Apr. 17, 1923.

1,451,924

H. O. REIDENBACH

SPRING STRUCTURE

Filed May 5, 1922

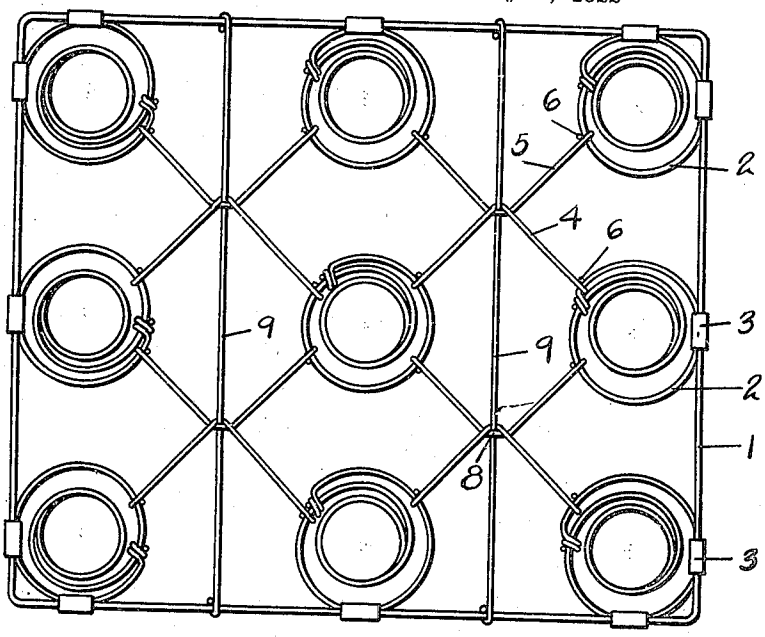


Fig. I.

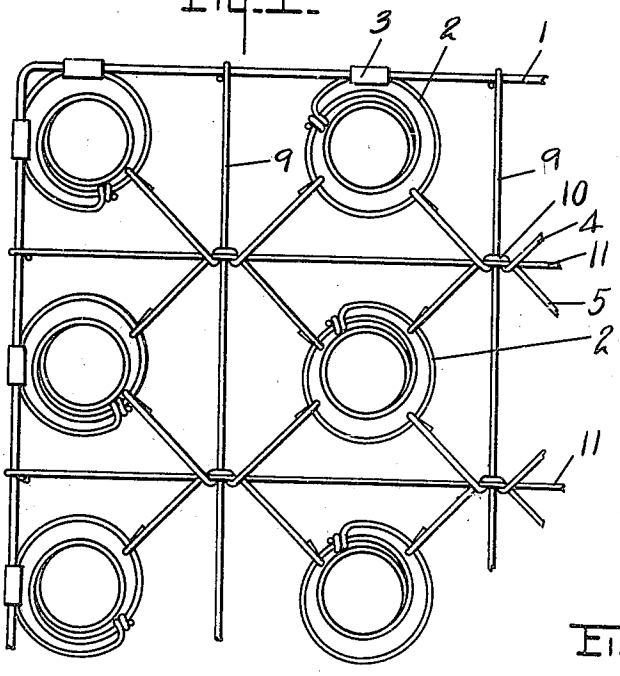


Fig. III.

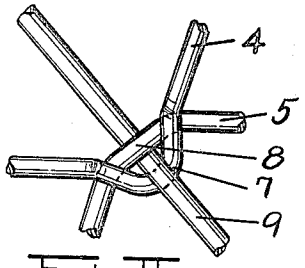


Fig. II.

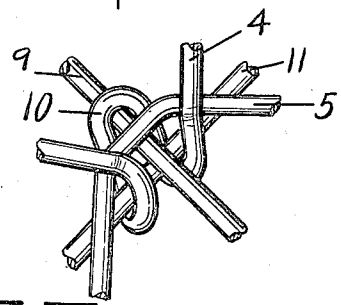


Fig. IV.

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UNITED STATES PATENT OFFICE.

HERMAN O. REIDENBACH, OF DETROIT, MICHIGAN, ASSIGNOR TO L. A. YOUNG INDUSTRIES, INC., OF DETROIT, MICHIGAN.

SPRING STRUCTURE.

Application filed May 5, 1922. Serial No. 558,697.

To all whom it may concern:

Be it known that I, HERMAN O. REIDENBACH, a citizen of the United States, residing at city of Detroit, county of Wayne, State of Michigan, have invented certain new and useful Improvements in Spring Structures, of which the following is a specification.

This invention relates to improvements in spring structures.

The main objects of this invention are:—

First,—to provide in a spring structure such as a cushion or bed-spring or the like, an improved means for supporting the springs in an upright position.

Second,—to provide in a spring structure of the class described an improved spring tie means which effectively supports the spring and at the same time affords an effective supporting top for the upholstery or mattress placed thereon.

Further objects, and objects relating to structural details will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawings, forming a part of this application, in which:

Fig. I is a plan view of a spring structure embodying the features of my invention, the structure illustrated being shown of diminutive size for convenience in illustration.

Fig. II is a fragmentary perspective view of a pair of the tie members and the locking wire therefor.

Fig. III is a detail plan view of a modified form of my invention in which cross wires are provided in addition to the tie wires.

Fig. IV is a fragmentary perspective view of a pair of the tie members and cross and tie wires.

In the drawings, similar reference characters refer to similar parts throughout the several views.

Referring to the drawings, the structure illustrated comprises border frame 1 and the body springs 2, the springs being arranged in aligned rows, the outer springs being secured to the border frame by the clips 3. The structure illustrated in Fig. I is a diminutive one, that is only nine springs are shown for convenience in illustration, but it is to be understood that the structure is designed by me for spring cushions and bed springs and the like.

I provide V-shaped tie members 4 and 5 disposed in coacting pairs. These tie members have eyes 6 at their ends engaged with adjacent springs, the tie members 4 have offsets or hooks 7 at their bights which engage at the bights 8 of the tie members 5. The tie wires 9 are passed between the offset bight 7 and the bight 8 as shown in Fig. II thereby locking the tie members together. The ends of the wires 9 are secured to the border frame. The springs are thus securely supported and at the same time the grid or net work consisting of the end coils of the springs, the tie members and tie rods for supporting the upholstery. Both ends of the spring may be supported in this manner, or the spring may be mounted upon a suitable supporting base, depending upon the character of the spring structure.

In the modification shown in Figs. III and IV the tie members 4 are provided with return bend hooks 10 at their bight ends instead of the offset-like hooks 7. The cross wires 11 are disposed in the hooks of aligned tie members, tie wires 9 being passed over these cross wires locking them in engagement with the hooks, the tie wires at the same time locking the tie members in engagement. This provides cross wires in both structures adding to the strength of the structure and also to the net work or grid.

I have illustrated and described my improvements in two embodiments which I have found very satisfactory. I have not attempted to illustrate or describe other adaptations or improvements, as I believe the disclosures made will enable those skilled in the art to which my invention relates to embody or adapt the same 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 a border frame, a plurality of springs, the outer springs being secured to said border frame, V-shaped tie members disposed in coacting pairs with their ends secured to adjacent springs, the bight of one member of each pair being hooked, the hook being engaged with the bight of the coacting member, cross wires disposed in the hooks of aligned

tie members, and tie wires disposed through said hooks and transversely of said cross wires locking said tie members and said cross wires, the ends of said cross and tie wires being secured to said border frame.

2. In a spring structure, the combination of a border frame, a plurality of springs, the outer springs being secured to said border frame, V-shaped tie members disposed in coacting pairs with their ends secured to adjacent springs, the bight of one member of each pair being hooked, the hook being engaged with the bight of the coacting member, and tie wires disposed through said hooks locking said tie members, the ends of said tie wires being secured to said border frame.

3. In a spring structure, the combination of a plurality of springs, V-shaped tie members disposed in coacting pairs with their ends secured to adjacent springs, the bight of one member of each pair being hooked, the hook being engaged with the bight of the coacting member, cross wires disposed in the hooks of aligned tie members, and tie wires disposed through said hooks and transversely of said cross wires locking said tie members and said cross wires.

4. In a spring structure, the combination of a plurality of springs, V-shaped tie members disposed in coacting pairs with their ends secured to adjacent springs, the bight of one member of each pair being hooked, the hook being engaged with the bight of the coacting member, and tie wires disposed through said hooks locking said tie members.

5. In a spring structure, the combination with a top border, of a plurality of springs, V-shaped tie members disposed in coacting pairs with their ends secured to adjacent springs, one member of each coacting pair having its bight laterally offset and engaging the bight of the coacting tie member, and tie wires passing between the bights of said tie members retaining them in engagement.

6. In a spring structure the combination with a plurality of springs of V-shaped tie members disposed in coacting pairs with their bights interlocking one with the other and their ends secured to adjacent springs, and tie wires passed between the interlocking bights of tie members, locking them in engagement.

In witness whereof I have hereunto set my hand and seal.

HERMAN O. REIDENBACH. [L. S.]