

Sept. 11, 1951

G. E. GAGNIER
SPRING CONSTRUCTION

2,567,330

Filed Oct. 17, 1945

2 Sheets-Sheet 1

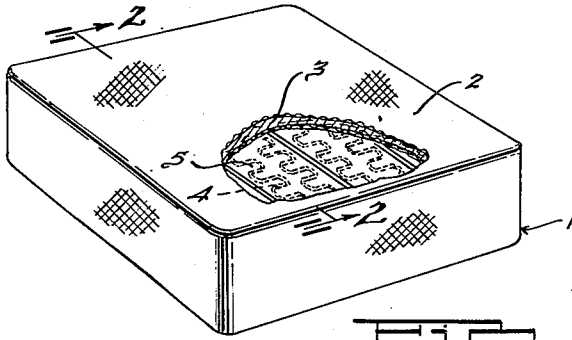


FIG. 1.

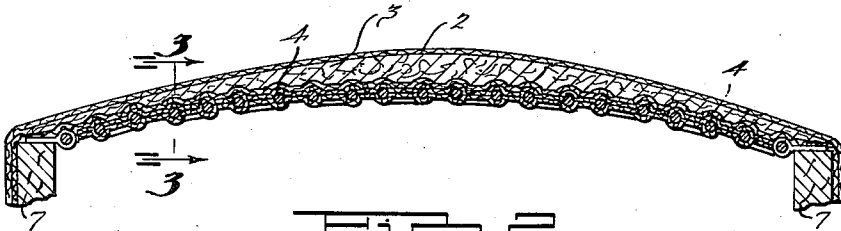


FIG. 2.

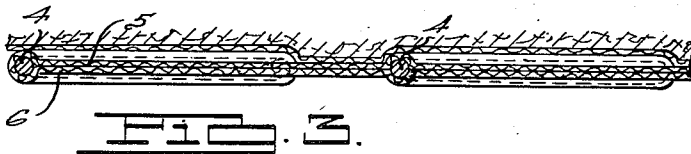


FIG. 3.

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2 Sheets-Sheet 2

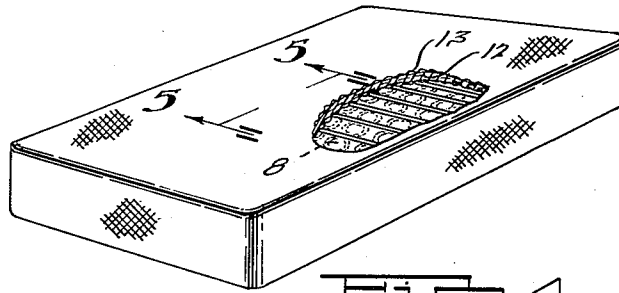


FIG. 4.

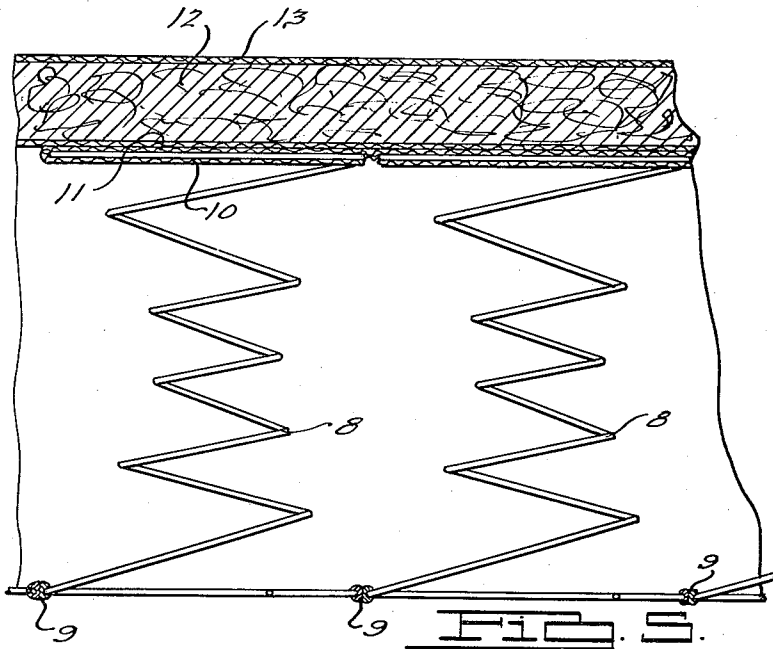


FIG. 5.

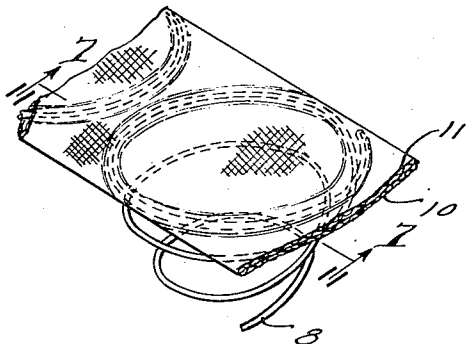


FIG. 6.

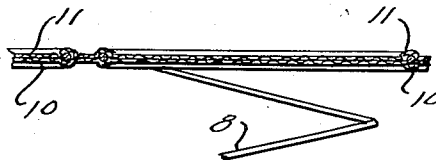


FIG. 7.

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UNITED STATES PATENT OFFICE

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SPRING CONSTRUCTION

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Application October 17, 1945, Serial No. 622,720

2 Claims. (Cl. 5—351)

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This invention relates generally to spring constructions. More particularly, it relates to a novel and specific form of spring construction which is easy, simple, and cheap to manufacture.

The present invention is primarily concerned with novel and improved means for effectively interconnecting adjacent spring elements, and, as is hereinafter pointed out, is applicable to many and various types of spring constructions.

Many of the same problems are found in the construction of mattresses, as are found in conventional spring seat cushions, and, consequently, it will be readily apparent that the improvements of the present invention are of great usefulness in a wide variety of constructions.

Primarily, the present invention has for an object the provision of an assembled spring construction in which novel and improved means are provided for interconnecting adjacent spring elements in order to provide the necessary freedom of relative movement therebetween.

Still further, the present invention contemplates the provision of a spring construction in which the spring elements comprising the supports for the surfaces of the seat or mattress construction are anchored and interconnected with each other in a novel and improved manner.

Yet another object of the present invention consists in the provision of an improved tying means for interconnecting adjacent spring elements in such a manner that a vastly improved and highly satisfactory spring seat or mattress construction will be provided.

Further objects, advantages, and features of the present invention will become obvious upon a consideration of the following specification, taken in connection with the accompanying drawings forming a part thereof.

In the drawings:

Figure 1 is a perspective view of a seat cushion or mattress construction with portions broken away in order to illustrate the improvements of the present invention.

Figure 2 is a very substantially enlarged, transverse sectional view of the spring seat construction shown in Figure 1 illustrating in detail the improvements of the present invention in one form.

Figure 3 is a still further enlarged, fragmentary sectional view taken substantially along the lines 3—3 of Figure 2 illustrating in detail one manner in which the improvements of the present invention may be employed to anchor flexibly adjacent spring elements in the predetermined desired adjusted relationship.

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Figure 4 is a perspective view of a spring seat or mattress construction in which the improvements set forth herein are embodied in connection with a fundamentally different type of spring element than has been shown in the preferred embodiment of the invention shown in Figures 1, 2, and 3 of the drawings.

Figure 5 is a very much enlarged, fragmentary, cross-sectional view of one form of the improvement of the present invention, taken substantially along the line 5—5 of Figure 4.

Figure 6 is an enlarged, fragmentary, perspective view of the same general spring construction show in Figures 4 and 5 of the drawings, illustrating in greater detail the specific manner in which the adjacent spring elements are resiliently interconnected.

Figure 7 is an enlarged, fragmentary, sectional view, taken substantially along the line 7—7 of Figure 6.

With more specific reference to the forms of the invention shown in the drawings, it will be readily appreciated that these constructions are merely illustrative of the various embodiments which the present invention may take.

While the various constructions shown in the drawings are merely illustrative of the broad inventive concept set forth herein, it will be seen that these improvements may not only be embodied in spring cushions and mattresses, but may be also embodied in many and various forms of spring constructions.

Probably the most useful form which the improvements of the present invention may take is in connection with sinuous spring constructions of the general type shown in Figures 1, 2, and 3 of the drawings.

In spring seats, seat backs, and mattress constructions using generally arcuate sinuous spring elements of the general type shown in Kaden Reissue Patent No. 21,263, great difficulty has been experienced in providing satisfactory means for retaining adjacent spring elements in the desired relative relationship.

A spring cushion or mattress 1, covered with the usual fabric 2 overlying conventional padding 3, may be provided. This upper surface structure which is conventional in the art, may be supported by a plurality of generally parallel arcuate spring elements 4. These elements may be of the same sinuous form and mounting taught in Kaden Reissue Patent No. 21,263, referred to above.

Under normal circumstances, great difficulty is experienced in establishing the proper rela-

tionship between adjacent spring elements, but according to the improvements of the present invention, novel and particularly effective means are provided for accomplishing this purpose. A pair of layers of burlap or canvas are placed on the upper or lower sides of these spring elements such, for example, as the layers 5 and 6 shown in Figure 3 of the drawings.

Prior to mounting these layers of burlap or canvas 5 and 6 adjacent the spring elements 4, one or the other, or both, are coated with latex or other suitable adhesive material in order to maintain the same in predetermined desired assembled relationship. From the standpoint of the present invention, it is immaterial whether the layers of fabric material extend over two or more adjacent spring elements, or whether such a layer is used to provide adequate interconnection for all spring elements comprising the supports for the surface of a seat cushion or mattress.

As is conventional in constructions of this general character, the spring elements 4 may be mounted upon, and tensioned across, a frame 7 which may be formed of wood as shown, or may be of any other suitable construction.

In the modified embodiment of the invention shown in Figures 4, 5, 6, and 7 of the drawings, a still more conventional seat or mattress construction is shown. In this form of the invention, a plurality of conventional spring elements 8 are anchored together at their lower ends by means of suitable frame members or clips 9. The upper portions of the spring elements are resiliently interconnected by means of upper and lower layers of burlap or canvas 10 and 11, one or the other or both of which, prior to assembly, are coated with a layer of latex or other suitable adhesive which will serve to bond the fabric members not only to each other, but to the engaged portions of the spring elements 8. This inherently eliminates the need for clips, staples, fasteners, or other means for securing the upper ends of the spring elements in assembled relationship and yet at the same time provides an easy, simple, cheap, and otherwise vastly improved construction.

As is usual in constructions of this general character, the upper surfaces of the spring elements, when properly interconnected, may be covered with a conventional layer of upholstery, comprising padding 12 and upper surface covering 13.

In assembling constructions of the general character described in the preceding figures of the drawings, it is readily apparent that much labor is saved. Further, it is clear that a very much more satisfactory construction results without the need of complex manufacturing operations.

While but two specific constructions have been shown and described embodying the improvements of the present invention, it will be apparent to those skilled in the art that many

other and further modifications thereof may be made falling within the scope of the present invention as set forth in the subjoined claims.

What is claimed is:

1. A spring seat cushion comprising a load engaging upholstery layer, a load supporting unit having a pair of spaced frame members and having sinuous spring elements extending from one frame member to the other in spaced parallel relationship with the leg portions of the loops extending in the general direction of length of the frame members, said spring elements being directly connected to the frame members and providing a resilient support for the load to which the upholstery layer is subjected, and upper and lower fabric sheets enclosing the spring elements and having adjacent faces adhesively secured together throughout their surface area between adjacent spring elements and between adjacent loops of the spring elements to maintain said spaced relationship of the spring elements and to distribute the load over the loops.

2. A spring seat cushion comprising a load engaging upholstery layer and a unit for directly supporting the load to which the upholstery layer is subjected, said unit having a pair of spaced frame members and having sinuous spring elements extending from one frame member to the other in spaced substantially parallel relationship with the leg portions of the loops extending in the general direction of length of the frame members, said spring elements being directly connected to the frame members and having portions between the frame members bowed upwardly to provide an upwardly convex resilient support for the upholstery layer, and upper and lower fabric sheets completely enclosing the portions of the spring elements extending between the frame members and having adjacent faces adhesively secured to the spring elements and together throughout their surface area between adjacent spring elements and between adjacent leg portions of the loops.

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