April 20, 1926. 1,581,870

G. G. RICKERSON

SPRING STRUCTURE

Filed Sept. 28, 1925

Fig. 1.

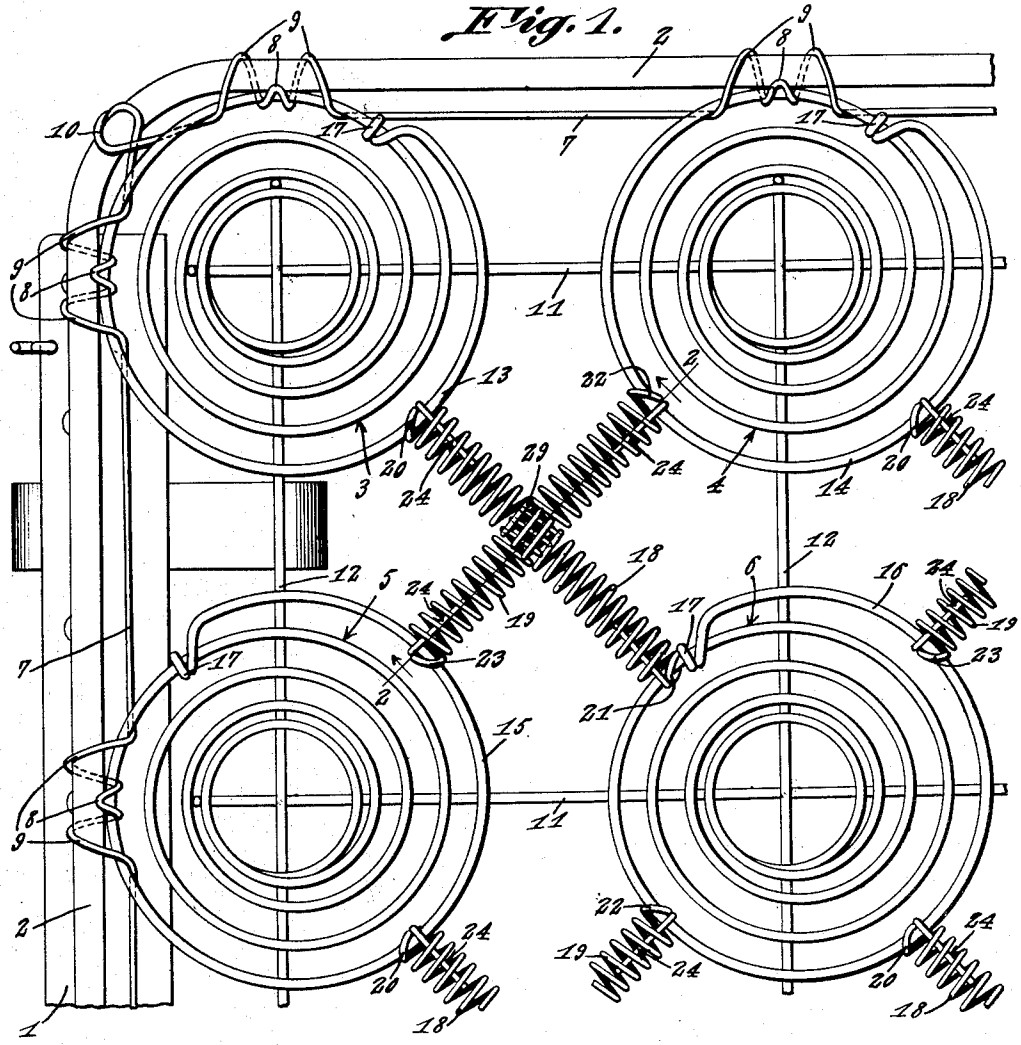


Fig. 2.

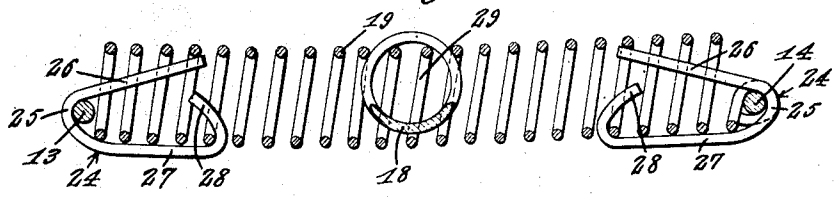
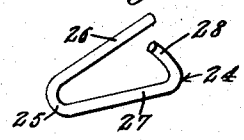


Fig. 3.



Grady Gordon Rickerson, INVENTOR.

BY

Geo. F. Kimmel ATTORNEY.

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UNITED STATES PATENT OFFICE.

GRADY GORDON RICKERSON, OF AUGUSTA, GEORGIA, ASSIGNOR TO AUGUSTA BEDDING COMPANY, OF AUGUSTA, GEORGIA.

SPRING STRUCTURE.

Application filed September 28, 1925. Serial No. 59,082.

To all whom it may concern:

Be it known that I, GRADY GORDON RICKERSON, a citizen of the United States, residing at Augusta, in the county of Richmond and State of Georgia, have invented certain new and useful Improvements in Spring Structures, of which the following is a specification.

This invention relates to spring structures, such as bed springs, springs for sofas, cushions, etc., and the invention has for its object to provide, in a manner as hereinafter set forth, a spring structure which is strong, durable, thoroughly efficient in its use, and comparatively inexpensive to manufacture.

A further object of the invention is to provide, in a manner as hereinafter set forth, a spring structure including resilient spacer elements for connection to and interposed between the main or cushioning springs of the structure and further with new and novel locking means for the ends of the spacers with respect to the springs to prevent disconnection of the spacers when the spring structure is used.

With the foregoing and other objects in view, the invention consists of the novel construction, combination and arrangement of parts, as hereinafter more specifically described and illustrated in the accompanying drawings, wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications can be resorted to which come within the scope of the claims hereunto appended.

In the drawings wherein like reference characters denote corresponding parts throughout the several views:—

Figure 1 is a fragmentary view, in top plan, of a spring structure, in accordance with this invention.

Figure 2 is a sectional elevation illustrating a pair of spacers and a pair of locking elements for one of the spacers in locking position with respect thereto and also with respect to a pair of main or cushioning springs of the spring structure.

Figure 3 is a perspective view of a locking element.

A spring structure, in accordance with this invention, comprises a lower frame 1 and a vertically movable upper frame 2. The spring structure further includes main or cushioning springs arranged in longitudinal and horizontal rows, and which are connected in a known manner to the frame 1 and further act as means to resiliently support the frame 2. The main springs are of the spiral coil type and as illustrated, by way of example, four main springs are shown and indicated at 3, 4, 5 and 6. The outer main springs of the rows are connected by a tie member 7 to the upper frame 2, and said tie member is formed with bent portions for not only overlapping the frame 2 but also the upper coil of the said outer springs, in a manner as indicated at 8, 9 and 10, whereby the said outer springs are connected to the upper frame 2 for the purpose of resiliently supporting it. The springs of the rows are furthermore connected by longitudinally and horizontally disposed tie bars 11 and 12 respectively.

The upper coils of the springs 3, 4, 5 and 6 are indicated respectively at 13, 14, 15 and 16 and each of which is connected to an adjacent lower coil, as indicated at 17.

The springs of one row are connected to the springs of the other row by a pair of interengaging resilient combined spacing and coupling elements extending in opposite directions with respect to each other, and as illustrated by way of example, the upper coil 13 of the spring 3 is connected to the upper coil 16 of the spring 6 by a combined spacing and coupling element 18, and the upper coil 14 of the spring 4 is connected to the upper coil 15 of the spring 5 by a combined spacing and coupling element 19. Each of said elements is in the form of a coiled spring of reduced diameter of the helical type, and one end terminal of the element 18 is wrapped around the coil 13, as at 20, and the other end terminal of the element 18 is wrapped around the coil 16, as at 21, for the purpose of connecting the element 18 to the springs 3 and 6. One end terminal of the element 19 is connected to the coil 14, as at 22, and the other end terminal of the element 19 is wrapped around or connected to the coil 15, as at 23, whereby the springs 4 and 5 are connected together. The elements 18 and 19 maintain the springs 3, 4, 5 and 6 in spaced relation, and to prevent the disconnection of the elements 18 and 19 from the springs 3, 4, 5 and 6, locking members are employed which are not only connected with the upper coils of said cushioning spring but also extend in-

to the elements 18 and 19, from the ends thereof, and further overlap certain of the coils of said elements.

The locking members are referred to generally by the reference character 24, and each of which includes an arcuate coupling or outer end portion 25, an inwardly extending and upwardly inclined upper locking portion 26 which projects from the upper end of the arcuate portion 25, and a lower hook-shaped locking portion 27 having its stem projecting at right angles from the lower end of the arctuate portion 25. The stem of the portion 27 terminates in a bill 28. The portion 26 is superposed throughout with respect to the stem and bill of the portion 27. The bill 28 is positioned to overlap a part of the stem and it extends towards the portion 26 at an inclination. When a locking member 24 is in operative position the arcuate portion 25 is positioned against the inner side of an upper coil of a cushioning spring and the portion 26 extends into one end of a combined spacer and coupling element and is enclosed by the coils thereof. The portion 27 extends under one end of a combined spacer and coupling element and the bill 28 of said portion 27 extends between a pair of coils of such element and is enclosed by a plurality of coils of such element.

Each pair of elements 18 and 19 interengages with each other at the center thereof, as at 29, to prevent the separation of said elements relative to each other when the pair of elements are connected to four of the cushioning springs.

It is thought the many advantages of a spring structure, in accordance with this invention, can be readily understood, and although the preferred embodiment of the invention is as illustrated and described, yet it is to be understood that changes in the details of construction can be had which will fall within the scope of the invention as claimed.

What I claim is:—

1. In a spring structure, two pairs of cushioning springs, a pair of interengaging and oppositely extending combined spacer and coupling elements having their terminal portions overlapping the coils at the upper ends of said springs and each consisting of a small coiled spring, and a locking member for each end of each of said elements and consisting of an arcuate portion engaging the inner side of an upper coil of a cushioning spring, an upwardly inclined locking portion extending into one end of the element and a lower hook-shaped locking portion positioned exteriorly of such end and having its bill extending into the element and towards said upper locking portion.

2. In a spring structure, two pairs of coiled cushioning springs, a pair of interengaging, oppositely extending, resilient combined spacer and coupling elements each having an end terminal thereof overlapping the upper coil of a spring whereby said springs are connected together, and a locking member carried by the upper coil of each of said springs and including an inclined upper locking portion extending into the end of an element and further including a lower hook-shaped locking portion having a part thereof arranged exteriorly of the element and further having its bill extending into said element towards said upper locking portion.

3. A spring structure comprising two pairs of cushioning springs of the spiral coiled type, a pair of coiled, resilient, oppositely extending interengaging combined spacer and coupling elements having inherent parts of their ends connected to the upper coils of said springs, and locking members carried by the upper coils of said springs and each including an inclined upper locking portion and a lower hook-shaped locking portion, said inclined portion extending into one end of an element and bearing against the inner face thereof, said lower portion having a part thereof positioned against the periphery of an element and further having its bill extending into said element towards said upper locking portion.

In testimony whereof, I affix my signature hereto.

GRADY GORDON RICKERSON.