June 23, 1942. L. A. YOUNG 2,287,336

SPRING STRUCTURE FOR CUSHIONS, MATTRESSES, OR THE LIKE

Filed Sept. 9, 1940

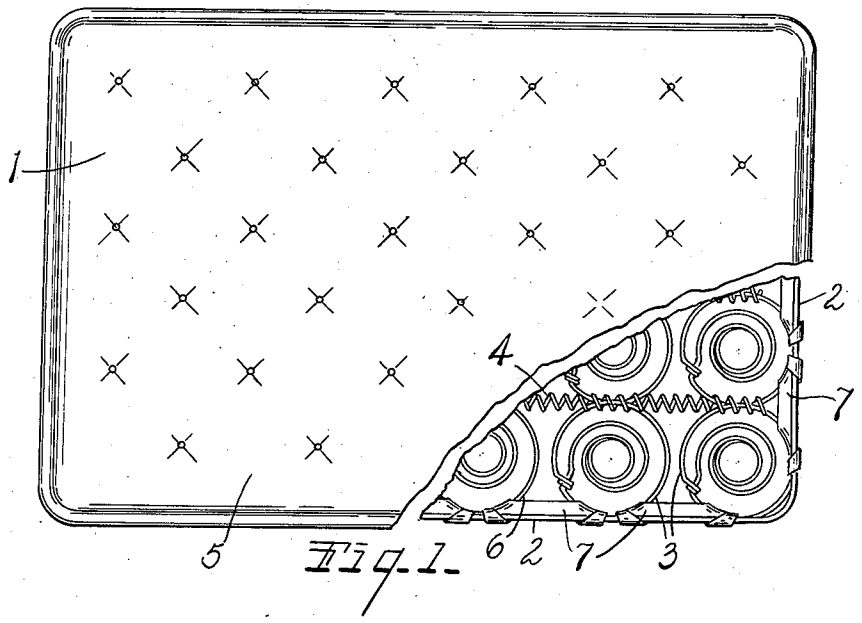


Fig. 1.

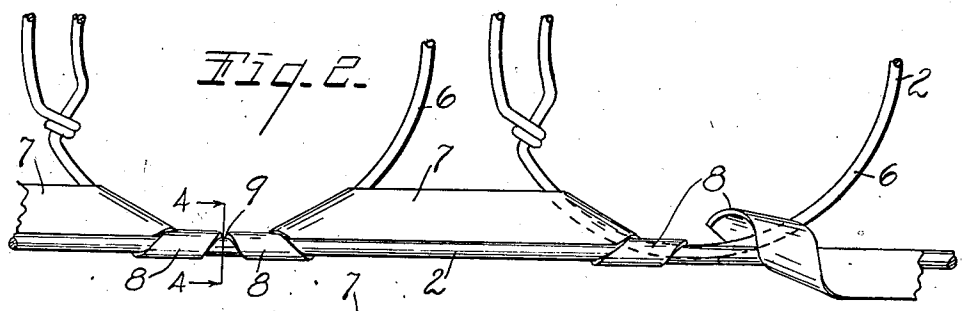


Fig. 2.

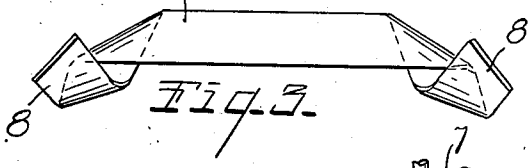


Fig. 3.

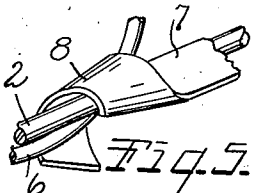


Fig. 5.

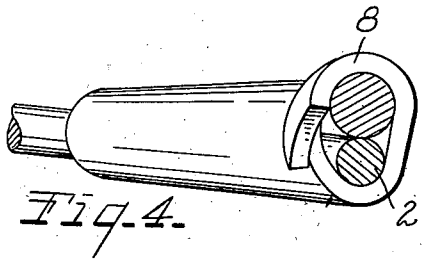


Fig. 4.

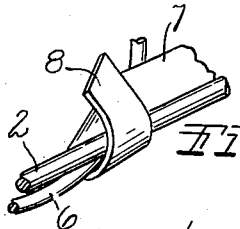


Fig. 6.

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SPRING STRUCTURE FOR CUSHIONS, MATTRESSES, OR THE LIKE

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8 Claims. (Cl. 5—260)

This invention relates to improvements in spring structure for cushions, mattresses or the like.

The main objects of this invention are:

First, to provide a spring structure which is well adapted for use in cushions, mattresses and the like, in which the border springs are very effectively secured to the border frame and the border frame is reinforced and supported or braced against collapsing stresses.

Second, to provide a spring assembly for the purpose described which utilizes a wire border frame.

Third, to provide an improved combined clip and bracing or reinforcing member or element for use in securing coiled body springs to a frame member.

Further objects and advantages pertaining to details and economies of construction and operation will appear from the description to follow. The invention is defined in the claims. A preferred embodiment of my invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary plan view of a cushion or mattress structure embodying the features of my invention, a portion of the upholstery being broken away.

Fig. 2 is an enlarged fragmentary view illustrating details of the structure and of the manner of assembling my improved clip and brace members or elements with the associated parts.

Fig. 3 is a plan view of a combined brace and clip member embodying my invention.

Fig. 4 is an enlarged fragmentary view in section on line 4—4 of Fig. 2.

Figs 5 and 6 are fragmentary perspective views illustrating successive steps in the assembling of the parts.

In the accompanying drawing, 1 represents an upholstered spring structure such as a cushion or mattress. It will be understood that I have not attempted to illustrate parts in relative proportion and that I have only shown one border frame, designated by the numeral 2, formed of wire. It will be understood that in certain assemblies such as mattresses, there are two border frames, while in certain structures such as spring cushion structures, a suitable base frame is provided. I have not illustrated such a base frame in the accompanying drawing.

The body springs 3 are of the helically coiled type and they are arranged in rows, the springs of adjacent rows being connected by the helical tie members 4. The upholstery 5 may be of any suitable character, my present improvements being concerned with the spring unit or structure. The border springs are arranged with their end coils 6 in lapping relation to the frame member 2, in underlapping relation where the frame member is a top frame member as in the embodiment illustrated.

The border springs are securely connected to the frame member 2 by means of the combined clip and bracing or reinforcing member 7. These members 7 are of a length corresponding to the required spacing of the springs and are, in the preferred embodiment, formed of flat straps of metal of substantial width and terminate in laterally extending spiral coils 8, see Figs. 3, 5 and 6. These coils are initially open, that is the members 7 are formed for applying with the coils 8 open, so that, in applying, the members 8 may be presented to the lapping parts of the frame and the coils of an adjacent pair of springs as indicated in Fig. 5, that is the coils engage over the lapping parts with the body portion of the member 7 extending outwardly. A substantially half rotation of the member 7 swings it to the position shown in Fig. 2, whereupon the ends of the coils are closed or clamped upon the coils and frame member, as shown in Figs. 2 and 4. In this position, the body portions of the combined clip and brace members rest upon the coils of the pair of adjacent springs with the outer edges of the body portions in embracing and reinforcing relation to the wire frame member, and in a position well calculated to resist stresses applied to the frame member tending to collapse the same inwardly. The terminals of the adjacent members 7 are in abutting relation, as indicated at 9, Fig. 2, and also the clamping engagement insures against any movement longitudinally of the frame members. The wire frame member is effectively reinforced and at the same time the body springs are effectively united thereto. The parts are economical to produce and assemble.

I have illustrated and described my improvements in an embodiment which I consider very practical. I have not attempted to illustrate or describe certain other embodiments or adaptations as it is believed that this disclosure will enable those skilled in the art to embody or adapt my improvements as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a spring structure, the combination of body springs arranged in rows, the springs of adjacent rows being connected, a top border

frame of wire, certain body springs being arranged with their top coils in underlapping relation to a side member of said border frame, and combined clip and brace members formed of flat strips of metal and terminating at each end in laterally extending spiral coils, the spiral coils of said members clampingly embracing the overlapping portions of the frame member and coils of a pair of adjacent springs with the body portions of said combined clip and brace members resting upon the end coils of the pair of adjacent springs and at the inside of the border frame member with their outer edges in supporting engagement with the border frame member and constituting reinforcing means therefor.

2. In a spring structure, the combination of body springs, a frame member of wire, certain body springs being arranged with coils thereof in lapping relation to said frame member, and combined clip and brace members formed of flat strips of metal and terminating at each end in laterally extending spiral coils, the spiral coils of said members clampingly embracing the overlapping portions of the frame member and the coils of a pair of adjacent springs with the body portions of said combined clip and brace members resting upon the coils of the pair of adjacent springs and at the inside of the frame member with their outer edges in supporting engagement with the frame member and constituting reinforcing means therefor.

3. In a spring structure, the combination of body springs, a frame member of wire, certain body springs being arranged with coils thereof in lapping relation to said frame member, and combined clip and brace members formed of flat strips of metal and terminating at each end in laterally extending spiral coils, the spiral coils of said members clampingly embracing the overlapping portions of the frame member and the coils of a pair of adjacent springs with the body portions of said combined clip and brace members in supporting engagement with the frame member and constituting reinforcing means therefor.

4. In a spring structure, the combination of body springs, a border frame member of wire, certain body springs being arranged with end coils thereof in lapping relation to said frame member, and combined clip and reinforcing members terminating at each end in portions clampingly embracing the lapping portions of the frame member and coils of a pair of adjacent springs with the body portions of said combined clip and brace members resting upon the end coils of the pair of adjacent springs and at the inside of the border frame member with their outer edges in supporting engagement with the border frame member and constituting reinforcing means therefor.

5. In a spring structure, the combination of body springs, a border frame member of wire, certain body springs being arranged with end coils thereof in lapping relation to said frame member, and combined clip and reinforcing members terminating at each end in portions clampingly embracing the lapping portions of the frame member and coils of a pair of adjacent springs with the body portions of said combined clip and brace members in substantially parallel supporting engagement with the border frame member and constituting reinforcing means therefor.

6. In a spring structure, the combination of body springs and a frame member disposed tangentially and in lapping relation to corresponding coils of the body springs, and flat, strap-like combined clip and reinforcing members terminating at each end in laterally extending spiral coils clampingly embracing the lapping portions of the body spring coils and the frame member with the extremities of the intermediate body portions of the clip members lapping adjacent body spring coils and medially in reinforcing engagement with the frame between the pair of body springs secured to the frame member thereby.

7. In a spring structure, the combination of body springs and a top border frame member disposed tangentially and in lapping relation to corresponding coils of the body springs, and combined clip and reinforcing members terminating at each end in coiled end portions clampingly securing together the lapping portions of spring coils and the frame member, said clip and reinforcing members being provided with intermediate uncoiled portions in reinforcing engagement with the border frame between the pair of body springs secured to the frame member by said combined clip and reinforcing members.

8. A combined clip and reinforcing member for attaching a spaced pair of coil body springs to a frame member disposed tangentially relative to corresponding coils of the springs, comprising a strap-like body portion and laterally extending spirally twisted end portions which are initially open permitting engagement with the parts to be united and to position the member by rotative movement, said spirally twisted end portions being bendable to facilitate clamping thereof upon the parts engaged thereby.

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