Feb. 1, 1944. H. MORRISON ET AL 2,340,551

CUSHION UNIT FOR FURNITURE

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Fig. 1.

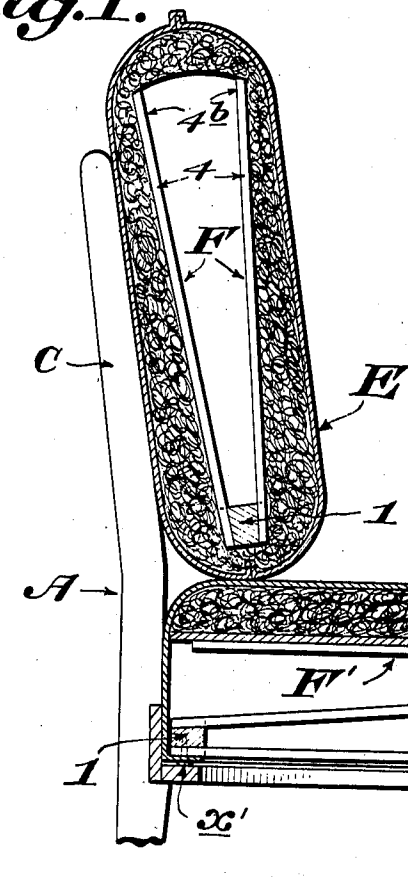


Fig. 2.

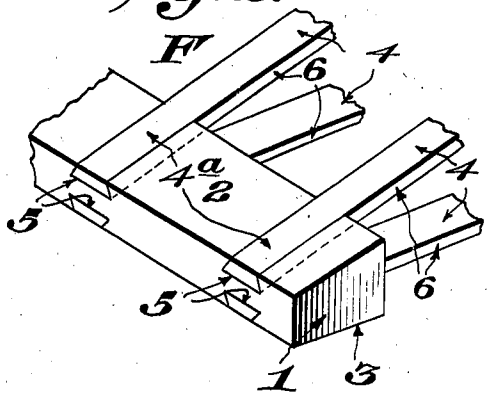


Fig. 3.

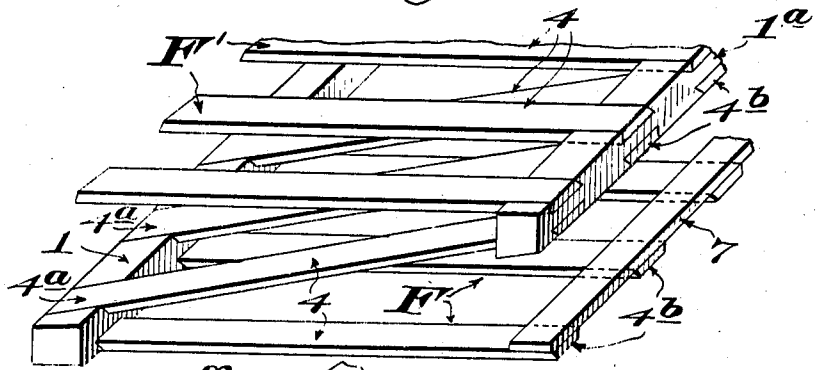
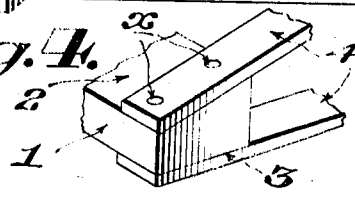


Fig. 4.



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Fig. 5.

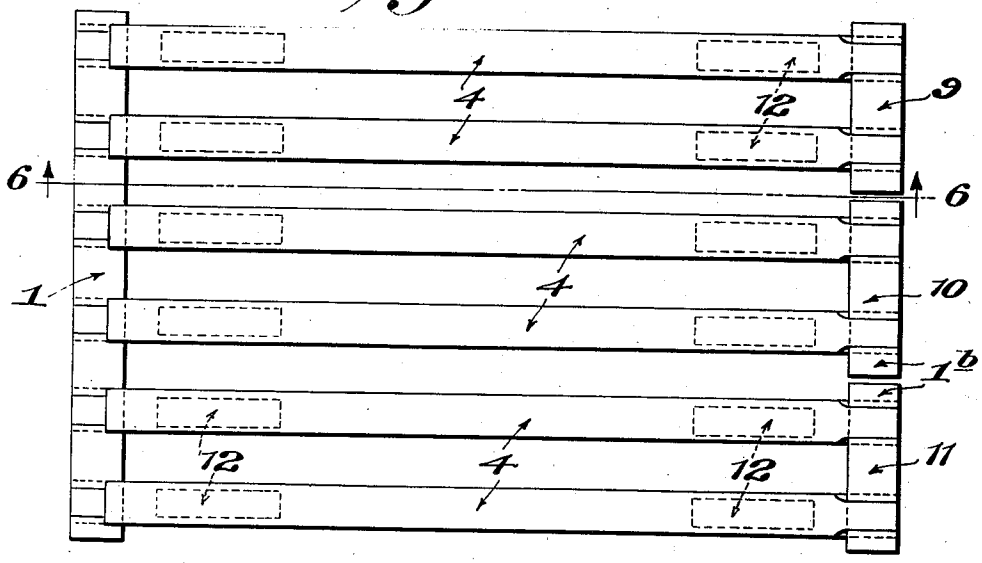


Fig. 6.

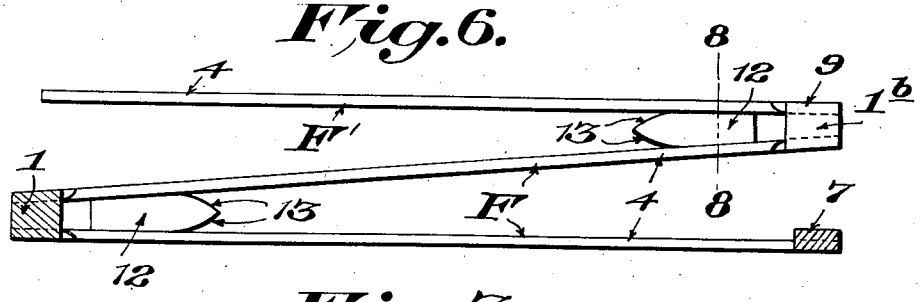


Fig. 7.

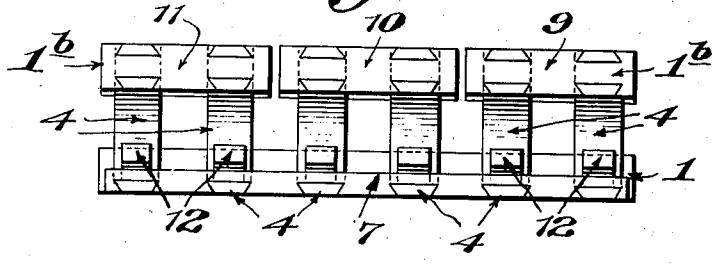
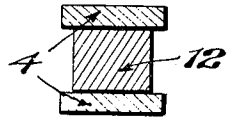


Fig. 8.



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CUSHION UNIT FOR FURNITURE

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Application September 25, 1942, Serial No. 459,694

3 Claims. (Cl. 155—179)

This invention relates to furniture construction and more particularly to an improved form of cushioning means for the seats and backs of upholstered chairs, settees, and the like.

Heretofore, it has been customary to provide cushioning units comprising a series of spring coils or the like, so arranged and connected as to form a yielding load sustaining support to resist the weight and body movements of the occupant of the seat in a comfortable and restful manner. However, owing to the present lack of spring steel for purposes of this sort, it becomes necessary to utilize other materials of a non-metallic nature to obtain the desired results. While it is, of course, possible to provide the upholstered seats and backs of articles of furniture with cushions which are stuffed with fibrous materials, well known in the industry, nevertheless, such soft materials usually become packed or compressed in a relatively short time, so as to afford little or no resiliency in supporting the intended load, and, moreover, soon become unsightly because of the hills and valleys inevitably resulting from irregular packing or compressing the material at different points.

Accordingly, the primary object of the present invention is to provide a non-metallic cushioning unit, preferably of wood, which can be fabricated in various shapes, dimensions, and sizes to constitute a yielding filler or core for the seat and back cushions of the chair. In that connection, the invention contemplates a unit having structural features and characteristics lending themselves to the provision of a basic unit or form of device which may be conveniently used in multiple where greater load sustaining or pressure resisting capacity is desired.

A further object of the invention is to provide a simple, practical and reliable form of cushioning unit which may be readily fashioned by furniture craftsmen to suit the needs of the particular installation, and wherein the primary resiliency of the unit is afforded by spaced leaves or wings, each consisting of a plurality of springy wood strips properly anchored at one end and arranged to produce the desired yielding effect.

With the above and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings in which:

Fig. 1 is a vertical cross-sectional view of the seat and back of an upholstered chair or the like, embodying the present improvements.

Fig. 2 is a detail fragmentary perspective view illustrating a preferred method of attaching the springy wood strips to the support and also showing a portion of the basic or primary unit of construction.

Fig. 3 is a fragmentary perspective view of the multiple cushion unit used in the seat of the chair.

Fig. 4 is a detail perspective view illustrating an alternative method of attaching the springy wood strips to the support.

Fig. 5 is a plan view of a modified form of seat unit on the order of Fig. 3.

Fig. 6 is a vertical cross section taken on the line 6—6 of Fig. 5.

Fig. 7 is a front elevation of the unit shown in Fig. 5.

Fig. 8 is a detail cross sectional view taken on the line 8—8 of Fig. 6.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

Fig. 1 of the drawings illustrates a typical application of the invention to an article of furniture which may be in the form of a chair, settee, or the like and includes the resilient or springy cushioning units within upholstered coverings or casings which form the usual seat and back cushions. As shown, the article of furniture designated generally as A, comprises a seat frame B and a back frame C respectively supporting the seat D, and the back cushion E.

In its primary or basic form, Fig. 2, the cushioning unit of the present invention is designated generally as F and in this form may be conveniently utilized as the interior resilient element for the upholstered back cushion E. When the unit F is used in multiple, as for example in the seat cushion D of the article of furniture, the same may comprise the units F and F' arranged vertically in reversed relation, for example, as shown more in detail in Fig. 3.

Referring more particularly to the structural features and characteristics of the cushioning unit F and its multiple counterpart, it will be observed that the same preferably includes an elongated support 1 which may be in the form of a bar or rail of wood of suitable cross section and formed with the opposite faces 2 and 3 thereof beveled or inclined in opposite directions. Thus, the short dimension of the cross section is disposed at the rear of the support, and in effect, the said faces 2 and 3 diverge toward the front

of the support thereby readily to provide for the proper angular relation of the normally straight spring strips 4 when assembled thereto.

The said strips 4 are preferably made of springy wood having the ends 4a thereof attached or secured in an appropriate manner in or to the faces 2 and 3 of the support, while the opposite ends 4b thereof are spaced relatively far apart so that when pressure is applied thereto, they will yield or flex throughout their length and thereby become compressed under static or shifting load to provide a yielding support which will return to its normal position when relieved of load or pressure.

According to the preferred embodiment of the invention, the ends 4a of the spring strips are secured to the opposite faces 2 and 3 of the support in parallel relation and are appropriately spaced longitudinally thereof. When so arranged and secured, the opposite groups provide, in effect, divergently related spring wings or leaves. Thus, in basic form, the strips, together with the support 1, provide a cushion of substantially V-shape when viewed in cross section or in end elevation. As shown in Fig. 2, the support 1 is provided at spaced intervals in the faces 2 and 3 with the dovetail slots or grooves 5, thereby conveniently to receive the oppositely beveled edges of the strips 4 and anchor them in place. It will, of course, be understood that the groove 5 may be filled with glue or other adhesive, and if desired, other fastening means, such as a nail, may be used. Under ordinary circumstances, however, the ends 4a of the strips 4 are simply slid into the dovetail mortise or groove and secured by an adhesive.

Fig. 4 of the invention illustrates an alternative manner of connecting the ends of the strips 4 to the support 1. In this arrangement, the faces 2 and 3 of the support have the related ends of the strips secured thereto by a nail x or equivalent fastening and an adhesive.

The primary form of the invention above described, that is, the form including the support 1 and the strips or slats 4 arranged to provide a pair of wings or leaves, may conveniently be embodied in the back cushion E. Where greater resiliency is desired as well as additional load sustaining capacity, the multiple cushioning unit shown in Fig. 3 may be used, for example, in the seat D.

According to Fig. 3, it will be observed that the cushioning unit F including the support 1, having the strips 4—4 secured thereto in diverging relation to provide the wings or leaves previously referred to, is preferably extended at the end not only to provide an adequate ground for the slots or mortises 5 but also to assist in supporting the unit in the chair frame. The forward ends 4b of the strips 4 constituting the lower horizontal wing of the unit F are preferably connected by a slat 7 which assists in supporting the unit on the seat frame of the article of furniture, and, like the support 1, lowermost in Fig. 1, forms a base to which the covering may be tacked. The free ends 4b of the upwardly inclined strips 4 of the upper wing of the unit F in Fig. 3 are anchored or secured to a second support 1a which may be a duplicate of the support 1 except that it is reversed in position. This second support has additional strips 4 secured thereto which extend horizontally toward the rear of the unit, and which together with the inclined strips of the upper wing of the unit F constitute the unit F', thereby to provide a multiple cushioning unit which in cross section or end elevation is substantially of Z-shaped formation. It will, of course, be understood that the upper series of strips 4 constituting the top horizontal wing of the cushion unit F' may be provided with a pad or covering 8 which in turn supports fibrous upholstering material all of which is covered by casing whose free ends are tacked or secured respectively to the lower support 1 and the slot 7 as shown by the fastenings x' in Fig. 1.

With each strip free at one end it is possible for them to be individually responsive to applied pressure and deformable according to the degree of pressure exerted at or in the zone of one or more of them, and, in this way, the full cushioning effect of the unit is preserved since the several strips will more readily conform to the more or less irregular outline of body contour or profile or the shifting of body weight.

In the foregoing connection these advantages may be carried out in making the multiple unit of Fig. 3 variably responsive to load or pressure at the front end, by sectionalizing the upper front support 1b as shown in Fig. 5. Referring to this figure, it will be observed that the said support is divided into the sections 9, 10, 11 each of which have a plurality of strips secured thereto. These sections may be of equal or unequal length and may have the ends of two or more strips secured thereto. The purpose and advantage of this division is that when the seat is being used, that is under compression, there is more weight in the center than on the sides and by making the front rail of the seat in three sections, it allows the center section to compress further than the two side sections and, of course, makes a more comfortable seat.

Figs. 5–8, inclusive, also illustrate another desirable and important feature namely the wedge blocks 12 arranged and secured between the spring strips at a sufficient distance from their anchored ends to soften and distribute stress when the strips are compressed. These blocks are preferably of elongated form with opposite sides inclined to match the relative inclinations of the strips and their inner ends are drawn to a rounded or blunt point whose arcuate sides 13 provide a rolling fulcrum surface for the strips when flexed under load. Although the form of cushioning units shown in Figs. 1–4 may be satisfactory without the wedge blocks, nevertheless, their presence adds the advantages heretofore pointed out.

From the foregoing it will be apparent that the present invention provides a cushioning unit wherein all the parts are preferably formed from wood and which lends itself particularly to wood fabricating methods and which may be embodied in various lengths, widths and depths according to the specifications of the upholstered portion of the article of furniture.

We claim:

1. A cushioning unit for the seats and backs of chairs and the like, comprising, an elongated support, opposite sets of spring wood strips projecting from opposite faces of said support in diverging relation, and a second elongated support engaging the free ends of said spring strips of one of said sets and in turn having a third set of spring wood strips projecting therefrom in overlying spaced relation to the subjacent set carried by said first mentioned support, and said second support being divided into sections terminating between a pair of adjacent strips.

2. A cushioning unit for furniture, comprising,

a pair of elongated supports arranged at different elevations and each having divergently related sets of spring strips secured to opposite sides thereof, one set of said strips being secured to both supports, and one of said supports being divided into sections to render portions of said last mentioned set of strips yieldable independently of other portions.

3. A cushioning unit for furniture, comprising, a pair of elongated supports arranged at different elevations and each having divergently related sets of spring strips secured to opposite sides thereof, one set of said strips being secured to both supports, and one of said supports being divided into sections to render portions of said last mentioned set of strips yieldable independently of other portions, and an individual load and stress distributing member permanently secured between each related pair of strips.

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