Oct. 24, 1933. G. E. TAYLOR 1,931,744

SPRING ASSEMBLY

Filed May 25, 1933

Fig. 1.

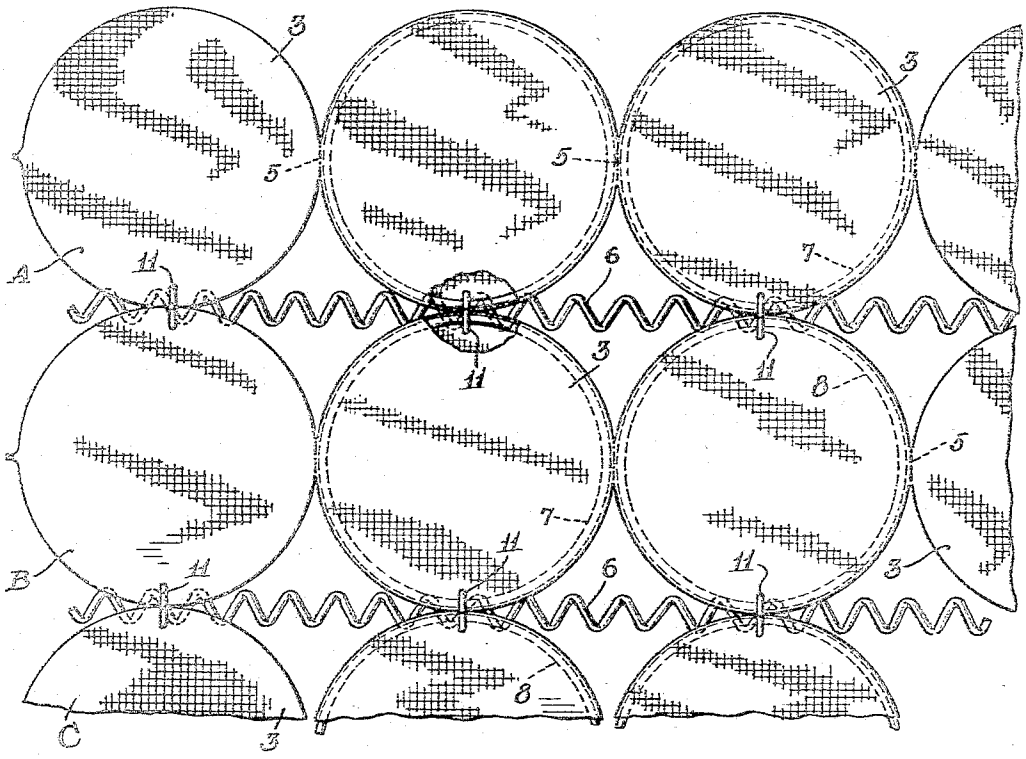


Fig. 2.

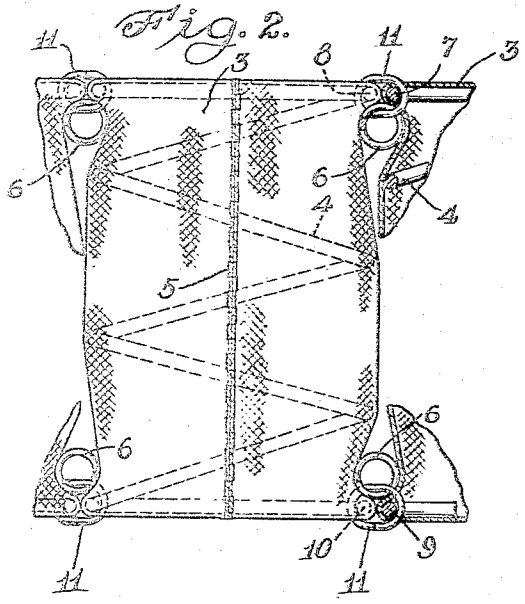
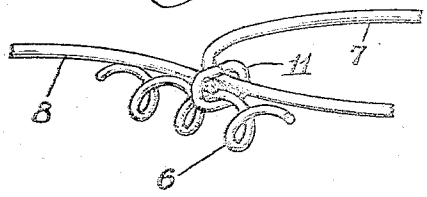


Fig. 3.



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SPRING ASSEMBLY

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Application May 25, 1933. Serial No. 672,792

1 Claim. (Cl. 5—353)

This invention relates to spring assemblies of the kind particularly adapted for use in spring filled mattresses, cushion seats and the like.

In assemblies comprising transversely and longitudinally extending rows of convolute springs, cross members such as cords or the like have been extended across the springs and have been connected thereto to retain the springs in position, but often when the spring assemblies were distorted as by being compressed or bulged during assembly or even in use, the cords were stretched or broken permitting displacement of the springs. Cross members such as wires or the like have been extended between contiguous rows of springs and these wires have either had formations therein or devices thereon which were aligned with adjacent portions of contiguous springs prior to assembly. Suitable fastening means interconnected the adjacent portions of the springs and the formations or devices on the wires or the like. While such wires or the like did not stretch or break, the manufacture of assemblies including wires so equipped was a tedious task since adjacent portions of each set of springs had to be separately aligned with the formation or device on the wire before the fastening means were installed.

The objects of my invention are to avoid separately aligning the springs with the cross members by using cross members to which the springs may be connected anywhere in the extent thereof and to prevent breakage of the cross members and displacement of the springs by extending resilient helical wires between contiguous rows and by so securing the springs to the wires that the helix thereof will prevent relative movement between the cross members and springs.

A selected embodiment of the invention is illustrated in the accompanying drawing wherein

Fig. 1 is a fragmentary top plan;

Fig. 2 is a fragmentary end elevation in which a part is broken away; and

Fig. 3 is a perspective detail view.

In the accompanying drawing I have shown a plurality of convolute springs 4 arranged side by side in rows. The springs are connected in the rows in any desired manner, as by the use of clips or the like, and in the illustrated form I enclose the springs in fabric casings 3 and unite the adjacent casings in the rows by stitching 5. Three rows of springs A, B, and C are shown in the drawing which are arranged side by side with the springs in each row aligned with the springs in the adjacent row. Cross members 6 extend between the rows of springs adjacent the tops and bottoms thereof. The end convolutions of adjacent springs 4 are arranged in side by side relation. The cross members 6 adjacent the tops of the springs underlie the adjacent parts of the upper end convolutions 7 and 8 while the cross members adjacent the bottom of the springs are positioned above the adjacent parts of the lower end convolutions 9 and 10.

The cross members are in the form of helical wires which, after the springs are secured thereto anywhere in the extent thereof, prevent relative movement of the cross members and springs since the helix of the wires prevents travel therealong particularly when the helical wires are positioned relative to the end convolutions of springs in the manner above described. The adjacent parts of the convolutions 7 and 8 and 9 and 10 are secured to the helical wires to prevent displacement of the springs. These end convolutions of the springs are connected to the cross members by wire loops 11. These wire loops firmly clamp the end convolutions to the helical wires, as is illustrated in Fig. 3, and the helix of the wires prevents these loops 11 from moving along the wires and since the parts are firmly interconnected the wires are prevented from moving through the loops and consequently both the wires and the springs are held against displacement.

The wire loops are installed in a suitable manner. For example, when the springs are enclosed in casings, the wire loops are passed through the top of one casing 3, across the convolution 7, through the side wall of the casing, about the adjacent part of the wire 6, through the side wall of an adjacent casing, across the convolution 8, through the top of the latter casing, and the ends of the wire are abutted.

The use of helical wires avoids the necessity of separately aligning each set of springs with a formation or device on the cross member because the loops may be connected to the helical wires any place in the extent thereof. Hence, the springs may be economically assembled. Since the loops extend at right angles to the axis of the helix and as the parts are firmly clamped together movement of the loops along the wires is prevented as well as movement of the wires through the loops. Moreover, by using wires the likelihood of stretching and breaking is avoided. Therefore, since the helical wires prevent displacement of the springs it is apparent that an efficient and long-lived spring assembly is provided which may be distorted in compression or

use without the likelihood of the displacement of the springs.

While I have illustrated and described a selected embodiment of my invention is to be understood that this is capable of variation and modification and I therefore do not wish to be limited to the precise details set forth but desire to avail myself of such changes and modifications as falls within the scope of the following claim:

I claim:

A spring assembly comprising a plurality of rows of springs, the springs in each row being arranged in juxtaposed relation and being respectively aligned with the springs in the adjacent row, casings enclosing said springs and joined together intermediate juxtaposed springs in each row, said casings being joined on the diameters of the springs aligned longitudinally of the rows, a helical wire between each of the adjacent rows of springs and positioned below the topmost convolution of each of the aligned springs in the adjacent rows, another helical wire between each of the adjacent rows of springs and positioned above the lowermost convolution of each of the aligned springs in the adjacent rows, and wire loops respectively passed through the casings and about the adjacent parts of the end convolutions of aligned springs in adjacent rows and about the adjacent helical wire, the wire loops passed about the topmost convolutions of the springs tightly clamping these convolutions and the adjacent helical wire in nested relation with convolutions in side-by-side relation and the helical wire therebelow and intermediate thereof, the wire loops passed about the lowermost convolutions of the springs tightly clamping these convolutions and the adjacent helical wire in nested relation with the convolutions in side-by-side relation and the helical wire thereabove and intermediate thereof, the helical wires extending across said spring assembly in parallel relation with the diameters of the springs aligned longitudinally of the rows and in cooperation with said wire loops, the nested relation of the convolution with said helical wires, the joining of the casings effectively preventing displacement of said springs in said assembly.

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