Abstract: A furniture device (1) comprising a fundament (3), a support member (7) provided on the fundament, a lifting member (10) adapted to lift and lower the support member between a first and a second position, and a drive unit (30). The lifting member comprises an arm arrangement (20, 20a, 20b) with a first arm (22), a first pivot (26) and a second pivot (28). The arm arrangement comprises a second arm (24) with a displaceable end (35) that is adapted to be displaced by the drive unit while acting on the support member. The lifting member in cooperation with the drive unit is configured to lift the support member from the first position to the second position by displacing the displaceable end towards the second pivot and lower the support member from the second position to the first position by displacing the displaceable end away from the second pivot.
A FURNITURE DEVICE

FIELD OF THE INVENTION

The present invention relates to a furniture device comprising a fundament in connection to the ground, a support member defining an extension plane and being provided on the fundament, a lifting member adapted to lift and lower the support member between a first and a second position that are located at different elevation from the fundament. The lifting member comprising at least one arm arrangement that comprises an elongated first arm, a first pivot between the first arm and the fundament, and a second pivot between the first arm and the support member. The first arm extends from the first pivot to the second pivot. The furniture device further comprising a drive unit adapted to act on the arm arrangement so that the arm arrangement acts on the support member.

PRIOR ART

A furniture device, such as a bed, an armchair, or other similar devices, is adapted to receive the weight or part of the weight of a being.

The furniture device comprises the support member provided on the fundament. The support member is adapted to be lifted by means of the lifting member between at least the first and the second position. The furniture device may have a single support member or a plurality of support members. The at least first and second position of the single support member may for example assist the user to enter or exit the support member. In case of a plurality of support members, the support member with the at least first and a second position is for example a foot support,
wherein the at least first and second position provides comfort to the user when the furniture device is used for different purposes, such as for laying down or for sitting.

The drive unit comprises a drive motor, such as an electric motor, that acts on a protruding part of the arm arrangement in order to lift or lower the support member. Thereby, the protruding part is subjected to a large force, wherein the protruding part and the arm arrangement require a rigid structure in order to withstand the force from the drive motor. The requirement of a rigid structure increases the weight and the material cost of the pivot arm. Another problem with prior art devices is that the drive unit requires space under the fundament of the device. Thereby, the space can not be used for storage, and furthermore cleaning under the fundament is difficult.

WO2005/122841 discloses a device for lifting a support member between a first and a second position. The device comprises a fundament and a lifting member. The lifting member comprises an arm arrangement comprising a first arm (see fig. 2 and 3, reference number 15a, 15b), a first pivot between the first arm and the fundament and a second pivot between the first arm and the support member. The device further comprises a drive unit adapted to induce a rotation of the arm arrangement so that the arm arrangement acts on the support member. The drive unit acts by means of an electric motor on a protruding part (see fig. 2, reference number 16) of the arm arrangement, wherein the support member is lifted or lowered between the first and the second position. The device has the above described problems and disadvantages.

OBJECTS AND SUMMARY OF THE INVENTION

The object of the present invention is an improved furniture device. A first object of the invention is a device that requires a
less rigid arm arrangement in comparison to prior art. A second object of the invention is a device, which comprises a pivoting mechanism that requires less space under the fundament in comparison to prior art.

These objects are achieved by a furniture device according to claim 1. The furniture device is characterized in that the arm arrangement further comprises an elongated second arm with a displaceable end that is adapted to be displaced by the drive unit while acting on the support member, wherein the first arm and the second arm are rotary joined with each other and to the fundament by means of the first pivot so that the second arm extends from the first pivot to the displaceable end, wherein the lifting member in cooperation with the drive unit is configured to lift the support member from the first position to the second position by displacing the displaceable end towards the second pivot and lower the support member from the second position to the first position by displacing the displaceable end away from the second pivot.

The first and the second arm are rotary joined with each other and to the fundament by means of the first pivot, wherein the first pivot enables the first and second arm to rotate in respect to each other and in respect to the fundament. The first and the second arm are arranged in respect to the first pivot so that the first arm extends from the first pivot to the second pivot and so that the second arm extends from the first pivot to the displaceable end. The displaceable end of the second arm is adapted to be displaced by the drive unit. Thereby, the displaceable end acts on the support member.

The arm arrangement is adapted to lift and lower the support member without applying pressure on a protruding part in order to create a rotation of the arm arrangement. The displaceable end of the second arm is adapted to be displaced by the drive unit, wherein the displaceable end acts on the support member.
Accordingly, the pivot arm may be made of a less rigid structure than in prior art devices. Thereby, the material cost for the pivot arm is reduced. Furthermore, the weight of the device is reduced.

The displaceable end is adapted to act on the support member, which enables the lifting member to be located at a position where the pivoting mechanism does not require space under the fundament, wherein the space under the fundament may be used for other purposes such as storage. Furthermore, without obstacle of the drive unit cleaning under the fundament is facilitated.

According to one embodiment of the invention, the lifting member is adapted to lift and lower the support member so that the inclination of the extension plane is maintained or changed less than 10 degrees, preferably less than 5 degrees.

According to one embodiment of the invention, the arm arrangement is adapted to maintain the first and the second position of the support member without significantly changing the inclination of the extension plane.

According to one embodiment of the invention, the furniture device defines a symmetry plane intersecting the first pivot and the extension plane, the first arm defines a first line between the first pivot and the second pivot and a first angle between the first line and the symmetry plane, and the second arm defines a second line between the first pivot and the displaceable end and a second angle between the second line and the symmetry plane, wherein the displaceable end is adapted to be displaced so that the first angle and the second angle is essentially the same or the difference between the first angle and the second angle is less than 10 degrees, preferably less than 5 degrees.
Thanks to the fact that the first angle and the second angle is essentially the same, or the difference between the first angle and the second angle is less than 10 degrees, preferably less than 5 degrees, it is assured that the support member is lifted and lowered without significantly changing the inclination of the extension plane.

According to one embodiment of the invention, the symmetry plane is intersecting the extension plane perpendicularly.

According to one embodiment of the invention, the support member comprises a lower surface directed towards the arm arrangement, which lower surface comprises a displacement surface that is adapted to facilitate the displacement of the displaceable end. By means of the displacement surface, the displaceable end acts on the support member with a force that lifts or lowers the support member between the first and the second position.

According to one embodiment of the invention, the support member comprises a guide member protruding away from the lower surface of the support member and comprising said displacement surface, wherein the guide member is adapted to guide the displacement of the displaceable end. Thereby, the rate in which the support member is lifted and lowered when displacing the displaceable end.

According to one embodiment of the invention, the guide member comprises a wedge shaped element.

According to one embodiment of the invention, the drive unit comprises an elongated driving element and a displacement member adapted to be displaced along the driving element and connected to the displaceable end.
According to one embodiment of the invention, the drive unit comprises a drive motor adapted to act on the driving element so that the displacement member is displaced along the driving element. According to one embodiment of the invention, the drive motor is an electric motor.

According to one embodiment of the invention, the drive motor rotates the driving element to displace the displacement member and thereby providing the displacement of the displaceable end.

According to one embodiment of the invention, the elongated driving element comprises a first threading and the displacement member comprises a second threading, which first and second threading engages with each other, wherein the displacement member is adapted to be rotated so that the displacement member is displaced and thereby also the displaceable end is displaced.

According to one embodiment of the invention, the drive unit comprises a link arm extending between the displacement member and the displaceable end, a third pivot between link arm and the displacement member and a forth pivot between the link arm and the displaceable end.

The link arm is adapted to allow the support member to be lifted independently from the lifting provided by the arm arrangement. By means of the link arm it is assured that a person is not pinched between the second section and the fundament.

According to one embodiment of the invention, the link arm has a length that enables the displaceable end to be displaced on the displacement surface of the guide member.

According to one embodiment of the invention, the guide member protrudes a certain length away from the lower surface
of the support member, wherein the link arm has a length that exceeds the protruding length of the guide member.

According to one embodiment of the invention, the first pivot is adapted to allow a first rotation of the first arm and a second rotation of the second arm, wherein the first rotation and the second rotation are directed in opposite directions.

According to one embodiment of the invention, the second arm comprise an elongated first arm part and an elongated second arm part, wherein the first arm part is closer to the first pivot than the second arm part, and a fifth pivot between the first arm part and the second arm part adapted to allow a third rotation of the second arm part in relation to the first arm part, wherein the drive unit is adapted to act on an outer part of the second arm which outer part is located at a greater distance from the first pivot than the fifth pivot.

By means of the arrangement of the first and second arm part and the fifth joint, the distance from the first pivot to the displaceable end is adapted to be less than the combined length of the second arm. Further advantage is that the lifting or lowering of the support member is further controllable by the arrangement.

According to one embodiment of the invention, the first arm part extends along a first longitudinal axis and the second arm part extends along a second longitudinal axis, and the second arm comprises a first stop member adapted to stop the third rotation at a first inclination between the first and the second longitudinal axis, wherein the second rotation is consecutive to the third rotation when the support member is lifted away from the first position.

According to one embodiment of the invention, the second rotation is initiated at the first inclination between the first and
the second longitudinal axis. According to one embodiment of
the invention, the second rotation is initiated when the first stop
member is in contact with both the first and the second arm part.

According to one embodiment of the invention, the first arm
comprise an elongated third arm part and an elongated fourth
arm part, wherein the third arm part is closer to the first pivot
than the fourth arm part, and a sixth pivot between the third arm
part and the fourth arm part adapted to allow a fourth rotation of
the fourth arm part in relation to the third arm part.

According to one embodiment of the invention, the third arm part
extends along a third longitudinal axis and the fourth arm part
extends along a fourth longitudinal axis, and the first arm
comprises a second stop member adapted to stop the fourth
rotation at a second inclination between the third and the fourth
longitudinal axis, wherein the first rotation is consecutive to the
fourth rotation when the support member is lifted away from the
first position.

According to one embodiment of the invention, the first rotation
is initiated at the first inclination between the third and the
fourth longitudinal axis. According to one embodiment of the
invention, the first rotation is initiated when the second stop
member is in contact with both the third and the fourth arm part.

According to one embodiment of the invention, the drive unit is
adapted to, from the first position of the support member, act on
the second arm and thereby displacing the displaceable end
while inducing the third rotation of the second arm part so that
the support member is lifted from the first position to the second
position.

According to one embodiment of the invention, the first position
is located closer to the fundament than the second position.
According to one embodiment of the invention, the support member is adapted to be positioned in any positions between the first and the second position.

According to one embodiment of the invention, the support member is in the second position when the first stop member is contacting both the first arm part and the second arm part.

According to one embodiment of the invention, the drive unit is adapted to, from the second position of the support member, act on the second arm and thereby displacing the displaceable end while inducing the fourth rotation of the forth arm part so that the support member is lifted from the second position to the third position.

According to one embodiment of the invention, the support member is in the third position when the second stop member is contacting both the third arm part and the fourth arm part.

According to one embodiment of the invention, the second position is located closer to the fundament than the third position.

According to one embodiment of the invention, the support member is adapted to be positioned in any positions between the second and the third position.

According to one embodiment of the invention, the drive unit is adapted to, from the third position of the support member, act on the second arm and thereby displacing the displaceable end while inducing the first rotation and the second rotation so that the support member is lifted from the third position to the fourth position.

According to one embodiment of the invention, the third position is located closer to the fundament than the fourth position.
According to one embodiment of the invention, the support member is adapted to be positioned in any positions between the third and the fourth position.

According to one embodiment of the invention, the device comprises a further arm arrangement, each arm arrangement is arranged at opposite sides of the fundament, and a connection element connecting the arm arrangements together. By means of the arm arrangement, the further arm arrangement and the connection element the stability of the lifting and lowering of the support member is improved.

According to one embodiment of the invention, the drive unit acts on the connection element by means of the link arm. The link arm is adapted to transfer energy to the displaceable end so that the displaceable end is displaced towards the second pivot or away from the second pivot.

According to one embodiment of the invention, the furniture device comprises a first section comprising the support member, a second section adjacent to the first section comprising a further support member, a connection member extending between the first section and the second section, a first hinge between the connection member and the support member of first section and a second hinge between the connection member and the further support member of the second section. By means of the connection member, the first section and the second section are connected. Thereby, the first section is connectable to the second section.

According to one embodiment of the invention, the support member of the first section and the support member are adapted to form a combined surface when the support member is in the first position and individual surfaces when the support member is in the second position.
According to one embodiment of the invention, the furniture device comprises a first support arranged at the fundament, wherein the first support is adapted to support the first arm when the support member is in the first orientation. The first support provides further stability to the first arm when the support member is in the first position.

According to one embodiment of the invention, the first support supports the first arm part of the second arm during lifting or lowering the support member between the first and the second position.

According to one embodiment of the invention, the furniture device comprises a second support arranged at the fundament, wherein the second support is adapted to support the second arm when the support member is in the first orientation. The second support provides further stability to the second arm when the support member is in the first position.

According to one embodiment of the invention, the second support supports the third arm part of the first arm during lifting or lowering the support member between the second and the third position.

According to one embodiment of the invention, the first pivot comprises means for inducing the first rotation of the first arm in dependency of the second rotation of the second arm.

According to one embodiment of the invention, the support member rests on the fundament in the first position and is held in the second position by the lifting member.

BRIEF DESCRIPTION OF THE DRAWINGS
The invention will now be explained more closely by the description of different embodiments of the invention and with reference to the appended figures.

The invention will now be explained more closely by the description of different embodiments of the invention and with reference to the appended figures.

5 Fig. 1 shows a side view of a furniture device according to the invention.
Fig. 2 shows the furniture device in a perspective view from the ground.
Fig. 3a shows a side view of the furniture device in a first position.
Fig. 3b shows a side view of the furniture device in a second position.
Fig. 3c shows a side view of the furniture device in a third position.
Fig. 3d shows a side view of the furniture device in a forth position.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE INVENTION

A furniture device 1 is now to be described with reference to figure 1 - 3. The structure of the furniture device 1 will in particular be explained with reference to figure 1 disclosing a schematic side view of the furniture device 1 and figure 2 disclosing the furniture device 1 in a perspective view from the ground.

The furniture device 1 comprises a fundament 3 in connection to the ground 5 and a support member 7 defining an extension plane P1 and being provided on the fundament 3.

The furniture device 1 further comprises a lifting member 10 adapted to lift and lower the support member 7 between a first, a second, a third and a fourth position, which first, second, third and fourth positions are located at different elevation from the fundament 3. The lifting member 10 comprises at least one arm
arrangement 20 that comprises an elongated first arm 22, an elongated second arm 24 and a first pivot 26 between the first arm 22 and the fundament, and between the second arm 24 and the fundament 3.

The furniture device 1 further comprises a drive unit 30 adapted to act on the second arm 24 so that the arm arrangement 20 acts on the support member 7, wherein the support member 7 is lifted and lowered between the first, the second, the third and the fourth position.

The lifting member 10 further comprises a second pivot 28 between the first arm 22 and the support member 7. The second arm 24 comprises a displaceable end 35 that is adapted to be displaced by the drive unit 30 while acting on the support member 7.

The first arm 22 and the second arm 24 are rotary joined with each other and to the fundament 3 by means of the first pivot 26. The first arm 22 and the second arm 24 are arranged in respect to the first pivot 26 so that the first arm 22 extends from the first pivot 26 to the second pivot 28, and so that the second arm 24 extends from the first pivot 26 to the displaceable end 35.

The first pivot 26 is adapted to allow a first rotation R1 of a first arm 22 and a second rotation R2 of the second arm 24. The first rotation R1 and the second rotation R2 are directed in opposite directions, wherein the support member 7 is adapted to be lifted when the displaceable end 35 is displaced towards the second pivot 28 and adapted to be lowered when the displaceable end 35 is displaced away from the second pivot 28.

The support member 7 comprises a lower surface 40 directed towards the arm arrangement 20. The support member 7 comprises a guide member 42 protruding away from the lower
surface 40 of the support member 7. The guide member 42 comprises a wedge shaped element, which shape controls the rate in which the support member 7 is lifted and lowered when the displaceable end 35 is displaced towards or away from the second pivot 28. The guide member 42 comprises a displacement surface 44 that is adapted to facilitate the displacement of the displaceable end 35.

The drive unit 30 comprises an elongated driving element 50 and a displacement member 52 adapted to be displaced along the driving element 50. The displacement member 52 is connected to the displaceable end 35 by means of a link arm 54 extending between the displacement member 52 and the displaceable end 35. The drive unit 30 further comprises a third pivot 56 between the link arm 54 and the displacement member 52, and a fourth pivot 58 between the link arm 54 and the displaceable end 35. The link arm 54 has a length that enables the displaceable end 35 to be displaced on the displacement surface 44 of the guide member 42.

The drive unit 10 further comprises a drive motor 60 adapted to act on the driving element 50 so that the displacement member 52 is displaced along the driving element 50, wherein the link arm 54 displaces the displaceable end 35.

The second arm 24 comprises an elongated first arm part 70 and an elongated second arm part 72. The fist arm part 70 is located closer to the first pivot 26 than the second arm part 72. The second arm 24 further comprises a fifth pivot 74 between the fist arm part 70 and the second arm part 72. The fifth pivot is adapted to allow a third rotation R3 of the second arm part 72 in relation to the first arm part 70. The drive unit 30 is adapted to act on an outer part of the second arm part 72, which outer part is located at a greater distance from the first pivot 26 than the fifth pivot 74.
The first arm part 70 extends along a first longitudinal axis \( L_1 \) and the second arm part 22 extends along a second longitudinal axis \( L_2 \). The second arm 24 further comprises a first stop member 76 adapted to stop the third rotation \( R_3 \) at a first inclination between the first longitudinal axis \( L_1 \) and second longitudinal axis \( L_2 \). Accordingly, the second rotation \( R_2 \) is consecutive to the third rotation \( R_3 \) when the support member 7 is lifted away from the first position.

The first arm 22 comprises an elongated third arm part 80 and an elongated fourth arm part 82. The third arm part 80 is located closer to the first pivot 26 than the fourth arm part 82. The first arm further comprises a sixth pivot 84 between the third arm part 80 and the fourth arm part 82. The sixth pivot 84 is adapted to allow a fourth rotation \( R_4 \) of the fourth arm part 82 in relation to the third arm part 80.

The third arm part 80 extends along a third longitudinal axis \( L_3 \) and the fourth arm part 82 extends along a fourth longitudinal axis \( L_4 \). The fourth arm part 82 comprises a second stop member 86 adapted to stop the fourth rotation \( R_4 \) at a second inclination between the third longitudinal axis \( L_3 \) and the fourth longitudinal axis \( L_4 \). Accordingly, the first rotation \( R_1 \) is consecutive to the fourth rotation \( R_4 \) when the support member 7 is lifted away from the first position.

The furniture device 1 further comprises a first support 90 attached to the fundament 3. The first support 90 is adapted to support the first arm 22 when the support member 7 is in the first position. The furniture device 1 further comprises a second support 92 attached to the fundament 3. The second support 92 is adapted to support the second arm 24 when the support member 7 is in the first position.

The lifting member 10 is adapted to lift and lower the support member 7 so that the inclination of extension plane \( P_1 \) is
maintained or changed less than 10 degrees preferably less than 5 degrees. This is achieved by means of that the furniture device 1 defines a symmetry plane P2 intersecting the first pivot 26 and the extension plane P1.

The first arm 22 defines a first line A1 between the first pivot 26 and the second pivot 28, wherein during lifting and lowering of the support member 7 a first angle \( \alpha_1 \) is defined between the first line A1 and the symmetry plane P2. The second arm 24 defines second line A2 between the first pivot 26 and the displaceable end 35, wherein during the lifting and lowering of the support member 7 a second angle \( \alpha_2 \) is defined between the second line A2 and the symmetry plane P2.

The displaceable end 35 is adapted to be displaced on the guide member 42 so that the first angle \( \alpha_1 \) and the second angle \( \alpha_2 \) is essentially the same or so that the difference between the first angle \( \alpha_1 \) and the second angle \( \alpha_2 \) is less than 10 degrees preferably less than 5 degrees. The furniture device 1 is arranged so that the symmetry plane P2 is intersecting the extension plane P1 perpendicularly, as shown in fig 1.

Figure 2 shows the furniture device 1 in a view from the ground. The fundament 3 comprises support legs 93 for elevating the furniture device 1 from the ground 5. The furniture device 1 comprises the arm arrangement 20a and a further arm arrangement 20b. Each arm arrangement 20a, 20b is arranged at opposite sides of the fundament 3. The furniture device 1 further comprises a connection element 95 that connects the arm arrangement 20a with the further arm arrangement 20b.

The furniture device 1 further comprises the guide member 42a and a further guide member 42b. Each guide member 42a, 42b comprises the displacement surface 44. The connection element 95 comprises the displaceable end 35 and the connection element 95 is adapted to be displaced on the displacement
surface 44 so that the support member 7 is lifted or lowered between the first, the second, the third and the fourth position.

In the disclosed embodiment of the invention, the furniture device 1 comprises the link arm 54a and a further link arm 54b. The link arms 54a, 54b are connected to opposite sides of the displacement member 52.

The furniture device 1 further comprises a first section 100 comprising the support member 7, a second section 102 adjacent to the first section 100. The second section 102 comprises a further support member 104. The furniture device 1 further comprises a connection member 106 extending between the first section 100 and the second section 102. The connection member 106 comprises a first hinge 108 between the connection member 106 and the support member 7 of the first section 100 and a second hinge 110 between the connection member 106 and the further support member 104 of the second section 102.

With reference to the figure 3a - 3d, the lifting and lowering of the support member 7 between the first, the second, the third and the fourth position will be explained.

Starting from figure 3a, the drive unit 30 is adapted to, from the first position of the support member 7, act on the second arm 24 and thereby displacing the displaceable end 35 towards the second pivot 28 while inducing the third rotation R3 of the second arm part 72 so that the support member 7 is lifted from the first position, see fig. 3a, to the second position, see fig. 3b.

Starting from figure 3b, the drive unit 30 is adapted to, from the second position of the support member 7, act on the second arm 24 and thereby displacing the displaceable end 35 towards the second pivot 28 while inducing the fourth rotation R4 of the fourth arm part 82 so that the support member 7 is lifted from the second position, see fig. 3b, to the third position, see fig. 3c.
Starting from figure 3c, the drive unit 30 is adapted to, from the third position of the support member 7, act on the second arm 24 and thereby displacing the displaceable end 35 towards the second pivot 28 while inducing the first rotation $R_1$ of the first arm 22 and the second rotation $R_2$ of the second arm 24 so that the support member 7 is lifted from the third position, see figure 3c, to the fourth position, see figure 3d.

The support member 7 is adapted to be positioned in any position between the first, the second, the third and the fourth position.

The present invention is not limited to the embodiments disclosed but may be varied and modified within the scope of the following claims.
CLAIMS

1. A furniture device (1) comprising:
   - a fundament (3) in connection to the ground (5),
   - a support member (7) defining an extension plane (P1) and
     being provided on the fundament (3),
   - a lifting member (10) adapted to lift and lower the support
     member (7) between a first and a second position that are
     located at different elevation from the fundament (3), the lifting
     member (10) comprising at least one arm arrangement (20, 20a,
     20b) that comprises an elongated first arm (22), a first pivot (26)
     between the first arm (22) and the fundament (3), and a second
     pivot (28) between the first arm (22) and the support member
     (7), wherein the first arm (22) extends from the first pivot (26) to
     the second pivot (28), and
   - a drive unit (30) adapted to act on the arm arrangement (20,
     20a, 20b) so that the arm arrangement (20, 20a, 20b) acts on
     the support member (7),
   - the arm arrangement (20, 20a, 20b) further comprises an
     elongated second arm (24) with a displaceable end (35) that is
     adapted to be displaced by the drive unit (30) while acting on
     the support member (7), wherein the first arm (22) and the
     second arm (24) are rotary joined with each other and to the
     fundament (3) by means of the first pivot (26) so that the second
     arm (24) extends from the first pivot (26) to the displaceable end
     (35), wherein the lifting member (10) in cooperation with the
     drive unit (30) is configured to lift the support member (7) from
     the first position to the second position by displacing the
     displaceable end (35) towards the second pivot (28) and lower
     the support member (7) from the second position to the first
     position by displacing the displaceable end (35) away from the
     second pivot (28).

2. A furniture device (1) according to claim 1, wherein the lifting
   member (10) is adapted to lift and lower the support member (7)
so that the inclination of the extension plane \( P_1 \) is maintained or changed less than 10 degrees, preferably less than 5 degrees.

3. A furniture device \( (1) \) according to claim 1 or 2, wherein the furniture device \( (1) \) defines a symmetry plane \( P_2 \) intersecting the first pivot \( (26) \) and the extension plane \( P_1 \), the first arm \( (22) \) defines a first line \( (A_1) \) between the first pivot \( (26) \) and the second pivot \( (28) \) and a first angle \( (\alpha_1) \) between the first line \( (A_1) \) and the symmetry plane \( P_2 \), and the second arm \( (24) \) defines a second line \( (A_2) \) between the first pivot \( (26) \) and the displaceable end \( (35) \) and a second angle \( (\alpha_2) \) between the second line \( (A_2) \) and the symmetry plane \( P_2 \), wherein the displaceable end \( (35) \) is adapted to be displaced so that the first angle \( (\alpha_1) \) and the second angle \( (\alpha_2) \) are essentially the same or the difference between the first angle \( (\alpha_1) \) and the second angle \( (\alpha_2) \) is less than 10 degrees, preferably less than 5 degrees.

4. A furniture device \( (1) \) according to claim 3, wherein the symmetry plane \( P_2 \) is intersecting the extension plane \( P_1 \) perpendicularly.

5. A furniture device \( (1) \) according to any of the preceding claims, wherein the support member \( (7) \) comprises a lower surface \( (40) \) directed towards the arm arrangement \( (20, 20a, 20b) \), which lower surface \( (40) \) comprises a displacement surface \( (44) \) that is adapted to facilitate the displacement of the displaceable end \( (35) \).

6. A furniture device \( (1) \) according to claim 5, wherein the support member \( (7) \) comprises a guide member \( (42) \) protruding away from the lower surface \( (40) \) of the support member \( (7) \) and comprising said displacement surface \( (44) \), wherein the guide member \( (42) \) is adapted to guide the displacement of the displaceable end \( (35) \).
7. A furniture device (1) according to claim 6, wherein the guide member (42) comprises a wedge shaped element.

8. A furniture device (1) according to any of the preceding claims, wherein the drive unit (30) comprises an elongated driving element (50) and a displacement member (52) adapted to be displaced along the driving element (50) and connected to the displaceable end (35).

9. A furniture device (1) according to claim 8, wherein the drive unit (30) comprises a drive motor (60) adapted to act on the driving element (50) so that the displacement member (52) is displaced along the driving element (50).

10. A furniture device (1) according to claim 8 or 9, wherein the drive unit (30) comprises a link arm (54, 54a, 54b) extending between the displacement member (52) and the displaceable end (35), a third pivot (56) between link arm (54, 54a, 54b) and the displacement member (52) and a forth pivot (58) between the link arm (54, 54a, 54b) and the displaceable end (35).

11. A furniture device (1) according to any of the preceding claims, wherein the first pivot (26) is adapted to allow a first rotation (R1) of the first arm (22) and a second rotation (R2) of the second arm (24), wherein the first rotation (R1) and the second rotation (R2) are directed in opposite directions.

12. A furniture device (1) according to claim 11, wherein the second arm (24) comprise an elongated first arm part (70) and an elongated second arm part (72), wherein the first arm part (70) is closer to the first pivot (26) than the second arm part (72), and a fifth pivot (74) between the first arm part (70) and the second arm part (72) adapted to allow a third rotation (R3) of the second arm part (72) in relation to the first arm part (70), wherein the drive unit (30) is adapted to act on an outer part of
the second arm part (72) which outer part is located at a greater distance from the first pivot (26) than the fifth pivot (74).

13. A furniture device (1) according to claim 12, wherein the first arm part (70) extends along a first longitudinal axis (L1) and the second arm part (72) extends along a second longitudinal axis (L2), and the second arm (24) comprises a first stop member (76) adapted to stop the third rotation (R3) at a first inclination between the first longitudinal axis (L1) and the second longitudinal axis (L2), wherein the second rotation (R2) is consecutive to the third rotation (R3) when the support member (7) is lifted away from the first position.

14. A furniture device (1) according to any of the preceding claims, wherein the device (1) comprises a further arm arrangement (20b), each arm arrangement (20a, 20b) having the same configuration and being arranged at opposite sides of the fundament (3), and a connection element (95) connecting the arm arrangements (20a, 20b) together.

15. A furniture device (1) according to any of the preceding claims, wherein the furniture device (1) comprises a first section (100) comprising the support member (7), a second section (102) adjacent to the first section (100) comprising a further support member (104), a connection member (106) extending between the first section (100) and the second section (102), a first hinge (108) between the connection member (106) and the support member (7) of first section (100) and a second hinge (110) between the connection member (106) and the further support member (7) of the second section (102).
**INTERNATIONAL SEARCH REPORT**

**International application No**
PCT/EP2011/073072

**A. CLASSIFICATION OF SUBJECT MATTER**

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According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

A47C A61G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPO-Internal, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

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Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:
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**Date of the actual completion of the international search**
16 May 2012

**Date of mailing of the international search report**
25/05/2012

**Name and mailing address of the ISA/**
European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016

**Authorized officer**
Behammer, Frank
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