

[54] UPHOLSTERY EDGING

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[51] Int. Cl.B32b 3/24, A47c 27/08
[58] Field of Search.....297/218, 219, 226, 253, 452, 297/457; 5/353.1, 353.2, 353.7

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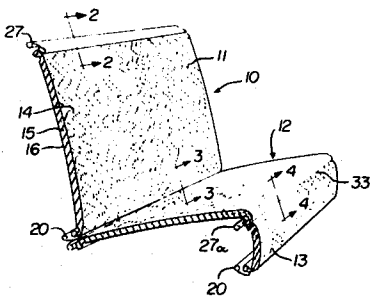
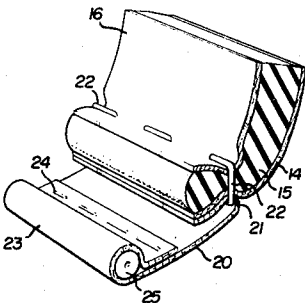
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[57] ABSTRACT

An upholstery edging formed of a thin, narrow relatively stiff, linearly oriented polypropylene fiber, randomly oriented, cloth strip, which is stretch resistant in all of its planar directions, stitched to and extending the length of an edge of an upholstery cover fabric which is to be fastened to another element, with the strip being double bent along the line of stitches to form a double ply, and with the free edge of the outer ply being bent over into a continuous tubular portion for receiving an elongated stiffening rod therein.

9 Claims, 7 Drawing Figures



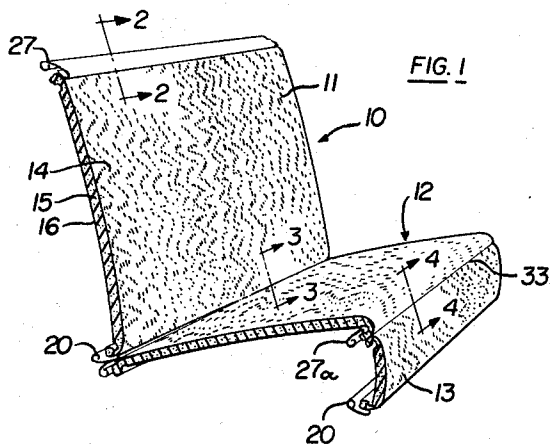


FIG. 1

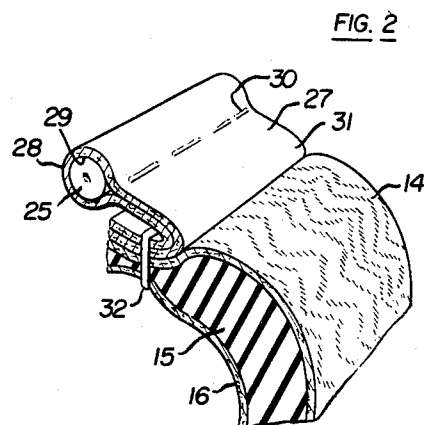


FIG. 2

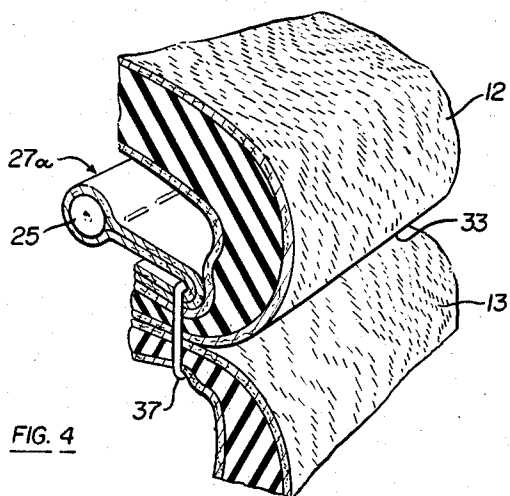


FIG. 4

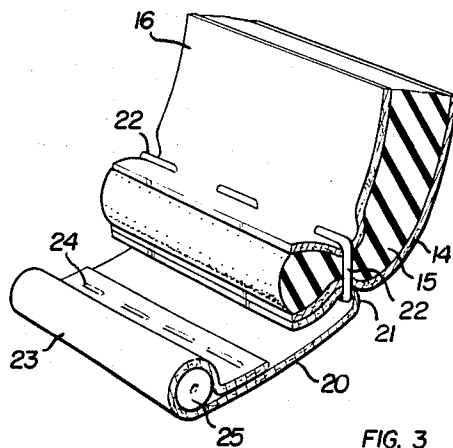


FIG. 3

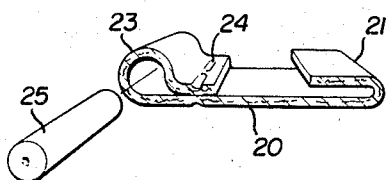


FIG. 6

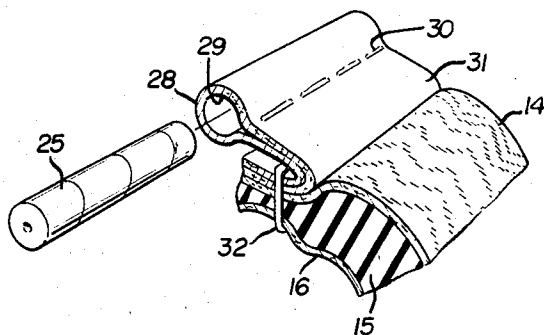


FIG. 5

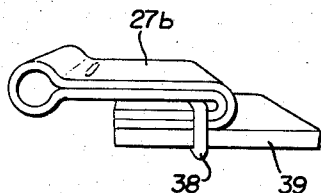


FIG. 7

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UPHOLSTERY EDGING

BACKGROUND OF INVENTION

In the manufacture of automobile type seats, it is customary to first form the inner seat structure out of the usual metal springs, support frames, etc., and then to cover the seat back and horizontal seating portion with a foam rubber-like material, with the entire structure then covered with an upholstery fabric which is previously stitched into a cover formation out of separate fabric panels. In some seat constructions, sheets of thick, resilient, foam rubber-like plastic material is secured in face to face contact with the panels of the upholstery cover fabric which covers the forward portion of the seat back and the upper portion and forward portion of the bench or seating part.

The upholstery fabric is usually made of either a woven fabric material or a monolithic sheet plastic material or combination of these, stitched together in various panel formations. All of these materials tend to stretch and to pucker and wrinkle, particularly along lines of stitching. Thus, in fastening the edges of cover panels together or fastening edges of the cover panels to the under supporting structure of the seat, such as the spring frames, particularly where the cover material is jointly assembled with the seats of resilient foam material, it is difficult to form straight, unpuckered and wrinkle-free seams during the process of manufacturing the upholstery cover and during the assembly to the seat frame. Also, there is a tendency of the cover to wrinkle and to pucker and at times, to actually tear along its edge joints, after a period of use of the seat. This is particularly aggravated since automotive seats, are exposed to varying climatic conditions including varying temperatures, humidities, etc., which affect fabric and seat covers.

Hence, the invention herein is concerned with providing an upholstery edging for seat covers used in automotive type seats, although also usable in ordinary furniture construction, for making it easier to assemble composite panels of fabric and resilient foam rubber-like linings, and to join the panels together to form the overall seat cover and also to join the edges of the seat cover to the supporting seat frame construction. Such edgings reinforce the foam material and the joints at the edges of the cover panels, make assembly far simpler and avoid wrinkling, puckering and tearing of the cover fabric and its joints.

SUMMARY OF INVENTION

The invention herein contemplates forming edging strips secured to the edges of upholstery cover panels, particularly those formed of layers of outer upholstery fabric and inner, thick, resilient foam-type materials, by a line of stitching which connects the cover layers together along their edges, as well as connecting the strip thereto, and with the strip being double bent at the line of stitching to form an inner ply extending along the edge portion of the cover, and an outer ply having a tubular formation formed thereon and containing a stiffening rod-like material. Thus, the outer ply may be pulled for stretching the cover into shape and may be fastened to adjacent seat elements or cover panels. The two plys back-up and reinforce the cover edge for evenly distributing loads thereon, and resisting wrinkling, puckering and tearing thereof. The strip is preferably formed of a thin, narrow, elongated non-woven, randomly oriented fiber cloth made of felted, stretch or linearly oriented, polypropylene fibers which make up a relatively smooth and slippery surfaced cloth which is relatively stiff and is stretch resistant in all of its planar directions.

This edging thus forms a means for spreading out and more uniformly applying loads along the entire length of the upholstery cover edge to which the strip is attached. Due to its stretch resistance and relative stiffness, as compared to the upholstery cover, it maintains the appearance of the finished seat, that is, preserving its smooth, wrinkle-free, pucker-free seams and edges.

These and other objects and advantages of this invention will become apparent upon reading the following description, of which the attached drawings form a part.

DESCRIPTION OF DRAWINGS

FIG. 1 is a perspective, cross-sectional view of an automobile type seat cover forward seat back panel and upper and forward seat portion panels, showing the application of the upholstery edging thereto.

FIG. 2 is an enlarged, perspective view of a fragment, taken in the direction of arrows 2—2 of FIG. 1.

FIG. 3 is an enlarged, perspective cross-sectional view of a fragment taken in the direction of arrows 3—3 of FIG. 1, showing the lower edge of the forward seat back panel.

FIG. 4 is an enlarged, perspective, cross-sectional view showing the joint between the upper seat portion cover panel and the forward edge panel of the seat portion.

FIG. 5 is a view similar to FIG. 2, but showing the reinforcing rod removed and showing one form of edge strip.

FIG. 6 is an enlarged, perspective view showing another form of edge strip, with the reinforcing rod removed, and corresponding to that shown in FIG. 3.

FIG. 7 illustrates the edge strip of FIGS. 2 and 5 connected to a single thickness upholstery sheet.

DETAILED DESCRIPTION

FIG. 1 illustrates, in cross-section a portion of an automotive type seat upholstery cover 10 having a forward seat back panel 11 and an upper seating portion panel 12 to which is connected a forward edge panel 13. These panels are slipped over the previously formed seat structure which consists of springs, frames, and under covering sheets, all of which is conventional. The edges of the respective panels are either connected to adjacent edges of other panels by stitching or alternatively to the seat frame construction as by means of wire rings or the like. The seat structure and the connections of the cover to it are omitted since these are all conventional.

Each of the cover panels are formed of a sheet of upholstery fabric 14, which may be of a woven material or of a monolithic plastic sheeting or a combination of these stitched together in suitable pattern. The upholstery fabric is laid over and covers a sheet of foamed rubber-like material 15 such as of a suitable resilient plastic material for cushioning purposes. Usually, the fabric is not connected to but rather is laid over the resilient sheet, the two being connected only at their edges or at times at suitable portions between the edges for decorative or additional fastening purposes.

Conventionally, the resilient sheet 15 is backed with a thin, wide weave backing cloth 16 which may be bonded thereto.

The edging strip of this application is preferably formed of a fine strand, linearly or stretch oriented polypropylene plastic material, which is felted into a randomly oriented non-woven fabric or cloth. For example, it may be of approximately 13 mills in thickness and 3 1/2 ounces per square yard in weight. The thickness and fiber size and degree of orientation of the fiber may vary depending upon the strengths and stiffnesses best suited for the particular seat construction.

The strip forming fabric is relatively smooth and slippery and also considerably stiffer than the fabric used for the upholstery. Most importantly, it is characterized by being stretch resistant in all of its planar directions as contrasted with normal fabrics used in upholstery which generally are stretchable and easily wrinkled.

The edging strip may be formed in one of two analogous ways, depending upon the overall seat construction. Thus, FIGS. 3 and 6 illustrate one way, which corresponds to the lower edge of the rear seat panel and the lower edge of the forward edge of the seat portion. Here, the lower edging strip 20 (see FIG. 3) is bent along the line 21 extending its full length, after it is secured by a line of stitching 22 to the edge of the cover panel. The line of stitching extends through and compresses together the outer upholstery fabric 14, the resilient

sheet 15 and the sheet backing 16, thus fastening the upholstery to the combined resilient sheet-cloth backing 16.

Bending the strip as shown, forms two plies, namely, an inner ply which is in face to face contact with the edge portion of the upholstery fabric 14 and an outer ply whose free edge is bent into a tubular shape 23 with its free edge portion secured to the body of the strip by means of a line of heat welds 24. A rod-like stiff cord 25 is inserted into the tubular portion 23, preferably after the stitching so as to not interfere with the movement of the cloth in the sewing machine. The rod may be made of a twisted paper which is thus somewhat bendable but relatively stiff and may be in the order of about one-eighth of an inch in diameter.

FIGS. 2 and 5 illustrate the second form of edging, wherein the edge strip 27 located at the upper edge of the panel 11, is formed of a strip of material which is double bent along a central line 28 to form a double thickness, with the portion at the double bend forming the tubular shape 29 and with a line of heat welds 30 completing the formation of the tubular shape.

The strip is then bent along a line 31 after it is stitched by a line of stitches 32 which simultaneously fasten the strip to the edge of the cover and also compress and stitch together the edge portions of the upholstery fabric 14 and the thick resilient sheet 15 and the cloth backing 16. After the stitching process, the rod-like material 25 may be inserted into the tubular shape.

Where adjacent sheet panels are to be joined together, as for example shown in FIG. 4 which illustrates the joint 33 between the seating panel 12 and forward edge panel 13, the strip 27a, formed in the same way as shown in FIG. 2, is stitched by the same line of stitches 37 which secures the panels together. The construction is otherwise the same as that described above.

Similarly, where the upholstery cover consists of only a single thickness of fabric, such as is common along the vertical edges of a seat, the edging may be secured as illustrated in FIG. 7. Here, the edging strip 27b, which is otherwise identical to strip 27 illustrated in FIG. 2, is secured by a line of stitches 38 to the single thickness upholstery fabric 39.

With this construction, it can be seen that the inner ply of the strip, whether it is of a double layer as in FIG. 2, or a single layer as in FIG. 3, stiffens and reinforces the edge of the upholstery cover, preventing puckering or wrinkling thereof, with the outer layer serving as the fastening means for both fastening the panel to another panel or to the seat structure, as well as for distributing loads and pulling the panel. Thus, the edge strip makes it easier to assemble the seat panels into the composite seat cover and preserves the life of and the appearance of the seat cover after assembly.

Having fully described an operative embodiment of this invention, I now claim:

1. An edging strip for upholstery cover fabric covering a seat-like base structure and having long, free edges to be fastened to adjacent elements of the upholstery structure comprising:

a continuous, long, narrow, randomly oriented, non-woven, fiber strip which is relatively smooth and stiffer than the upholstery fabric and is characterized by resisting stretching in all of its planar directions;

said strip being arranged along and overlapping an edge of the fabric and stitched thereto by a continuous line of stitches;

the strip being double bent at the line of stitches to form overlapped plies, with the inner ply being in face to face

contact with the fabric edge portion between the line of stitches and the adjacent fabric edge, and the outer ply overlapping the inner ply and extending outwardly of the edge thereof;

the free edge of the outer ply being bent into a continuous tubular portion for receiving an elongated stiffening rod inserted therein;

wherein the outer ply may be fastened, adjacent its rod receiving portion, to another element for securing the upholstery edge thereto, and the double bent strip reinforces, stiffens the edge of, and prevents puckering and wrinkling of the fabric.

2. An edging strip as defined in claim 1, and said strip being centrally bent approximately in half along its length direction, wherein each of said plies is formed of a double thickness; and said tubular portion being formed by the centrally bent portion.

3. An edging strip as defined in claim 1, and wherein the bent free edge of the outer ply is secured to the body of the ply by means of a line of heat welds extending the length of the strip.

4. An edging strip as defined in claim 1, and wherein the fibers forming such strip comprise linearly oriented polypropylene fibers felted together into non-woven cloth.

5. An upholstery edge construction comprising:

an upholstery cover formed of an outer sheet of upholstery fabric, covering a thick sheet of resilient foamed rubber-like material backed by a sheet of cloth and having an elongated edge to be fastened to another upholstery structural element;

an edging strip formed of a continuous, long, narrow, randomly oriented, non-woven fibrous sheet which is characterized by being stiffer than said cover, smooth surfaced and stretch resistant in all of its planar directions;

said strip being bent along its lengthwise direction to form two overlapping plies and being secured to the cover by a line of stitches extending parallel to but spaced inwardly of said cover elongated edge, the stitches extending through the cover fabric sheet and cloth and compressing them tightly together along the line of the stitches;

and the outer ply of the strip having its free edge bent into a continuous tubular edge portion extending the length of the strip and receiving a relatively stiff, rod-like member extending the length thereof;

wherein the outer ply portion, adjacent its tubular edge portion, may be secured to said structural element for securing the cover thereto, and the double bent strip reinforces, stiffens the edge of, and prevents puckering and wrinkling of the cover fabric.

6. A construction as defined in claim 5, and said strip being centrally bent approximately in half along its length direction, wherein each of said plies is formed of a double thickness, and said tubular portion being formed by the centrally bent portion.

7. A construction as defined in claim 5, and wherein the bent free edge of the outer ply is secured to the body of the ply by means of a line of heat welds extending the length of the strip.

8. A construction as defined in claim 7, and wherein the fibers forming said strip comprise linearly oriented, polypropylene fibers felted together into non-woven cloth.

9. A construction as defined in claim 5, and the cover fabric and the sheet being substantially free of connection to each other, except at their edges.

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