

June 17, 1924.

G. O. BRANDT

1,497,888

CUSHION AND UPHOLSTERING SPRING FOR AUTOMOBILES AND THE LIKE

Filed Dec. 26, 1922

2 Sheets-Sheet 1

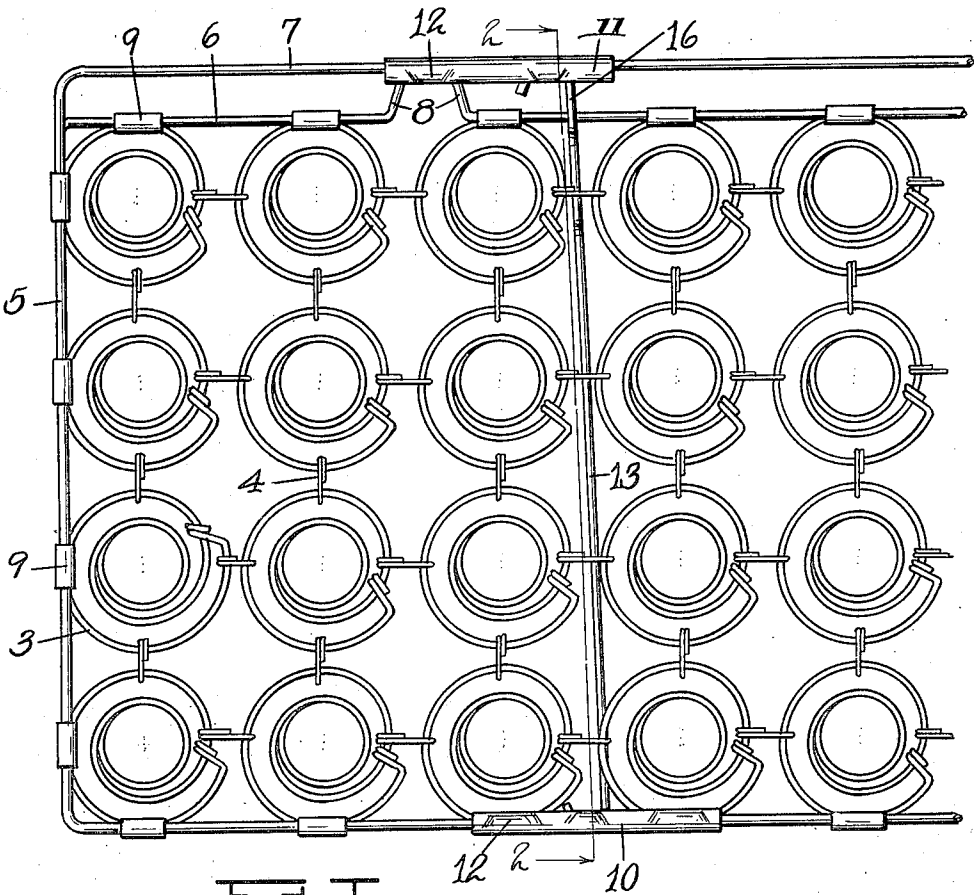


FIG. I.

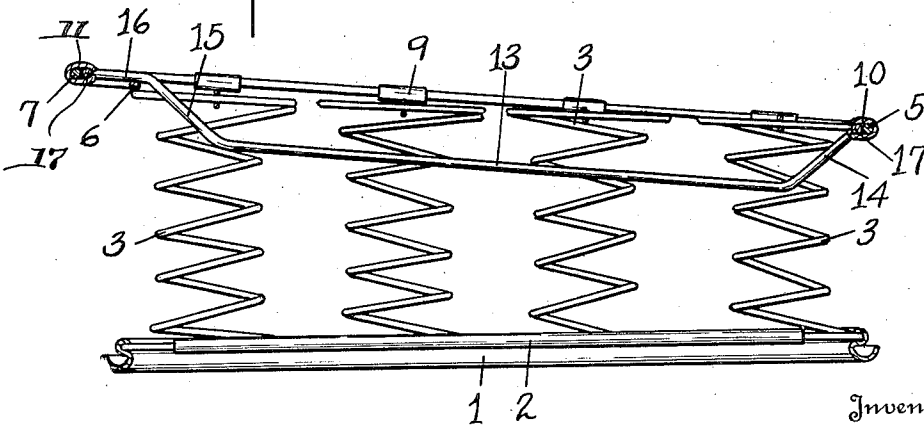


FIG. II.

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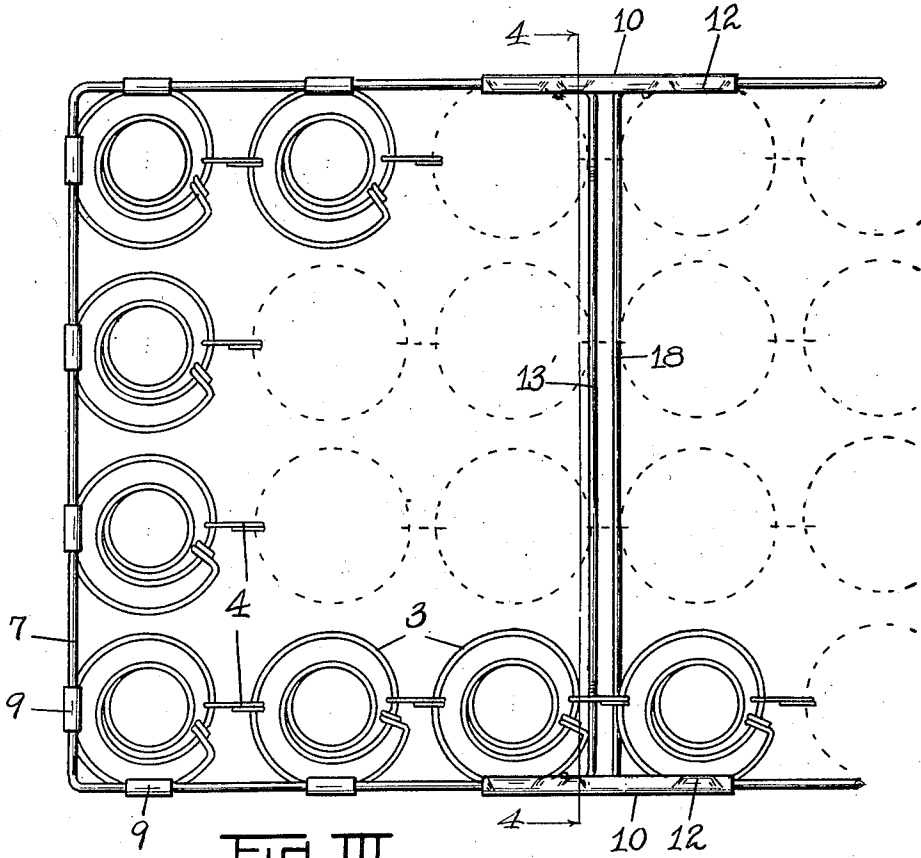


FIG. III.

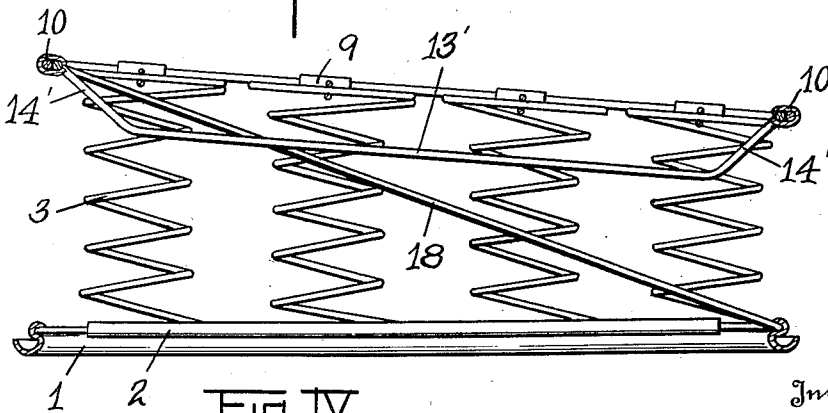


FIG. IV.

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Patented June 17, 1924.

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# UNITED STATES PATENT OFFICE.

GUSTAV O. BRANDT, OF DETROIT, MICHIGAN, ASSIGNOR TO L. A. YOUNG INDUSTRIES, INC., OF DETROIT, MICHIGAN.

CUSHION AND UPHOLSTERING SPRING FOR AUTOMOBILES AND THE LIKE.

Application filed December 26, 1922. Serial No. 608,996.

*To all whom it may concern:*

Be it known that I, GUSTAV O. BRANDT, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented certain new and useful Improvements in Cushion and Upholstering Springs for Automobiles and the like, of which the following is a specification.

This invention relates to improvements in cushion and upholstering springs for automobiles and the like.

In the manufacture of cushion springs of this character it is quite common practice to form the top border frames of wire which may be quite easily bent or sprung in upholstering or under undue stresses, so that it is desirable to brace the same. An objection to the brace structure is that the braces are likely to become loosened or their attachments permit the ends of the braces to project, thereby punching through the upholstering or bulging the frame and causing undue wear.

The main objects of the invention are:

First, to provide in a cushion spring structure an improved bracing means whereby the frame is effectively braced and at the same time the yielding or resiliency of the cushion spring is not affected.

Second, to provide in a spring cushion structure an improved means for bracing and attaching the braces which, while permitting the yielding of the cushion, effectively maintains the parts in their proper relation.

Third, to provide an improved spring structure which is very strong and durable although made of comparatively light materials.

Further objects, and objects relating to structural details, will definitely appear from the detailed description to follow.

I accomplish the objects of my invention by the devices and means described in the following specification. The invention is clearly defined and pointed out in the claims.

A structure which is a preferred embodiment of my invention is clearly illustrated in the accompanying drawing, forming a part of this application, in which:

Fig. I is a fragmentary plan view of a cushion structure embodying the features of my invention, the bottom frame being omitted.

Fig. II is a vertical transverse section on a line corresponding to line 2—2 of Fig. I.

Fig. III is a fragmentary plan view of a modified embodiment of my invention, the "extension member" of Fig. I being omitted.

Fig. IV is a vertical transverse section on a line corresponding to line 4—4 of Fig. III.

In the drawing similar reference characters refer to similar parts throughout the several views, and the sectional views are taken looking in the direction of the little arrows at the ends of the section lines.

Referring to the drawing, 1 represents the bottom border frame, 2 the cross strips and 3 the body springs of the cushion which are preferably arranged in rows, as illustrated, and flexibly connected by the links 4. As the details of the base form no part of my present invention I do not further illustrate or describe the same herein.

I provide a top border frame, 5 which is, in practice, formed of wire. A top frame member 6 is disposed in spaced relation to the front member 7 of this top border frame, the frame member 6 having loop-like offsets 8 therein. The front row of springs is secured to this frame member 6 by means of the clips 9, while the end and rear rows of springs are secured to the end and rear members of the frame by means of clips 9 or the clip members 10 which perform the functions of the clips 9 with additional functions which will be pointed out.

Clip members 11 are provided which secure the loops 8 of the frame member 6 to the front member 7 of the border frame and also perform the additional functions which will later be pointed out. These clips 10 and 11 are of U-shape cross section as shown in Figs. II and IV and embrace the border frame and are indented at 12 to clamp them upon the springs and the loop offset 8.

I provide a brace 13 which has upwardly offset ends 14 and 15, the front offset 15 having a horizontal portion 16 which overlies the frame member 6. This brace terminates in laterally turned ends 17 which are secured to the border frame by means of the clips 10 and 11, the clips being indented to embrace these laterally turned ends, thereby effectively securing the ends of the brace to the frame.

The arms of the brace are of such length that the body of the brace lies a substantial distance below the normal plane of the upper ends of the springs, so that the brace

does not interfere with the depression of the springs under load or support of the upholstery upon the springs. Further, while the brace is of such strength as to support the border frame of the cushion while being upholstered, the brace will, under an excess of pressure upon the border frame members, bow downwardly. The engagement of the brace attaching clips with the brace and some other part, as the offset 8, or the adjacent springs, prevents the turning of the brace upon the border frame, permitting the disengagement of the brace, or its end being projected to punch through the upholstery or form a bulge in the upholstery, which causes undue wear. Further, the border frame is reinforced and stiffened at this bracing point by these clips.

In the modification shown in Figs. III and IV my improvements are embodied in a structure in which the "extension edge" of Figs. I and II is not present, the outer front row of springs being secured directly to the border frame. The brace 13' has offsets 14' at each end, substantially alike, and both ends are secured by clips 10 which also engage the adjacent springs. The diagonal brace 18 is secured to the front border frame by means of the clip 10 and its lower end is secured to the base frame 1.

By this arrangement of parts I provide a spring structure which is simple and economical in its parts and is easily assembled and when assembled is very strong and durable.

I have not attempted to illustrate or describe various embodiments and adaptations which I contemplate, as I believe the disclosure made will enable those skilled in the art to which my invention relates to embody or adapt the same as may be desired.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. The combination in a cushion spring structure comprising body springs arranged in rows, of a top border frame, a top frame member disposed in a spaced relation to the front member of said top border frame and having a loop-like offset therein extending to said top border frame, the front row of springs being secured to said top frame member, the end and rear rows of springs being secured to the end and rear members of said border frame, the tops of said springs being flexibly connected, a cross brace disposed between adjacent rows of springs and having upwardly offset ends terminating in lateral arms, the front offset of said brace having a horizontal portion overlying the said top frame member, the said offsets being of substantial length whereby the body of the brace lies below the normal plane of the tops of the springs, and U-shaped clip members embracing the front and rear

border-frame members and clamped upon the arms of said brace whereby the brace is secured to said frame members, the front clip member being also clamped upon the lateral offset of said top frame member securing it to the front border frame member, the rear clip member being clamped upon the top coils of adjacent springs and constituting clips securing them to said rear frame member, all coacting for the purpose specified.

2. The combination in a cushion spring structure comprising body springs arranged in rows, of a top border frame, a top frame member disposed in a spaced relation to the front member of said top border frame and having a loop-like offset therein extending to said top border frame, the front row of springs being secured to said top frame member, the end and rear rows of springs being secured to the end and rear members of said border frame, a cross brace disposed between adjacent rows of springs and terminating in lateral arms, and U-shaped clip members embracing the front and rear border-frame members and clamped upon the arms of said brace whereby the brace is secured to said frame members, the front clip member being also clamped upon the lateral offset of said top frame member securing it to the front border frame member, the rear clip member being clamped upon the top coils of adjacent springs and constituting clips securing them to said rear frame member, all coacting for the purpose specified.

3. The combination in a cushion spring structure comprising body springs, of a top border frame, a top frame member disposed in spaced relation to the front member of said border frame and having a loop-like offset therein extending to said border frame, the adjacent row of springs being secured to said top frame member, a brace, and a U-shaped clip member embracing the front border frame member and clamped upon the front end of said brace and also clamped upon the lateral offset of said top frame member securing it to the front border frame member.

4. The combination in a cushion spring structure, of a frame member, body springs, a brace member disposed at the side of one of said springs and in non-engaging relation therewith, a U-shaped clip embracing said frame member and clamped upon the end of said brace member and a coil of said spring disposed at the side thereof whereby said spring and brace are secured to the frame member and the frame member is reinforced at the point of attachment.

In witness whereof, I have hereunto set my hand and seal.

GUSTAV O. BRANDT. [L. s.]