Feb. 27, 1923.

1,446,453.

W. A. FALLS.

SPRING CONSTRUCTION.

FILED SEPT. 20, 1921.

2 SHEETS—SHEET 1.

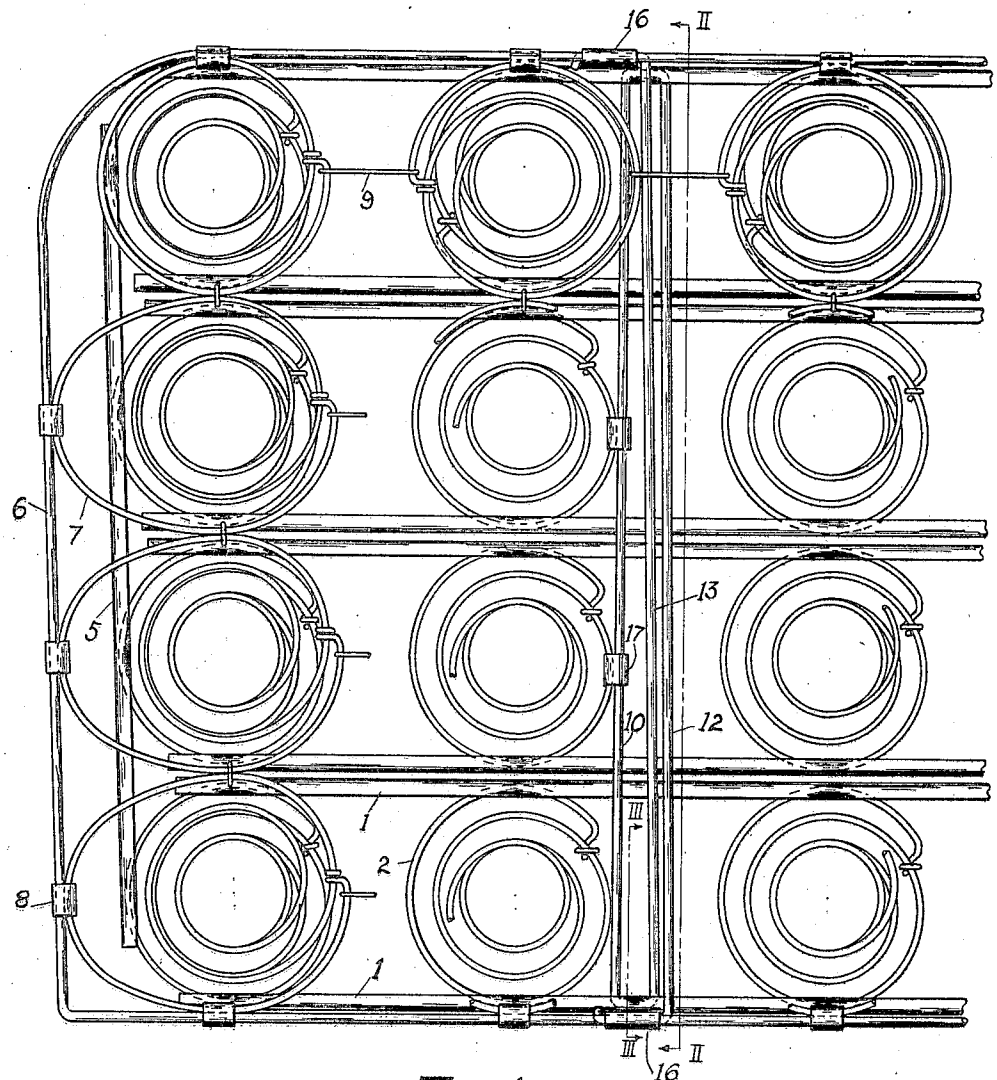


Fig. 1

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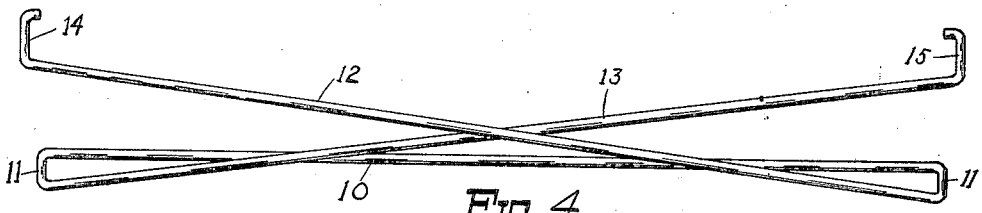


Fig. 4

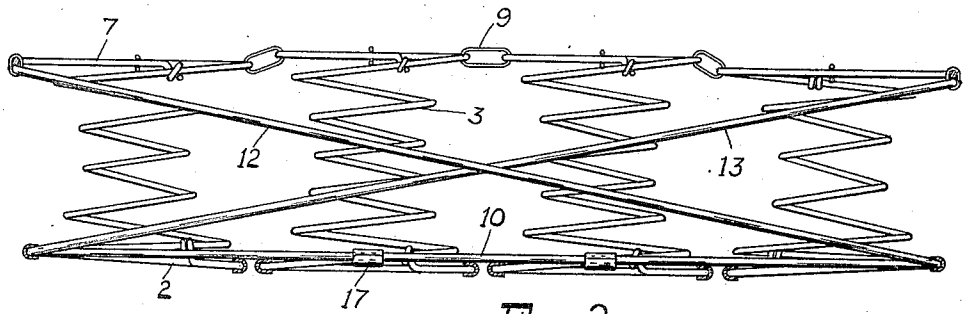


Fig. 2

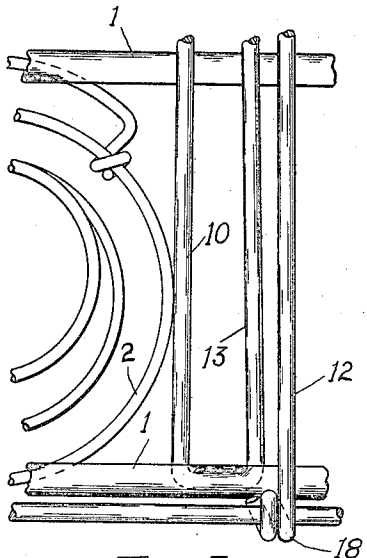


Fig. 5

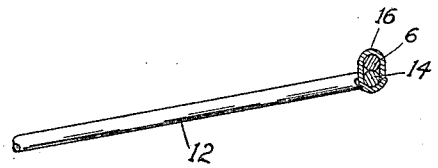
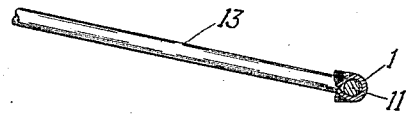


Fig. 3



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UNITED STATES PATENT OFFICE.

WILLIAM A. FALLS, OF DETROIT, MICHIGAN, ASSIGNOR TO L. A. YOUNG INDUSTRIES, INC., OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

SPRING CONSTRUCTION.

Application filed September 20, 1921. Serial No. 501,907.

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 Constructions, of which the the following is a specification.

In seat back structures, it is necessary that the springs be soft and pliable to yield readily and conform to the back of the user, but the structure must not sag, as this results in the deformation and displacement of the upholstery and filling.

This invention relates to a spring back for seats and more particularly to an arrangement of parts whereby the springs are maintained in their normal position although they may be very light and pliant.

The invention consists in the matters hereinafter set forth and more particularly pointed out in the appended claims.

In the drawings, Fig. 1 is a view in front elevation, partially broken away, of a back for seats that embodies features of the invention;

Fig. 2 is a view in section, taken on or about line II—II of Fig. 1;

Fig. 3 is an enlarged view in detail taken on or about line III—III of Fig. 1;

Fig. 4 is a view in detail of a brace member; and

Fig. 5 is a view in detail enlarged, showing another method of tying or anchoring of the brace members to the rim.

As herein shown in preferred form, a seat structure is built up of transverse members 1, preferably opposed U or channel strips in which the base turns 2 of body springs 3 are inserted and gripped, the base turns serving to also support the lateral margin strip 5 which is also U or channel in section. A rim wire 6 is secured to the top whorls 7 of the body springs, some of which are enlarged to contact with the rim by clips 8 or other preferred holding means to secure the rim in place. Tie members 9 connect the intermediate body springs to the marginal ones. Lateral displacement of the rim frame 6 in relation to the lower frame members, is prevented by braces that unite the outer sides of the rim frame, each with the opposite side members of the main or base frame and also interconnect the lower turns of the body springs if desired.

In preferred form these braces are constructed each of a piece of spring wire or like suitable material, bent between its ends to provide a middle portion 10 of suitable length to span across the interval between the side members of the base frame with corresponding offsets 11 at the ends which are inserted in and gripped by the sides of these members and with oppositely disposed obliquely arranged arms 12 and 13, the end portions 14 and 15 of which are bent to provide abutments which are connected by clips 16 to the upper rim wire 6. Suitable clips 17 unite the cross member 10 with certain base turns of the adjacent body springs. Or the brace may be attached directly to the rim wire 6 by twisting the end portions around the wire as seen at 18 in the modification indicated in Fig. 5.

The spring back resulting from this construction is extremely pliant, the brace not interfering with the independent compression of each spring so that the back conforms to the person or the user while any lateral displacement of the rim in relation to the base is prevented by the disposed brace members.

Obviously changes in the detail of construction may be made without departing from the spirit of the invention and I do not care to limit myself to any particular form or arrangement of parts.

I claim as my invention:

1. In a spring structure, a base frame, an outer rim frame, body springs yieldingly holding the frames in spaced relation and braces for maintaining the frames from relative lateral displacement, each consisting of a member bent between its ends into a middle portion that spans the base frame and has offset end portions secured to the base frame with a pair of crossed arms, extending from the offsets, that are secured to the upper rim frame.

2. In a spring structure the combination of a plurality of springs, a base comprising opposed members of channel cross section clamped upon the bottom coils of opposed rows of springs, an outer border frame, and

a brace member comprising a base portion and crossed arms integral therewith, the ends of the said base portion being clamped within said channeled base members and constituting a cross member therefor, the outer ends of said arms being secured to said outer border frame.

3. In a spring structure, the combination of a plurality of springs, a base comprising opposed members, an outer border frame, and a brace formed of wire comprising a base portion and crossed arms extending from the ends thereof, the ends of said base portion being secured to said opposed base members and the outer ends of said arms being secured to said outer border frame.

4. In a spring structure, the combination of a plurality of springs, a base therefor comprising opposed members, an outer border frame, a brace comprising a base portion secured to said opposed base members and constituting a base cross member, and integral arms disposed diagonally of the spring structure and secured to said outer border frame.

In testimony whereof I affix my signature.

WILLIAM A. FALLS.