demands few components in the balance joint to obtain a movement in the joint that feels comfortable for the user.

At the same time, embodiments of the present invention relate to an improved resting chair comprising a balance joint as mentioned above.

Embodiments of the present invention thereby also seek to provide a recliner comprising a balance as described above and with an underframe made of fewer parts than available solutions, and providing a larger degree of comfort for the user as the underframe has an adapted elasticity while at the same time having sufficient rigidity to support the sliding mechanism,

Embodiments of the present invention also seek to provide a free-standing sofa being made of modules where the seat module is provided with a balance joint. Such a sofa is much simpler and quicker to mount that known sofas, while at the same time providing user comfort and comprises fewer parts that furniture made on similar principles.

According to a first aspect of the present invention, there is provided a balance joint suitable for attachment between a seat arrangement and a chair leg arrangement, said balance joint including first and second mountings together forming a hollow space, and at least one hinge pin, the mountings are rotatably mounted to each other by means of the at least one hinge pin, wherein it further comprises at least one elastic packing arranged in said hollow space and the at least one elastic packing is arranged between the mountings so that the possibility for expansion of the elastic packing is limited by the mounting in at least two directions, where the mountings are designed with attachment plate and side walls in such a way that the side walls of the first mounting can be arranged outside the side walls of the second mounting.

As the two mountings are rotatably mounted to each other and an elastic packing is situated between the mountings, the packing will provide gradually increasing resistance as the deflection between the two mountings in the balance joint is increasing. The tilting movement between the mountings will be ceased when the packing cannot longer be compressed between the mountings, as a gradual resistance is obtained until there is a complete blocking of the movement. By this solution it can be prevented that the mountings are bumping onto each other or a blocking device at full rotation of the mountings.

In advantageous embodiments the balance joint comprises mountings formed as an attachment plate and side walls in such a way that the side walls of the first mounting can be arranged on the outside of the side walls of the second

mountings. It will then be formed a hollow space delimited by the side walls and the attachment plates, where the elastic packing is arranged in the hollow space. The packing is dimensioned so that it abuts or lies close to at least the attachment plates and side walls. Preferably, the packing is abutting or lie close to the attachment plates and side walls. The packing can also be larger than the hollow space in two or more directions, so that the packing lie preloaded against at least two walls in the hollow space.

In certain embodiments of the balance joint, the side walls are provided with mating holes suitable for lead-through of a gudgeon. The gudgeon will then pass across the balance joint between the attachment plates and form a rotational axis for the parts of the balance joint.

In certain embodiments of the balance joint at least one attachment plate comprises holes for attachment to a seat arrangement or a chair leg arrangement. The balance joint can then easily be screwed or bolted to the chair or furniture on which it is to be used. If the balance joint comprises two attachment plates, both attachment plates can comprise holes, so that the balance joint can be bolted or screwed onto both furniture elements that are going to tilt or rock in relation to each other.

In other embodiments of the balance joint, the attachment plate of a first of the mounting comprises a lead-through hole and where there to the inner surface of the second of the mounting is attached a pedestal protruding through the lead-through hole. This embodiment enables the balance joint to be used in a pedestal connection where one furniture part of the furniture both can tilt about the mountings and rotate about the pedestal connection.

In some embodiments of the balance joint the pedestal comprises a hollow or a threaded hollow in an end part suitable for a fastening element or a threaded fastening element, respectively. The hollow provides an easy way of fastening the balance joint to a fastening element.

It is also described embodiments of a chair comprising a balance joint as defined in the first aspect and a sofa comprising a number of seat arrangements mounted to a chair leg arrangement by means of a balance joint as defined in the first aspect. The balance joint provides an improved tilting movement and dampened blocking mechanism in the furniture compared to previously known tilting joints.

It is further described a recliner comprising a seat part being hinged to a back part, were the seat part and the back part are suspended in an underframe, where the underframe comprises a laminated bow carrying two bearers in metal, and a bracket in metal attached centrally to the laminated bow, as the bracket is

rotatably attached to a central hub of a foot. In one embodiment of the recliner, the bracket is a tiltable balance joint as described above.

Such a recliner provides both an improved comfort by the special combination of rigid metal elements and laminated elements with a certain elasticity. Such a reclined with a balance joint will obtain an improved comfort in that the chair part can tilt in relation to the foot in addition to the seat and back part being rotatable forwards and backwards about the underframe and hinged in relation to each other in the connection between seat and back part.

In one embodiment of the recliner the laminated bow comprises multiple layers of wood and the arm rest bow comprises an integrated attachment arrangement for attachment of cushion or arm rest bolstering. The laminated bow provides elasticity giving a good comfort for the user while providing sufficient mechanical stability. The laminated bow gives a softer sensation to the user of the chair in that it provides a small yield when the person sitting in the chair is moving. The integrated attachment arrangement in the arm rest comprises a bow section or surface part provided with attaching elements such as holes or knobs, where fitting attaching elements in a cushion or armrest bolstering can be attached.

According to a second aspect of the present invention, there is provided a furniture comprising an elongated horizontal aluminium profile and two base elements, where a number of furniture modules are mounted on the aluminium profile. The aluminium profile comprises at least one groove on the upper side. Each furniture module comprises a seat part, a backrest part and an attachment bracket under the seat part, where the bracket comprises at least one bolt arranged to fit into the groove in the aluminium profile. The bracket comprises a balance joint according to one of the claims 1-5 for the provision of a rocking movement between seat module and aluminium profile. Such furniture will comprise a limited number of single parts, so that it can be transported in modules, it is simple to assemble, gives flexibility in that it is module based and at the same time gives the user a furniture with good sitting comfort.

In one embodiment of the furniture, the bracket comprises a balance joint as described above to provide a rocking connection between seat module and aluminium profile. The balance joint will form a tiltable transition between the seat module and the attachment bracket attaching the seat module to the horizontal profile, which will give an improved comfort for the user. At the same time, the balance joint will absorb and dampen impacts and loads arising when the user moves abruptly in the seat or sit down on the furniture in an abrupt way, e.g. by falling down onto the seat. As the balance joint dampens the movement in the seat module, the load on the attachment between the attaching bracket and the profile is evened out.

In one embodiment of the furniture there is an end piece mounted on the aluminium profile in each end of it. The end piece ensures that the modules are not shifted on the profile and form a decorative ending on the side of the sofa.

In one embodiment of the furniture, the aluminium profile is hollow and comprises two T-grooves in the side being used as an upper side in the furniture, as each furniture module comprises bolts fitting into the T-grooves. The fitting attachment devices in the profile and modules provide a simple and secure way of attaching the modules to the profile.

In another embodiment of the furniture, the aluminium profile comprises two gripping grooves on the side being used as underside in the furniture, arranged to hold the foot or base elements. It is an advantage with extruded aluminium profiles that it is possible to form a complicated cross section on the profiles, where a number of grooves or ribs are formed in the length direction of the profile. The gripping grooves in one of the sides provide a simple and sturdy attachment of foot or base elements.

The furniture elements in the above described furnitures can be taken from the group including a seat, a seat module comprising seat part and back part, a side element or arm rest, a table top and a cabinet. As the grooves in the aluminium profile are adapted to receive elements on several sides of the profile, it is obtained great flexibility in the design of the final furniture based on the above mentioned furniture elements.

It is also described a building kit or prefabricated set for assembly of sofa comprising an elongated aluminium profile provided with longitudinal grooves and a number of module elements comprising two or more foot or base elements, one or more seat modules and two end pieces, where the base elements, seat modules and end pieces comprises anchoring organs fitting with at least one of the longitudinal groove of the aluminium profile.

In one embodiment of the building kit or prefabricated set as described above, are one or more side elements or arm rests comprising anchoring organs fitting with at least one of the longitudinal grooves of the aluminium profile.

As the furniture is easy to assemble by means of the elongated profile with various attachment grooves and assigned anchoring organs on the module elements, it would be possible to assemble the final sofa without comprehensive training. The easy assemble would also make the likelihood for erroneous assembly of the furniture very little.

It is also described a method for assembly of sofa comprising the steps of:

- provide an elongated aluminium profile comprising grooves in the surface,

Claims

1. A balance joint suitable for attaching between a seat arrangement and a chair leg arrangement, said balance joint including first and second mounting together forming a hollow space, and at least one hinge pin, the mountings are rotatably mounted to each other by means of the at least one hinge pin,
wherein it further comprises at least one elastic packing arranged in said hollow space and the at least one elastic packing is arranged between the mountings so that the possibility for expansion of the elastic packing is limited by the mounting in at least two directions, where the mountings are designed with attachment plate and side walls in such a way that the side walls of the first mounting can be arranged outside the side walls of the second mounting.

2. A balance joint according to claim 1, where the side are provided with mating holes suitable for introduction of at least one hinge pin.

3. A balance joint according to one of the clams 1-2, where at least one attachment plate comprises holes for attachment in a seat arrangement or a chair leg arrangement.

4. A balance joint according to claim 1, where the attachment plate of one of the mountings comprises a lead-through hole and where there to the inner surface of the other of the mountings is attached a pedestal protruding from the lead-through hole.

5. A balance joint according to claim 4, where the pedestal comprises a hollow or a threaded hollow in the end section suitable for an attachment element or a threaded attachment element.

6. A chair comprising a balance joint according to one of the claims 1-5.

7. A sofa comprising a number of seat arrangements mounted to a chair leg arrangement by means of a balance joint according to one of the claims 1-5.

8. A furniture comprising an elongated horizontal aluminium profile and two base elements, where a number of furniture modules are mounted on the aluminium profile, the aluminium profile comprising at least one groove on the upper side, each furniture module comprising a seat part, a backrest part and an attachment bracket under the seat part, where the bracket comprises at least one bolt arranged to fit into the groove in the aluminium profile,
wherein the bracket comprises a balance joint according to one of the claims 1-5 for the provision of a rocking movement between seat module and aluminium profile.

9. A furniture according to claim 8, where the end piece is mounted on the aluminium profile in each end of this.

10. A furniture according to one of the claims 8-9, where the aluminium profile is hollow and comprises two T-slots in the upper side, as each furniture module comprises bolts fitting into the T-slots.

11. A furniture according to one of the claims 8-10, where the aluminium profile comprises two slots in the underside, arranged to hold the base elements.

12. A furniture according to one of the claims 8-11, where the furniture elements can be collected from the group including a seat, a seat module comprising seat part and backrest part, a side element or arm rest, a table top and a cabinet.