ANATOMIC DESK CHAIR COMPRISING BACKREST WITH FRAME HAVING A TIRE-TYPE ASSEMBLY SYSTEM

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ABSTRACT

The present invention relates to an anatomic desk chair for office or home work, which has a displacement system composed by a plurality of wheels which allow the user to move from one location to another, wherein the chair is characterized by comprising a backrest having a frame with a tire-type assembly system, i.e. wherein the backrest as such is made of an elastomeric material and is assembled in the frame by pressure and these are adjusted through a series of screws attaching the frame and the counter-frame. Thus, the assembly system is composed by a back support or "skeleton" which corresponds to a piece injected in an elastomer requiring of a stretching process subsequent to the injection in order to obtain the shape and dimension sufficient to assembly in the frame with a tire-type system, after such skeleton-frame assembly the counter-frame is assembled through screws as previously indicated.
ANATOMIC DESK CHAIR COMPRISING BACKREST WITH FRAME HAVING A TIRE-TYPE ASSEMBLY SYSTEM

TECHNICAL FIELD

[0001] The present invention pertains generally to a chair, more particularly an anatomic chair, said chair having a displacement system composed by a plurality of wheels which allow the user to move from one location to another, wherein the chair is characterized by comprising a backrest having a frame with a tire-type assembly system, i.e., wherein the backrest as such is made of an elastomeric material and is assembled in the frame by pressure and these are adjusted through a series of screws attaching the frame and the counter-frame. The assembly system may composed of a back support or “skeleton” which may correspond to a piece injected in an elastomer wherein the elastomer undergoes a stretching process subsequent to the injection to obtain the shape and dimension sufficient to assemble in the frame with a tire-type system. After such skeleton-frame assembly the counter-frame may be assembled through screws as previously indicated.

[0002] In addition, embodiments of the disclosed chair may have a lumbar support system which allows the user to assume an appropriate position when using the chair, avoiding thereby problems that may arise in the back, namely in the lumbar region, due to an inadequate position for long periods of time.

BACKGROUND

[0003] Desk chairs have become a basic tool found in almost any office or home. In order to comfortably perform a desired task, it is often necessary to maintain a good posture when performing the work. Whether the work is manually performed or completed by using a computer or the like, a comfortable sitting position is desirable. For this purpose, there are a variety of chairs which allow the user to have a comfortable and adequate position for supporting long working hours without suffering the side effects generated by a bad or inadequate posture. However, these chairs usually result in back problems, namely in the lumbar region.

[0004] In addition, some manufacturers and producers of work chairs have focused in most cases on desk chairs which provide a support for the lumbar region and other parts of the back and body, but wherein said chairs have elevated costs and cannot be purchased by all the general public. Moreover, these chairs have backrests made of materials that do not have an adequate assembly with the backrest and therefore, an inconvenience can arise related to the chair being released or damaged with relatively low usage. Poor quality and easily damaged chairs is undesirable because it raises the costs for the consumer and in some cases for the manufacturer who must assume such loss due to the warranty.

[0005] In this regard, the state of the art contains a plurality of desk chairs having the above mentioned properties, such as the one described in document WO 93/25121, which discloses a tiltable chair including a base member, a seat, a back, and a linkage assembly adapted to allow the seat and back to tilt downwardly and rearwardly to allow pivotal movement of the seat about a pivot axis in substantial alignment with the hip joints of a user. Likewise, other aspects of the invention of this document are to provide a vertically adjustable column for supporting the seat of the chair, a support assembly comprising a frame member having a central opening thereof and a receptacle formed around the perimeter thereof, a carrier member adapted to fit inside the receptacle and a membrane of elastic material covering the central opening and a pair of armrests adapted to be mounted to the chair to allow pivotal movement thereof. However, it can be clearly seen that the chair described in this document shows the disadvantage of not having a specific backrest assembly system. Contrary to the disclosed chair, it is done by thermal processes or through adhesives that, after some use time, and under the force of the user to cause this chair to tilt backward. This chair can loosen and then it is necessary for some maintenance or reparation and in some cases cause inconvenience to the user due to failure during the use, which is undesirable.

[0006] On the other hand, document JP 2008104594 teaches a chair having a backrest board firmly fastened to a back support, wherein the backrest board is composed of synthetic resin in which an elastomer is mixed to improve the flexibility. The upper part of the backrest board has a plurality of bag-like parts formed by changing their positions in the left/right and top/bottom. Thus, each bag-like part is opened to the left or the right and has a flat nut inserted inside. Similarly, the back support of the chair described has an upper plate overlapped on the upper part of the backrest board and a screw penetrating through the upper plate which is screwed into the flat nut, wherein the bag-like parts and the upper plate are fastened so as to have high fastening strength and durability. Moreover, the bag-like parts are provided in the back side of the backrest board so as to prevent the degradation of the aesthetic appearance of the front face of the backrest board.

[0007] Finally, document KR 100946664 mentions a chair which is able to control the angle of a back support to tilt back the back support and maintain tilted angle, wherein said chair is able to control the angle of a back support. The disclosed chair comprises: a back support having rotation axis and displacement axis at left and right sides; a housing having a coupling hole which is connected to the rotation axis; a displacement bundle having a driving block; and a locking member which selectively fixes the position of the driving block, wherein the displacement bundle comprises: a driving block which moves along a sliding groove; a driving bar mounted to surround a support shaft; an elastomer inserted in to an external surface of the driving bar; and a controller protruding the outside of the housing of the chair. However, it can be seen that just like all the above mentioned documents, this chair described in KR 100946664 features an assembly from the backrest to the frame which is based on thermal processes or through the use of adhesive, which is undesirable and can have some complications when in use.

[0008] According to the above information, it is clear that there is a need in the state of the art for designing and implementing a working chair being completely ergonomic and which additionally has an assembly system in the backrest which allows said backrest to couple to the frame by some means not requiring complicated thermal processes or adhesives which fasten the backrest and the frame such that they allow the user to safely and reliably tilt back without the possibility of a detachment or the like, while having a lumbar support system to avoid problems related to bad postures when doing a work for prolonged periods of time.
BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 depicts a perspective view of an embodiment of an ergonomic chair;
[0010] FIG. 2 depicts a plane front view of the ergonomic chair of FIG. 1;
[0011] FIG. 3 depicts a plane side view of the chair of FIG. 1 with a cross section of line A-A shown in FIG. 2, wherein the details of the assembly of the frame and lumbar support are shown.
[0012] FIG. 4 depicts an enlarged view of the detail of the assembly B corresponding to the assembly of the backrest and the frame.
[0013] FIG. 5 corresponds to an enlarged view of the detail of the assembly C corresponding to the lumbar support.
[0014] FIG. 6 depicts an exploded perspective view of the chair of FIG. 1.

DETAILED DESCRIPTION

[0015] The present invention corresponds to an ergonomic chair (1) comprising the following parts or components:
[0016] A backrest (2) composed by a mesh (21) responsible for directly supporting the back of the user when using the chair (1), a frame (22) located around the mesh (21), a counter-frame (24) which allows the attachment between the mesh (21) and the frame (22) to affix these two elements to the chair (1), wherein the assembly between such elements is a tire-type assembly. A counter-frame may facilitate the attachment of the mesh and the frame to the ergonomic chair. A lumbar support (23) may be located in the lower part of the backrest (2) and in direct contact with the mesh (21), and a back support of backrest (25) which joins the backrest (2) and the seat (3);
[0017] A seat section (3) composed by a base (31) supporting in its upper part a cushion, a back support (32) which allows the connection between the seat (3) and the backrest (2), and vertical movement system (33) corresponding to a lever which allows the chair to displace vertically upwards or downwards according to the selection of the user or tilting forward or backward or a combination thereof; and
[0018] A movement and support system (4) located in the lower part of the chair (1) and connecting with the seat section (3) by means of a chair central support which corresponds to the column (50) thereof being inserted directly in the back support (32) of the seat (3);
[0019] In this regard, the mesh (21) of the backrest (2) of the chair (1) corresponds to a part called "skeleton", due to it corresponding to the skeleton of the backrest (2), wherein said mesh is preferably made of an elastomer and is directly assembled in the frame (22) by a tire-type system assembly. Thus, the mesh (21) is wrapped around the frame (22) in order to be fastened to the same, wherein said frame (22) is assembled in the counter-frame (24) by at least one screw (221) or in an alternative embodiment, a series of screws (221) which pass through both the frame (22) and the counter-frame (24) maintaining thereby all the components of the backrest (2) together and avoiding the chair (1) to disassemble due to the everyday use.
[0020] Likewise, this type of assembly is located in the lower part of the backrest (2) which corresponds to the lumbar support (23) wherein said lumbar support is also assembled by at least one screw (231) or in an alternative embodiment, at plurality of screws (231) attaching the back support of the backrest (25) by passing through the counter-frame (24).

[0021] In this way, the lumbar support system (23) serves a dual function, that is, a system which allow to have a lumbar and sacral support, wherein said system or support (23) is important for the sacral support which is not very common in this type of chairs existing in the state of the art, taking into consideration the fact that the sacral support is located lower than the lumbar support, in the same system or support (23) and provides an additional option for improving the ergonomic conditions of the product and to improve the comfort of the user, considering that the dimensions of the people (anthropometry) features very large variations, for example, the lumbar support for a person could be very high or very low for another one depending on the dimension of the back. Thus, the chair of the present invention has an adjustable horizontal axis for tension and one in the vertical axis so a sacral or lumbar support is customized, depending on the needs of the user.

[0022] In a preferred embodiment of the invention, the movement and support system (4) is formed by a series or plurality of extensions (41) which correspond to the legs of a chair and wherein each extension (41) has a distal end with at least one wheel (42) allowing the chair (1) to easily move or displace by means of the movement of the user when desired.

[0023] In one embodiment of the present invention, the chair (1) further may comprise a support system for arms (5), which preferably may be composed by two independent supports, one for each side of the chair and matching with the right and left arms of the user. Thus, each of said supports of the system (5) has an extension which protrudes directly from the base (31) of the seat section (3) and extends upwards towards the upper part of the chair (1) by the outer edge as show in FIG. 1, wherein such extensions fit in some armrests that preferably have a flat upper surface and are made of a material which allows an adequate comfort for the user, that is, wherein its texture is substantially padded.

We claim:

1. An ergonomic chair comprising:
   a backrest, including a mesh for directly supporting the back of the user when using the ergonomic chair;
   a frame located around the mesh;
   a counter-frame which facilitates the attachment of the mesh and the frame to the ergonomic chair;
   a movement system including a base, supporting in its upper part a cushion, a back support, which allows the connection between the seat and the backrest, and a vertical movement system corresponding to a lever which allows the chair to displace, according to the selection of a user, in a direction of at least one of vertically upwards, vertically downwards, tilting forward, tilting backward and a combination thereof;
   a lumbar support system located in the lower part of the backrest and placed in direct contact with the mesh and a back support of backrest which joins the backrest and the seat; and
   a movement and support system located in the lower part of the chair connected to the seat with a chair central support which corresponds to a column inserted directly in the back support of the seat, wherein the assembly between the mesh, the frame and the counter-frame is a tire-type assembly system.

2. The ergonomic chair according to claim 1, wherein the mesh of the backrest is made of an elastomer and is directly assembled in the frame by a tire-type assembly system.
3. The ergonomic chair according to claim 1, wherein said frame is assembled in the counter-frame by at least one screw which passes through both the frame and the counter-frame.

4. The ergonomic chair according to claim 1, wherein the lumbar support is assembled with the back support of the backrest by at least one screw passing through the counter-frame.

5. The ergonomic chair according to claim 1, wherein the lumbar support system includes a lumbar and a sacral support, wherein the lumbar support system further includes a tension adjustable horizontal axis and a tension adjustable vertical axis, and wherein said sacral support is located lower than the lumbar support.

6. The ergonomic chair according to claim 1, wherein the movement and support system includes a plurality of extensions, wherein each of the plurality of extensions includes a distal end having at least one wheel.

7. The ergonomic chair according to claim 1, further comprising at least one support system for arms.

8. The ergonomic chair according to claim 7, wherein each of the at least one support system for arms includes an extension, wherein the extension protrudes from the base and extends upward, wherein said extensions includes at least one armrest having a flat upper surface made of a padded material.

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