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CUSHION CONSTRUCTION

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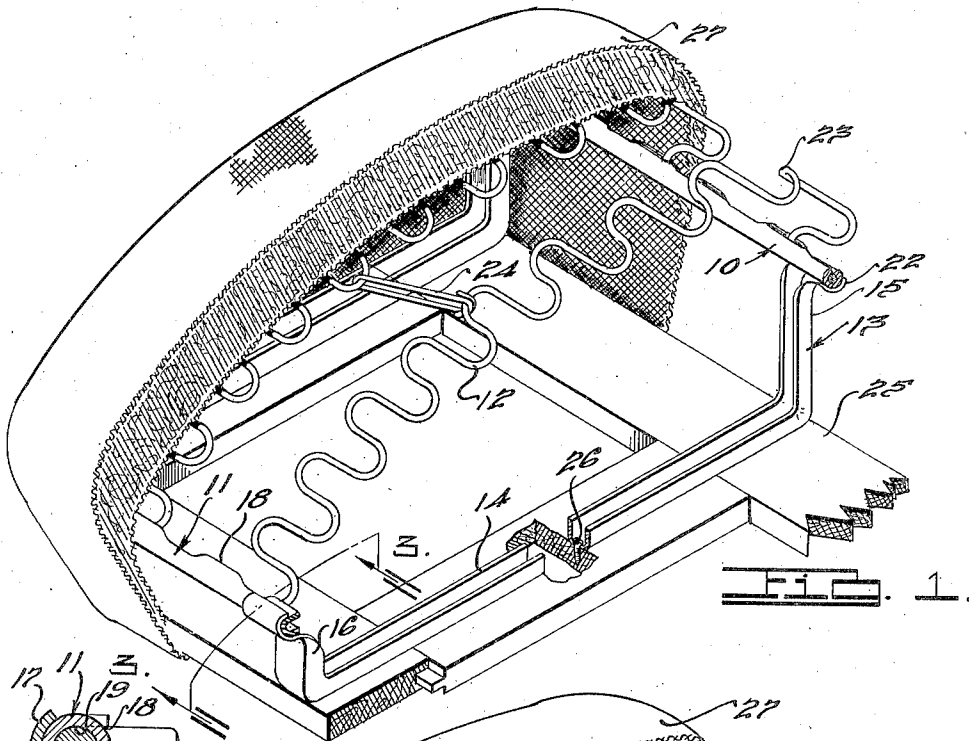


FIG. 1.

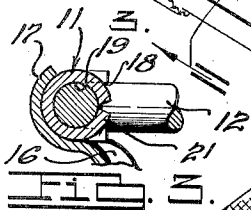


FIG. 2.

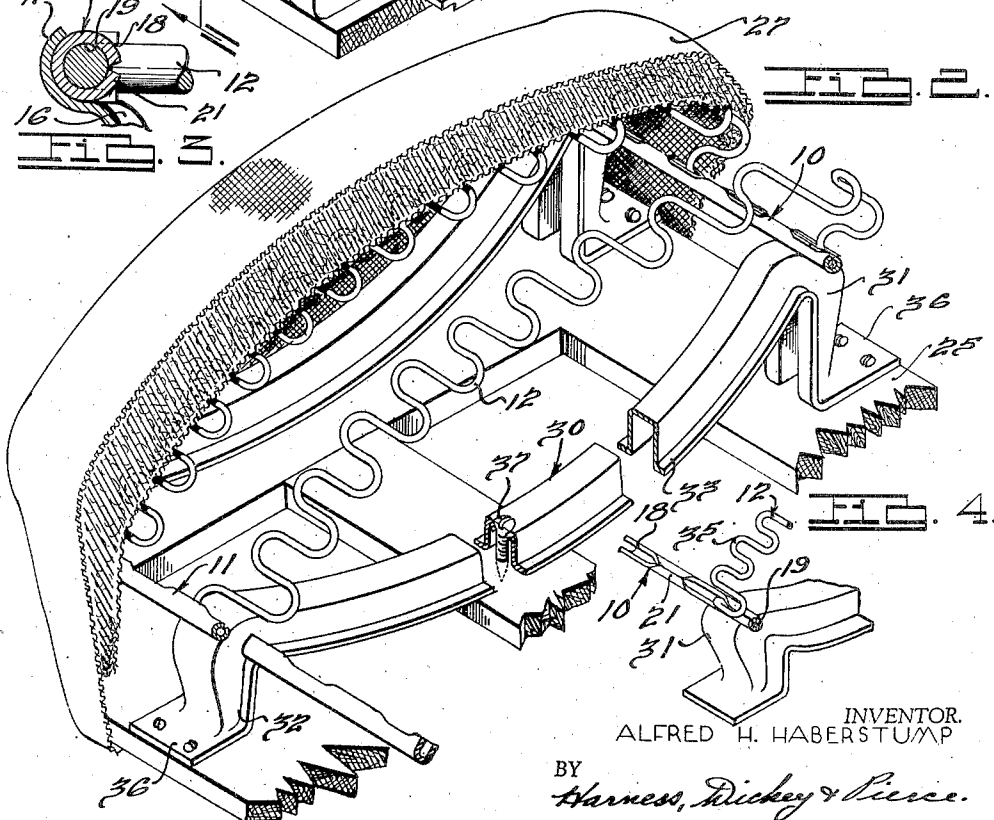


FIG. 4.

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CUSHION CONSTRUCTION

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5 Claims. (Cl. 155—179)

My invention relates to cushion construction and particularly to a seat or back cushion having a resilient surface of varying contours supported by spaced bracing and supporting elements.

Heretofore when employing the sinuously formed wire strips to provide a resilient surface, the strips were anchored in border elements having recesses disposed in or at the same angle to a plane passing therethrough to have the slope of the strips the same at both ends of the frame. Bracing means were provided between the border elements for retaining them against inward movement under the stress of the spring strips and additional means independent of the bracing elements were utilized for supporting the resulting spring assembly.

In practicing my present invention, I utilize similar border elements but dispose the channel openings therein at different angles relative to a common plane so that the ends of the spring strips will assume different arcs so that one end will provide more resiliency than the other. The inventive concept includes the use of spaced rigid members which engage and support the border elements in the manner set forth above and which themselves act as a support for the resulting unit assembly. The braces may be joined to each other by elements disposed parallel to the border elements, or may be secured to a unit frame to which cover material may be tacked or otherwise secured. The elements for joining the bracing members may be of metal with tacking material formed therein in the manner well known in the art, or suitably shaped elements could be provided for receiving the edge of the trim material, all of which is well known in the art.

Accordingly, the main objects of my invention are, to provide a seat with a resilient surface, one end of which has greater resiliency than the other; to mount border elements on rigid supporting members in such manner as to support spring strips therebetween to form a surface having greater resiliency at one end than at the other; to provide spaced bracing and supporting means for a seat frame to which the border elements thereof are rigidly secured; to mount an assembly embodying a spring surface secured to spaced bracing elements rigidly on a frame to which the trim material may be secured; to provide bracing means for a seat frame which engages and supports the border element thereof at spaced points and which constitute the means for supporting the unit assembly; and in general, to provide a cushion having greater resiliency at one end than at the other supported by spaced

rigid elements which is simple in construction and economical of manufacture.

Other objects and features of novelty of my invention will be either specifically pointed out or will become apparent when referring, for a better understanding of my invention to the following description taken in conjunction with the accompanying drawing, wherein:

Figure 1 is a broken perspective view of a seat embodying features of my invention;

Fig. 2 is a view of structure, similar to that illustrated in Fig. 1, showing a modified form of my invention;

Fig. 3 is an enlarged sectional view of the structure illustrated in Fig. 1, taken on the line 3—3 thereof; and,

Fig. 4 is a broken perspective view of the structure illustrated in Fig. 2 as viewed from the top right corner of the figure.

In Figure 1, I have illustrated a seat or back cushion embodying spaced border elements 10 and 11 which form a means for receiving and supporting laterally disposed sinuous spring strips 12 thereacross. The spring elements are similar to those described and claimed in the patent to Kaden, No. 2,002,399, issued May 21, 1935, under which the assignee of the present application is a licensee. The spring strip embodies in general a length of wire bent into sinuous shape and provided with a set on an arc of smaller radius. For the size of wire and length employed in cushion construction, the arc upon which the strip is initially set has a diameter of substantially 7 inches or 8 inches. This initial set in the spring provided material resistance against downward displacement when the ends of the strips are drawn outwardly and anchored to assume an arc of longer radius. When the spring strip is so disposed, a material resistance against deflection is provided which increases with an increase in load providing desirable spring characteristics to the resulting seat or back cushion formed thereby.

A plurality of spaced bracing and supporting members 13 are utilized for retaining the border elements 10 and 11 spaced from each other in position to support the strips 12 in a predetermined manner relative to each other. The border elements 10 and 11 are of unique construction, being similar to that illustrated and described in the patent to Clarence W. Menge, Patent No. 2,175,062, issued October 3, 1939, and assigned to the assignee of the present invention.

More specifically, the bracing and supporting members 13 in the structure illustrated in Fig. 1, embody channel elements having a base portion

14 and upright end portions 15 and 16 which are flanged to receive the frame elements 10 and 11 respectively. In Fig. 3, the end 16 is curved at 17 to be inwardly presenting to receive the border element 11 and have the channel portion 18 thereof presenting inwardly of the cushion substantially parallel to the portion 14 of the bracing and supporting member 13. At spaced points the elements 10 and 11 are provided with recesses 19 produced by the crimping of the side portions 21 of the frame element as illustrated more clearly in Fig. 3. The ends of the spring strips 12 are inserted in the recesses 19 and the sides of the channel element 18 adjacent thereto and preferably flanged together to retain the spring ends against movement outwardly of the recess and to be thereby permanently anchored therein.

The tops of the upward end portions 15 of the elements 13 are formed into upwardly presenting channels in which the border element 10 is secured, with the channel portions 18 presenting frontwardly. The front portions of the spring strips 12 form an arched portion 23 above the border element 10 when the front ends of the strips are secured in the channel portions 18 of the element. The arched portion 23 provides a soft front edge to the cushion, eliminating contact with the border element 10 as occurred heretofore when the front edge was constructed in the manner illustrated at the rear edge of the cushion. The spring strips 12 may be retained relative to each other by suitable clips 24 and the endmost spring strips may be anchored to a resilient border element as disclosed in the patent of the assignee company, No. 2,106,644, issued January 25, 1938.

Suitable means may be provided for interconnecting the bracing and supporting members 13, such as a frame 25, which is herein illustrated made of wood and to which the bracing elements are rigidly secured such as by screws 26. The frame 25 provides means by which the padding and finish trim material 27 may be secured by tacking. It is to be understood that metal strips may be employed for interconnecting the bracing and supporting elements 13 having means for securing the padding and trim material 27 thereto. Such metal strips may encompass an element for receiving tacks or may be formed for receiving and clamping the ends of the material thereon. Such strips are old in the art and are not herein described or illustrated in detail.

Referring to Fig. 2, I have illustrated a different type of bracing and supporting elements from those employed in the structure illustrated in Fig. 1. The bracing and supporting elements 30 employed in the structure illustrated in Fig. 4, embody channel shaped members presented downwardly having the central portion bowed downwardly and with downwardly extending leg portions 31 and 32. The channel may be flanged laterally at 33 to provide additional strength thereto. The border elements 10 and 11 are secured directly to the arcuate portions at the tops of the legs 31 and 32 positioned relative to the arc in such manner as to have the channel portion thereof presented at different angles to a common plane somewhat similar to the disposition of the border elements 10 and 11 illustrated and described with regard to the structure shown in Fig. 1.

The border elements 10 and 11 are welded or otherwise secured to the bracing and supporting elements in position to have one edge of the resulting spring surface of greater arcuate curva-

ture than the other as explained hereinabove. The greater arcuate curvature adjacent the leg portion 31 is more clearly illustrated in Fig. 4, where in the portion 35 extends upwardly from the frame element 10 and curves sharply rearwardly thereof to provide a rolled resilient edge to the resulting spring surface. The legs 31 and 32 on the bracing and supporting element 30 are provided with extending flanges 36 having one or more apertures therein by which the flanges are secured to a tacking frame 25 which is herein illustrated as being constructed of wood, although it is to be understood that metal framing elements having means for anchoring the ends of the trim material 27 therein may be substituted therefor. The centrally bowed portion of the bracing and supporting member 30 may have a screw 37 extended through the center thereof in engagement with the frame.

A simplified seat or back cushion is provided by the structure herein illustrated and described, one which has rigid supporting and bracing elements which are spaced apart and which rigidly support the border members in which the sinuous spring strips are secured. By locating the border elements in predetermined relation to each other, one end of the resulting spring surface has greater resiliency than the other. The frame elements are secured to the bracing and supporting members which in turn have secured thereto means for retaining the edges of the padding and trim material over the resulting cushion. The cushion formed in this manner has a very desirable spring characteristic to the surface and one edge over which the spring strips are arcuately disposed.

While I have described and illustrated several embodiments of my invention, it will be apparent to those skilled in the art, that various changes, omissions, additions and substitutions may be made therein without departing from the spirit and scope of my invention, as set forth in the accompanying claims.

What I claim is:

1. A spring structure for a cushion, embodying spaced frame elements having channel portions therein, bracing means for supporting said elements with the channels of one of said elements presented at a greater angle to a common plane than the other, and spring strips secured by said elements with one end thereof disposed on an arc greater than that at the other end, whereby greater resiliency is provided at one edge of the unit assembly than at the other.

2. In a spring construction for a cushion including, in combination, spaced frame elements having open channel portions and adjacent recesses, bracing members having raised end portions for receiving and supporting said members, one of said raised portions securing said element with its channel portions presenting upwardly of the frame, the other of said raised portions supporting said element with its channel portions inwardly presenting, and sinuous spring elements having their ends secured in the recess portions of said elements with one edge thereof provided with greater resiliency than the opposite edge thereof.

3. In a spring construction for a cushion including, in combination, spaced frame elements having open channel portions and adjacent recesses, bracing members having raised end portions for receiving and supporting said members, one of said raised portions securing said element with its channel portions presenting upwardly

of the frame, the other of said raised portions supporting said element with its channel portions inwardly presenting, sinuous spring elements having their ends secured in the recess portions of said elements with one edge thereof provided with greater resiliency than the opposite edge thereof, padding and trim material secured to said unit assembly, and means interconnecting said bracing members to which said trim material is secured.

4. A spring structure for a cushion, embodying spaced frame elements having channel portions and adjacent recessed portions, spaced bracing members of bowed shape having downwardly projected leg portions at each end, means for securing said elements adjacent to the top of said leg portions to have the channel portions of one element presented inwardly of the structure and the channel portions of the other element projected outwardly therefrom, and sinuous spring strips having their ends anchored

in the recessed portions of said elements with greater resiliency provided adjacent to one element than at the other.

5. A spring structure for a cushion, embodying spaced frame elements having channel portions and adjacent recessed portions, spaced bracing members of bowed shape having downwardly projected leg portions at each end, means for securing said elements adjacent to the top of said leg portions to have the channel portions of one element presented inwardly of the structure and the channel portions of the other element projected outwardly therefrom, sinuous spring strips having their ends anchored in the recessed portions of said elements with greater resiliency provided adjacent to one element than at the other, padding and trim material encompassing said assembly, and means interconnecting said bracing members to which said trim material is secured.

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