

April 30, 1940.

N. P. SCHREINER

2,198,724

UPHOLSTERY PADDING

Filed Dec. 23, 1937

2 Sheets-Sheet 1

Fig. 1.

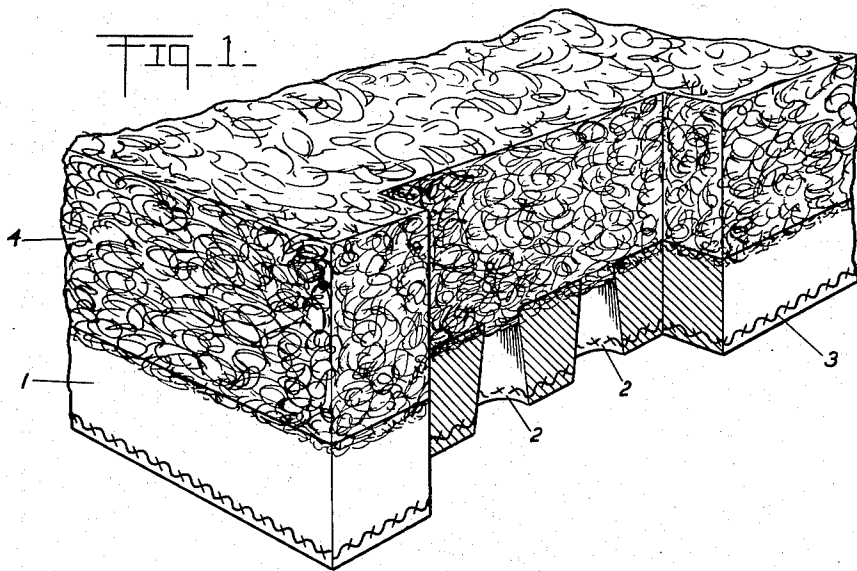


Fig. 3.

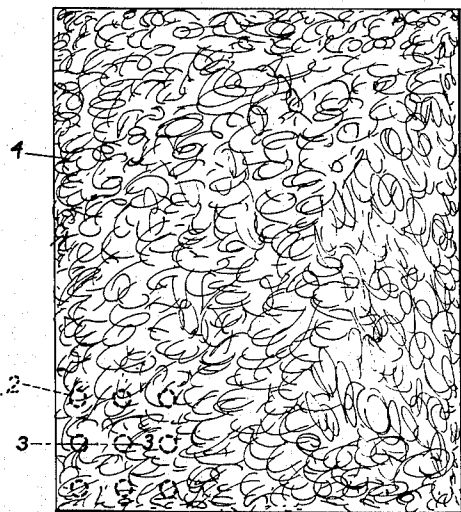
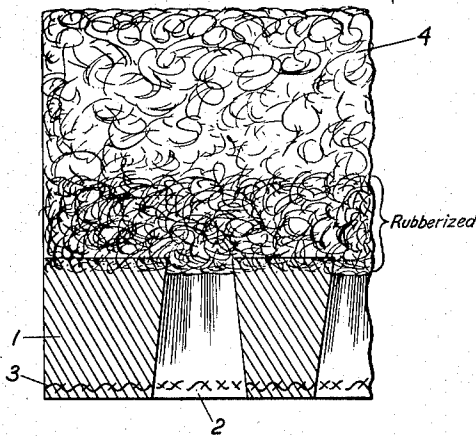
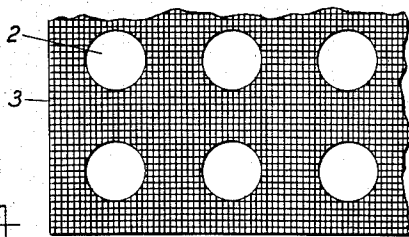


Fig. 2.

Fig. 4.



Witness

H. W. Young

Inventor

Norval P. Schreiner

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2 Sheets-Sheet 2

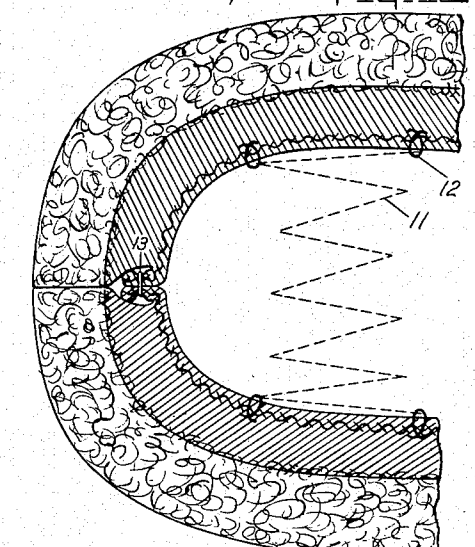
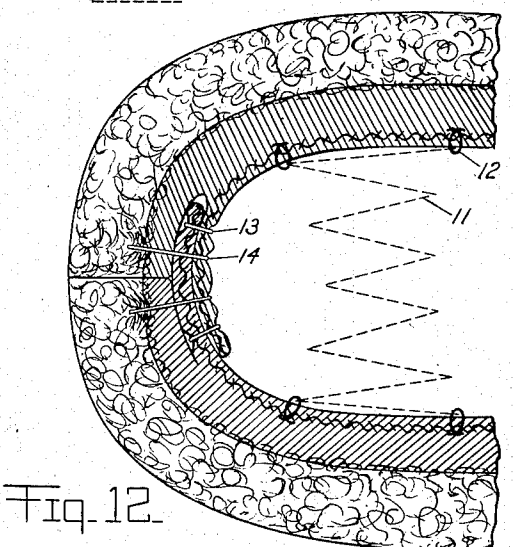
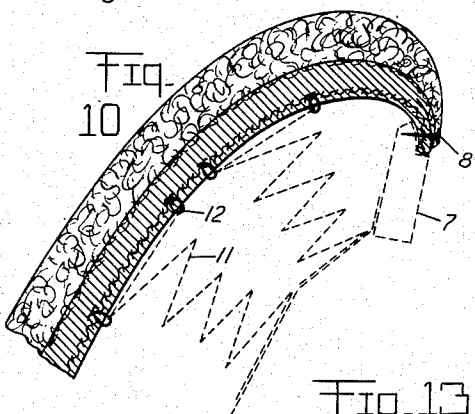
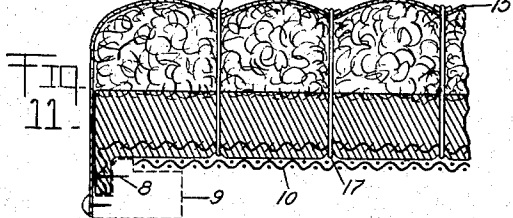
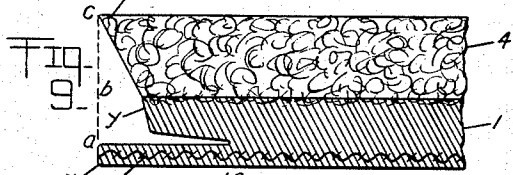
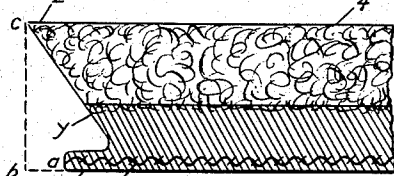
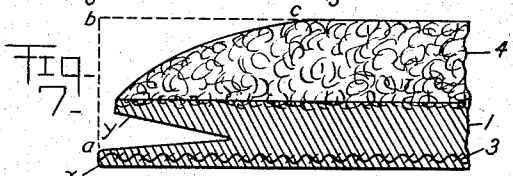
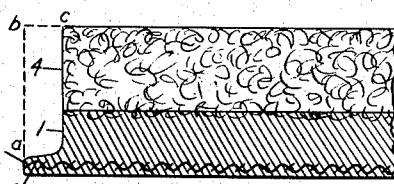
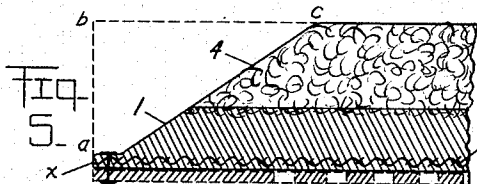


Fig. 12.

Witness

Henry Young

Inventor

Norval P. Schreiner

UNITED STATES PATENT OFFICE

2,198,724

UPHOLSTERY PADDING

Norval P. Schreiner, Springfield, Mo.

Application December 23, 1937, Serial No. 181,347

5 Claims. (Cl. 154—54)

This invention relates to upholstery padding and particularly to such padding having ventilation provisions.

One of the objects of my invention is to provide a resilient main cushion portion of straticulate formation adapted to furnish a uniformly pringy support for a superposed surface cushion portion, with the further object of providing ventilation means whereby air may pass freely through such main cushion portion.

Another object of my invention is to provide a porous, aerated surface portion over which the usual upholstering material is to be placed, the material and structure of such surface portion being of a nature that provides a comfortable, heat dissipating medium adapted to relieve excessive temperatures induced by the person sitting or reclining thereon.

A further object of my invention is to provide an integral reinforcing medium having the multiple purpose of: first, providing a substantially non-stretchable base portion which may be readily and securely attached at its edges to furniture framework or other support by such simple expedients as nails, staples, rivets, stitching, etc., whereby the padding may be securely held in proper position or whereby the padding may be made into tubing, pillows, reversible cushions, mattresses, etc., by attaching juxtaposed padding edges together by similar means; second, providing a seating for the underlying coil springs or other major spring means and being adapted to resist the chafing, gouging and wearing effects of such springs as well as being adapted to prevent bagging or sagging between such spring supports; and third, providing a means whereby underlying springs may be readily attached directly to the padding in their proper disposition by clips, staples, stitches or otherwise.

A further object of my invention is to provide means to prevent the closure of the vents in the main cushion portion when the padding is depressed.

An additional objective is the provision of means to prevent slipping, bunching, thinning or separation of the surface padding material and to prevent shedding and sifting of such material, as well as displacement, distortion and excessive stretching of the main cushion portion.

Closely associated with the last two objectives is the additional purpose of preventing the surface padding material from wadding into the vents of the main cushion portion.

Coincidental with these objectives is the pro-

vision of a unitary structure which may be manufactured in relatively large sizes and subsequently cut to the required shapes and sizes while each piece, regardless of its size or shape retains each and all of the instrumentalities effecting the above objectives and providing a self-contained, comfortable, ventilated padding that may be readily secured to the framework of furniture or made into inner-spring mattresses, pillows, cushions, etc. without the introduction of separate base-sheets burlap, cotton batting, tow, moss or palm fibre.

In this respect is the additional desideratum of providing a unitary padding which may be thinned or bevelled at the edges while at the same time retaining the principal provisions herein outlined. Also is the related purpose of providing such a padding having means whereby various kinds of edge formations may be made by cutting, trimming, slicing or otherwise preparing such edges to adapt the padding to desired applications.

For a full understanding of my invention reference is had to the accompanying drawings in which:

Fig. 1 is a fragmentary perspective view of my padding.

Fig. 2 is a top plan view of my padding.

Fig. 3 is an enlarged vertical section taken on line 3—3 of Fig. 2.

Fig. 4 is a top plan view of a portion of my reinforcing base material.

Figures 5 to 13 inclusive are diagrammatic vertical cross sectional views showing various manners in which my padding material may be prepared for use and some of the different applications for which it is adapted.

Fig. 5 shows one method of shaping and fastening my padding.

Figures 6, 7, 8 and 9 show methods of forming the edge of my padding for different applications.

Fig. 10 shows an application of my padding after being shaped as indicated in Fig. 7.

Fig. 11 shows an application of my padding after being prepared in the manner indicated in Fig. 6, and also shows how tufting may be employed in connection with upholstery cover material.

Fig. 12 shows a manner of fastening juxtaposed edges of my padding material subsequent to shaping as shown in Fig. 9.

Fig. 13 shows how the padding material may be fastened in juxtaposed relation after preparing as indicated in Fig. 8.

In further detail I have provided (Fig. 1) a main cushion portion, 1, consisting of a layer of resilient material such as sponge rubber or the like having vertically disposed ventilation conduits, 2, tapering in width from bottom to top. Near the lower surface of the main cushion portion I have provided a friction sheeting 3, of fabric or corded structure. Such reinforcing medium is shown separately in Fig. 4. It will be understood that other patterns or systems of weaving or arranging the strands or cords forming the reinforcing medium may be used in this respect, as for instance an open mesh or laced effect. It will be noted that a relatively thin layer of the main cushion material 1 is disposed below the reinforcing medium.

It is here observed that such fabric structure is preferably impregnated with tough rubber to facilitate adhesion of the parts and to provide inseparability of the stands whereby raveling or tearing is prevented.

Partially embedded in the upper surface of the main cushion portion 1 is a surface padding portion 4, comprising a layer of curled hair or the like. It will be noted that this material extends continuously across the ventilation conduits 2 of the main cushion portion.

It is here observed that the curled hair composing the surface padding may be rubberized or otherwise reinforced throughout the lower portion of such surface padding, as indicated in Fig. 3, if desired; that is, a portion of the surface padding adjacent the main cushion as well as that portion which is embedded therein may be rubberized or otherwise treated to stiffen the fibres.

With reference to the diagrammatical views 5 to 13 inclusive it is noted that various methods of shaping and attaching my material to furniture may be employed and various contours obtained by preparing the material at its edges in the manners shown. It will be noted that provision for fastening is made by removing a portion of the main cushion material above the fabric to provide a relative thin marginal portion *x*, (Figs. 5 to 9 incl.). In Figs. 5 to 9 inclusive the dotted lines *a*, *b*, *c* indicated the original shape of the padding prior to forming the edge, the enclosed portion being removed in forming the cross-sectional shapes depicted.

In Fig. 5 is shown one method of cutting and bevelling the edge and a method of fastening to the perforate metal support 5 by rivets 6. Fig. 6 shows preparation suitable to applications such as indicated in Fig. 11, in which nails 8 are employed to secure the material to the frame 9. In Fig. 11 a central support of screen is indicated by the numeral 10. Fig. 11 also shows how tufting may be employed in connection with upholstering (cover) material. The covering material 15 is bound to the padding by tufting cord 16, and has its marginal portion secured in any suitable manner. Fig. 7 shows how the material may be shaped to fasten as in Fig. 10. In this instance an intermediate V shaped portion of the main cushion material is removed leaving a projecting portion (*y*, Fig. 7) of such material. In this case the surface padding material is trimmed to a bevel. It will be noted that by this procedure a secure fastening is had through the portion which contains the reinforcing fabric, (*x*, Fig. 7), while the cushioning and aerating effects of the main cushion portion and the surface cushion portion are retained up to the extreme edge, where it is secured as in Fig. 10 by nails 8 to support 7.

In preparing the material for use in pillows,

reversible cushions and the like in which spring members are to be used, methods indicated in Figs. 8 and 9 are applicable, Fig. 8 indicating preparation for assembly as shown in Fig. 1 and Fig. 9 showing a formation suitable for use as in Fig. 12. In Fig. 13 the thinned portions (*z*, Fig. 8) containing the fabric are stitched in base to base relation at 13. This operation is conveniently accomplished with the spring member in place by depressing the springs to bring the upper and lower pads close together. After stitching or otherwise securing the edges and upon releasing the springs the padding will assume the contour indicated in Fig. 13 and the lateral projections of the surface padding (*z*, Fig. 8) will be forced together to form a smooth juncture.

In Fig. 9 a V shaped portion of the main cushion material is removed and the upper part of the remaining cushion material *y* is shortened, while the surface padding is trimmed to extend laterally over the edge of *y* at *z*. In Fig. 12 the material thus prepared is joined by overlapping the thinned portions (*z*, Fig. 9) and stitched at 14; after which the extended portions (*y*, *z*, Fig. 9) are adjusted in abutting relation and loosely stitched at 14.

In Figures 10, 12 and 13 springs 11 are shown held in position by clips 12 which penetrate the main cushion portion and engage the reinforcing fabric 3.

It will be noted in Fig. 10 that in tufting the cord indents the softer main cushion material below the reinforcing fabric thereby providing non-chafing seat for the cord at its point of engagement with the reinforcing fabric, while the indentation of the cord into the softer material of the lower surface at 17 serves to protect the cord from wear and tear from abrasive contact with springs or other supports.

Due to its desirability as a resilient material many attempts have been made to utilize sponge rubber in the construction of upholstery padding cushions, etc. but when used as a surface padding in close proximity to the body of the person sitting or reclining thereon, it is found objectionable in view of its heat absorbing and retaining characteristics which result in a very uncomfortable cushion or mattress. Ventilation means are in evidence as efforts to dissipate the heat generated by the body in contact with such a cushion but such devices do not provide a complete circulation of air throughout the surface area when in use due to the absence of surface ventilation provisions, and consequently the inherent heat retaining characteristics of the material are not obviated.

In my invention I have utilized therein as a surface material, curled hair or the like in view of its heat dissipating qualities together with its known desirability as a soft, springy, aerating material. Through the incorporation of a portion of this surface padding with the sponge rubber I have eliminated several objections usually associated with curled hair as a padding material i. e. separation, bunching, wadding, thinning, sifting, etc., which are especially evident where curled hair is loosely superposed over sponge rubber or the like. Excessive stretching of the rubber under such conditions and consequent displacement of the curled hair together with attendant wadding of the hair into the openings of perforate rubber cushions render such procedure entirely impracticable.

My incorporation of the hair with the rubber prevents undue stretching of the rubber by re-

enforcing it laterally; obviates the wadding of the hair into the openings in the rubber and at the same time prevents closure of the holes in the rubber, thereby assuring proper circulation of air through the openings of the main cushion portion into the porous, aerated surface portion through-out which it is freely permeated to provide a cool, comfortable surface.

Cotton or felt batting, loosely superposed over the curled hair, has been proposed in an effort to retain the hair in proper disposition but such procedure destroys the effectiveness of the hair inasmuch as the cotton or felt batting is not sufficiently air pervious to provide proper circulation and retains heat and moisture to the discomfort of the user and is detrimental to upholstery covering material through absorption of perspiration.

It will be observed that through my unitary consolidation I have provided a padding material which preserves the desirable features of such materials as sponge rubber and curled hair while at the same time eliminating their objectionable features, and through the integral association of these materials with my reinforcing medium I have accomplished a number of purposes heretofore unachieved.

It will be noted that I have provided a tough, rubberized friction material 3 as a base and have incorporated such material in the main cushion portion 1 in such a manner as to provide a thin layer of the soft main cushion material below such fabric whereby an anti-chafing seat is provided for the springs or other support, thereby eliminating slipping, rubbing and chafing and consequent wear, while the fabric provides a base which is resistant to puncture and tearing by spring parts or the like.

I claim:

1. An upholstery padding comprising a layer of sponge rubber or the like, said layer having incorporated therein near its lower surface a sheet of fabric, a portion of said rubber forming an anti-friction base portion below said fabric, said layer of rubber and said fabric having vertically disposed conduits therein, and a

layer of curled hair or the like in superposed relation to said rubber, a portion of said hair being embedded in said rubber, a portion of said hair spanning said vertically disposed conduits to provide a connective medium across said conduits. 5

2. An upholstery padding comprising a layer of sponge rubber or the like, a layer of fabric or the like integrally associated with said rubber and interposed between the lower and upper surfaces of said rubber to form a consolidated reinforced main cushion portion, said main cushion portion having air passages extending vertically there-through, and a layer of hair or the like, said layer of hair having a portion thereof interposed with said rubber to form an integral part thereof, said hair extending across said air passages, a portion of such extended hair being continuous with said interposed layer. 10 15

3. In an upholstery padding a layer of sponge rubber or the like having vertically disposed conduits therein, and a layer of curled hair or the like, said hair being in superposed relation to said rubber and having its lower surface incorporated with the upper surface of said rubber, said hair extending across said conduits, and the lower surface of such extended portion being continuous with the portion incorporated with the upper surface of the said rubber. 20 25

4. In a straticulate upholstery padding a layer of sponge rubber or the like, said layer having vertically disposed air conduits and a superposed layer of curled hair or the like, said layers being integrally associated with each other, said layer of curled hair being continuous across said air conduits. 30 35

5. In an upholstery padding a layer of perforate sponge rubber or the like and a layer of curled hair or the like, said layer of curled hair being integrally associated with said layer of rubber, said layer of curled hair being continuous across the perforations of said rubber and forming a connective medium across said perforations whereby to anchor the walls of such perforations against distortion. 40 45

NORVAL P. SCHREINER.