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(54) Support structure for beds, sofas and the like with a back or bedhead member which can be laterally rotated.

(57) A support structure for beds, sofas and the like that is formed by a frame (1) bearing a plane stuffed member (2) designed to form a mattress or seating, which frame (1) comprises a longitudinal beam (3) provided in the vicinity of at least one of its ends with a vertical pin (5) around which there may rotate a curved arm (6) bearing on its free, upwardly facing, end a stuffed member (10) designed to act as a back and/or bedhead member.

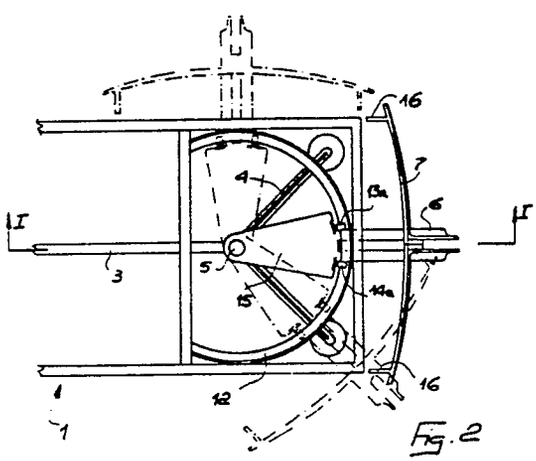

Fig. 2

EP 0 309 021 A1

SUPPORT STRUCTURE FOR BEDS, SOFAS AND THE LIKE WITH A BACK OR BEDHEAD MEMBER WHICH CAN BE LATERALLY ROTATED

The present invention relates to a support structure for beds, sofas and the like with a back or bedhead member which can be laterally rotated.

Beds which can be converted into sofas or sofas which can be converted into beds have a very wide range of applications in the field of furnishing, since it is useful in many cases to have one or other of these pieces of furniture available to meet particular circumstances.

The structures which are adapted to this purpose, provided with mechanisms of various types allowing their arrangement to be modified, usually have drawbacks in one or other of their arrangements and are therefore more appropriate for one or other function and are not completely satisfactory in their alternative arrangement.

There is consequently a need for a structure which is, in both aesthetic and functional terms, fully satisfactory in both arrangements, i.e. both as a bed and a sofa, which can be readily converted from one function to the other.

Moreover, in the case of sofas, there is a need for back members which can be disposed in a plurality of positions, both aligned and adjacent along one side or at either end of the sofa or opposite one another on the opposite sides of the sofa or elsewhere and such that their inclination can also be modified; a similar need arises with beds, where it should be possible to provide a bedhead with different inclinations and orientations, depending on requirements, so that pillows and the like, for instance, be supported in various positions.

There is consequently a need for a structure enabling the provision of convertible beds and sofas with a back member or bedhead which can be oriented in a number of arrangements with good aesthetic qualities in each arrangement.

These results are achieved by the present invention which provides a support structure for beds, sofas and the like which is formed by a frame bearing a plane stuffed member designed to form a mattress or seating, which frame comprises a longitudinal beam provided in the vicinity of at least one of its ends with a vertical pin around which there may rotate a curved arm bearing on its free, upwardly facing, end a stuffed member designed to act as a back and/or bedhead member.

The frame is provided, at the location of each pin, with a curved guide rigid therewith and disposed horizontally coaxial to the pin and extending over an angle which is at least equal to, or higher than, the angle of rotation provided for the curved arm, having slipways, with a two-sided connection, with which corresponding sliding support and connection members for the curved arm supported by the relative pin are engaged.

The sliding members supporting and connecting the curved arm with respect to the curved guide and formed by at least a pair of superimposed slides bearing at the top and at the bottom respectively against the curved guide and tightened against it, the rotation of the curved arm with respect to the relative pin being allowed by friction.

There are two pairs of angularly spaced rollers.

The stuffed member, designed to act as a back and/or bedhead member, supported by the curved arm(s) is formed by two adjacent portions hinged together and at the free end of the curved arm with a horizontal axis, which can be independently orientated with respect to this axis.

Means for locking the stuffed back or bedhead members in the desired inclination are advantageously provided.

Further details are given in the following description with reference to the attached drawings, in which:

Fig. 1 is a side view of a sofa or bed of the invention in section along the line I-I of Fig. 2;

Fig. 2 is a top view of the sofa or bed of Fig. 1 with the stuffed members removed;

Fig. 3 shows one arrangement of a bed with the structure of the invention;

Fig. 4 shows a different arrangement of a bed with the structure of the invention;

Fig. 5 shows a further arrangement of a bed with the structure of the invention;

Fig. 6 shows one arrangement of a sofa with the structure of the invention;

Fig. 7 shows a different arrangement of a sofa with the structure of the invention;

Fig. 8 shows a further arrangement of a sofa with the structure of the invention.

As shown in Figs. 1 and 2, a sofa or bed of the invention comprises a structure 1 bearing the stuffed mattress or seating 2, shown diagrammatically in the Figure, which structure comprises a support beam 3 to which the legs 4 bearing on the floor are connected, and bears, at one or both ends, a pin 5 about which a curved arm 6 rotates.

This curved arm, in turn, comprises at its end a curved horizontal fascia 7 which bears, with an articulated connection, the panels 8, 9 bearing the stuffed back or bedhead member 10 whose stuffed portion 11 is shown diagrammatically in the Figure.

The structure 1 further comprises a horizontal curved guide 12, coaxial with the pin 5, having a

substantially T-shaped cross-section with the flange facing outwardly; two pairs of slides, upper 13a and 14a and lower 13b and 14b respectively, bear from opposite sides on the web of this curved guide and are supported on the horizontal portion 15 of the curved arm 6 and tightened together so as to enable the rotation of the arm 6 about the axis of the pin 5 with friction, thus holding the position in which they are placed during use.

The slides 13, 14 provide in this way the rigid connection, in a vertical and torsional direction, of the arm 6 with the frame 1, together with the pin 5, while the arm itself is free to rotate about the axis of the pin 5, and can rotate in opposite directions through some 90° with respect to the median position shown in the Figure.

The panels 8 and 9 bearing the stuffed portion of the back member are supported in turn in an articulated manner, with a horizontal axis, on the lateral flanges 16 of the curved fascia 7 and are provided with snap-locking catches, having mechanisms of known type, in several positions thus making it possible to place the back member 10 in different angular positions as shown by dashed lines in Fig. 1, thus enabling, together with the rotation of the overall back member about the axis of the pin 5, many of the user's requirements to be met.

The structure of the invention makes it possible to provide a single bed, by disposing the members 10 such that they form heads at the ends of the seating 2, which may be converted into a sofa by rotating the members 10 to form a back member along one of the sides of the plane 2, maintaining the aesthetic features of the structure in all cases; the structure of the invention, if applied to the head of a bed, for example a double bed, allows the members 10, forming the bedhead in this case, to be arranged in a position suitable for sleeping, for example with the panel 9 disposed horizontally, as shown in Fig. 3, and the panel 8 close to vertical, or with the panels 8, 9 aligned and obliquely disposed as shown in Fig. 4 for one of the bedhead members 10, on the right-hand side of the Figure, which is further rotated towards the side of the bed to form a support member for example for reading and the like, or, as shown in Fig. 5, with both the bedhead elements rotated laterally towards the sides of the bed with the panels 8, 9 inclined to different extents, according to the user's requirements.

It is evident that in the case of a double bed, formed substantially by a double structure 1, with two pins 5 for the connection and rotation of the relative bedhead members, each of the bedheads may rotate about their respective pin in a single direction, while in the case of a single bed the rotation of the bedhead member 10 can be bidirectional with respect to its position of alignment with the bed.

In the case that the structure of the invention is applied to a sofa, as shown in Figs. 6, 7 and 8, various arrangements are possible, for example with the back members 10 aligned on one side of the sofa (Fig. 6), with the back members 10 facing one another on either side of the sofa (Fig. 7), or even with one or both of the back members 10 disposed on the sides of the sofa itself (Fig. 8), or obviously in the intermediate positions, wherein in each of these positions the inclination to vertical of the panels 8, 9 of the back members may also be varied in accordance with the user's requirements.

Many variants may be made without departing from the general scope of the invention.

Claims

1. A support structure for beds, sofas and the like, characterized in that it is formed by a frame bearing a plane stuffed member designed to form a mattress or seating, which frame comprises a longitudinal beam provided in the vicinity of at least one of its ends with a vertical pin around which there may rotate a curved arm bearing on its free, upwardly facing, end a stuffed member designed to act as a back and/or bedhead member.

2. A support structure for beds, sofas and the like as claimed in claim 1, characterized in that the frame is provided, at the location of each pin, with a curved guide rigid therewith and disposed horizontally coaxial to the pin and extending over an angle which is at least equal to, or higher than, the angle of rotation provided for the curved arm, having slipways, with a two-sided connection, with which corresponding sliding support and connection members for the curved arm supported by the relative pin are engaged.

3. A support structure for beds, sofas and the like as claimed in claim 2, characterized in that the sliding members supporting and connecting the curved arm with respect to the curved guide are formed by at least a pair of superimposed slides bearing at the top and at the bottom respectively against the curved guide and tightened against it, the rotation of the curved arm with respect to the relative pin being allowed by friction.

4. A support structure for beds, sofas and the like as claimed in one or more of the preceding claims, characterized in that there are two pairs of angularly spaced rollers.

5. A support structure for beds, sofas and the like as claimed in one or more of the preceding claims, characterized in that the stuffed member, designed to act as a back and/or bedhead member, supported by the curved arm(s) is formed by

two adjacent portions hinged together and at the free end of the curved arm with a horizontal axis, which can be independently orientated with respect to this axis.

6. A support structure for beds, sofas and the like as claimed in claims 1 and 5, characterized in that means for locking the stuffed back or bedhead members in the desired inclination in a number of positions are advantageously provided.

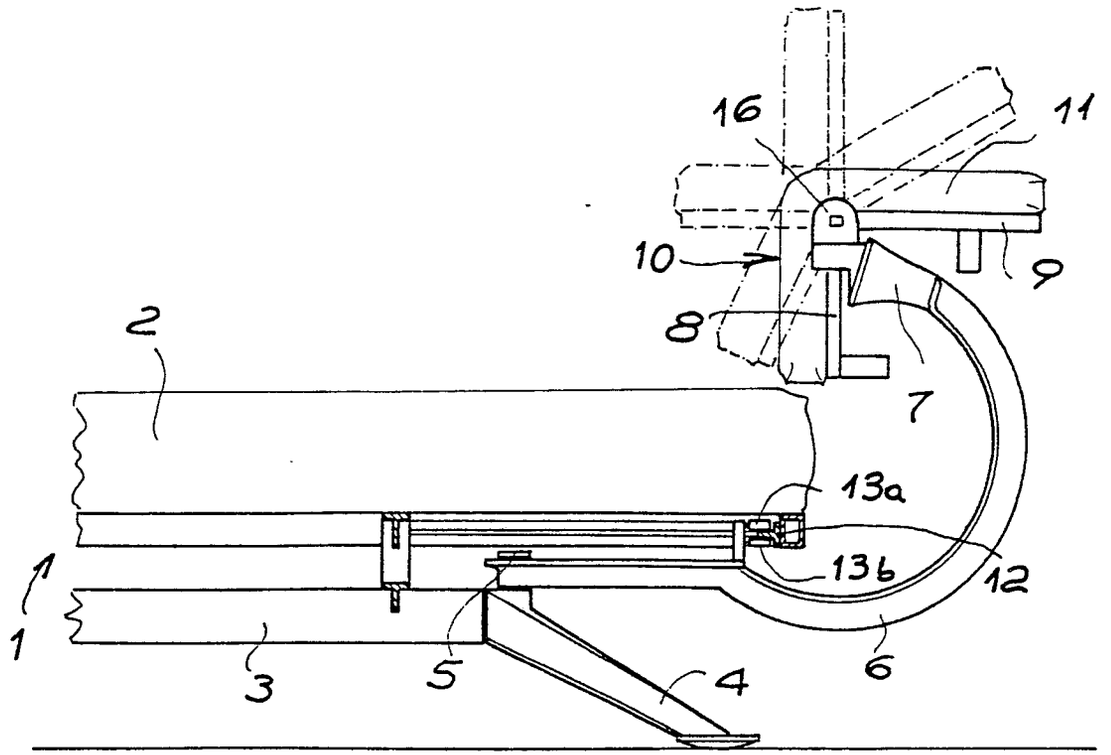

Fig. 1

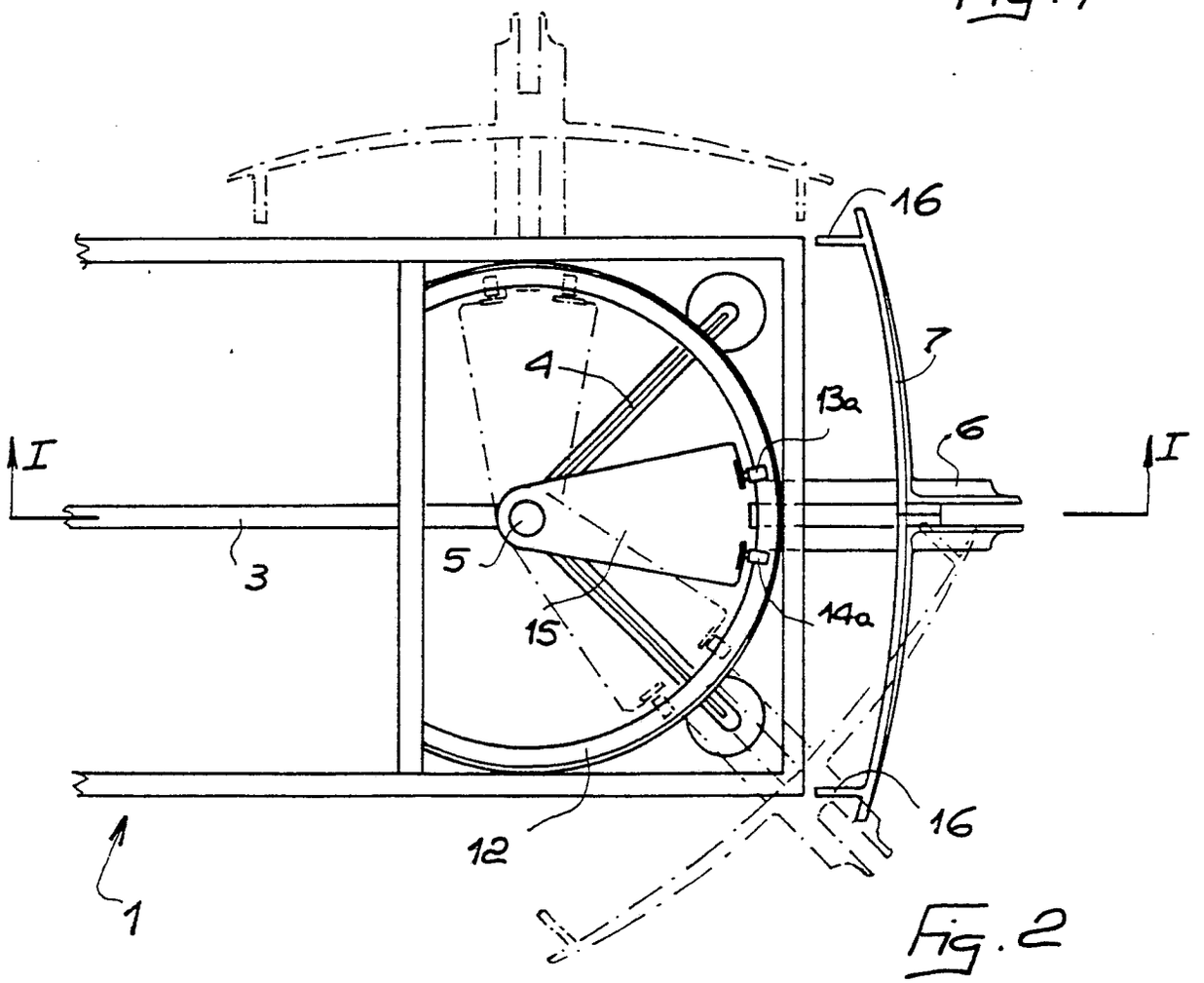

Fig. 2

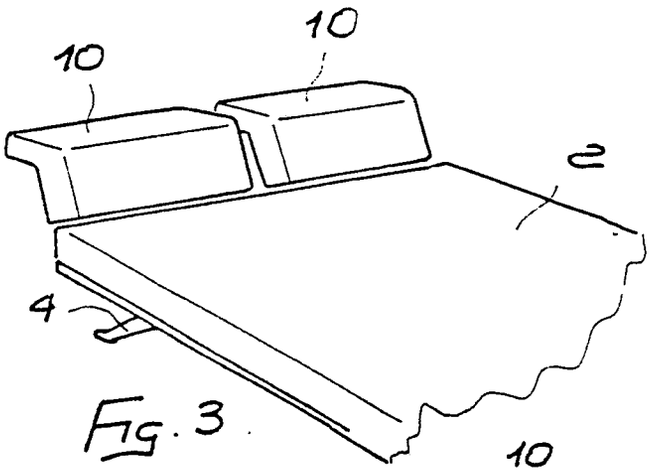

Fig. 3

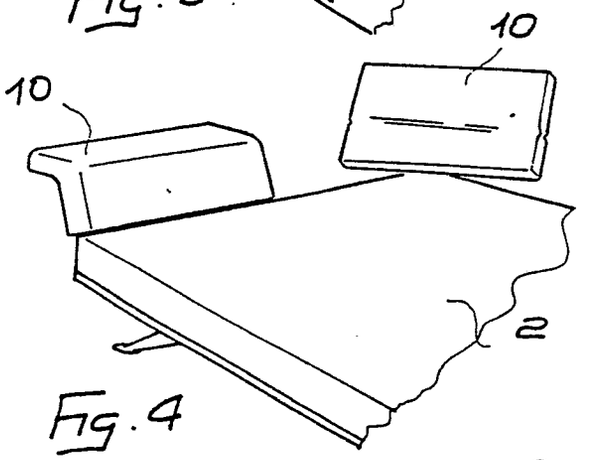

Fig. 4

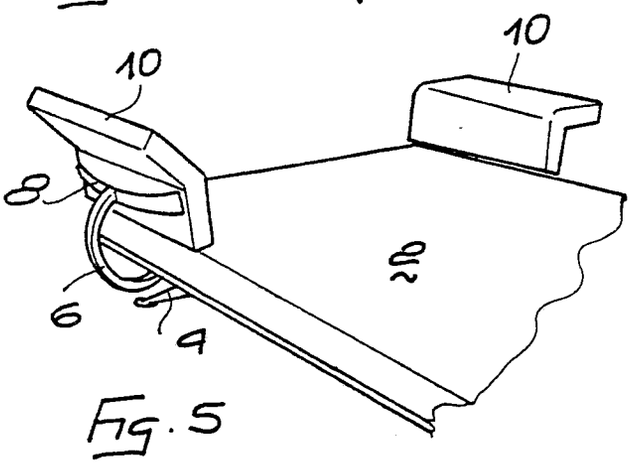

Fig. 5

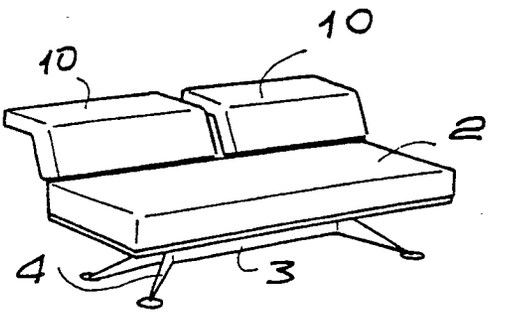

Fig. 6

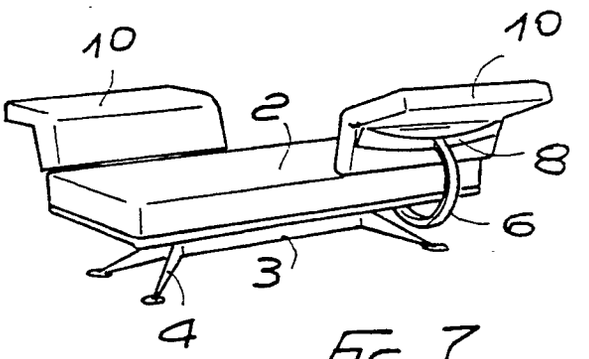

Fig. 7

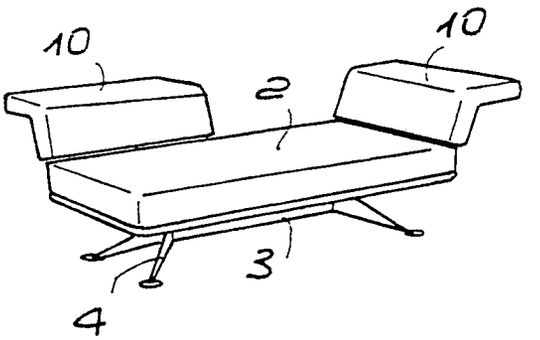

Fig. 8

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EUROPEAN SEARCH REPORT

Application Number

EP 88 20 1900

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.4)
A	US-A-3 248 742 (JOHNSON)		A 47 C 19/02 A 47 C 20/00 A 47 C 20/04 A 47 C 7/40 A 47 C 17/14
A	US-A-4 542 936 (GAFKEN)		
A	DE-A-2 546 060 (REINHOLD)		

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

A 47 C

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	20-12-1988	VANDEVONDELE J.P.H.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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