July 22, 1941. V. ASARO 2,249,999

SPRING ASSEMBLY FOR MATTRESSES, CUSHIONS, AND THE LIKE

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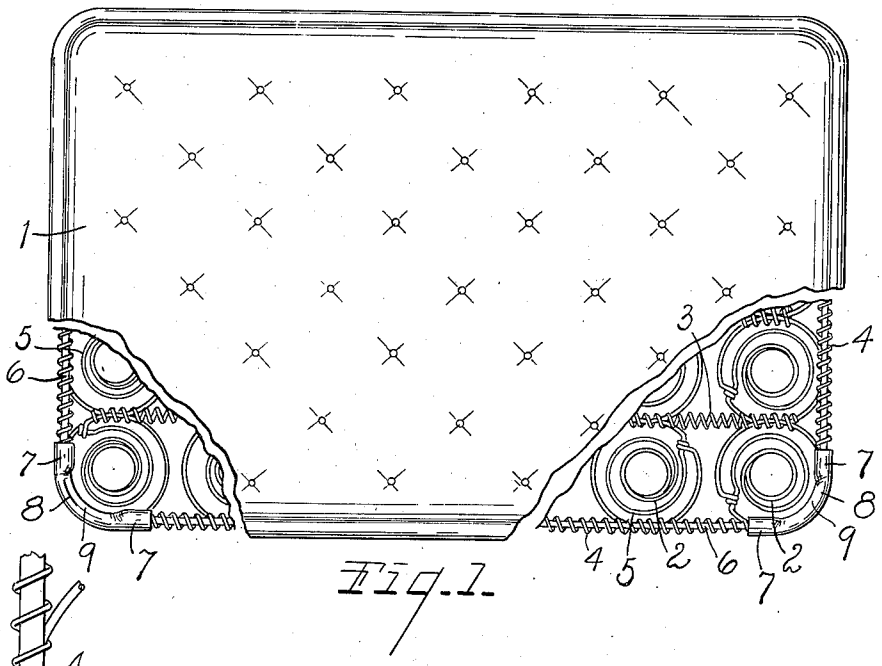


Fig. 1.

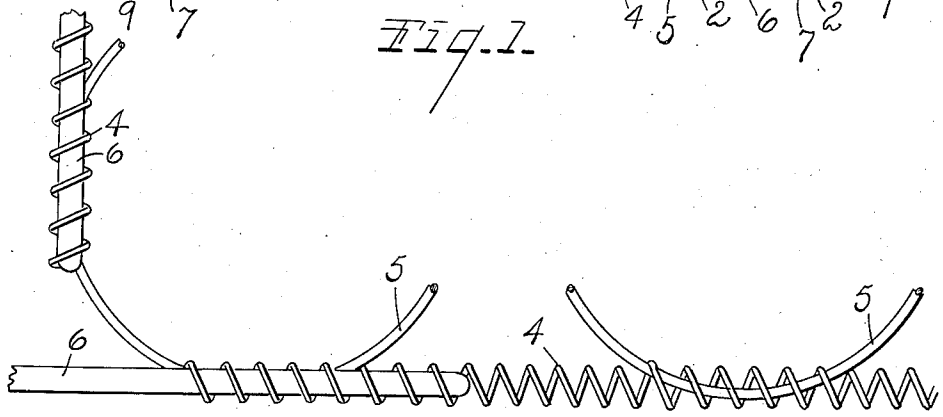


Fig. 2.

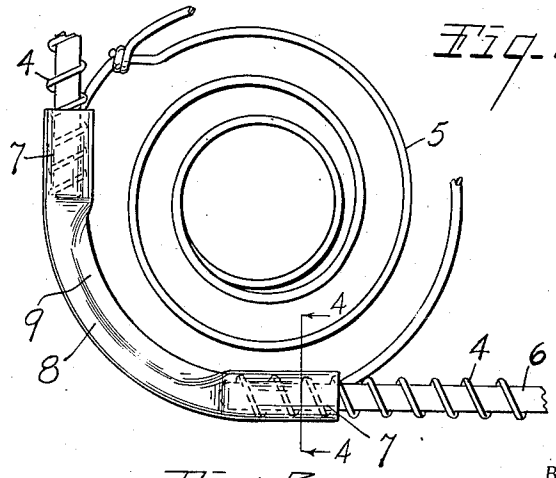


Fig. 3.

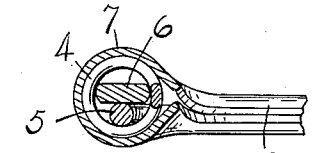


Fig. 4.

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SPRING ASSEMBLY FOR MATTRESSES, CUSHIONS, AND THE LIKE

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Application August 31, 1940, Serial No. 354,986

6 Claims. (Cl. 5—260)

The main objects of this invention are:

First, to provide a spring assembly which is well adapted for use in mattresses and relatively large cushion structures which is economical to produce, both in the matter of material and assembly, and one in which the border springs are effectively supported against lateral collapsing movement and at the same time the edge or border of the structure has the desired softness or yieldability to vertical stresses.

Second, to provide a structure having these advantages which permits the use of a method and assembling machinery that are now extensively used.

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 structure embodying the features of my invention, partially broken away to show structural details, the bottom structure being omitted for convenience in illustration there being commonly duplication of the top structure as viewed in Fig. 1.

Fig. 2 is an enlarged fragmentary view illustrating steps in the assembly of the parts.

Fig. 3 is an enlarged fragmentary view illustrating certain structural details.

Fig. 4 is an enlarged fragmentary section on line 4—4 of Fig. 3.

In the embodiment of my invention illustrated in the accompanying drawing, the upholstery 1 for the spring assembly may be of any desired type. This is shown conventionally and it will be understood that I have not in the accompanying drawing attempted to maintain or illustrate the relative proportion of the parts. The body springs 2 are of the helically coiled type and are arranged in rows, the springs of adjacent rows being connected by helical tie members 3. The border or edge springs of the assembly are connected by helical border members 4, these in practice being of the same character as the helical tie members 3. These border members 4 are threaded upon the corresponding end coils 5 of the border springs with a plurality of the helical border members engaging the coils 5.

It will be appreciated that these helicals yield freely to lateral stresses. To resist lateral stresses, I insert or thread the border members 6 into the border helicals 4, the border members 6 being preferably inserted above the portions of the coils 5 engaged by the members 4, as shown in Fig. 4. The members 6 are resilient straps or bars of flat cross section and are of such dimension as to be a sliding fit within the members 4, as best shown in Fig. 4, and serve to lock the coils 5 in position while the coils in turn, owing to the members 6 being superimposed on segmental portions of the coils and their relative fit within the coils, prevent twisting of the members 6 so that they are presented edgewise to the edge of the assembly, and, so presented, have a maximum resistance to lateral collapsing stresses which would tend to tilt or laterally collapse the border springs.

The ends of the members 4 and 6 are engaged within the sockets 7 of the corner members 8 which are clamped upon the corner coils as shown in Figs. 1, 3, and 4, the sockets being arranged tangentially of the portions of the springs upon which the corner members are clamped. The members 6 preferably have a sliding telescoping relation to the sockets so that they may yield somewhat without distorting the corner springs of the assembly. Each edge of the structure, particularly in the mattress assembly, is provided with the border members, although on certain spring cushion structures a satisfactory structure might be produced with the border members only at the front of the cushion, and in certain springs assemblies or structures the intermediate rows of springs might be reinforced and supported against lateral collapsing movement by the use of helicals and the members 6.

The helical tie and border members may be easily associated with the spring and there are machines designed for that purpose, such an assembling machine being illustrated in the patent to Heuer No. 1,930,715, dated October 17, 1933.

With the helical members assembled with the springs, the members 6 may be inserted by threading through the border helicals as indicated in Fig. 2. The corner members 8 may then be applied, the sockets thereof being telescoped with the helicals and the members 6 as illustrated in Fig. 3, and the corner members clamped upon the coils of the springs as shown at 9. It is not necessary that the helicals 4 have any sliding relation to the sockets, but it is desirable that the members 6 have a telescoping slidable relation to the sockets, although, if desired, the sockets may be clamped upon the springs and the members 6 after the parts are assembled.

I have illustrated and described my improvements in a very practical embodiment thereof. I have not attempted to illustrate or describe

certain other embodiments or adaptations which I contemplate, 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, helical border members connecting corresponding end coils of the border springs, the coils of each border spring so connected being engaged by a plurality of the coils of the helical border member, curved corner members clamped upon end coils of corner springs of the assembly and having tangentially disposed sockets at the ends thereof, the ends of said helical border members being disposed in said sockets, and resilient reinforcing members of flat cross section threaded into the coils of said border members above the portions of the border spring coils embraced by the helical border members, said reinforcing members being a sliding fit within said border helicals and being in telescoping slidable relation to said sockets.

2. In a spring structure, the combination of body springs, helical border members connecting corresponding end coils of the border springs, curved corner members clamped upon end coils of corner springs of the assembly and having tangentially disposed sockets at the ends thereof, the ends of said helical border members being disposed in said sockets, and resilient reinforcing members of flat cross section threaded into the coils of said border members, said reinforcing members being in telescoping slidable relation to said sockets.

3. In a spring structure, the combination of body springs, helical border members connecting corresponding coils of border springs of the assembly, the coils of each border spring so connected being engaged by a plurality of the coils of the helical border member, socket members secured to end coils of corner springs of the assembly, the ends of said border helicals being disposed in said sockets, and resilient rod-like border members of flat cross section disposed within the coils of said helical border members above the portions of the border spring coils embraced by the helical border members with their ends in telescoping slidable relation to said sockets.

4. In a spring structure, the combination of a row of body springs, a helical tie member connecting corresponding end coils of said body springs, the coils of each spring so connected being engaged by a plurality of the coils of the helical tie member, socket members mounted upon the end body springs of the row in telescopingly supporting relation to the helical tie member, and a resilient reinforcing member of flat cross section threaded into the coils of said helical tie member above the portions of the body spring coils embraced by said helical tie member, said reinforcing member being a sliding fit within said helical tie member and being in telescoping slidable relation to said sockets.

5. In a spring structure, the combination of a row of body springs, a helical tie member connecting corresponding end coils of said body springs, socket members mounted upon the end body springs of the row in telescopingly supporting relation to the helical tie member, and a resilient reinforcing member of flat cross section threaded into the coils of said helical tie member, said reinforcing member being in telescoping slidable relation to said sockets.

6. In a spring structure, the combination of a row of body springs, a helical tie member connecting corresponding end coils of said body springs, socket members mounted upon the end body springs of the row in telescopingly supporting relation to the helical tie member, and a resilient rod-like member of flat cross section disposed within said helical tie member having substantial side by side supporting engagement with the portions of the body spring coils embraced by said helical tie member with its ends in sliding telescoping relation to said sockets.

VITO ASARO.