Feb. 22, 1927. 1,618,852

H. J. TIFFANY

SPRING STRUCTURE

Original Filed June 3, 1925

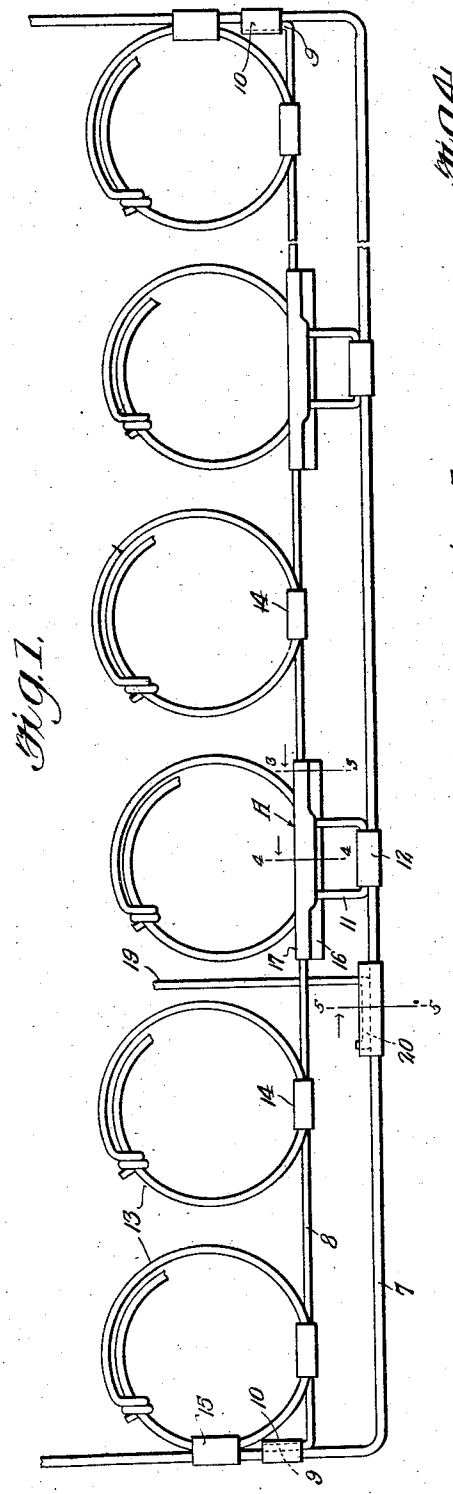


Fig. 1.



Fig. 4.

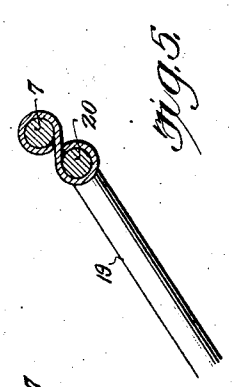


Fig. 5.

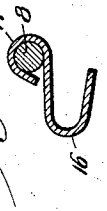


Fig. 3.

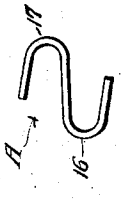


Fig. 6.

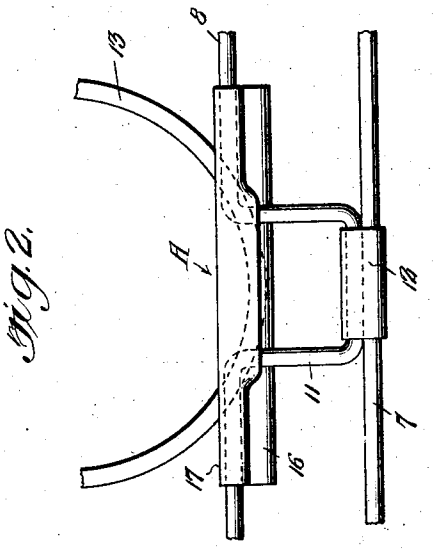


Fig. 2.

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UNITED STATES PATENT OFFICE.

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SPRING STRUCTURE.

Application filed June 3, 1925, Serial No. 34,630. Renewed November 26, 1926.

This invention relates to spring structures.

One object of the invention is to provide a spring structure, embodying among other characteristics, means whereby to connect the various structural elements firmly together to prevent undue thrusts from injuring upholstering material or from rendering the structure ineffective as an efficient and satisfactory cushion.

Another object is to provide a peculiarly formed clip whereby to effect a substantial connection between the connected parts to prevent twisting or lateral deflection of the structure as a whole.

With these and other objects in view, the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:

Fig. 1 is a fragmentary top plan view of one embodiment of the invention.

Fig. 2 is an enlarged plan view showing S-shaped clip applied.

Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a sectional view on the line 4—4 of Fig. 1.

Fig. 5 is a sectional view on the line 5—5 of Fig. 1, and

Fig. 6 is a sectional view of the clip A before application to the spring structure.

Referring now more particularly to the accompanying drawings, the reference character 7 indicates a top border wire of a spring structure and the character 8 designates a top frame member having lateral projections 9 at its ends secured to the sides of the top border wire by means of any suitable type of clip 10. This frame member 8 has its body portion spaced from the front of the border wire and is adapted to strengthen the upper front edge of spring structures and to prevent lateral or other objectionable thrusts incident to application of upholstering material or expansion and contraction and lateral deflections of springs without destroying the requisite amount of resiliency at the upper front edge of the structure.

The top frame member has connection with the top border wire through the instrumentality of substantially U-shaped loops 11 which extend forwardly from the frame member 8 and have their bight portions secured to the top border wire by means of suitable clips 12.

Body springs 13 are arranged in the structure in any suitable manner and the front row of springs have their upper convolutions secured to the said top frame member 8, some by clips 14 and others by S-shaped sheet metal clips A, the end springs being further secured to the top border wire by suitable clips 15.

The front body springs disposed adjacent the forwardly directed loops 11 are secured to the top frame member 8 by the aforesaid substantially S-shaped clips A, each of which latter has an inner groove 16 and an outer groove 17. The inner groove 16 receives the upper convolution of the adjacent spring and the clip has the walls or one wall of the inner groove compressed inwardly onto the convolution as at 18, to bind the latter in the inner groove. The outer groove of each clip A receives the said top frame member and the inner ends of the respective loop 11, and the walls or one wall of the outer groove is compressed at spaced points or at its ends and adjacent to the opposite sides of the respective loop to bind the loop and the top frame member in the outer groove of the respective S-shaped clips of the structure.

The sheet metal clip where it is pinched or compressed at one side at its ends causes a binding of the clip onto the frame member and also onto the inner side of the loop at the points where the sides of the loops merge from the frame member. Thus there are two spaced points of pinching action at one side of the clip A and on the other side the clip is pinched onto the adjacent spring intermediate the ends of the clip and between the points of pinching at the ends of the clip. This forms a strong, durable and substantial connection between the parts connected by the clip and yet the desired resiliency of action of the upper front edge of the structure is maintained.

In some structures a brace, such as that

indicated at 19 is used and the S-shaped clip may be employed to secure the brace to the top border wire. As shown, the brace 19 (which usually extends from the upper to the lower rear edge of the structure) has a laterally directed end 20 which is disposed in the inner groove of the S-shaped clip and the walls or one of the walls of the inner groove intermediate its ends is compressed onto the laterally directed end 20 to secure the same in said inner groove of the clip. The outer groove of the clip receives the top border wire and the walls or one of the walls of the outer groove is pinched throughout its length onto the border wire.

What is claimed is:

1. In a spring structure, a top border wire, springs within the border wire, a top frame member spaced from the front of the border wire and disposed adjacent the upper convolutions of the front row of springs and having a substantially U-shaped projection extending to the front of the border wire, a clip of sheet metal folded upon itself to provide an inner and an outer groove and having a portion extending between the top frame member and the upper convolution of one of the front springs, said inner groove receiving the upper convolution of the last-mentioned spring, and one wall of the inner groove being compressed intermediate its ends onto the said convolution, the outer groove of the clip receiving the top frame member and being compressed on the latter from the outer ends of the clip to the sides of said projection, and a clip to secure the outer end of the projection to the front of the border wire.

2. In a spring structure, a top border wire, springs within the border wire, a top frame member spaced from the front of the border wire and disposed adjacent the upper convolutions of the front-row of springs and having a substantially U-shaped projection extending from opposite one of the front springs to the front of the border wire, a clip formed of sheet metal and having a portion disposed between the frame member and the upper convolution of the front spring from which said projection extends, the clip having an inner and an outer groove, the outer groove receiving the frame member above the respective spring and the inner groove receiving the convolution of the respective spring below the frame member, the walls of the grooves being compressed at spaced points onto the convolution of the respective spring and onto the frame member, and means for connecting the U-shaped extension to the front of the border frame.

In testimony whereof I have hereunto set my hand.

HARRY J. TIFFANY.