April 12, 1932. R. C. WINDERS 1,853,247

SPRING ASSEMBLY

Filed July 27, 1931

Fig. 1

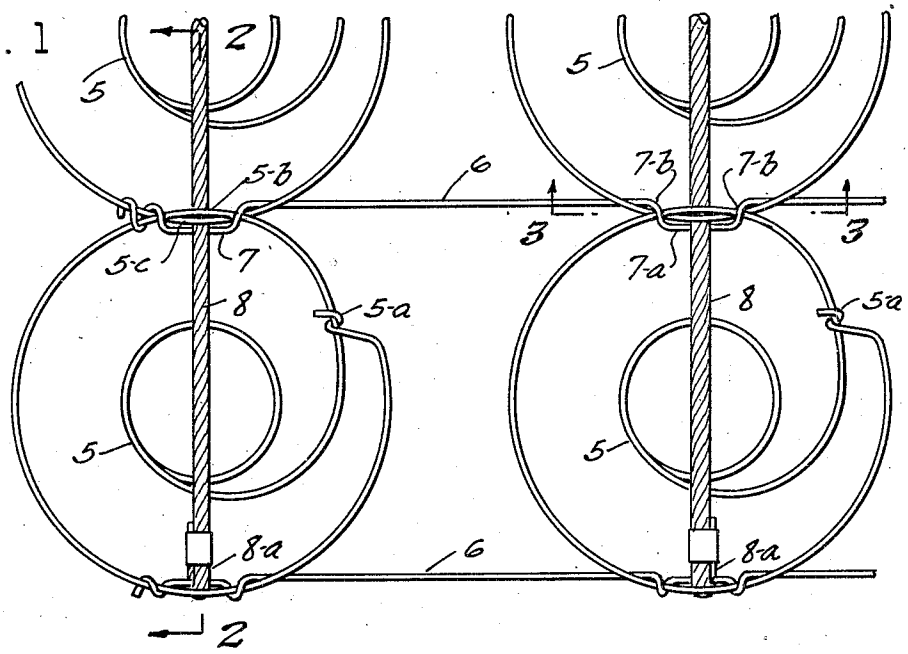


Fig. 2

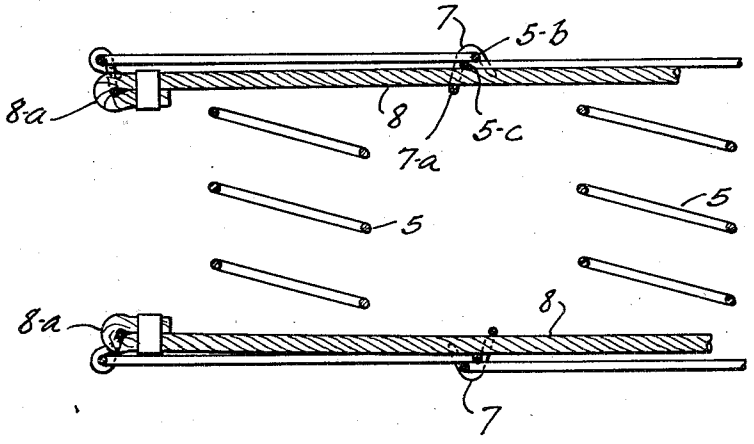


Fig. 3

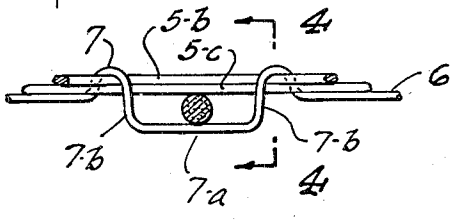
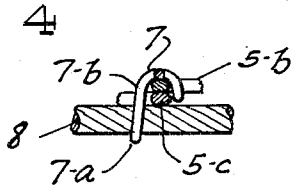


Fig. 4



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UNITED STATES PATENT OFFICE

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SPRING ASSEMBLY

Application filed July 27, 1931. Serial No. 553,270.

This invention relates to a spring assembly suitable for use in cushions, mattresses and like places. It comprises a group of coiled springs tied together. It is desirable that such assemblies be light in weight, the springs grouped close together and that a minimum of the covering enveloping the springs be unsupported. Furthermore, the springs should be securely fastened together and the whole assembly be capable of being rolled. Due to the weaving of the springs the ties must enable relative movement of the springs to accommodate themselves to differences in distortion. Unless tying, enabling such movement is effected, the assembly does not have softness. If the springs are tied to allow themselves to move for accommodation of one another, noise may result in use of the springs. My invention contemplates a noise dampening tie.

The objects of this invention are to provide a spring assembly having the advantages described above and including economy of structure and ease of assembly of the elements.

These objects together with other objects and corresponding accomplishments are obtained by means of the embodiment of my invention illustrated in the accompanying drawings, in which:—

Fig. 1 is a plan view showing a fragment of a spring assembly at a corner; Fig. 2 is a section as seen on the line 2—2 of Fig. 1; Fig. 3 is a detail section as seen on the line 3—3 of Fig. 1; and Fig. 4 is a section as seen on the line 4—4 of Fig. 3.

Referring with more particularity to the drawings, the assembly comprises a plurality of coiled springs 5, the end portion being enlarged in spiral form. The ends of the wire forming the coils are fastened to adjacent convolutions by twisting the ends around the convolutions as indicated by 5*a*. This is a common type of construction for coiled springs used in cushions and mattresses. The springs 5 are arranged in rows and the rows are parallel to one another and may be spaced a suitable distance apart. The springs in a row are contiguous to one another and the end coils are overlapped so that one lies above the other as indicated by 5*b* and 5*c*.

Extending transversely across the rows are tie wires 6 having locks for adjacent springs provided by forming loops 7 in the wires. These loops comprise crowns 7*a* and legs 7*b*. Sockets are formed in the legs by bending the loops back upon themselves. The sockets are narrow so that the end coils disposed therein lie in tiers and can have no lateral displacement. The wires 6 underlie the inner sides of the end coils with the loops 7 passing up and over the overlapping coils. Thus, the coils are held against lateral displacement and yet a movement of one spring in relation to the other is permitted, that is, rotary and hinged movement.

Extending along the rows are cords 8. These cords may be of any suitable pliant material, such as fibre. The cords are strung through the eyes formed between the end coils and the crowns of the loops and form keepers to prevent the end coils from becoming displaced. They are fastened at their ends to the crowns of loops as indicated by 8*a*. The cords fill the eyes and act to dampen noise at the locks. Being flexible, they permit the spring assembly to be rolled in the direction of the cords. They also extend across the middle of the spring coil and are disposed so that the covering will not sag into the bores of the spring.

The assembly is easily put together. The locks are positive and the structure economical.

What I claim is:—

1. A spring assembly including a plurality of coiled springs arranged in spaced parallel rows, contiguous springs in a row having their terminal coils overlapping, tie wires extending transversely of said rows and locked thereto by means of loops laterally offset from said tie wires, which loops extend through the terminal coil of one spring, over the overlapping intersections of said terminal coils and downwardly through the terminal coil of the second spring and underhanging said overlapping intersections, keeper ties of cord ranging lengthwise of said rows underlying said terminal coils and rove through the eyes formed by said loops and terminal

coils, said keeper ties being fastened at their ends to the endmost tie wires.

2. A spring assembly including a plurality of coiled springs arranged in spaced parallel rows, contiguous springs in a row having their terminal coils overlapping, tie wires extending transversely of said rows having locks embracing overlapping coils, said locks comprising loops laterally offset from said wire with the legs of a loop curved to form pockets, said loops extending through the terminal coil of one spring and over the overlapping intersections of said terminal coils and downwardly through the terminal coil of the second spring with the overlapping intersections lying in said pockets and the crowns of loops underhanging said overlapped intersections, keeper ties of cord ranging lengthwise of said rows underlying said terminal coils and rove through the eyes formed by said loops and terminal, coils, said keeper ties being fastened at their ends to the endmost tie wires.

In witness that I claim the foregoing I have hereunto subscribed my name this 22 day of July, 1931.

ROBERT C. WINDERS.