Patent claims:

1. An apparatus (1) for positioning the body of a user (100), wherein the apparatus may be integrated into a seat or a lounger or used as a cushion, comprising:

a seating element (20), a back element (10) having a pelvis and lumbar-spine module (13) (10) and a computer unit (40), wherein the back element (10) is connected to the seating element (20), wherein the pelvis and lumbar-spine module (13) comprises at least an adjusting element (117) and at least a sensor (113), and wherein the seating element (20) comprises at least an adjusting element (108) and at least three sensors (111, 112), wherein the sensors (111, 112, 113) of the pelvis and lumbar-spine module (13) and of the seating element (20) are connected to the computer unit (40) and configured to sense seat-related and rest-related pressures of the user (100) in the seating element (20) and in the pelvis and lumbar-spine module (13), wherein the computer unit (40) is connected to the adjusting elements (108, 117) of the pelvis and lumbar-spine module (13) and the back element (20) respectively and configured to evaluate the seat-related and rest-related pressures and to activate the adjusting elements (108, 117) of the pelvis and lumbar-spine module (13) and the back element (20) respectively, **characterized in that** a first and a second sensor (112) and a third sensor (111) of said sensors are configured to sense the seat-related pressure of the first and second ischial tuberosities (102) and the seat-related pressure of the coccyx (104) in an substantially upright seating position of the user (100), wherein the first and the second ischial tuberosities (102) define an ischial-tuberosity level, wherein the adjusting element (108) of the seating element (20) is configured to compensate for the ischial-tuberosity level horizontally about the sagittal axis of the user (100) in the case of seat-related and/or rest-related pressure differences and whereupon the adjusting element (117) of the pelvis and lumbar-spine module (13) is configured to tilt the pelvis (101) of the user (100) about the horizontal axis of the same until the seat-related and/or rest-related pressure of the coccyx has a value substantially equal to zero.

2. An apparatus (1) according to claim 1**, characterized in that** in the region of the sacrum (123) and the coccyx (104) of the user (100), when transitioning from an substantially upright seating position into a position inclined about the horizontal axis of the user (100), the seat-related and/or rest-related pressures will develop as a function of the inclination of this position, wherein in the lying position in the region of the sacrum (12) there will develop substantially maximal seat-related and/or rest-related pressures.

3. An apparatus (1) according to claim 1, **characterized in that** the back element (10) has a thoracic-spine module (12) and a cervical-spine and head module (11), wherein the thoracic-spine module (12) is connected to the pelvis and lumbar-spine module (13), the cervical-spine

and head module (11) is connected to the thoracic-spine module (12) and the back element (10) is connected to the seating element (20).

4. An apparatus (1) according to claim 3, **characterized in that** the back element (10) comprises further adjusting elements (116, 121, 119, 122, 110), which are configured to position the user (100) by way of alternating and/or synchronous adjusting movements, in particular in the region of the spine (196), sagittally and about the longitudinal axis of the same, wherein the computer unit (40) is configured to carry out the adjusting movements in the pelvis and lumbar-spine module (13), in the thoracic-spine module (12) and in the cervical-spine and head module (11) in succession to one another, wherein in the adjusting elements already positioned of the seating element and/or back element there will not develop substantially any seat-related and/or rest-related pressure differences or changes of the body's position, respectively.

5. An apparatus (1) according to claim 4, **characterized in that** the adjusting elements (117, 116, 119, 121, 122) spare the spinous processes (107) of the user (100) upon the activation of the same.

6. An apparatus (1) according to any of the preceding claims, **characterized in that** the apparatus (1) has a leg element (30), wherein the leg element (30) is connected to the seating element (20) and comprises further adjusting elements and sensors.

7. An apparatus (1) according to any of the preceding claims, **characterized in that** the adjusting elements (108, 117, 110, 116, 121, 119, 122) comprise actuators selected from the group consisting of mechanic, electric, pneumatic or hydraulic actuators.

8. An apparatus (1) according to any of the preceding claims, **characterized in that** the sensors (111, 112, 113) of the pelvis and lumbar-spine module (13) and of the seating element (20) comprise sensors selected from the group consisting of mechanic, electric, pneumatic or hydraulic sensors.

9. A method for operating an apparatus (1) according to any of the claims 1 to 8, wherein the method comprises the following steps:

a) sensing the seat-related and/or rest-related pressure of the ischial tuberosities (102) of the user (100) by the first and second sensor (112);
b) evaluating the seat-related and/or rest-related pressures and, in the case of seat-related and/or rest-related pressure differences, activing the adjusting element (108) of the seating element (20) by the computer unit (40);
c) horizontally compensating for the ischial tuberosity level of the user (100) about the sagittal axis of the same;
d) sensing the seat-related pressure of the coccyx (104) of the user (100) by the third sensor (111) of the seating element (20);
e) evaluating the seat-related and/or rest-related pressure of the coccyx (104) of the user by the computer unit (40);
f) activating the adjusting element (117) of the pelvis and lumbar-spine module (13) by the computer unit (40) to tilt the pelvis (101) of the user (100) about the horizontal axis of the same into a positive and/or negative sagittal direction;
g) terminating the adjusting movement of the adjusting elements (117) by the computer unit (40) as soon as the seat-related and/or rest-related pressure of the coccyx (104) has a value substantially equal to zero during tilting.

10. A method according to claim 9, wherein the method, following the ischial-tuberosity level compensation and the tilting process of the pelvis (101) of the user (100), includes the following steps:

a) positioning and sagittally supporting the user (100) in the region of the thoracic spine by activating the adjusting elements (119,121) of the thoracic-spine module (12) by the computer unit (40), wherein the adjusting movements spare the region of the spinous processes (107);
b) sensing seat-related and rest-related pressure differences by the sensors (111, 112, 114, 113) of the seating element (20) and back element (10);
c) evaluating the seat-related and rest-related pressures by the computer unit (40);
d) terminating the adjusting movement of the adjusting element (119) of the thoracic-spine module (12) by the computer unit (40) as soon as a substantial seat-related and/or rest-related pressure difference in the adjusting elements of the seating element (20) and/or of the pelvis and lumbar-spine module (13) is being sensed;
e) subsequent positioning and sagittally supporting the user (100) in the region of the cervical spine and head region of the same by activating the adjusting elements (122) of the cervical-spine and head module (11) by the computer unit (40);
f) terminating the adjusting movement of the adjusting elements (122, 115) by the computer unit (40) as soon as a seat-related and/or rest-related pressure difference in the adjusting elements (116, 121) of the thoracic-spine module (12) is being sensed.

11. A method according to any of claims 9 and 10, **characterized in that** the body positioning of the user (100) is realized in an inclined position of the back element (10).

12. A method according to any of claims 9 and 11, **characterized in that** the adjusting elements are activated at a location of the leg element (30) in an inclined position of the back element (10) and an inclined position of the seating element (20) by the computer unit (40) until the heel of the user (100) rest at least at the ischial-tuberosity level.

13. A method according to any of claims 9 to 12, wherein the method, following the positioning of the user (100), comprises the following steps:

a) post-positioning the user (100) in cyclic time intervals and/or at a segmental pressure difference of pre-defined seat-related and rest-related pressure ranges;
b) activating adjusting elements of the apparatus (1) in a horizontal plane of the back element (10) and/or of the seating element (20) and/or of the leg element (30) in the form of synchronous and/or alternating adjusting movements segmentally upwards and/or downwards in succession to one another or in any order along the longitudinal axis, wherein the synchronous adjusting movements are realized in a positive as well as negative sagittal direction and the alternating adjusting movements are realized in the form of a rotation about the longitudinal axis, wherein the adjusting movement is realized unilaterally in a positive sagittal direction and on the other side for the same amount in a negative sagittal direction;
c) activating adjusting elements of the seating element (20) in the form of synchronous or alternating adjusting movements;
d) activating adjusting elements of the leg element (30) in the form of synchronous and/or alternating adjusting movements.