June 14, 1932. E. D. McNALLY 1,863,450

SPRING STRUCTURE

Filed Feb. 18, 1930 2 Sheets-Sheet 1

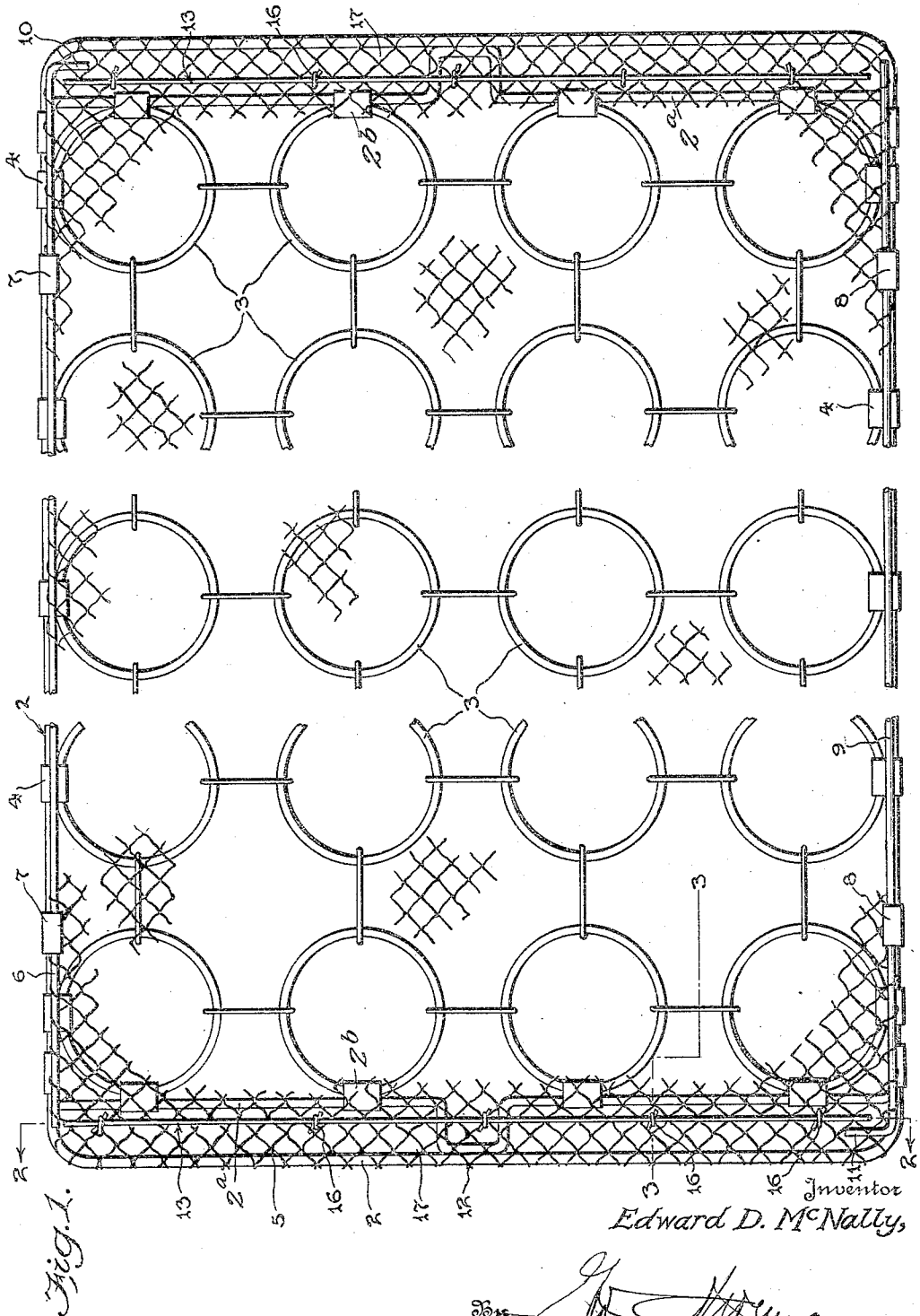


Fig. 1.

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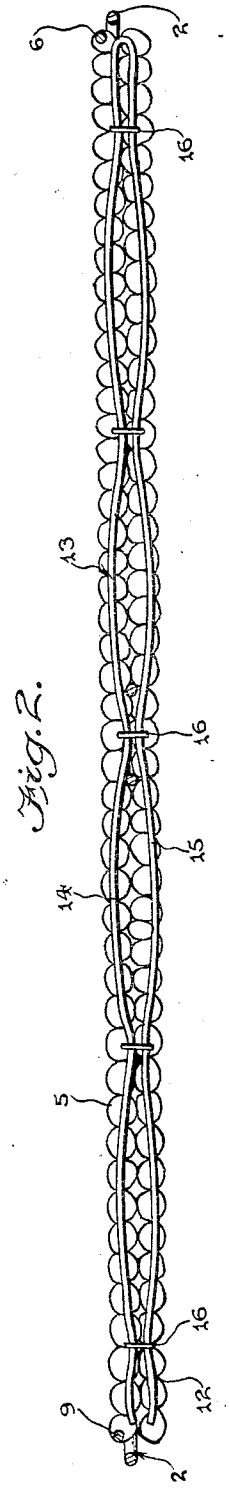


Fig. 2.

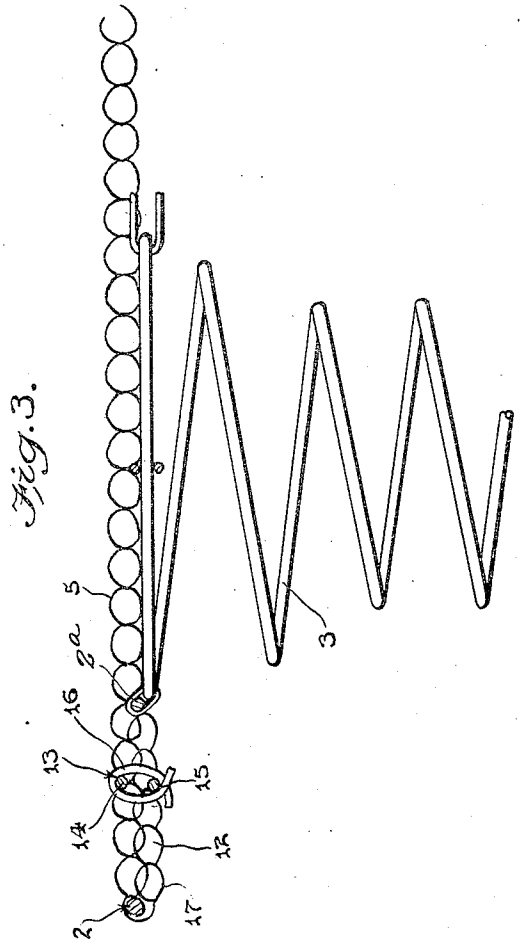


Fig. 3.

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UNITED STATES PATENT OFFICE

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SPRING STRUCTURE

Application filed February 18, 1930. Serial No. 429,420.

This invention relates to spring structures.

Spring structures used particularly for automobile seats are frequently covered on top with more or less fine mesh fabric wire in the form of a sheet of material for the effective support of the upholstery stuffing material used in the upholstering of the structures and the method practiced is such that strands of the fabric material at the edges frequently puncture the skirt or facing of the upholstery covering. In other words, the top of spring structures for seating purposes are sometimes covered with a wire fabric and the edges of the wire fabric at the ends of the structure, and sometimes at the front and rear are turned downwardly over the edge of the upper frame and permitted to depend an inch or two from the upper frame, hanging freely, along the sides of the spring structure. The leather or other covering for the structure consists of a padded seat portion and depending skirt or side facings, and the latter hide or conceal the rough depending free edge portions of the wire fabric, but as the said free edges of the sheet of wire fabric are irregular and incident to the cutting of the sheet cause sharp cutting wire projections, the wires work or cut through the upholstery skirts or facings, mutilating and damaging the same, causing undue wear and resulting in an unsightly appearance after short use of the upholstered structure.

It is therefore an object of the invention to overcome the defects stated and to provide an upholstered spring structure of the nature stated wherein the sheet of wire fabric is employed, but to obviate the overhanging objectionable hanging edges of the wire mesh fabric and to so position the edges of the sheet of wire fabric and to secure them in a manner to obviate the possibility of such edges of the sheet material coming at any time into contact with the skirt or side facings of the upholstered structure.

With the above and other objects in view, the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and set forth in the claims hereto appended, it being understood that various changes in the form, proportion, and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

In the drawings:—

Figure 1 is a top plan view, the central part of the structure being broken away.

Fig. 2 is a transverse sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 1.

Referring now more particularly to the accompanying drawings, the reference character 2 indicates a top frame preferably of wire, but which may be of any other suitable material or form and mounted in any suitable manner between the top frame and a base frame are hour-glass or other types of springs 3 which are connected together at their upper ends and the border springs being connected at their upper convolutions to the upper frame by means of suitable clips 4. The ends of the upper frame 2 extend beyond the end rows of springs 3 and accordingly the conventional deformed wire 2^a extends transversely across the top frame adjacent each end of the structure, as shown, the said deformed wire 2^a being connected to the respective rows of end springs by means of clips 2^b in the usual manner. The spring structure, thus far described, needs not a detail description because the particular type of spring structure is not herein claimed as my invention only in so far as concerns the manner in which I prevent undue injury to the upholstery covering as will now be explained.

It is the custom in this art, in the building of certain spring structures, to place a sheet of wire mesh or fabric wire over the top of the structure for the support of upholstery material. This is the type of spring structure to which the present invention relates and the character 5 indicates a sheet of fabric wire. As shown, this sheet of material has not been cut along the longitudinal edges of the same, but along transverse lines thereof, in order to obtain the desired size of the sheet for the spring structure. A wire 6 is

passed through the longitudinal edge loops of the sheet of fabric wire and this wire is of a length substantially the length of the seat structure, and it is clamped at intervals to the upper frame by means of suitable clips 7, whereby to secure the front edge of the sheet of fabric wire evenly to the front edge of the upper frame without the formation of snagging projections.

The other longitudinal edge of the sheet material 5 is connected to the rear edge of the upper frame in the same manner, that is, by means of suitable clips 8 which embrace the wire 9. These wires 6 and 9 may have one end deflected laterally as shown at 10 and 11, respectively, if desired, and the lateral ends of these wires project into loops of the fabric material to prevent any possibility of a sliding movement of the wires although this would be prevented by a tight clamping action of the aforesaid clips 7 and 8.

The ends of the sheet of fabric material are folded downwardly and under backwardly upon the body of the sheet of wire fabric, as indicated at 12, with the folded portion 12 clamped to the body of the sheet material 5 to maintain the fold 12 under the sheet and to prevent it from, at any time, hanging loosely or freely down alongside of the corresponding border springs. To this end, I employ a U-shaped resilient member at each end of the structure, the same being formed alike and each indicated by the reference character 13 and each being composed preferably of wire and of a length substantially the width of the spring structure. Each U-shaped member 13 lies adjacent the respective end of the upper frame with one leg 14 disposed on top of the sheet of wire fabric and the other leg 15 disposed under the underside of the folded portion 12 of the sheet of material and at intervals, these legs 14 and 15 of the U-shaped clamping member 13 being brought toward each other and bound at spaced points by means of suitable clips 16 so as to effectively maintain the folded end portions 12 of the sheet material against the body of the sheet material 5 and prevent hanging of the folded portions 12 and to thereby maintain the rough edges of the cut ends of the sheet inwardly of the spring structure and away from the skirt or facing portion 17 of the covering and overcoming the objectionable characteristics in structures of this character as hereinbefore outlined. The binding together of the legs of the U-shaped members against the body and folded portions of the sheet of fabric material in the manner stated effectively connects the sheet of material to the ends of the structure in addition to performing the functions hereinbefore stated.

What is claimed is:

1. In a spring structure comprising a foundation of coil springs, and a top frame connected to the upper coils of the border springs and having a side portion projecting beyond the foundation, a wire fabric extending over the foundation and frame and connected at its edges to the respective sides of the frame, and having the edge portion adjacent the projecting portion of the top frame folded therearound and against the under side of the fabric, a U-shaped member embracing the folded portion of the fabric projecting beyond the foundation, and fastening elements passing through the folded portion of the fabric and engaging the parts of the U member in contact with the said fabric.

2. In a spring structure comprising a foundation of coil springs, a top frame projecting at opposite ends beyond said foundation, a wire fabric of a width corresponding to the width of the foundation and top frame and having end portions folded around the projecting ends of the top frame, wires engaging the side loops of the wire fabric and connected at intervals to the top frame, U members embracing the folded end portions of the fabric, and fastening elements passing through the folded portions of the fabric and engaging parts of the U members in contact with said fabric.

In testimony whereof I have hereunto set my hand.

EDWARD D. McNALLY.