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(54) **Support for bed slats with elasticity adjustment**

(57) Between the shim (1) which receives the end of the slat and the frame (2) of the bed base, there is an elastically deformable flexing element (3), which includes two rings, one inner one (10) and another larger outer one (11), an adjustment device (15) working with said rings, able to be positioned between the inner ring (10) and the base of the flexing element (3), only the smaller ring (10) becoming operative and achieving the maximum tautness in the transmission of forces towards the

frame (2), said adjustment device (15) being situated in a horizontal position, closing the outer or encircling ring (11), which thus becomes operative, whereby a degree of intermediate tautness is achieved, or said adjustment device (15) being removed, whereby the degree of tautness of the transmission is minimal, in other words, acquiring three levels of elasticity or shock absorption in the transmission of forces from the slat to the frame of the bed base.

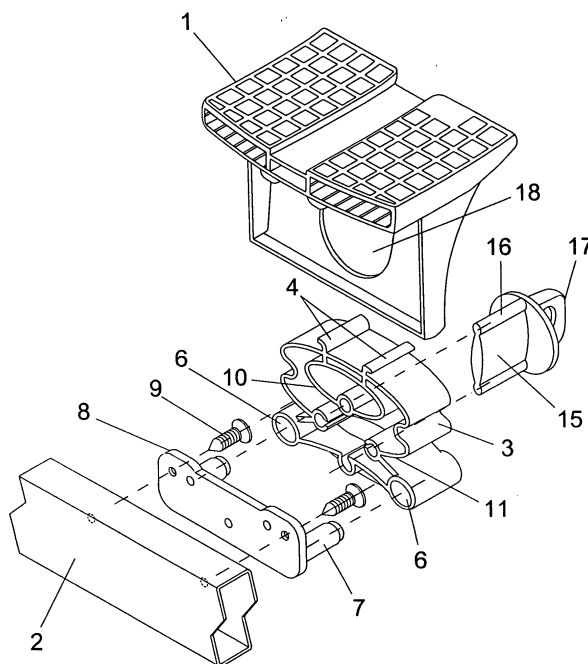


FIG. 1

Description

OBJECT OF THE INVENTION

[0001] The present invention refers to a support for bed slats, that is to say slats, of the type commonly called slatted bed bases, which attach each of said slats to the frame or structure of the bed base.

[0002] The object of the invention is to make the support able to vary its degree of tautness, or which is the same as saying, to make the slats of the bed base more or less elastic with respect to the frame or structure of the bed base.

[0003] Another object of the invention is that this adjustment in the degree of elasticity of the slats may be done quickly and easily by the user at any time during the useful life of the slatted bed base.

[0004] The invention thus applies to the field of manufacturing slatted bed bases or beds.

BACKGROUND OF THE INVENTION

[0005] Within the field of slatted bed bases or beds, an outer metal frame is usually used, either continuous or jointed, which corresponds to the contour of the bed base, and may, in some cases, have an intermediate bolster, depending on the size of said base, so that a plurality of individual supports for the slats are fastened to the bolsters of said metal structure at suitable distances and conveniently distributed, enabling the slats to be fastened by their ends.

[0006] These supports do not just have the function of fastening the slats to the metal structure, but also to absorb the dimensional variations occurring in said slats during utilization the bed base, due to their change in curvature, and because said absorption of the dimensional variations is done without making any noise.

[0007] Supports are also known which, in addition to the aforementioned benefits, act as shock-absorbers for the transmission of forces from the slats to the metal framework, by means of elastically deformable elements included in said supports. However, this shock-absorption effect can only be adjusted at the time of designing and making the bed base, using supports with a greater or smaller elasticity index, but do not allow such elasticity to be changed subsequently, let alone be adjusted by the user.

[0008] On the other hand, although there are supports available on the market whose elasticity can be varied, these usually provide little elasticity and only have 2 adjustment positions, restricting the range of elasticity available for adjustment. In addition, they require a certain amount of time, tools and specific knowledge to be modified and/or the need to dismantle some of the elements, such as the support itself, the mattress, the slats and others, which makes it extremely difficult for the user to modify, given the complexity.

DESCRIPTION OF THE INVENTION

[0009] The support for slats proposed by the invention provides a fully satisfactory solution to the aforementioned problem set out, enabling the degree of elasticity to be extensively adjusted, whereby each slat, or slats, transmits the load borne to the metal framework or structure of the bed base, more specifically providing three clearly distinct levels of elasticity which may be modified by the user as and when he wishes in a quick, easy and simple way, without the need of tools and without the need to dismantle any of the elements forming the array.

[0010] For this, and more specifically, between the shim to which the corresponding end of the slat is fastened and the metal frame of the bed base structure, there is a flexing element through which the forces are transmitted, a flexing element in which there are two rings, one of these encircling the other and having a different capacity for elastic deformation, an adjustment device working with said flexing element which, depending on its own position within the flexing element, changes the elastic functionality of said rings, as well as changing the elastic deformation coefficient of the flexing element array between the aforementioned three levels, one when said adjustment device adopts a vertical position, corresponding to maximum tautness, another when it adopts a horizontal position, corresponding to intermediate tautness, and another when said adjustment device is removed, when elasticity or flexibility is maximum.

[0011] The position of the appropriate number of shims on the bed bolsters, whether taut or jointed, single or double, and the speed, ease and simple means of adjustment, enables the user to extensively modify the elasticity as and when he wishes, making, for example, areas such as the lumbar or other regions taut, or even making just one of the bed side slats taut and/or loosening the other side slat, enabling, especially in a double bed, adjustment of the elasticity on each side, in accordance with the preferences of both users.

DESCRIPTION OF THE DRAWINGS

[0012] To accompany the present description and in order to provide a better understanding of the characteristics of the invention, in accordance with a preferred example of practical embodiment thereof, a set of drawings is provided as an integral part of said description, representing the following, in an illustrative and non-limitative way:

Figure 1. Shows a perspective breakdown of a support for bed slats with elastic adjustment carried out in accordance with the object of the present invention.

Figure 2. Shows an elevational view of the array represented in the previous figure, duly assembled, in a position with maximum tautness in shock absorption.

Figure 3. Lastly, this shows a representation similar to that in the previous figure, but which corresponds to the intermediate tautness position.

PREFERRED EMBODIMENT OF THE INVENTION

[0013] Looking at the figures provided and, especially at Figure 1, it can be seen how, in the support for slats proposed by the invention, there is a shim (1) used to receive the corresponding slat, or slats, by the ends, for the indirect fastening thereof to the bolster (2) of the metal structure or frame of the bed base, but with the special feature that between these elements, the shim (1) and frame (2), there is an elastically deformable flexing element (3), which serves as a shock absorber or elasticity adjustment device in said transmission of forces.

[0014] The flexing element (3) has at the top, a pair of ribs or pins (4) that can be joined between the respective grooves (5) and the shim (1), while the bottom of said flexing element (3) incorporates a pair of housings (6) for respective pins (7) which are joined directly to the frame of the bed or to a commercial flat bar (8) which is fastened using screws (9) to the frame (2), in this way the flexing element (3) being conveniently fastened to both the shim (1) and said frame or structure (2) of the bed base.

[0015] In the flexing element (3), separate from the aforementioned fastening elements for the shim (1) and the frame (2), two elastically deformable rings are defined, one inner one (10), preferably with an elliptic configuration and with a larger horizontal axis, and another outer one (11) encircling the first, the lower ring (10) having a groove (12) with a markedly strangled opening, while the encircling ring (11) is open at the bottom and has, corresponding with its opening, two grooves (13) with a strangled opening, similar to the previous one and facing one another, there being a fourth groove with a strangled opening (14) at the base of the flexing element and facing the aforementioned groove (12).

[0016] These grooves (12-14) and (13) are used to selectively receive or, where appropriate, not receive, as will be seen below, a part (15) with adjustment functions, with a pair of ribs and parallels (16) which can be tongue-and-groove coupled to the grooves (12-14) or to the grooves (13), and finished off in a ring (17) or other similar medium to facilitate the action thereof.

[0017] When said adjustment device (15) is set to the position in the figure (2), in other words, in a vertical position, coupling to the strangled opening grooves (12) and (14), it forms a taut bridge which cancels the functionality of the outer or encircling ring (11), the inner ring (10) solely acting as a shock absorber which, due to its reduced dimensions, provides a scant degree of deformability, so that the level of tautness on the support of the slat is at its maximum.

[0018] If, on the other hand, the adjustment device is removed (15), through the window (18) of the shim (1), in other words, without the need to dismantle the rest of

the structure, and is changed to the horizontal position shown in Figure 3, in other words, with its ribs (16) tongue-and-groove coupled to the strangled opening grooves (13), the ring (11) basically becomes operative which, due to its larger size and especially due to the deflections (19) it incorporates in its lateral areas, offers a degree of elasticity which is considerably higher than the adjustment device's previous position, which is equivalent to a considerably lower level of tautness in the transmission, but with a certain limitation caused by the tension produced towards the outside of the adjustment device (15) itself and/or the possible contact of the groove (12) on the adjustment device (15).

[0019] Lastly, and obviously, if the adjustment device (15) is removed, in other words, it neither enters the grooves (12-14) nor the grooves (13), the degree of elastic deformability of the flexing element is at its maximum and, consequently, its tautness is at its minimum.

Claims

1. Support for bed slats with elasticity adjustment device, of the type incorporating a shim to which the corresponding end of the also corresponding slat, or slats, can be fastened, a shim which forms the connection link of the slat, or slats, to the frame or structure of the bed or bed base, whether continuous or jointed, **characterized in that** between said shim (1) and frame (2) of the bed base, serving as a means for transmitting forces, is a flexing element (3), elastically deformable, which can provide different levels of elastic deformation depending on the position it has on an adjustment device (15) which makes said flexing element (3) more or less taut.
2. Support for bed slats with elasticity adjustment, according to claim 1, **characterized in that** the aforementioned flexing element (3) incorporates an inner ring (10), preferably with an elliptic section, and a larger outer encircling ring (11) with a similar configuration, with lateral curvatures (19), the inner ring (10) having a groove (12) at the bottom, with a markedly strangled opening, which sits opposite another groove (14) on the base of the flexing element, while the second ring (11) is open at the bottom and incorporates two other grooves (13) in this area, similar to the previous ones, with facing openings, these grooves (12-14) and (13) being of a suitable shape and size to selectively receive, by groove-and-tongue coupling, parallel ribs (16) positioned at suitable distances, which are in the adjustment device (15) and which, in a vertical position, basically use the inner ring (10), in a horizontal position, basically use the encircling ring (11), and when the flexing element is detached, allows the maximum capacity of elastic deformation for the whole array

3. Support for bed slats with elasticity adjustment, according to the previous claims, **characterized in that** the flexing element (3) incorporates at the top a pair of ribs or pins (4) which fit into housings (5) of the shim (1), while at the bottom a pair of housings (6) is incorporated, into which rods (7), emerging from a flat bar (8) which can be screwed to the frame (2) of the bed base, are attached. 5
4. Support for bed slats with elasticity adjustment, according to the previous claims, **characterized in that** the shim (1) has a wide window (18) providing direct manual access to a base ring (17) of the adjustment device (15), for changing its position or removing it. 10 15

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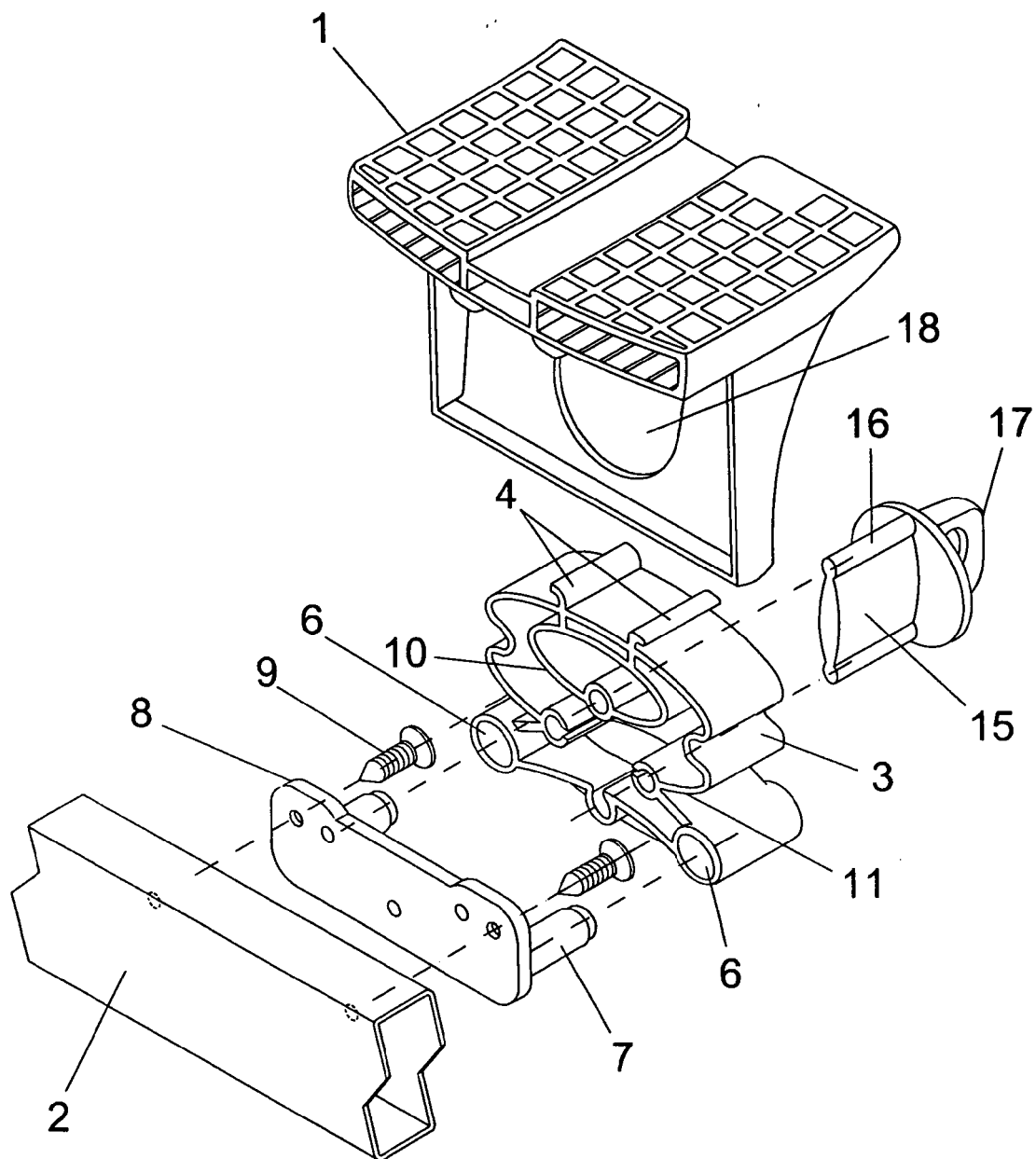


FIG. 1

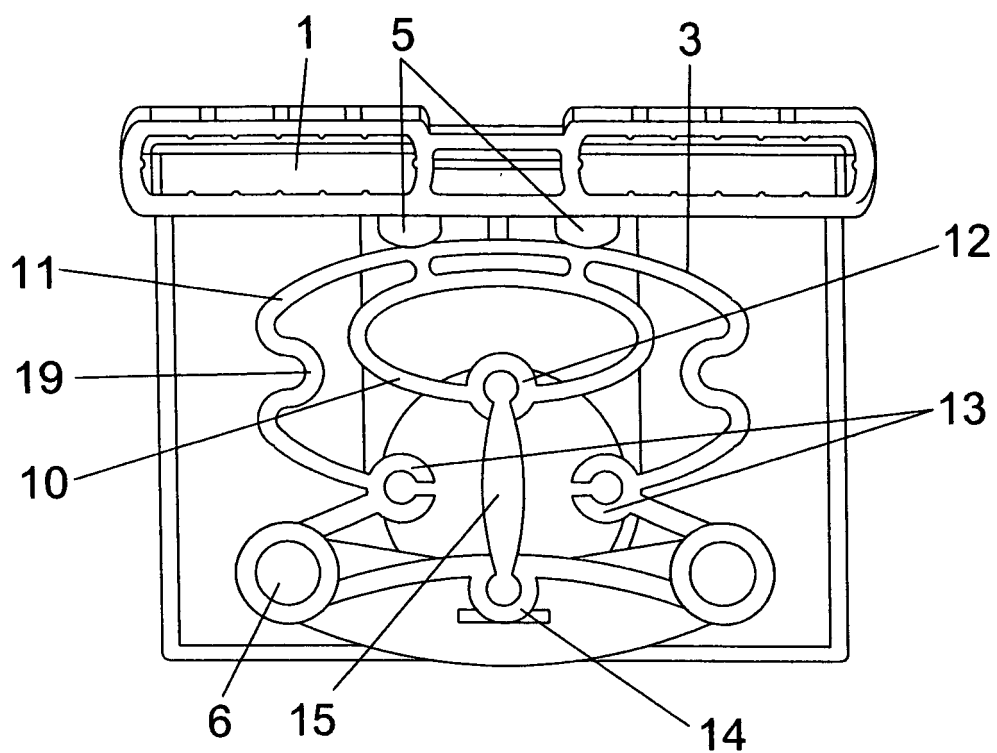


FIG. 2

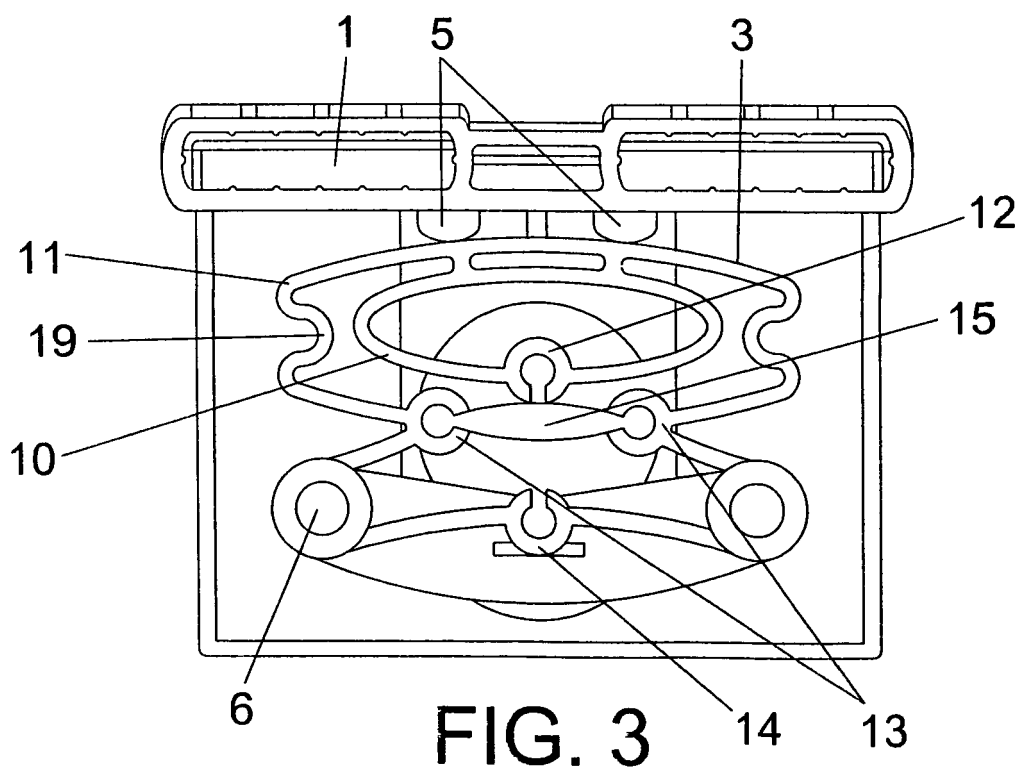


FIG. 3



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EUROPEAN SEARCH REPORT

Application Number
EP 05 38 0258

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 19 March 2007	Examiner Kus, Slawomir
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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Place of search The Hague		Date of completion of the search 19 March 2007	Examiner Kus, Slawomir
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