

[54] **HINGE CONSTRUCTION**
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 5/314

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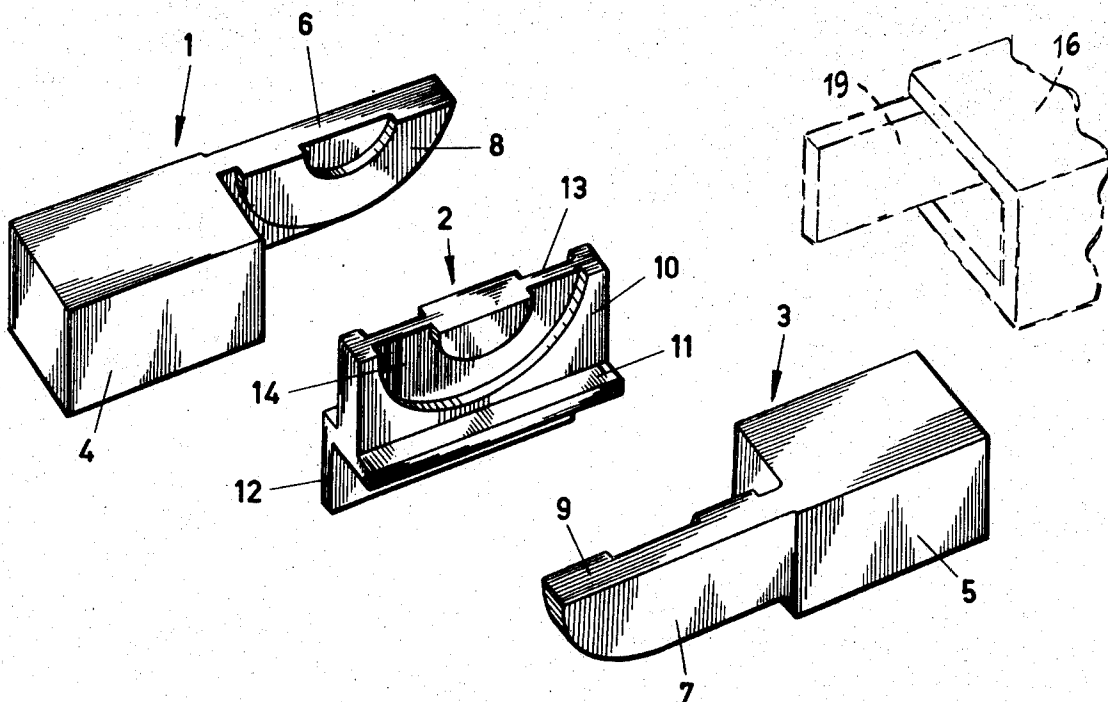
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[57] **ABSTRACT**

A hinge construction for hinging at least one hollow tubular member at one of its ends to another member for relative swinging through less than 90°, comprises a first small block having flat side secured to that other member and a second small block fitting tightly in the end of the hollow member and having a thinner part with a flat side projecting beyond the hollow member. Both flat sides lie opposite each other and one has a projection fitting slidingly in a semicircular groove in the other flat side and a retaining element maintaining the thin part of the second block against the flat side of the first block. A limiting element limits the angle of relative swinging movement.

4 Claims, 2 Drawing Figures



HINGE CONSTRUCTION

The invention relates to a hinge construction for hinging at least one hollow tubular member at one of its ends to another member, said members being permitted to swing relatively to one another over an angle of less than 90°.

The invention relates in particular to a hinge construction for hinging the frame of one or two folding members of the resting area of a bed to a supporting frame of said bed.

The object of the invention is to improve and simplify the existing hinge construction of this type.

According to the invention, the hinge consists of a first small block having at least one flat side to be secured to the other member and a second small block consisting of a part of such a form that said part will fit tightly in the end of the hollow member and of a thinner part having a flat side projecting from said hollow member, both flat sides lying opposite to each other while a projection is formed on the one flat side, said projection fitting slidably in a semi-circular groove provided in the other flat side, and a retaining element which holds the thin part of the second block against the flat side of the first block and a limiting element which limits the angle at which the two parts may hinge relatively to each other to the afore-mentioned angle.

According to the invention, the retaining element may be formed conveniently by an elongation in the form of a plane of said hollow member, provided at the end of said member and facing the thinner portion of the second block projecting beyond said end, so that said elongation and said thinner portion enclose the first block.

When the resting area of a bed consists of two parts which are both hinged to a supporting frame, the small block to be secured to the other member has two flat sides with a semi-circular groove of a certain width and depth in either side and a third block which is identical to said second block fits tightly in the end of the second part to be hinged, so that these two blocks are situated on either side of the first block and the projections formed on these blocks engage the respective grooves in the first block, the retaining elements being formed by the fact that a wall of both hollow members is extended beyond the end of said hollow member by an elongation in the form of a plane, so that the thinner portion of the block in the one hollow member fits slidably in the space between the elongated wall at the end of the other member and the flat side of the first block facing said wall.

The projection on the flat side of the thinner part of a second block is preferably semi-circular the radius of the circle being approx. equal to the radius of the semi-circular groove in a flat side of the first block.

The blocks forming the hinge are preferably made from a synthetic material.

According to the invention, the hinge construction is very simple and inexpensive and yet fulfills all requirements. Moreover, this construction facilitates the assembly of an adjustable bed.

The invention will now be described in more detail with reference to the accompanying drawing, wherein:

FIG. 1 is a perspective view of three blocks forming the hinge construction and taken apart with a fragment of the associated hollow bar shown in phantom line;

FIG. 2 is a view of a part of a bed of which the resting area consists of two parts which are both hinged to a supporting frame by means of the hinge construction according to FIG. 1.

According to the invention, the hinge comprises three small blocks 1, 2 and 3, which e.g. as a whole may be formed from a synthetic material.

The blocks 1 and 3 are essentially identical and consist of a thick portion 4, 5 having a rectangular cross section and a thinner portion 6, 7 with a rounded end. A semi-circular part 8, 9 is formed on the flat side facing inwards. The block 2 consists of a part 10 in the form of a sheet with flanges 11 at one end, while at the end of one of the flanges the part 12 projecting downwards is formed so that the flanges 11 and the part 12 include a right angle. In both sides of the part 10 a semi-circular groove 13, 14 is formed having such width and depth that the projecting parts 8, 9 fit into grooves 13, 14 respectively.

In assembled condition, as shown in FIG. 2, the parts 6 and 7 of the blocks 1 and 3 resp. are on either side of the part 10 of the block 2. The parts 4 and 5 of the blocks 1 and 3 have a dimension so that they will fit tightly in the outer ends of the hollow bars 15 and 16 of the bed frame, which consists of two members which may be swung upwards in inclined direction relative to the supporting frame 17.

FIG. 2 shows the right part 16 of the resting area in partly raised position and the left part 15 in horizontal position, at the ends of which both side walls of the bars 15 and 16 are extended by the parts 18 and 19 resp., which extend to the center of the block 2, said block being mounted on the supported frame 17. In this way the elongated side walls 18 and 19 form the retaining elements which hold the parts 6 and 7 of the blocks 1 and 3 against the block 2.

In order to prevent the part 6 or 7 of the block 1 or 3 to pass completely outside the space, which is determined between the part 10 of the block 2 and the elongation 18 or 19 of the bars 15 or 16, when said bar 15 or 16 makes an excessive swinging movement relative to the frame 17 so that said part 6 or 7 will not be enclosed any more, limiting elements 20 are provided between the bar 15 or 16 and the frame 17 (FIG. 2 shows only the element 20 between the bar 16 and the frame 17). These limiting elements will act in addition as supporting means of the parts of the resting area which are raised.

What is claimed is:

1. In a hinge construction for pivotally connecting at least one hollow elongated member at one of its ends to a support member, so that said members are swingable relative to one another over an angle of less than 90°, said hinge construction comprising a first hinge member adapted to be secured to said support member and having at least one flat surface, and a second hinge member adapted to be secured to said hollow member and having a flat surface, said flat surfaces of both hinge members facing one another in an abutting relationship, a projection on one said surface and a semi-circular groove in the other said surface, said projection slidably fitting into said groove; the improvement in which said second hinge member comprises a block-like portion which snugly fits into said hollow elongated member and a portion projecting from said hol-

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low member and off-set from one of the side walls of said hollow member and carrying said flat surface, retaining means maintaining said flat surfaces against one another, said retaining means comprising an integral extension of said one side wall of said hollow elongated member, so that said extension and said projecting portion of the second hinge member enclose said first hinge member, and means to limit the angle over which said members swing relative to one another.

2. A hinge construction as claimed in claim 1, said projection being semi-circular and having a shape complementary to said groove.

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3. A hinge construction as claimed in claim 1, said first hinge member having a second semi-circular groove coaxial with the first-mentioned groove and lying on the side of said first hinge member which is opposite the first-mentioned groove, and a third hinge member similar to said second hinge member and carrying a projection that fits into said second groove.

4. A hinge construction as claimed in claim 3, said projection of said third hinge member being semi-circular and having a shape complementary to said second groove.

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