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(54) **Sofa bed, a piece of furniture convertible from a seat into a bed**

Sofabett, ein Möbelstück verwandelbar von einem Sitz in ein Bett

Canapé lit, un meuble transformable de siège en lit

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Description

The invention relates to a piece of furniture convertible from a seat into a bed, provided with an upper part and a support supporting this part and having four legs rigidly connected to one another by connecting parts, the legs being formed of two at least substantially U-shaped profiles which are disposed cross-wise.

A seat comprised of like components is described in FR-A-1180733, directed to a lounge-chair which can be installed in a large number of positions. The seat according to said patent has however not been designed to be transformed into a furniture to be used as a bed. This due to the way in which the cross-wise disposed profiles forming the support are connected to one another by elements in the shape of armrests.

The invention has for an object to provide a piece of furniture convertible from a seat into a bed of the kind mentioned in the preamble, the support of which is relatively easy and cheap to manufacture and which offers nevertheless very good possibilities for a stable support of the piece of furniture, both in the sofa and in the bed position thereof.

The a piece of furniture convertible from a seat into a bed is characterized in that the above referred to profiles are irrotatably connected to one another by plates disposed on both lateral sides of the support, which plates are each connected at two places to the one U-shaped profile and at one of these places also to the other U-shaped profile, while each of the plates further supports at a third place the other U-shaped profile.

The plates are then preferably part of an operating mechanism for adjusting the upper part between a bed position and a seat position.

In this way, both U-shaped profiles are rigidly and irrotatably fixed to one another on each side only through three connections by means of plates which were already required for the operating mechanism of the upper part and only the shape of which has to be adapted for the function of attachment means.

In order to further reduce the number of components, locking members are advantageously formed on the plates which may engage irremovably at said third place in holes in the body of the other U-shaped profile.

In this way, no extra components are required for this connection, while the mounting operation only consists in pushing the locking members into the holes, which locking members may for example be designed as a barb-shaped lip.

The invention further embraces a support for use in the hereabove described piece of furniture.

The invention will be illustrated hereinafter by means of the drawings which schematically represent embodiments of the piece of furniture convertible from a seat into a bed according to the invention and in particular of the support therefor.

Fig. 1 and 2 are very schematical side elevational views of the embodiment of the piece of furniture convertible from a seat into a bed according to the invention

in the sofa position and in the bed position respectively, with only two frame components of the upper part being in particular indicated.

Fig. 3 is, on a larger scale, a side elevational view of an operating mechanism for adjusting the upper part between the sofa and bed position of the piece of furniture according to fig. 1 and 2.

Fig. 4 is a perspective view of the U-shaped profiles connected to one another for the support of the piece of furniture according to fig. 1 and 2.

Fig. 5, 6 and 7 show in different steps the final assembly of the support of the piece of furniture according to fig. 1 and 2, on a larger scale.

The drawings show very schematically an embodiment of the piece of furniture according to the invention, which is designed in this case as a sofa bed, which forms in the seat position a two or three seat sofa and in the bed position a double bed. Of course, the piece of furniture can also be designed as a chair respectively a single bed or may even comprise other combinations.

In the sofa bed, an upper part 1 and a support 2 supporting this upper part can roughly be distinguished. From the upper part 1, frame parts of the back portion 3 and the seat portion 4 are indicated very schematically. In the sofa position of the sofa bed according to fig. 1, the back portion 3 is directed obliquely upwards and the seat portion 4 is inclined backwards, while through a manipulation of an operating mechanism 5 represented very schematically in fig. 1-3, the back portion 3 and the seat portion 4 can be displaced and pivoted towards a horizontal bed position as illustrated in fig. 2.

The operating mechanism 5 comprises on both lateral sides a four bar system, one bar side of which being formed by a support for the back portion 3, which is connected through two bars 6 and 7 with a stationary bar side, which is a part of a side plate 8. The further construction and functioning of the operating mechanism is not relevant for the present invention and is therefore not described in greater detail. Only the side plates 8 of the operating mechanism are an element of the invention and will be discussed further hereinafter.

As mentioned, the upper part 1 of the piece of furniture is supported by the support 2 which is essentially built up of two at least substantially U-shaped tubes 9 and 10, the body 11 of the one U-shaped tube 9 being shorter than the body 12 of the other U-shaped tube 10 in such a manner that the legs 13 of the U-shaped tube 9 serving as legs for the piece of furniture fit accurately between the legs 14 of the other U-shaped tube 10 serving also as legs and both U-shaped tubes 9 and 10 can be connected cross-wise to one another. The upper part 1 is adjustably supported by the bodies 11 and 12 of the U-shaped tubes 9 and 10 in a not further indicated way, for example through support blocks 15. As shown, caps can further be applied onto the lowermost extremities of the legs 13 and 14.

In particular fig. 5-7 illustrate in which way both U-shaped tubes 9 and 10 are rigidly and solidly connected to one another. It can be seen that the side plate 8,

which is a part of the operating mechanism 5, also serves for mutually connecting the U-shaped tubes 9 and 10, the other side plate 8 on the opposite side of the piece of furniture also connecting mirror-wisely both tubes 9 and 10. The side plate 8 is fixed with screws 16 and 17 to the inner side of the leg 13 of the U-shaped tube 9, while the screw 16 serves at the same time for hingedly connecting the legs 13 and 14 of both tubes 9 and 10 to one another at their intersection. On the extremity of the side plate 8 removed from the screw 16 there is formed further a special lip 18, which is designed for irremovably engaging in a hole 19 in the body 12 of the U-shaped tube 10. As shown in fig. 5-7, both U-shaped tubes 9 and 10 can be pivoted in such a manner with respect to each other from a flat storage or transport position according to fig. 5 that, via the position according to fig. 6, the body 12 of the U-shaped tube 10 is going to lay finally in the position according to fig. 7 on to both side plates 8 in a cavity 20 formed thereby, and the lip 18 being penetrated into the hole 19, the shape of the lip 18 and the hole 19 being such that the lip 18 can no longer be withdrawn from the hole 19 so that a rigid connection of both tubes 9 and 10 is achieved and a stable support having a large base is provided.

From the above it will be clear that the invention provides a piece of furniture convertible from a seat into a bed, the support of which can be manufactured from very little components and in a very easy way, while the extremities of the legs 13 and 14 of the U-shaped tubes 9 and 10 provide in the depth direction of the piece of furniture a very large and therefore stable base for the piece of furniture, so that there is no risk for tipping over in the bed position of the piece of furniture. On the other hand, the legs of the support do not trouble persons sitting on the piece of furniture in the sofa position, which support is moreover also a visually attractive entity.

The invention is not limited to the embodiment represented in the drawings and described hereinabove, which can be modified in different ways within the scope of the invention defined in the claims.

Claims

1. A piece of furniture convertible from a seat into a bed, for instance a sofa bed, provided with an upper part (1) and a support (2) supporting this part and having four legs (13, 14) rigidly connected to one another by connecting parts (11, 12), the legs (13, 14) being formed of two at least substantially U-shaped profiles (9, 10) which are disposed crosswise, characterized in that said profiles (9, 10) are irrotatably connected to one another by plates (8) disposed on both lateral sides of the support, which plates are each connected at two places (16, 17) to the one U-shaped profile (9) and at one of these places (16) also to the other U-shaped profile (10), while each of the plates (8) further supports at a third place (18) the other U-shaped profile (10).

2. A piece of furniture according to claim 1, wherein said plates (8) are part of an operating mechanism (5) for adjusting the upper part (1) between a bed position and a seat position.
3. A piece of furniture according to claims 1 and 2, wherein locking members (18) are formed on the plates (8), which members may engage irremovably at said third place in holes (19) in the body (12) of the other U-shaped profile (10).

Patentansprüche

1. Möbelstück, das von einem Sitzmöbel in ein Bett, beispielsweise ein Schlafsofa, umgewandelt werden kann und mit einem oberen Teil (1) sowie einem Gestell (2) versehen ist, das diesen Teil trägt und vier Beine (13, 14) aufweist, die durch Verbindungsteile (11, 12) fest miteinander verbunden sind, wobei die Beine (13, 14) aus wenigstens zwei im wesentlichen U-förmigen Profilen (9, 10) bestehen, die kreuzweise angeordnet sind, **dadurch gekennzeichnet**, daß die Profile (9, 10) durch Platten (8), die an beiden Querseiten des Gestells angeordnet sind, nicht-drehbar miteinander verbunden sind, wobei die Platten jeweils an zwei Stellen (16, 17) mit dem einen U-förmigen Profil (9) verbunden sind und an einer dieser Stellen (16) auch mit dem anderen U-förmigen Profil (10), und jede der Platten (8) des weiteren das andere U-förmige Profil (10) an einer dritten Stelle (18) trägt.
2. Möbelstück nach Anspruch 1, wobei die Platten (8) einen Teil eines Betätigungsmechanismus (5) zum Verstellen des oberen Teils (1) zwischen einer Bettposition und einer Sitzposition bilden.
3. Möbelstück nach Anspruch 1 und 2, wobei Arretierelemente (18) an den Platten (8) ausgebildet sind, wobei die Elemente nichtlösbar an der dritten Stelle in Löcher (19) in dem Körper (12) des anderen U-förmigen Profils (10) eingreifen können.

Revendications

1. Pièce d'ameublement convertible de siège en lit, comme par exemple canapé lit, pourvue d'une partie supérieure (1) et d'un support (2) supportant cette partie et comportant quatre branches (13, 14) reliées l'une à l'autre de façon rigide par des parties de liaison (11, 12), les branches (13, 14) étant formées d'au moins deux profilés essentiellement en forme de U (9, 10) qui sont disposés transversalement, caractérisée en ce que les profilés (9, 10) sont reliés l'un à l'autre de façon non rotative par des plaques (8) disposées des deux côtés latéraux du support, lesquelles plaques sont reliées chacune en deux emplacements (16, 17) au profilé en forme de U (9) et à l'un de ces emplacements (16)

également à l'autre profilé en forme de U (10), chacune des plaques (8) supportant de plus en un troisième emplacement (18) l'autre profilé en forme de U (10).

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2. Pièce d'ameublement suivant la revendication 1, dans laquelle les plaques (8) susdites font partie d'un mécanisme de commande (5) pour ajuster la partie supérieure (1) entre une position de lit et une position de siège.

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3. Pièce d'ameublement suivant l'une ou l'autre des revendications 1 et 2, dans laquelle des organes de verrouillage (18) sont prévus sur les plaques (8), lesquels organes peuvent s'engager de façon non détachable au troisième emplacement précité dans des trous (19) prévus dans le corps (12) de l'autre profilé en forme de U (10).

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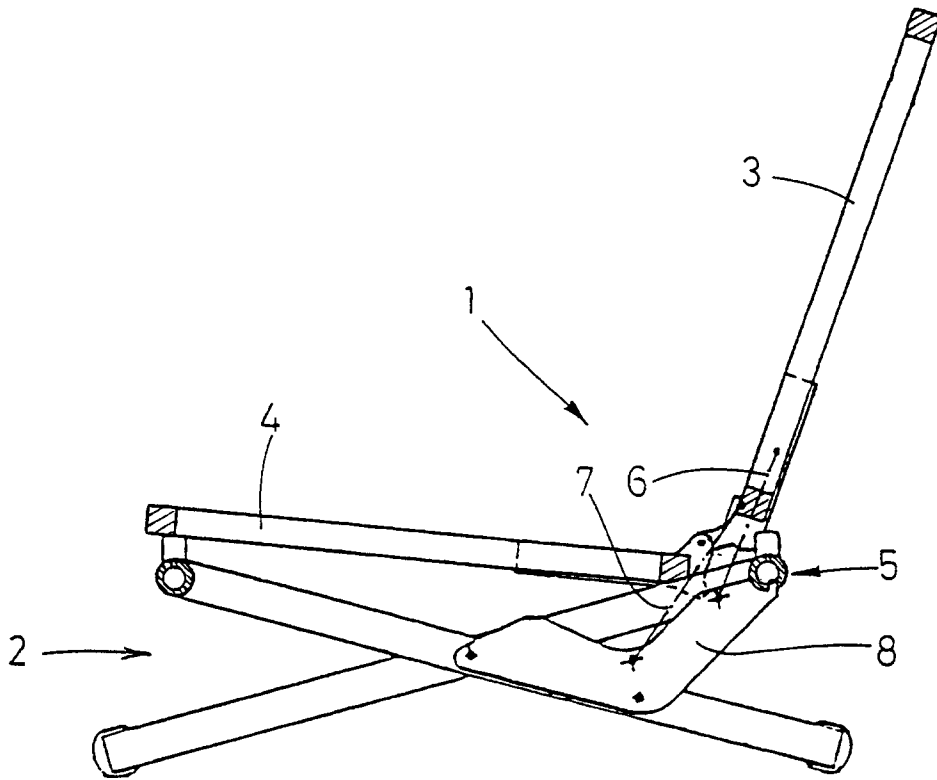


Fig.1

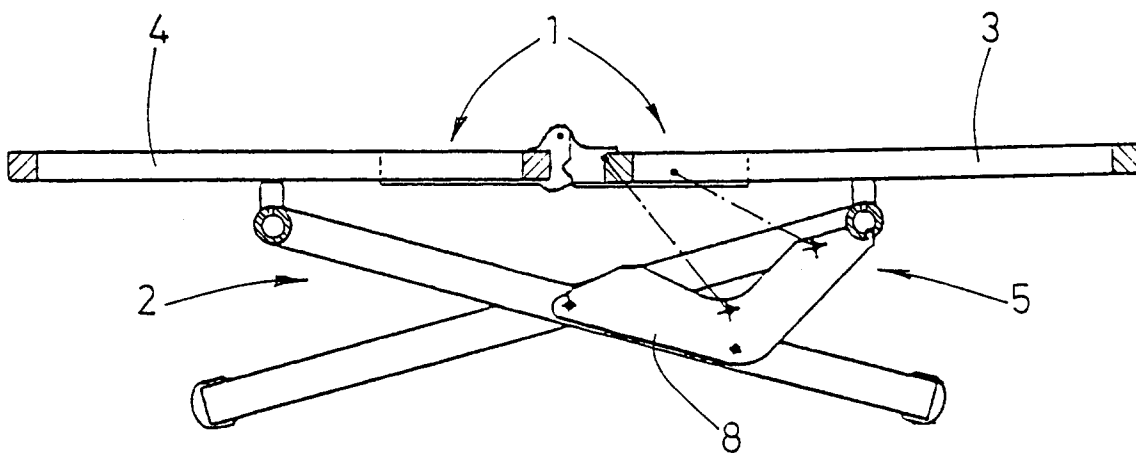


Fig.2

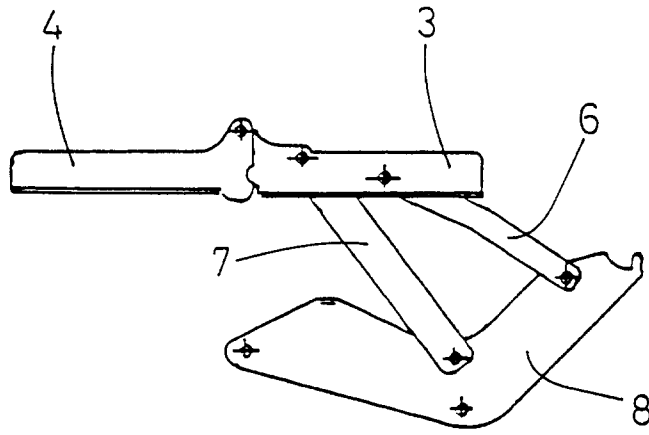


Fig.3

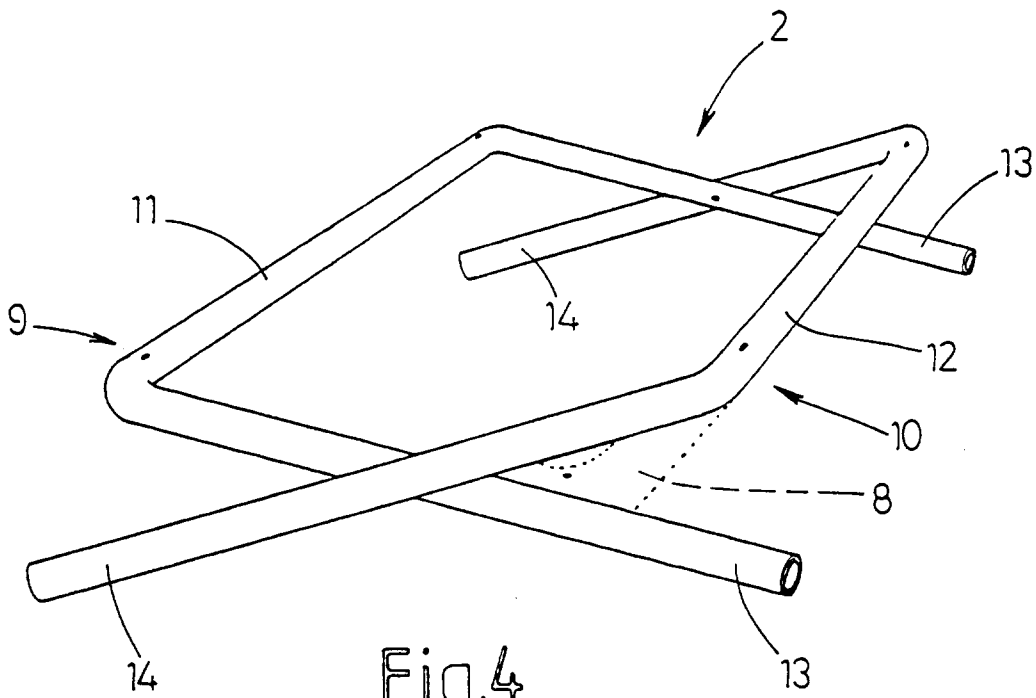


Fig.4

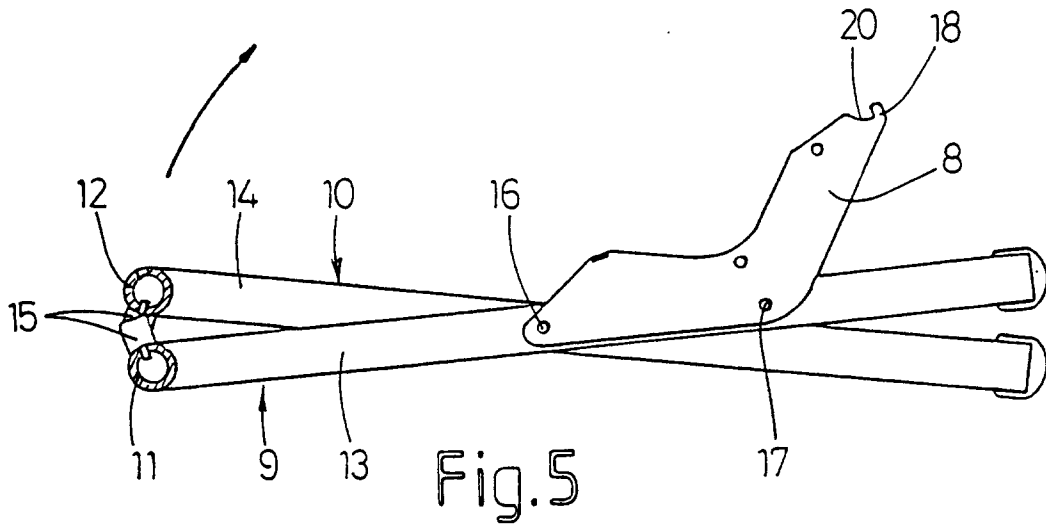


Fig.5

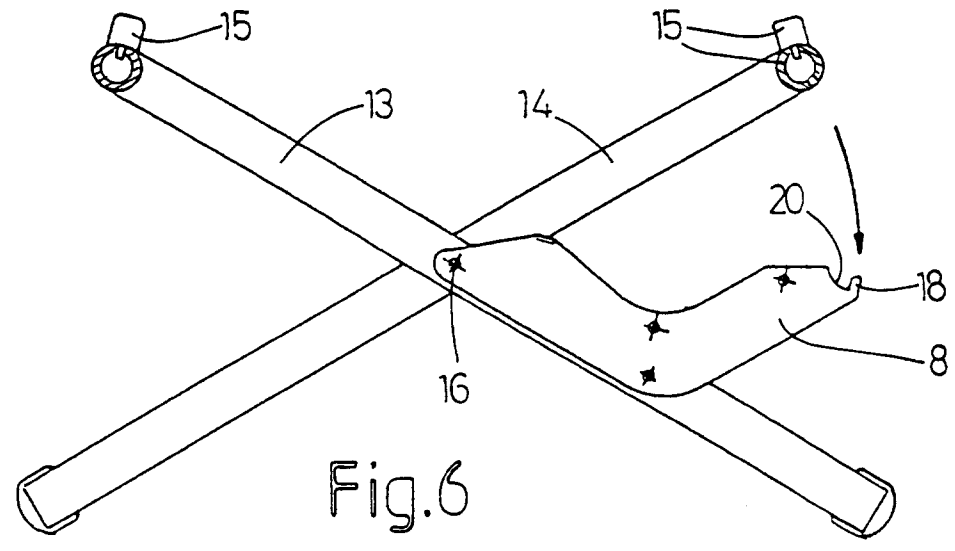


Fig.6

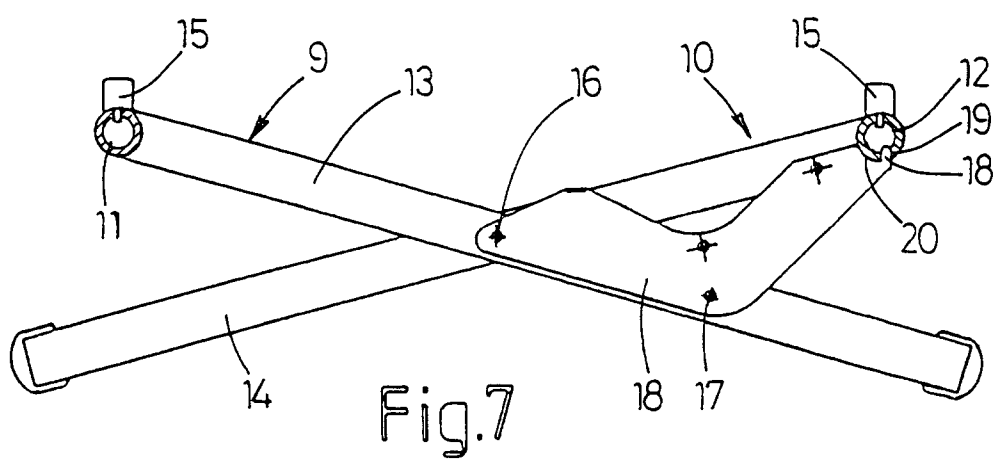


Fig.7