April 23, 1968 A. HILFIKER 3,379,472

FURNITURE FOR SITTING OR LYING ON

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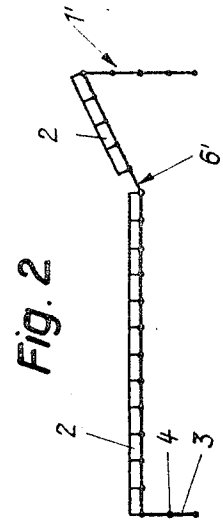


Fig. 2

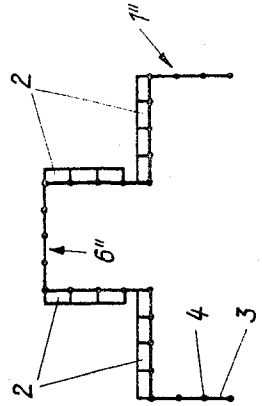


Fig. 3

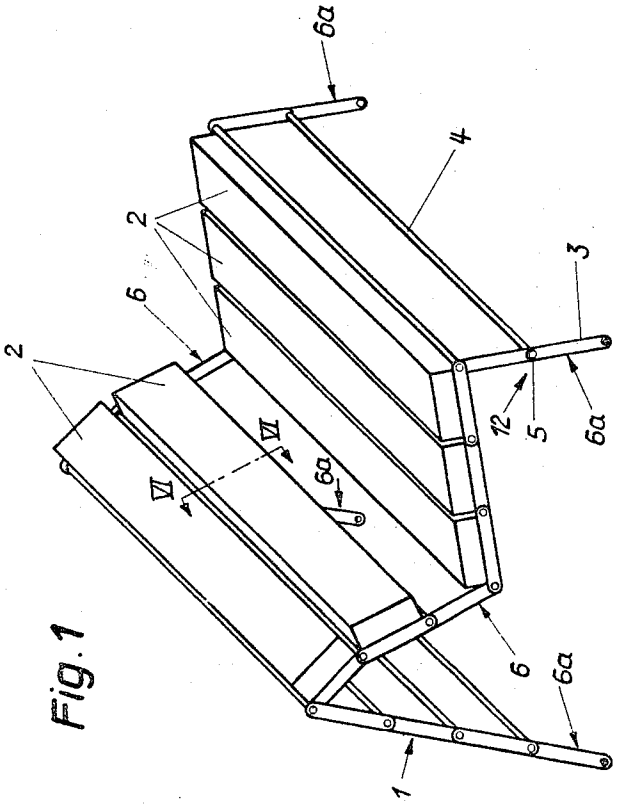


Fig. 1

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Fig. 4

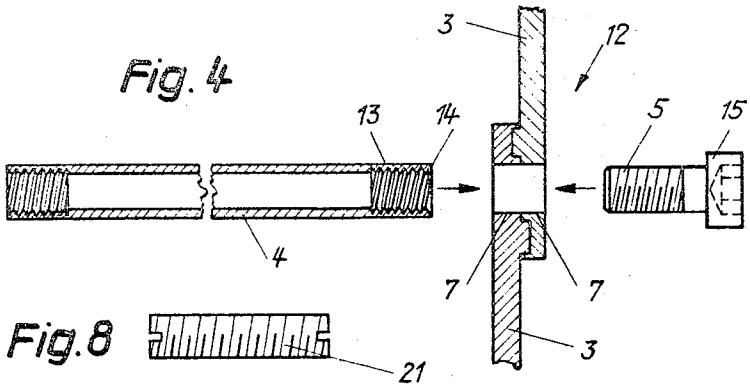


Fig. 8

Fig. 5

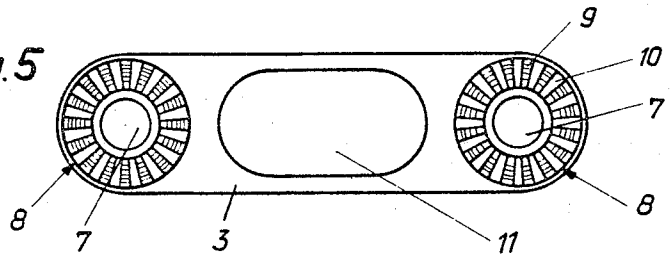


Fig. 6

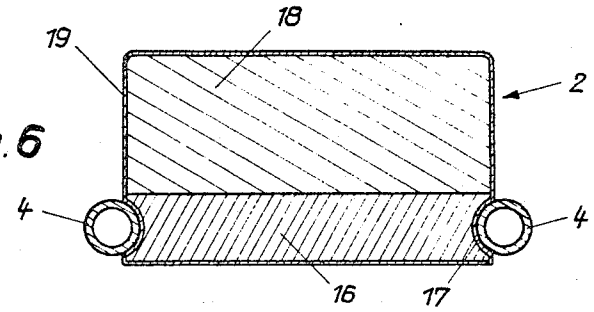
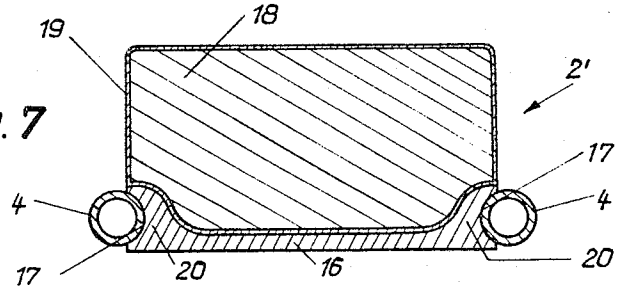


Fig. 7



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FURNITURE FOR SITTING OR LYING ON

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ABSTRACT OF THE DISCLOSURE

Piece of furniture with two or more stringers each composed of a multiplicity of short links with overlapping ends interconnected by cross-bars which tie the several stringers together, the overlapping ends being provided with confronting annular arrays of teeth which lockingly interengage in different relative angular positions whereby each stringer can be bent into a variety of shapes prior to final assembly. The stringers and their cross-bars form a frame supporting a set of cushioned planks which constitute a seating surface and/or a backrest.

The present invention relates to a piece of furniture for sitting or lying on.

An object of the invention is to provide such piece of furniture which can be put together from a number of similar or identical members adapted to be used for making up varied pieces of furniture for sitting or lying on.

Furniture pieces according to the invention comprise at least two main carriers or stringers made up from similar or identical links with overlapping ends. Similar or identical parallel staves or cross-bars are used to connect these stringers to one another and stiffened cushions or planks are then secured as body-supporting members to the cross-bars, locking means being provided on the overlapping ends of the links for securing them to one another in certain relative angular positions which can be selected during assembly of the links to form the stringers. The locking means may include two mating annular arrays of teeth, formed on confronting surfaces of the interconnected links, and screws engaging an associated cross-bar for holding the teeth in positive interengagement.

An advantage of the invention is that frames for the most varied forms of furniture pieces can be assembled from a small number of similar members, i.e. short links and cross-bars, which can be massed-produced economically.

The above and other objects and advantages of the invention will become more apparent upon reference to the following description and the accompanying drawing showing several embodiments thereof.

In the drawing:

FIG. 1 is a perspective view of an easy chair according to the invention,

FIG. 2 is a schematic side elevation of a couch according to the invention,

FIG. 3 is a schematic side elevation of a double divan according to the invention,

FIG. 4 is an exploded representation of several frame members of a piece of furniture according to the invention at a junction point of the frame, shown partly in section,

FIG. 5 is a side elevation of a stave-shaped carrier for use in furniture according to the invention,

FIG. 6 is a section along line VI—VI of FIG. 1 drawn to a larger scale,

FIG. 7 is a section, similar to that of FIG. 6, of another embodiment of the invention, and

FIG. 8 is a modified form of screw which can be used in furniture according to the invention.

The easy chair shown in FIG. 1 consists of a frame

1 and a plurality of squared stiffened cushions 2, of which three form the seat and two a back rest. The frame 1 is built up from the following members: links 3, tubular staves 4 and screws 5 (see also FIGS. 4 and 5). The links 3 are joined at their ends by means of the staves or cross-bars 4 and the screws 5 into two angularly bent rigid and parallel main carriers or stringers 6 which each have two feet 6a also joined together by these staves 4.

Each link 3 has the shape of a flat blade cast for example from aluminum alloy. Adjacent each end of each link 3 is a hole 7 surrounded on but one face of the blade by an annular array 8 of teeth 9.

In FIG. 5, for the sake of clarity, the teeth 9 invisible in elevation are shown hatched in contrast to the gaps 10 between the teeth which are left white. The distance between the two holes 7 of the link 3 may for example be about 165 mm., the width of the link about 46 mm. and its thickness 10 mm., flat recesses 11 being provided on both sides of the blade to save material.

With swaged links 3 it is preferable to reduce the thickness and omit the recesses 11.

As shown in FIG. 4 at each point of their junction 12 the ends of two links are so placed in mutual contract that the teeth 9 of the toothed array 8 engage in the gaps 10 of the other toothed array 8 and vice versa; thus the relative position of the two links 3 can be varied by the multiple of an angle of $360°/n$ where n indicates the number of teeth per array. When the screw 5 passes through the two holes 7 and screws axially into an inner thread 13 provided in the end of the tube 4 which is aligned with these holes and thus with the axes of the arrays 8, the two links 3 are securely clamped between the end 14 of the tube 4 and the head 15 of the screw 5, relative rotation of the links being prevented by the positive interengagement of the teeth of their arrays 8.

FIG. 6 shows how the stiffened cushions or planks 2 are held by the tubes 4. Each cushion 2 includes for this purpose a wooden board 16 which is provided at each longitudinal edge with a hollow groove 17 whose radius corresponds to the outer radius of the tubes 4. Any suitable cushion material 18, for example resilient foam plastic, is attached to the board 16, and a covering of textile material 19 which surrounds both the material 18 and the board 16 helps to secure the foam material onto the board. It is apparent from FIG. 6 that the cushions 2 are so inserted between the two tubes 4 that the latter engage in the concave edges 17 in the board 16 thereby ensuring that the cushions are reliably secured in the frame 1. The covering 19 extends between the board 16 and the tubes 4.

FIG. 7 shows as a variation a cushion 2' whose rigid constituent, in lieu of a wooden board 16 arranged wi hin the covering 19, is a plate 16' of aluminum alloy arranged outside the said covering. The plate 6' has on its longitudinal edges thickened portions 20 which again are provided with hollow grooves 17 receiving the tubes 4. The covering 19 surrounding the cushioning material 18 may be pasted onto the plate 6' or secured in any other manner, for example by means of screws (not shown) passing through the whole cushion 18, 19.

A couch is shown schematically in FIG. 2. The frame 1' of the couch consists of links 3 and tubes 4, which are secured to one another at the points of junction by means of screws 5 (see FIG. 4). Stiffened cushions 2 overlying the cross-bars 4 are disposed on the frame 1'. The double divan shown schematically in FIG. 3 is also put together from the same members 2–5. The length of the divan, i.e. its extent in the direction at right angles to the plane of the drawing, is preferably several (e.g. two or three) times the length of the cushions 2. The frame 1'' of the divan then has for example three or four angularly bent stringers 6''. Mutually aligned tubes

are secured together at their adjacent ends with the associated pair of links 3 of the intermediate stringer between them. In order to secure the adjacent ends of the tubes 4 together in this way, worm screws 21 (see FIG. 8) are employed at these central junction points.

It is possible to build the most varied furniture pieces for sitting or reclining with the same members 2–5 and 21. It is obvious that for example the easy chair shown in FIG. 1 can be turned into a divan of any desired length by the addition of further members in the manner described above, and the couch shown in FIG. 2 into a double couch, the shape of the main carrier or stringer being capable of being altered to an extensive degree to suit the requirements of space and personal taste.

The possibility of being able to put together the most varied furniture with the same members allows economical mass-production of these parts and of the piece of furniture itself.

It will be understood that this invention is susceptible to further modification in order to adapt it to different usages and conditions, and, accordingly, it is deemed to encompass such modifications as may fall within the scope of the appended claims.

I claim:

1. A piece of furniture comprising a frame including a plurality of parallel stringers and a multiplicity of cross-bars spanning said stringers, and a set of body-supporting members mounted on said frame, each of said stringers consisting of a multiplicity of links with overlapping ends, each pair of overlapping ends being in line with a respective cross-bar, and locking means including said cross-bars for nonrotatably joining said overlapping ends to each other in any one of a number of selectable relative angular positions.

2. A piece of furniture as defined in claim 1 wherein said locking means include mating formations on confronting surfaces of said overlapping ends, and screw means securing said overlapping ends to the respective cross-bar in line therewith while maintaining said formations in positive interengagement.

3. A piece of furniture as defined in claim 2 wherein said formations are annular arrays of teeth centered on the axis of the associated cross-bar, said screw means being disposed along said axis.

4. A piece of furniture as defined in claim 3 wherein said cross-bars are tubular and provided with internally threaded extremities to receive said screw means.

5. A piece of furniture as defined in claim 1 wherein said body-supporting members comprise cushioned planks each received between and carried by a pair of said cross-bars.

6. A piece of furniture as defined in claim 5 wherein said planks comprise rigid boards with concave longitudinal edges partly receiving said pair of cross-bars.

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