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G. F. VENZKE

2,129,251

BEDSPRING

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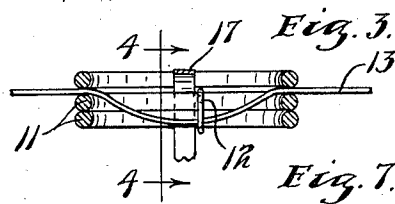
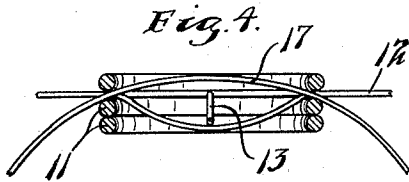
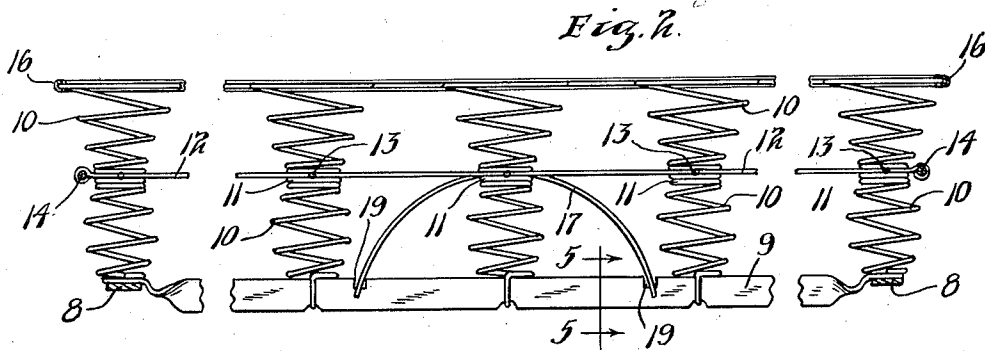
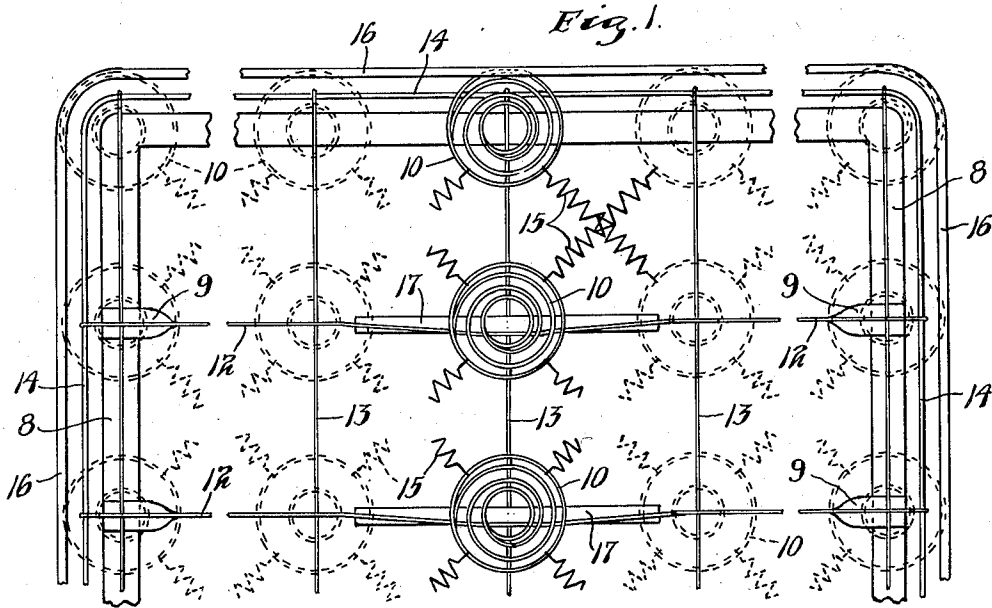


Fig. 5.

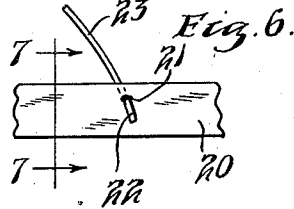
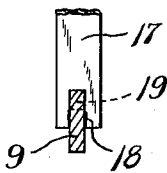
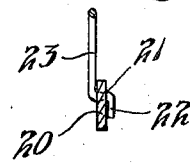


Fig. 7.



INVENTOR.
GEORGE F. VENZKE.
BY HIS ATTORNEYS.
Williamson & Williamson

UNITED STATES PATENT OFFICE

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BEDSPRING

George F. Venzke, Minneapolis, Minn.

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6 Claims. (Cl. 5—248)

This invention relates to bed spring constructions and more particularly is directed to means for preventing bed springs from sagging in the middle.

5 Most bed springs in use at the present time comprise an assembly of vertically positioned coils which are interconnected and mounted in a frame, the frame including a plurality of rigid transverse elements which are connected to the coils at the lower ends of said coils to support them. Bed springs of this type are of advantage since the separate coils are adapted to give more or less individual yielding support to any weights imposed upon them. They have one 10 draw-back, however, which is peculiar principally to double-bed spring constructions. When two people are sleeping in a bed there is a tendency for those springs more or less centrally arranged in the bed to yield downwardly to a degree greater than that desired, with the natural result that the occupants of the bed will roll against each other in the center of the bed with a resulting disturbance of sleep and rest.

It is, therefore, a general object of my invention to provide means for counteracting the tendency of the substantially centrally located coils to yield downwardly too great a distance, and to maintain a relatively flat upper supporting surface for the mattress of the bed.

Another object of the invention is to provide means for stiffening or reducing the yielding capacity of only the lower portions of the centrally located coils whereby the upper portions of those coils will still retain a comfortable degree of resiliency.

A further object of the invention is to provide means for reducing the yielding capacity of the coils which means can be readily incorporated in standard spring constructions in use today.

40 These and other objects and advantages of the invention will more fully appear from the following description made in connection with the accompanying drawing wherein like reference characters refer to similar parts throughout the views, and, in which:—

Fig. 1 is a partial plan view of a bed spring with portions of the structure broken away, and other portions shown in dotted lines;

50 Fig. 2 is a transverse section through a bed spring with some of the coils shown in elevation;

Fig. 3 is a vertical section through the central portion of a coil;

55 Fig. 4 is a section taken on the line 4—4 of Fig. 3;

Fig. 5 is a section taken on the line 5—5 of Fig. 2;

Fig. 6 is a fragmentary detail of a modification of my structure; and

Fig. 7 is a section taken on the line 7—7 of Fig. 6.

The spring frame includes a rectangular bottom edge element 8 which is provided with a plurality of rigid transverse bar elements 9, the ends of said transverse elements being flat and secured to the flat bottom frame element 8, and the intermediate portions of said transverse elements 9 being bent to a substantially vertical position, as best shown in Fig. 2. At spaced points across each of said transverse elements 8 are spring coils 10, the lower ends of said coils being suitably fastened to the transverse rigid bar elements. The coils lying upon the bottom frame 8 may be secured thereto in any desired manner such as by welding or by securing with wire or other metal clips. In the particular coil structure shown in the drawing, the central portions of said coils include a plurality of convolutions 11 which are in contact with each other, and between adjacent convolutions are passed longitudinal and transverse coil stabilizing wires 12 and 13. As shown in Figs. 3 and 4, those portions of the intermediate brace wires 12 and 13 which lie within the convolutions of said coils are bent slightly to retain the coils against lateral movement. The ends of the brace wires extend to the edges of the spring assembly and are secured to a substantially rectangular intermediate frame element 14. The upper ends of the coils are connected by small coil springs 15, as more or less diagrammatically illustrated in Fig. 1. An upper rectangular frame element 16 extends around the outside of the outer rows of coils, this frame element being substantially U-shaped in cross section, and being adapted to grip a portion of the upper convolutions of each coil which lies on the outside of the spring assembly.

In Figs. 1 and 2 there is shown a spring assembly which has a plurality of coils positioned at spaced points down the longitudinal center of the spring structure. It is this line of coils which I reinforce to decrease their downward yielding capacity. One means is accomplished by the provision of a strip of spring steel 17, the central portion of which is interposed between those medial convolutions which grip the transverse and longitudinal bracing wires 12 and 13. The ends of the metal band 17 are provided with notches 18 which are wide enough to receive the

thickness of the transverse rigid bottom supporting elements 9, and said notches 18 are adapted to fit into co-operating notches 19 which are cut into the upper edges of said transverse supporting elements 9. Thus when a weight is imposed upon the central springs, the spring steel stiffening band 17 will resist a considerable amount of downward yielding movement of those portions of the centrally aligned coils which lie below the point of connection of said coils with said spring metal bands. Consequently the relatively heavy weight of two persons lying on said springs will be more greatly resisted by centrally aligned coils than the other coils in the spring assembly. It should be noted, however, that the upper portions of the centrally aligned coils to which the metal bands 17 are connected will still have their normal amount of resiliency or yieldability, and the comfort afforded by the spring is not appreciably affected. If but one person lies upon a bed with my improved spring construction, he will not feel a ridge or other evidence of the presence of the reinforced springs for the reason that double bed springs will so support the weight of a single person that the presence of the stiffening elements 17 will not cause uneven depression of the centrally aligned coils relative to the other coils in the spring assembly.

In Figs. 6 and 7 there is shown a lower transverse coil supporting element 20 which corresponds to the elements 9 in Figs. 1 and 2. In this case, however, the bars 20 are provided with apertures 21 which are adapted to receive the angularly bent ends 22 of wire stiffening elements 23. This means of connecting a stiffening element of circular cross section is preferably used since it would be impractical to utilize the notches 18 and 19 used for anchoring the ends of the above described stiffening bands 17 to the lower supporting elements 9.

In describing my invention I have presumed that the spring assembly is to constitute a plurality of coils arranged in an uneven number of longitudinal rows so that one longitudinal row of coils will lie along the longitudinal center of the spring structure. It is, of course, to be understood that if an uneven number of longitudinal rows of coils is provided in a spring structure, the two rows of coils which lie adjacent the center line of the spring structure may be equipped with the coil stiffening elements in the same general manner as above described.

It will be further understood that various changes may be made in the form, details, arrangement and proportions of the various parts

without departing from the scope of my invention.

What is claimed is:

1. In a bed spring construction, an assembly of rigidly supported yieldable coils, and means for decreasing the normal yieldability of the lower portions of those coils lying substantially along the longitudinal center of said assembly.

2. In a bed spring construction, a frame, a plurality of rigid elements extending transversely of said frame, an assembly of yieldable coils supported on said rigid elements, and coil stiffening elements extending between said rigid elements and intermediate portions of those coils lying substantially along the longitudinal center of said assembly whereby said stiffening elements will decrease the yieldability of those coils to which they are connected between their intermediate points of connection and the lower ends of said coils.

3. The structure in claim 2 and said stiffening elements having intermediate portions thereof in engagement with said intermediate portions of said coils which lie substantially along the longitudinal center of said assembly, and the ends of said stiffening elements extending downwardly into engagement with said transverse rigid elements.

4. The structure in claim 2 and said coils having a plurality of intermediate convolutions in yielding contact with each other, and said stiffening elements being held by adjacent convolutions of said intermediate coil portions.

5. In a bed spring construction, a frame, a plurality of rigid elements extending transversely of said frame, yieldable coils supported on said rigid elements, resilient coil stiffening elements having intermediate portions in engagement with said coils, the ends of said stiffening elements being notched, and said transverse rigid elements being provided with means for engaging said notches.

6. In a bed spring construction, a frame, a plurality of rigid elements extending transversely of said frame, an assembly of yieldable coils supported on said rigid elements, resilient coil stiffening elements having intermediate portions in engagement with those coils lying substantially along the longitudinal center of said assembly, the ends of said stiffening elements being bent to provide end securing means, and said transverse rigid elements being formed to engage the bent ends of said stiffening elements.

GEORGE F. VENZKE.