March 11, 1941. T. BURKE 2,234,230

SPRING STRUCTURE FOR CUSHIONED SEATS

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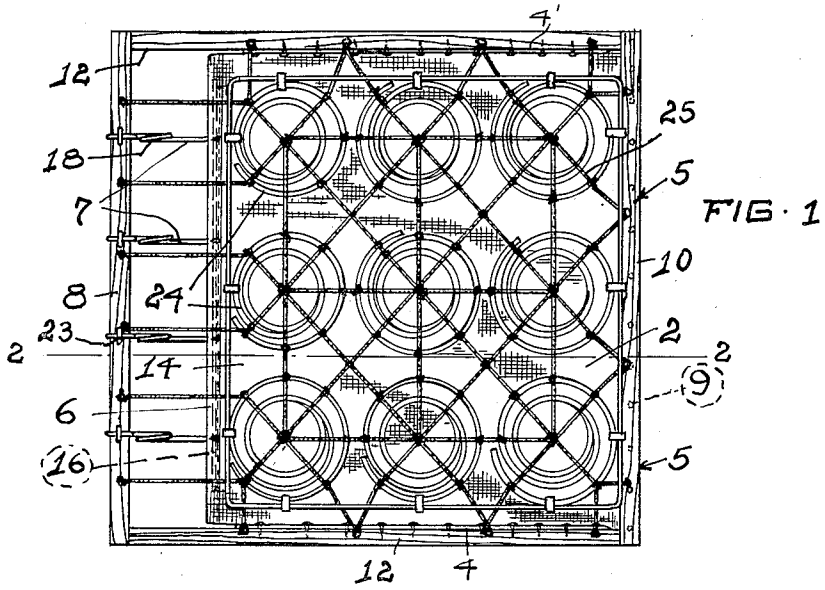


FIG. 1

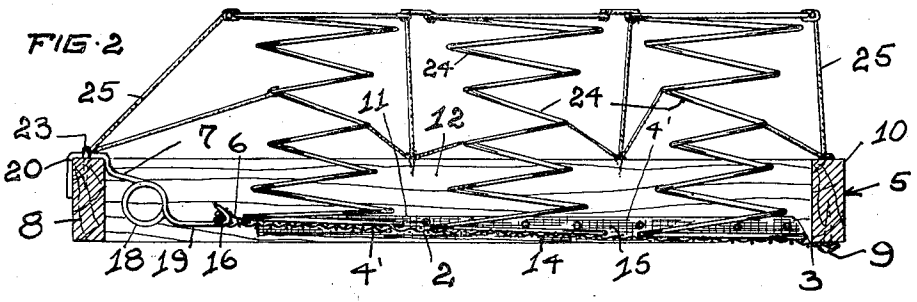


FIG. 2

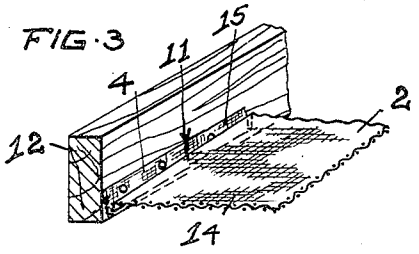


FIG. 3

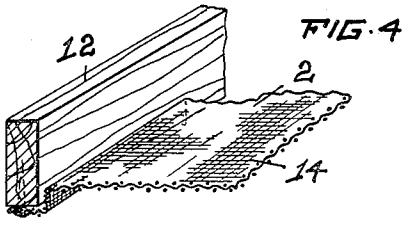


FIG. 4

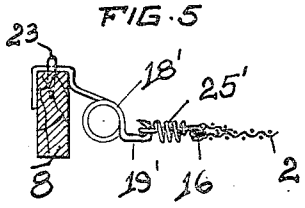


FIG. 5

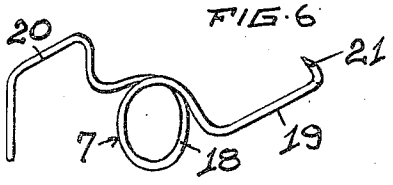


FIG. 6

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SPRING STRUCTURE FOR CUSHIONED SEATS

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Application April 20, 1938, Serial No. 203,058

3 Claims. (Cl. 155—179)

The present invention relates to improvements in spring seats for upholstered chairs, couches, settees and the like and its object in general is to provide an improved spring seat structure embodying a yielding flexible suspensory support of woven material for a series of spiral cushioning springs attached to and suspended within an open rectangular frame in such improved manner that the spring structure will secure maximum comfort to the occupant of a piece of furniture embodying the spring seat structure.

Another object of the invention is to provide an improved spring structure which is simplified in construction, relatively economical to manufacture, and durable in use.

A further object of the invention is to provide means for facilitating and simplifying a pivotal yielding connection between the flexible suspensory support of the spring structure and the supporting frame.

In addition the invention has certain other marked superiorities which radicaly distinguish it from present known structures. These improvements or superior characteristics embodying certain novel features of construction are clearly set forth in the following specification and the appended claims; and a preferred form of the invention is hereinafter shown with reference to the accompanying drawing forming part of the specification.

In the drawing:

Fig. 1 is a plan view showing one form of spring structure made in accordance with the invention.

Fig. 2 is a transverse vertical section, partly in elevation, taken substantially along the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary perspective sectional view through the spring structure showing the attachment of the flexible suspensory support to the side rail of the supporting frame.

Fig. 4 is a fragmentary perspective sectional view similar to Fig. 3 showing a somewhat different connection of the flexible suspensory support to the side rails.

Fig. 5 is a fragmentary vertical section of a spring structure showing a somewhat different connection of the rear end of the flexible suspensory support to the rear rail; and

Fig. 6 is a perspective view of the yielding supporting hook used in Figs. 1-2 for connecting the rear end of the flexible suspensory support to the rear rail.

In manufacturing upholstered furniture, especially chairs and davenport couches, it is customary to tack webbing to the bottom face or within the frame and to build up a spring structure thereon so as to provide a resilient seat which includes padding or upholstering. In constructions of this type the webbing stretches substantially and then effects changing of the yielding and springing properties of the present spiral coils of a piece of furniture thus constructed, so that the life of constructions of this type is limited. Such deficiencies have been partly overcome by the provision of a flexible suspensory support yieldingly suspended within an open rectangular frame, which support is utilized to mount the spiral supporting coils of the structure. However, the latter arrangement is rather expensive in construction and assembly, as it necessitates mounting of the flexible support in a special frame structure which in turn is yieldingly secured to the open frame.

The present improvement is a departure from these old practices in that the flexible suspensory support, preferably a piece of woven material 2 of trapezoidal outline, has its front and side edges 3 and 4 respectively directly nailed or otherwise secured to an open frame 5 of substantially rectangular shape in such a manner as to permit of the woven material being permitted to sag under load differentially downwardly from the front to the rear. The rear edge 6 of the woven material is yieldingly supported by a specific yielding bracket 7 which is directly attached or secured to the rear rail 8 of the frame 5. The edge 3 of the woven material is secured by means of tacks 9 to the bottom face of the front rail 10 and side edges 4 and 4' of the woven material 2 are attached on lines 11 to the inner faces of the side rails 12. The trapezoidal outline of the material when tacked to the frame produces a suspensory member embodying a seating surface 14 and having flanges 15 at the sides of said surface. The rear edge of the woven material is preferably reenforced by a straight edge wire 16 enclosed in said member as customary and is yieldingly attached to suspension member or bracket 7, hooked upon and secured to the rear rail 8 of frame 5, as will be hereinafter described. This suspension member, which is made of steel spring wire so as to possess the desired yielding action, embodies a central coil 18, the ends of which extend forwardly and rearwardly and form at the front end a hook-shaped extension 19 and at the rear end a substantially rectangularly shaped hook portion 20. Extension 19 of bracket 7 extends substantially in alignment with the bottom of

coil 18 and has its end 21 pointed and its hook curved so as to permit of said end 21 being readily entered into the rear edge 6 of the woven material 2 for pivotal engagement with the edge-wire 16 thereof. Hook portion 20 is shaped to fit the width of the rear rail 8 of the frame and can readily be hooked upon said rail until the horizontal portion 22 of the hook portion engages the top of said rail. A staple 23 is used for securing the bracket to the said rail.

The thus mounted suspensory support or woven material 2 mounts a plurality of coil springs 24, secured to said support in any common manner, which springs when properly set are tied to each other and to the rails of the frame by means of cord 25, all as commonly practiced.

When assembled, the suspensory support of the spring structure is yieldingly forced upwardly by the yielding action of the yielding brackets or suspension members 7 and under load, the suspensory support can readily yield a substantial distance without excessive stress to the side edges of said support, which side edges are secured to the inner faces of the side rails.

It is obvious that the side edges of the trapezoidally shaped woven material 2 may also be directly attached to the bottom faces of the side rails 12. A construction of this type, which is shown in Fig. 4, will act similarly to the one previously described.

Should it be desirable to increase the yielding action of the suspension members or brackets 7, then the coil 18 of said members can either be enlarged or the number of its coils can be increased or a short tension spring can be used for connecting edge wire 16 with the hook-shaped extension 19. In the latter case the length of extension 19 is preferably decreased to obtain space for a longer tension spring. A suspension member or bracket of this type is shown in Fig. 5. In this case the front extension 19' of the suspension member 18' is very short so as to permit of a helical or tension spring 25' of sufficient length being used for pivotally connecting edge wire 16 of the woven material 2 with the said suspension member which is secured to the rear rail of the frame in the manner previously described.

Having thus described my invention, what I claim is:

1. A spring structure for upholstered furniture comprising an open substantially rectangularly shaped frame, a flexible suspensory means of trapezoidal form rigidly secured at its front and side edges to the front and side rails of said frame, and yielding bracket means pivotally engaged with the rear edge of said suspensory means, said bracket means including a hook-shaped end adapted to be readily slipped upon the rear rail of said frame for engagement therewith.

2. As an article of manufacture and sale for use in upholstered furniture a hook-shaped, yielding bracket embodying a yielding portion, a hook portion extending forwardly of said yielding portion, and a second hook portion extending rearwardly of said yielding portion, said latter hook portion being of substantially U-shaped form for engagement with and interlocking with the rail of a furniture frame.

3. As an article of manufacture and sale for use in upholstered furniture a hook-shaped, yielding bracket embodying a coiled portion, a hook portion extending forwardly of said coiled portion, and a second hook portion extending rearwardly of said coiled portion, said hook portions extending from the top and bottom portions of said coiled portion to effect offsetting of said hook portions in height with respect to each other.

THEODORE BURKE.