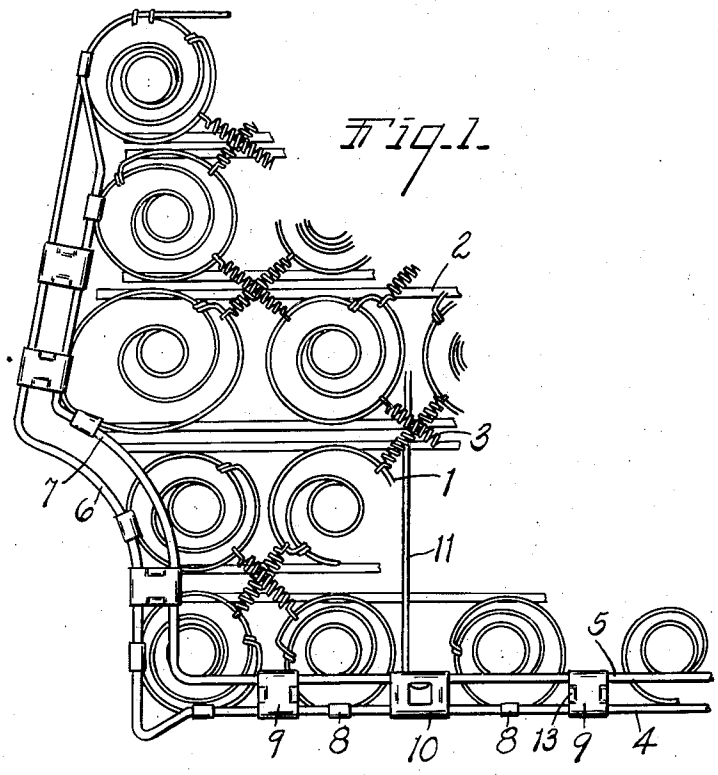
Aug. 9, 1949. V. ASARO 2,478,650

SPRING STRUCTURE

Filed Nov. 9, 1946

Fig. 1.



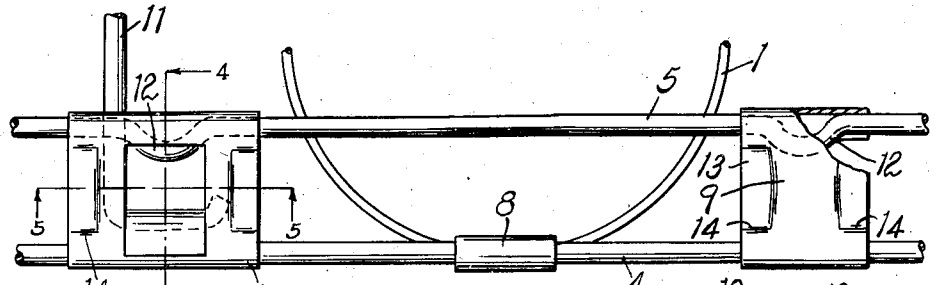


Fig. 2.

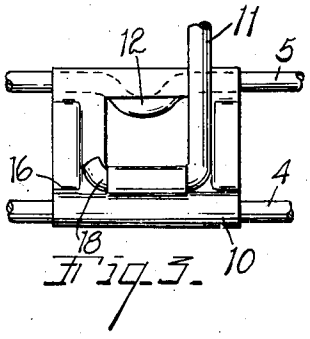


Fig. 3.

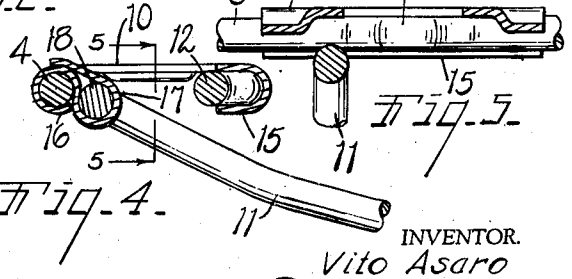


Fig. 4.

Fig. 5.

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Patented Aug. 9, 1949 2,478,650

UNITED STATES PATENT OFFICE

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SPRING STRUCTURE

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Application November 9, 1946, Serial No. 708,903

6 Claims. (Cl. 5—260)

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This invention relates to improvements in spring structures.

The main objects of the invention are:

First, to provide an improved spring structure having a top border frame which is effective in supporting the upholstery and effectively resists stresses applied to the frame in a horizontal direction and at the same time one which may be formed of light stock.

Second, to provide a border frame for spring cushion structures which may be readily constructed to any desired outline for the purpose of supporting upholstery or providing a cushion structure of desired shape and at the same time one which may be readily applied to a spring structure.

Third, to provide a border frame for spring structures to which the braces and cross members may be effectively connected.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a fragmentary plan view of a spring structure embodying the features of the invention, the bottom frame being omitted and only portions of the top frame and body springs being illustrated.

Fig. 2 is an enlarged fragmentary plan view of portions of the structure shown in Fig. 1.

Fig. 3 is an inverted fragmentary view of parts of the structure shown in Fig. 2.

Fig. 4 is an enlarged fragmentary section on line 4—4 of Fig. 2.

Fig. 5 is an enlarged fragmentary section on line 5—5 of Fig. 2.

In the accompanying drawing, the body springs 1 are of the helical type and mounted on a suitable base including cross members 2. The base member 3 is not illustrated and only a part of the body springs are illustrated. Adjacent springs in the assembly illustrated are connected by the crossed helical tie members 3.

My improved border frame comprises an outer frame member 4 and an inner frame member 5, these frame members being disposed in spaced relation and being provided with portions 6 and 7 respectively disposed at the ends of the cushions.

The top coils of the front and a portion of the end border springs are secured to the outer frame member 4 by means of the clips 8. These frame

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members 4 and 5 are formed of suitable gauge of rod or wire and are of round section.

The frame members are fixedly secured or connected together by means of the sheet metal clips 9 and 10, the clips 10 being quite similar to the clips 9 but are designed to secure the braces 11 to the frame members.

The inner frame members 5 have loop-like offsets 12 formed therein at longitudinally spaced intervals or in the positions at which the clips are to be attached.

The clips 9 have downward offsets 13 in the intermediate portions thereof providing shoulders 14 which engage the inner sides of the frame members at each side of the offsets 12 thus preventing longitudinal movement of the clips on the frame members.

The ends of the clips 15 and 16 are clamped around the frame members as is illustrated thereby fixedly securing them to the frame members and fixedly securing the frame members in laterally spaced relation. The offsets 12 in the inner border member prevent relative rotative movement of the clips and the inner frame member.

The clips 10 are the same as described except that they are somewhat wider and have an intermediate portion or web thereof struck out to provide tongues 17 which are clamped around the laterally disposed arms 18 of the brace or tie member 11.

The present structure is an embodiment or adaptation of the structure of my Patent No. 2,336,975, issued December 14, 1943. In that structure the frame members are of flattened cross section. My present invention permits the use of round stock.

The border frame is in effect a truss structure and is effective in resisting bending and wracking strains. The clips, being of substantial width and engaging each frame member at spaced points, are effective as struts. The members 4 and 5 may be made of quite light gauge stock and at the same time the structure is very strong and capable of resisting strains and stresses tending to distort the upholstery cushion.

I have illustrated and described an embodiment of the invention which is highly practical. I have not attempted to illustrate or describe other embodiments or adaptations as it is believed that this disclosure will enable those skilled in the art to embody or adapt the invention as may be desired.

Having thus described my invention, what I

claim as new and desire to secure by Letters Patent, is:

1. A frame for spring structures comprising inner and outer frame members of round section disposed in spaced parallel relation, the inner member having longitudinally spaced outward offsets therein, and sheet metal clips connecting said frame members, said clips having their inner ends clamped around the inner frame member to embrace the same at each side of the offsets thereof with the offsets engaging the clips whereby relative rotative movement of the clips and inner frame member is prevented, the outer ends of the clips being clamped around the outer border member, at least one of the clips having a bendable tongue struck from the portion thereof intermediate the frame members, and a brace having a lateral arm disposed below the clips having the tongue and secured thereto by said tongue.

2. A frame for spring structures comprising inner and outer frame members of round section disposed in spaced parallel relation, the inner member having longitudinally spaced outward offsets therein disposed in the plane of the frame members, and sheet metal clips connecting said frame members, said clips having their inner ends clamped around the inner frame member to embrace the same at each side of the offsets thereof with the offsets engaging and parallel to the adjacent sides of the clips whereby relative rotative movement of the clips and inner frame member are prevented, the outer ends of the clips being clamped around the outer border member.

3. A frame for spring structures comprising inner and outer frame members of round section disposed in spaced parallel relation, the inner member having an outward offset therein and a sheet metal clip connecting said frame members and having its inner end clamped around the inner frame member to engage the same at each side of the said offset thereof with the offset engaging the clip members whereby relative rotative movement of the clip and inner frame members is prevented, the outer end of the clip being clamped around the outer border member, the clip having a bendable tongue struck from the portion thereof intermediate the frame members, and a brace having a lateral arm disposed below the clip and secured thereto by said tongue.

4. A frame for spring structures comprising inner and outer frame members of round section disposed in spaced parallel relation, the inner

member having an outward offset therein disposed in the plane of the frame members and a sheet metal clip connecting said frame members and having its inner end clamped around the inner frame member to engage the same at each side of the said offset thereof with the offset engaging the side of the clip adjacent thereto and in spaced relation to the portions of the frame members around which the clip is clamped whereby relative rotative movement of the clip and inner frame members is prevented, the outer end of the clip being clamped around the outer border member.

5. A spring structure frame comprising inner and outer frame members of round section disposed in spaced relation, and a clip of sheet metal connecting said spaced frame members and having offsets in the side edges thereof providing shoulders in engagement with the adjacent edges of the frame members, the ends of the clips being clamped around the frame members, the inner frame member having an outwardly disposed loop-like bend therein disposed between said offsets of said clip with said shoulders engaging the bend of the frame members whereby movement of the clip longitudinally of the frame members and relative rotative movement of the inner frame member and clip is prevented.

6. A spring structure frame comprising inner and outer frame members disposed in spaced relation, and a clip of sheet metal connecting said spaced frame members and having offsets in the intermediate portion thereof between the frame members providing spaced shoulders in engagement with the adjacent edges of the frame members, the ends of the clips being clamped around the frame members, the inner frame member having an outwardly disposed offset therein disposed between said shoulders of said clip whereby movement of the clip longitudinally of the frame members and relative rotative movement of the inner frame member and clip is prevented.

VITO ASARO.

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