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R. RETTER
ELASTIC BED BOTTOM
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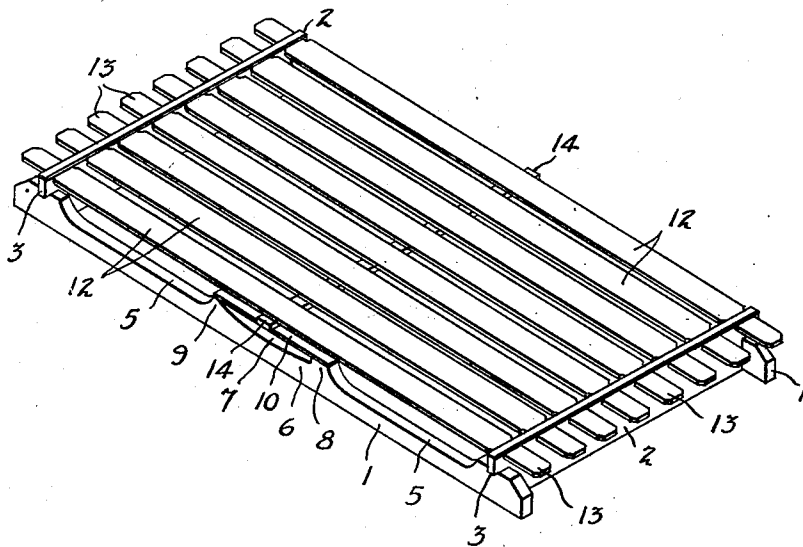


FIG. 1

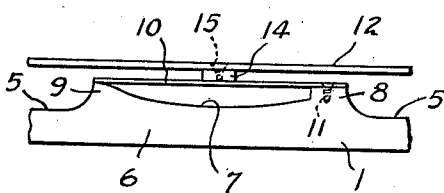


FIG. 2

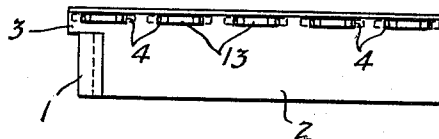


FIG. 3

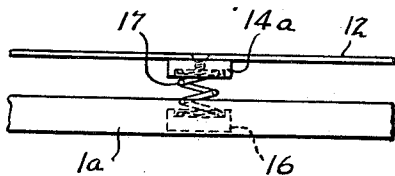


FIG. 5

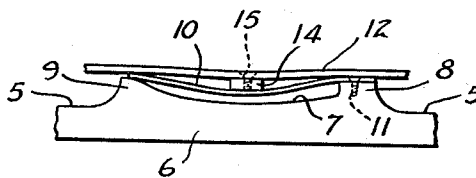


FIG. 4

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ELASTIC BED BOTTOM

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6 Claims. (Cl. 5-236)

This invention relates to an elastic bed bottom or mattress support and has for its object to provide a bed bottom which is comfortable, which is of light weight and of simple and inexpensive construction and which includes little or no metal in its structure.

A further object of the invention is to provide a wood bed spring which is so constructed and so mounted in its frame that it provides a comfortable, durable, noiseless and sanitary bed bottom.

A further object of the invention is to provide a wood spring bed bottom in which the range of flexure of the resilient wood cushioning elements is limited to protect the elements against breakage and in which the cushioning elements are so combined as to effectively absorb impact shocks at near the limits of movement of the cushioning elements.

With the above and other objects in view, the invention may be said to comprise the bed bottom as illustrated in the accompanying drawing hereinafter described and particularly set forth in the appended claims together with such variations and modifications thereof as will be apparent to persons skilled in the art to which the invention pertains.

Reference should be had to the accompanying drawing forming a part of this specification in which:

Figure 1 is a perspective view of a bed bottom embodying the invention;

Fig. 2 is a fragmentary side elevation on an enlarged scale showing the spring support for the central portion of the spring body;

Fig. 3 is a fragmentary end elevation of the bed bottom;

Fig. 4 is a fragmentary side elevation corresponding to Fig. 2 showing the shock absorbing action of the edge slats when the cushioning springs are flexed to near their limit of movement; and

Fig. 5 is a fragmentary side elevation showing an alternative form of central cushion for the spring body.

As illustrated in the accompanying drawing, the bed bottom of the present invention has a rigid rectangular frame composed of side bars 1 and end bars 2. The side and end bars are preferably in the form of boards which provide a substantially rigid frame preferably of sufficient strength to provide a bed frame when suitable supporting legs are attached thereto and of a height sufficient to permit the springs to have an adequate range of movement with the frame resting on the floor.

The frame is preferably constructed of an inexpensive light weight wood such as pine, hemlock, gumwood or redwood. Both the side bars and the end bars are disposed on edge and the bottom edges of the end bars are flush with the bottom edges of the side bars. The end bars 2 are of greater width than the side bars 1 and are rabbeted to provide end portions 3 which overhang the ends of the side bars. Above the tops of the side bars, the end bars 2 are provided throughout their lengths with spaced slots 4.

The side bars 1 are provided with elongated recesses 5 inwardly of the end bars 2 and between the inner ends of the recesses 5 there is provided a central raised portion 6 which has an elongated recess 7 which provides abutments 8 and 9 at opposite ends of the raised portion 6. A leaf spring 10 bridges the space between the abutments 8 and 9, the end of the spring resting on the abutment 8, being attached thereto by means of a screw 11 and the opposite free end being slidable on the abutment 9. The spring 10 may be a metal spring but is preferably a straight strip of elm, second growth hickory, or other suitable tough and resilient wood.

The frame, including the springs 10, provides a support for a spring body which consists of a series of longitudinal slats 12 formed of resilient wood and having narrowed end portions 13 which slidably fit in the slots 4 of the end bars. A cross slat 14 is attached by suitable means such as screws 15 to the undersides of the slats 12 substantially midway between their ends and the ends of the cross slats 14 rest upon the spring 10 substantially midway between the ends thereof. The slats 12 are preferably made of straight grained white or yellow pine and the cross slats 14 are relatively rigid so that the central portions of the slats 12 move substantially in unison. The spring body extends the full width of the frame, the outermost slats 12 being disposed directly over the side bars 1, the slats 12 being normally straight and supported a height above the side bars 1 such that the cross slat 14 rests lightly upon the springs 10.

It is necessary, in order to prevent breakage of the slats 12 and springs 10, to limit the extent of flexure of both. The recesses 7 are relatively shallow and the springs 10 may be bowed sufficiently to engage the bottoms of the recesses without breaking. The limited movement allowed by the cross slat 14 prevents excessive flexure of the slats 12, an abrupt transition from a flexible to a rigid support such as is ordinarily provided when cushioning springs are stopped

off would cause discomfort, but this effect is avoided by so combining the spring elements as to yieldingly absorb the impact shocks. The outermost or edge slats 12 overlying the side rails 1 are so positioned that they engage with the abutments 8 and 9 before the slat 14 engages the bottoms of the recesses 7 and act as shock absorbers near the limit of flexure to prevent abrupt stopping off of the springs and objectionable noise and jarring action.

The initial cushioning action is performed mainly by the springs 10 which are flexed downwardly by the loads imposed thereon. When the edge slats 12 are flexed downwardly far enough to rest on the abutments 8 and 9, as shown in Fig. 4, the portions of the edge slats between abutments 8 and 9 form a stiff auxiliary spring supplementing the action of the spring 10. The weight imposed upon the spring body is transmitted to the edge slats through the cross slat 14 and this weight is yieldingly supported by both the edge slats 12 and the leaf springs 10 which together provide a relatively stiff spring for absorbing shock near the limit of flexing movement. The edge slats 12 thus serve to protect the springs 10 against the imposition of excessive loads and to prevent the noise and jarring action which would result from the impact of the spring body against fixed stops. While the initial cushioning action of the spring 10 is desirable, it will be apparent that an effective cushioning action would be provided by the slats 12 should the springs 10 be omitted or be broken in service.

In Fig. 5 of the drawing, there is shown a modified spring support for the central portions of the slats 12 which may be employed. In this modification, a cross slat 14a has its ends overlying the side rails 1a and a cross bar 16 connects the side rails 1a immediately beneath the cross slats 14a. Compression coil springs 17 are interposed between the cross bar 16 and the cross slat 14a, springs 17 serving to cushion the downward movements of the slats 12 and the engagement of the slats 14a with the side bars 1a serving to prevent flexure of the slats 12 sufficient to break them.

The bed bottom of the present invention is composed wholly of inexpensive materials and little labor is required to assemble the parts. The entire structure is of light weight and is easily handled. All portions of the device are readily accessible for cleaning and all parts may be easily replaced if damaged or broken. The slats are capable of independent flexing to conform substantially to the form of a person lying thereon and, while the flexing thereof is limited, the cushioning capacity is high.

It is to be understood that variations and modifications of the specific devices herein shown and described for purposes of illustration, may be made without departing from the spirit of the invention.

What I claim is:

1. An elastic bed bottom comprising a rigid rectangular supporting frame having parallel side bars and end bars connecting said side bars, said end bars having their upper edges above the top edges of the side bars, resilient longitudinal slats having their ends slidably connected to said end bars, said slats being closely spaced substantially throughout the width of the frame and normally positioned above the top edges of the side bars, a relatively rigid cross slat attached to the undersides of said longitudinal slats intermediate the end bars, the ends of said cross slat

overlying the top edges of the side bars so that the downward movement of the said cross slat is limited.

2. An elastic bed bottom comprising a rigid rectangular supporting frame having parallel side bars and end bars connecting the side bars, said bars being in the form of boards on edge, the end bars having their top edges above the top edges of the side bars and having slots above the edges of the side bars, resilient longitudinal wood slats having their ends extending through the slots in the end bars and slidable therein, a relatively rigid cross slat attached to the longitudinal slats intermediate the end bars, the ends of said cross slat overlying the side bars of the supporting frame, and springs mounted on the supporting frame and yieldably supporting said cross slat above said side bars.

3. An elastic bed bottom comprising a rigid rectangular supporting frame having side bars and end bars in the form of boards positioned on edge, the end bars having their top edges above the top edges of the side bars and having a row of slots adjacent their top edges, said side bars each having a longitudinally extending recess in its top edge substantially midway between its ends, a normally flat leaf spring bridging each recess and attached to the top edge of the side bar adjacent one end of the recess, and a spring body comprising a series of resilient longitudinal wood slats having their ends slidably mounted in the slots of said end bars and a relatively rigid cross slat secured to the undersides of said resilient slats and having its ends resting upon said leaf springs substantially centrally of said recesses.

4. An elastic bed bottom comprising a rigid rectangular supporting frame having side bars and end bars in the form of boards positioned on edge, the end bars having their top edges above the top edges of the side bars and having a row of slots adjacent their top edges, said side bars each having a longitudinally extending recess in its top edge substantially midway between its ends, a straight resilient wood strip bridging the recess of each side bar and attached at one end to the top edge of the side bar, and a spring body comprising a series of resilient longitudinal wood slats having their ends slidably mounted in the slots of said end bars and a relatively rigid cross slat secured to said resilient slats and having its ends resting upon the resilient strips centrally of said recesses.

5. An elastic bed bottom comprising a rigid rectangular supporting frame having side bars and end bars in the form of boards positioned on edge, the end bars having their top edges above the top edges of the side bars and having a row of slots adjacent their top edges, said side bars each having a longitudinally extending recess in its top edge substantially midway between its ends, a straight resilient wood strip bridging the recess of each side bar and attached at one end to the top edge of the side bar, and a spring body comprising a series of resilient longitudinal wood slats having their ends slidably mounted in the slots of said end bars and a relatively rigid cross slat secured to said resilient slats and having its ends resting upon the resilient strips centrally of said recesses, the outermost of said resilient slats being positioned over the top edges of said side bars whereby said overlying slats engage the ends of said strips resting on the top edges of said side bars before the said strips engage the bottoms of said recesses.

6. An elastic bed bottom comprising a rigid rectangular supporting frame having side and end bars, the side bars having their top edges recessed midway between their ends and between the central recess and the ends thereof to provide a pair of spaced abutments in the central portion of each side bar, the end bars having their upper edges above the upper edges of the side bars, and a spring body comprising a series of parallel longitudinal resilient wood slats which are supported above the top edges of said side

bars and which have their ends slidably connected to said end bars, and a relatively rigid cross slat connected to said resilient slats substantially midway between their ends, said cross slat having its ends overlying the central recess in the top edge of the side bars, the outermost of said longitudinal slats being positioned over the top edges of said side bars and being engageable when flexed downwardly with said spaced abutments to resiliently absorb shocks.

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