rod (6), in the underside, included between the cross-piece (7) and the seat (3) is to allow the driven mobility of a kidneyrest (8), adjustable in height.

[0062] In more detail, said kidneyrest (8), is made up of an element of support (81), padded (82) from one side facing the back of the sheet (5) and from the other, providing a seat (83) through which is passing-through the support rod (6).

[0063] In this way a screw (91) by means of a knurl (9), perpendicularly interesting the seat (83), insists on the rod (6) in correspondence of opportune equidistant references (611), defining the different attainable positions from the kidneyrest (8).

[0064] In more detail, the position of the stuffing (82) is such to result almost close-fitting to the sheet (5) but without to deform the profile of the same, or at the most lightly deviated, in such a way to allow, during the sitting, a natural adapting, for light yielding, localised, of the back (4) laying to the rear stuffing (82).

[0065] Relatively to the upper part (62) of the rod (6), for the section (621) that exceeds the height of the back (4), a headrest is provided (10) overhanging, also this being adjustable.

[0066] In this case, the section (621) of the rod (6), is close to the axis of the back (4), as regards the under part, in such a way to allow a sliding of said headrest (10) almost in axis respect to the back (4).

[0067] About structure of the latter, one detects that also this is composed of an element of support (101), padded (102) by the chair side, from the other providing a seat (103) through which is passing-through the support rod (6). The adjusting of the same, is attainable in the same way of what has been provided for the kidneyrest (8).

[0068] Finally, in a preferred solution, along the said support element, in fixed position, is provided an overhanging clothes-hanger (63), made up of a lightly arched portion, said portion being connected to the rod (6) by a rear easement (63).

I claim:

1. Ergonomic chair-armchair structure, particularly for office, characterized in that it provides a support element (6) of at least one kidneyrest (8), under lee of the back side of the back (4), being, on one side, fixed to the seat (3-411), from the other to a connecting cross element (7) between the sides (41) of the armchair (A).

2. Ergonomic chair-armchair structure, particularly for office, according to claim 1., characterised in that said kidneyrest (8) is adjustable along the said support element (6), providing selective locking means (9, 91).

3. Ergonomic chair-armchair structure, particularly for office, including a base (1), a support (12) of a seat (3) and a back (4), the latter of the type obtained with a sheet (5) tensioned between the two sides (41) of the chair-armchair, according to claims 1., and 2., characterized in that it provides a support element (6) of the kidneyrest (8) and of the headrest (10), under lee of the back side of the back (4), being, on one side, downwardly fixed to the seat (3411), from the other to a connecting cross element (7) between the sides (41) of the armchair; and furthermore in which said kidneyrest (8) and headrest (10) are adjustable along the said support element (6), providing selective locking means (9, 91).

4. Ergonomic chair-armchair structure, particularly for office, according to previous claims, characterised in that the support rod (6), is made up with a metallic plate, shaped according to the profile of the same back (4), of which the lower end (61) bent for insert below the seat (3) and be anchored to the same, while the opposed side (62), upwards directed that exceeds with the section (621) the height of the back (4), is set and so engaged, in intermediate position, to a cross-piece (7), that joins the sides (41) of the chair (A).

5. Ergonomic chair-armchair structure, particularly for office, according to previous claims, characterised in that the support rod (6), in the underside, included between the cross-piece (7) and the seat (3) provides an adjustable kidneyrest (8).

6. Ergonomic chair-armchair structure, particularly for office, according to previous claims, characterised in that the upper part (62) of the rod (6), for the section (621) that exceeds the height of the back (4), provides an adjustable overhanging headrest (10); said rod (6) disposing the section (621) close to the axis of the back (4).

7. Ergonomic chair-armchair structure, particularly for office, according to previous claims, characterised in that both the kidneyrest (8), that the headrest (10) are made up of an element of support (81, 101), padded (82, 102) facing the back of the sheet (5), from the other, providing a seat (83, 103) through which is passing-through the support rod (6).

8. Ergonomic chair-armchair structure, particularly for office, according to previous claims, characterised in that the selective locking means of the position of the kidneyrest (8) and of the headrest (10), along the rod (6), are made up by a screw (9), that by means of a knurl (91), perpendicularly

regards the seat (**83**, **103**), insisting on the rod (**6**) in connection with references (**611**).

9. Ergonomic chair-armchair structure, particularly for office, according to previous claims, characterised in that the position of the stuffing (**82**, **102**) respectively of the kidney-rest (**8**) and of the headrest (**10**), is almost close-fitting to the sheet (**5**), without to deform the profile of the same, or at the most lightly deviated.

10. Ergonomic chair-armchair structure, particularly for office, according to previous claims, characterised in that along the said support element (**6**), is provided, in fixed position, an overhanging clothes-hanger (**63**), made up of a lightly arched portion, connected to the rod (**6**) by a back easement (**631**).

* * * * *