W. A. FALLS.

SPRING STRUCTURE.

APPLICATION FILED MAY 28, 1917.

1,270,238. Patented June 18, 1918.

Fig. 1

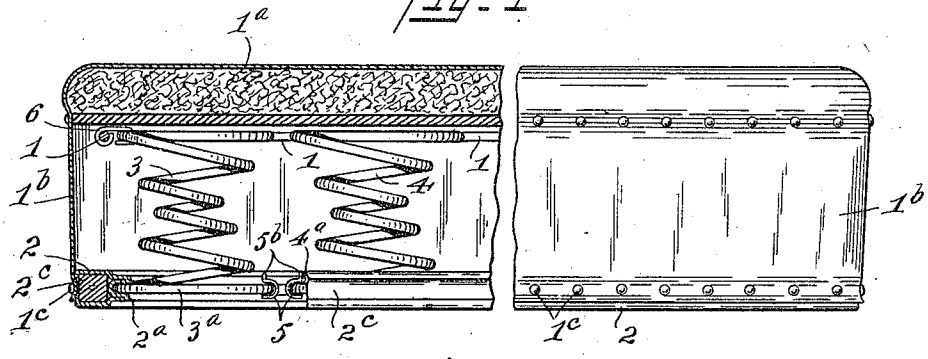


Fig. 2

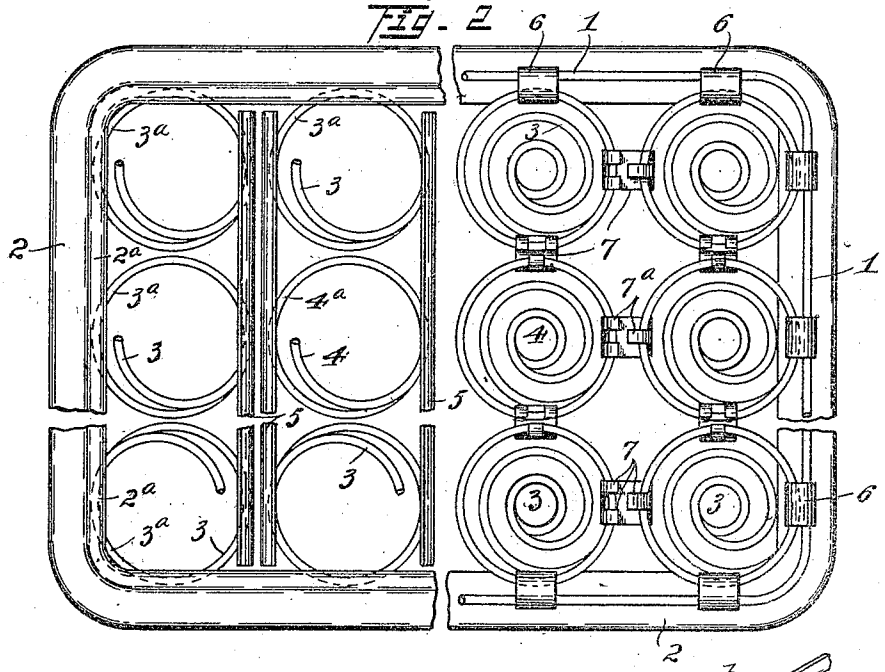


Fig. 3

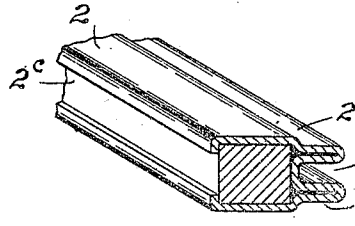
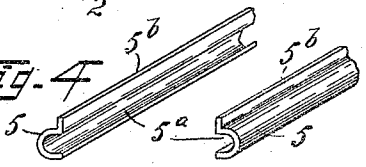


Fig. 4



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UNITED STATES PATENT OFFICE.

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SPRING STRUCTURE.

1,270,238. Specification of Letters Patent. Patented June 18, 1918.

Application filed May 28, 1917. Serial No. 171,383.

To all whom it may concern:

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

My invention relates to improvements in spring structures, and more particularly to that class or type known as "spring seat structures," the primary object of the invention being to provide a generally improved spring structure of this class which will be exceedingly simple in construction, cheap of manufacture, and efficient in use.

A further object is the provision of an improved spring structure embodying upper and lower frames together with border springs interposed between and connected to said frames through the medium of improved attaching means and with interior springs suspended within and attached to the base portions or convolutions of said border springs by means of improved "floating" clamping strips or cross bars adapted to hold and support the base convolutions of all of said coil springs and avoiding the use of special fastening devices as well as permitting the spring members to be variably spaced as desired during the time of the assembly of the parts to meet the varying demands of actual service.

A still further object is the provision of an improved lower or base frame embodying an improved metallic spring receiving and clamping strip extending about its inner periphery and provided with marginal "tacking" core or filler members of wood or analogous material adapted to receive and carry the upholstering tacks or nails used in securing or tacking the upholstery or covering material.

With the above mentioned and other ends in view, the invention consists in the novel construction, arrangement, and combination of parts, hereinafter described, illustrated in one of its embodiments in the accompanying drawings, and particularly pointed out in the appended claims.

Referring to the drawings, forming a part of this specification, Figure 1 is a view, partly in front elevation and partly in section, of a spring seat structure embodying my invention, certain intermediate portions being broken away for the purpose of enlargement and clearer illustration of the parts.

Fig. 2, a view of the frame and spring structure only, partly in top plan and partly in horizontal section.

Fig. 3, an enlarged detailed perspective view of a portion of the improved lower frame for securing the base portions of the border springs and upholstering in position.

Fig. 4, a similar view of the "floating" U-shaped cross bars or strips interposed between and secured to the base portion of the border and inner springs.

Similar numerals of reference designate like parts throughout all the figures of the drawings.

The improved spring seat structure comprises an upper frame, 1, and a lower frame 2, of rectangular form and preferably curved or rounded at their corners as shown. The upper frame 1, may be formed with a single length of wire bent into suitable form, and is secured to the border springs in some suitable and convenient manner as herein described, and is adapted to resiliently support the upholstered seat 1^a, in a well known and understood manner.

The improved lower or base frame 2, comprises a metallic body strip 2, crimped and folded forming inwardly extending flanges 2^a, spaced apart and forming an intermediate groove or channel 2^b, to receive and carry the lower convolutions 3^a, of the border springs 3. If desired the convolutions 3^a, in the groove 2^b, may be further secured by clamping or crimping the flanges 2^a, over the adjacent portions of the convolutions 3^a, and it will thus be seen that the parts 2^a, of the lower or base frame form a spring receiving and clamping strip about the inner periphery of the lower frame, and as a means of providing for the convenient securing or tacking of the upholstering or side covering 1^b, to the lower or base frame 2,—the latter is provided with a marginal "tacking" core or filler member 2^c, of wood or analogous material for receiving and carrying the upholstering tacks or nails 1^c.

As a means of conveniently securing and supporting the base convolutions 4^a, of the inner springs 4, to each other as well as to the base convolutions 3^a, of the border springs 3, cross clamping strips or bars 5, are provided, said cross strips or bars 5, being of substantially U-shape in cross section

forming channeled portions 5, to receive the lower convolutions 4^a and 3^a, of the inner and outer springs, respectively, and terminating short of the lower frame 2, so as to be free from the same and forming what may be termed "floating" cross clamping strips affording obvious advantages in assembling and adjusting the inner springs 4, and securing their base portions 4^a, in place. As a means of further reinforcing the cross clamping strips or bars 5, as against the downward depression or action of the strips through the superposed action of the springs 3, and 4, the inner portions of the strips or bars are preferably provided with upwardly extending ribs or flanges 5^b.

As a means of securing the upper convolutions of the border springs 3, to the upper frame 1, suitable spring clips 6, may be provided, and as a means of suitably securing the upper adjacent convolutions of such border springs to each other and to the adjacent upper convolutions of the inner springs 4, suitable spring clips 7, may be provided, said clips 7, in the present instance, being provided with clamping tongues 7^a, operated in a well known manner and adapted to afford some relative flexibility and movement between the upper convolutions of the springs while in service.

From the foregoing description, taken in connection with the accompanying drawings, the operation and advantages of my invention will be readily understood.

Having thus described one of the embodiments of my invention, what I claim and desire to secure by Letters Patent is,—

1. A spring structure, comprising upper and lower frames, coiled border springs connected to the inner sides of said frames, coiled inner springs disposed therebetween, and U-shaped floating cross strips arranged in pairs with the lateral channeled portions extending toward each other and receiving and containing the lower convolutions of said border and inner springs, said strips being substantially uniform throughout for adjustably receiving and variably spacing said lower convolutions of said springs and having upwardly extending reinforcing flanges extending above and reinforcing said lower convolutions of said border and inner springs.

2. In a spring structure, a frame carrying a plurality of coiled springs, and U-shaped floating cross strips arranged in pairs with their channeled portions extending toward each other and receiving and supporting the base convolutions of said springs, said strips being substantially uniform throughout for adjustably and variably receiving said springs in assembling and terminating in upwardly extending reinforcing flanges and projecting above the common horizontal planes of said base convolutions and reinforcing the latter relative to each other.

In testimony whereof I have affixed my signature.

WILLIAM A. FALLS.