Oct. 7, 1952 B. J. NAUGHTON, JR 2,612,941

UPHOLSTERING

Filed Feb. 28, 1951 2 SHEETS—SHEET 1

FIG. 1

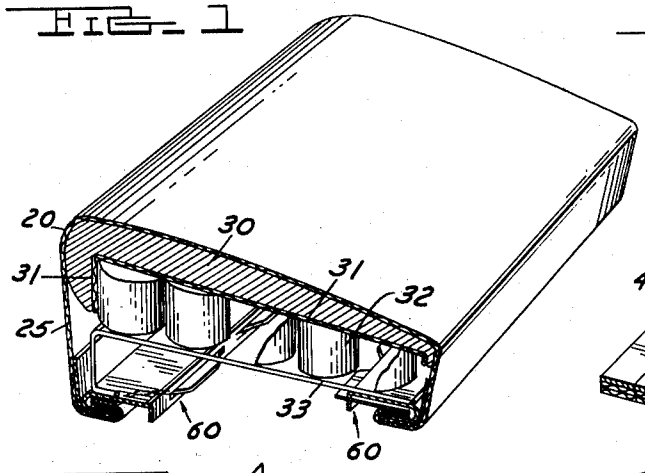


FIG. 6

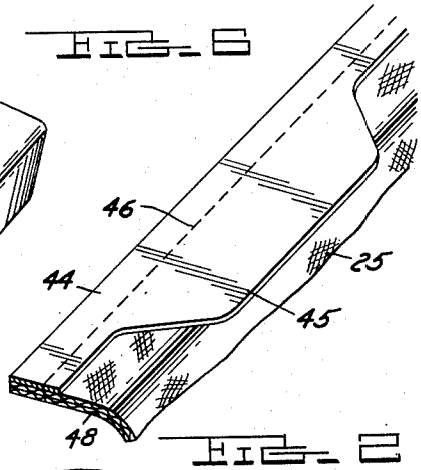


FIG. 2

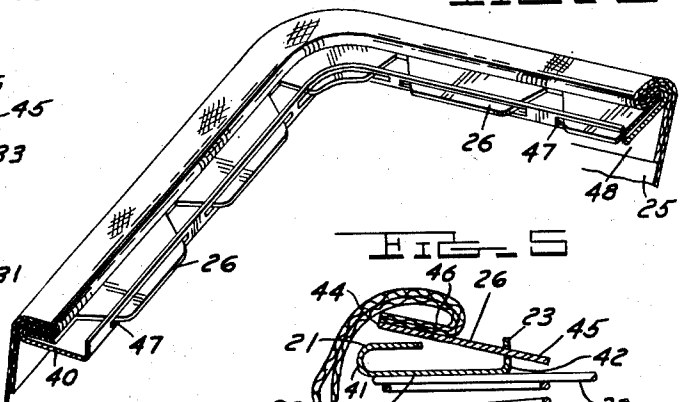


FIG. 4

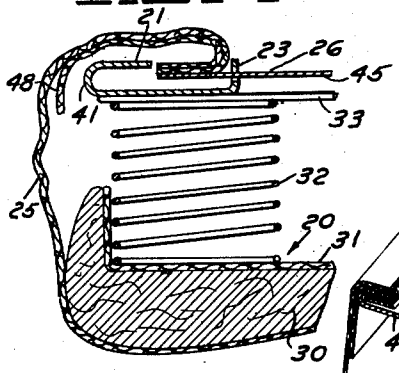


FIG. 5

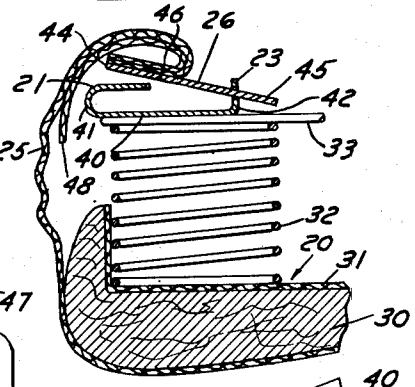


FIG. 3

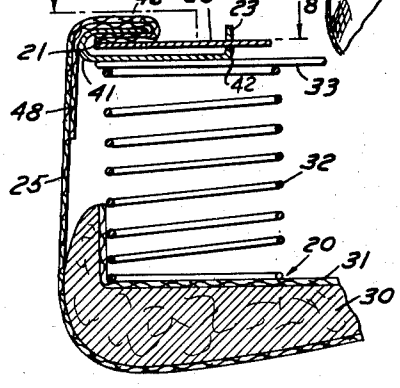
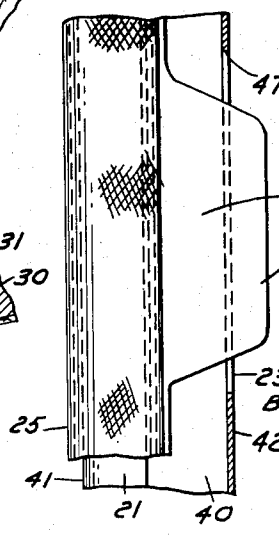


FIG. 8



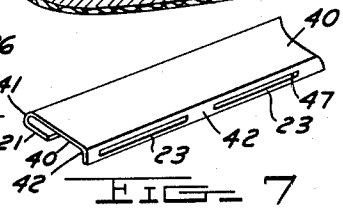


FIG. 7

INVENTOR.
BARTLEY J. NAUGHTON JR.
BY William P. Gerald

Oct. 7, 1952 B. J. NAUGHTON, JR 2,612,941

UPHOLSTERING

Filed Feb. 28, 1951 2 SHEETS—SHEET 2

FIG. 9

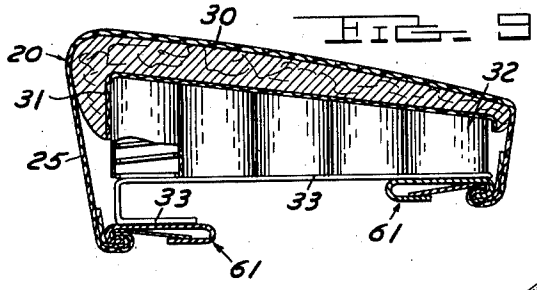


FIG. 10

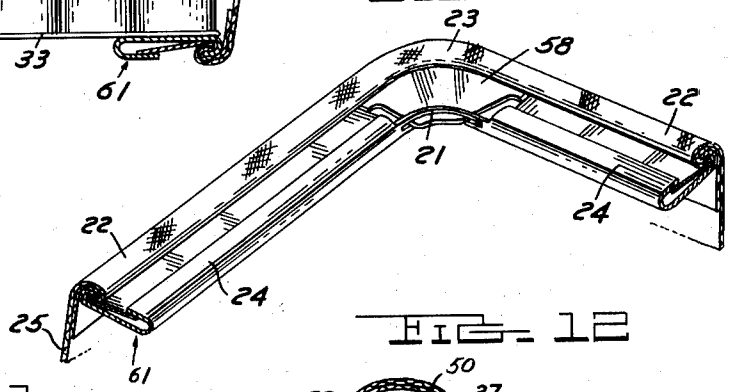


FIG. 11

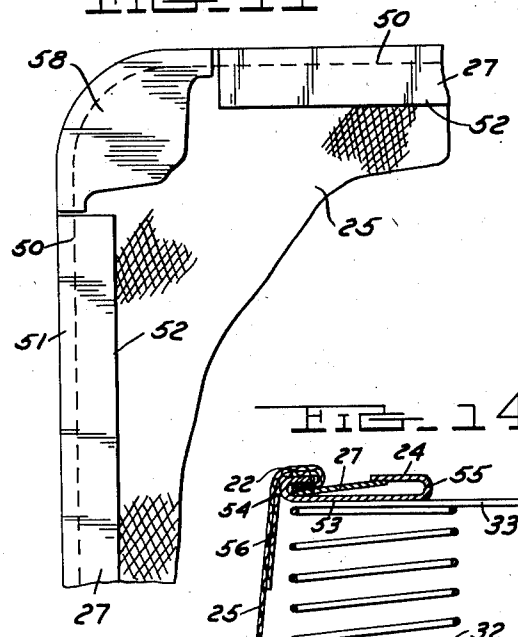


FIG. 12

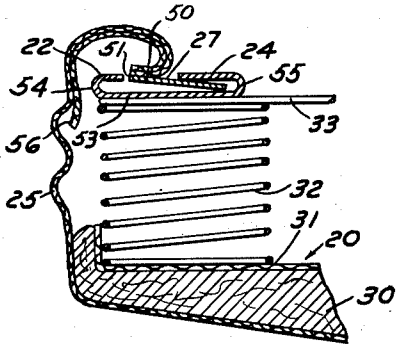


FIG. 13

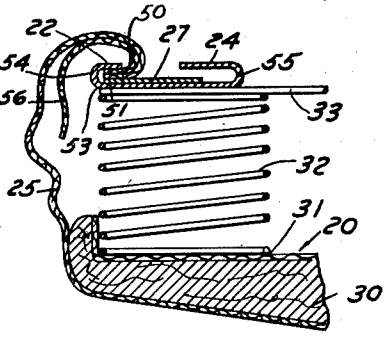
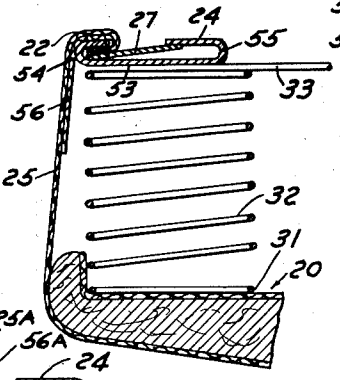


FIG. 14



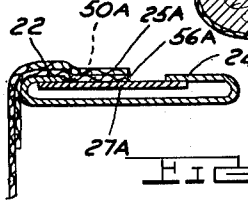


FIG. 15

INVENTOR.

BARTLEY J. NAUGHTON JR.

BY

William T. Secald

Patented Oct. 7, 1952

2,612,941

UNITED STATES PATENT OFFICE

2,612,941

UPHOLSTERING

Bartley J. Naughton, Jr., Birmingham, Mich., assignor of one-half to Stephen F. Olesak, Detroit, Mich.

Application February 28, 1951, Serial No. 213,240

16 Claims. (Cl. 155—180)

1

The invention relates to means and method of attaching fabric to upholstered articles and in particular to novel bar members disposed to constitute a fabric anchor catch which is in turn adapted to interfit with a novel anchor on the fabric to easily demountably-mount the fabric on the article.

The fabric anchor comprises a relatively inflexible tab of suitable material such as fiberboard or impregnated cardboard sewed to the edge of the fabric at a point intermediate the longitudinal edges of the fabric. The bar members parallel the bottom edge of the item or cushion in spaced relation to the cushion and to each other to provide a space between the bars for inserting the tab into the space between the bars and the cushion. In this manner the tab is trapped and positioned with its opposite longitudinal edges extending beyond the parallel bars with the sewed line of attachment self-locating itself adjacent the inside edge of the outside bar due to the pull of the fabric effected by the resilience of the cushion or the fabric itself; and the tab is so proportioned and sized that when the sewed line of attachment is so positioned the tab is positioned behind both bars.

Upholstering fabric has heretofore been attached to wooden frames by nailing or tacking, and to metal frames, such as automobile cushions, by looping the fabric around a frame member and using metal clips, such as "hog-rings" to fasten the fabric to other members or to itself. A tool known as a "hog-ringer" is usually employed to set the "hog-rings" and the worker operating the "hog-ringer" in generally limited to four hours per day on this operation due to the swelling of the user's hand muscles. Obviously, the "tacker" or "hog-ringer" is a skilled craftsman and the "tacking" and "hog-ringing" a time consuming operation which is expensive.

With the foregoing in view, it is a primary object of the invention to provide more efficient means and methods for attaching fabric to upholstered articles which do not require skilled craftsmen and which are cheaper, simpler, and improved over the devices and methods of the prior art.

An object of the invention is to provide methods and means for attaching fabric to an upholstered article which obviates the necessity of "tacking" and "hog-ringing."

An object of the invention is to provide methods and means for mounting upholstering fabric suitable for use in conjunction with complete prefabricated sub-assembly manufacture.

2

An object of the invention is to provide a relatively inflexible tab sewed to the fabric or cloth adjacent the edge of the cloth but at a point on the tab between the edges thereof so that the tab can assume the position of a T-shaped head to secure the fabric.

An object of the invention is to provide bars spaced from each other and from the cushion for inserting the tab between the bars and then between the bars and the cushion.

An object of the invention is to sew the fabric to the tab so that in secured position the tab lies between the bars and the cushion, and, the fabric lies between the bars with the sewed attachment self-locating itself adjacent the bar over which the fabric is pulled.

An object of the invention is to provide fabric attaching means which can be located on the bottom or side of a cushion in either concealed or exposed condition.

An object of the invention is to provide novel rail members embodying the inventive bars.

An object of the invention is to provide novel modifications of the second bar member.

An object of the invention is to provide means for quickly mounting or de-mounting the fabric on an upholstered article such as for cleaning or replacement.

An object of the invention is to provide means for mounting or de-mounting the fabric on an upholstered article requiring no special skill or training and which can be performed by any person without any special knowledge or tools.

An object of the invention is to eliminate long hours of expensive hand work in mounting or de-mounting fabric on upholstered articles.

An object of the invention is to provide means for mounting fabric on upholstered articles which do not require tools.

An object of the invention is to facilitate the easy choice of different fabrics in a finished article without special custom work and/or to provide removable coverings for seasonal variations, replacement, and cleaning.

These and other objects of the invention will become apparent by reference to the following description of the inventive catch and anchor including the bars, tabs and rails embodying the invention taken in connection with the accompanying drawings showing the invention in conjunction with an automobile seat cushion as an optional example, in which:

Fig. 1 is a perspective view of a cushion in cross-section showing the invention integrated therewith.

Fig. 2 is an inverted partial view of the cushion of Fig. 1 showing the various elements of the invention in perspective and cross-section.

Fig. 3 is a cross-section partial view of an inverted seat cushion showing the inventive elements in locked condition.

Fig. 4 is a partial cross-sectional view of an inverted seat cushion showing a stage of mounting or de-mounting the fabric via the inventive means.

Fig. 5 is a view similar to Fig. 4 showing another stage of mounting or de-mounting.

Fig. 6 is a partial view of the inventive anchor or tab sewed to the fabric in perspective and cross-section.

Fig. 7 is a perspective view of the rail embodying the inventive bars.

Fig. 8 is a cross-sectional view of Fig. 3 taken on the line 8—8 thereof showing the device of Fig. 6 integrated with the device of Fig. 7.

Fig. 9 is a view similar to Fig. 1 showing a modified rail incorporating modified bars.

Fig. 10 is a view similar to Fig. 2 showing the modified bar and corner section.

Fig. 11 is a plan view of the upholstering fabric equipped with the inventive anchor tabs showing in dotted lines the sewed attachment between the tab and fabric.

Fig. 12 is a view similar to Fig. 4.

Fig. 13 is a view similar to Fig. 4.

Fig. 14 is a view similar to Fig. 3; and

Fig. 15 is a cross-sectional view showing a modification in fabric-to-tab disposition.

Referring now to the drawings wherein like numerals refer to like and corresponding parts throughout the several views of the two embodiments of the invention shown in conjunction with an automobile seat cushion for purposes of illustration only, the cushion, fabric, and inventive attaching devices comprise a cushion 20, a first bar 21, Fig. 3 or a first bar 22, Fig. 14, spaced from the bottom of the cushion 20 and paralleling the edge of the cushion 20, Figs. 1, 2, 9, and 10; a second bar 23, Fig. 3, or a second bar 24, Fig. 14, spaced from the bottom of the cushion 20 and from the first bar 21 or 22 and paralleling the first bar; a fabric 25 covering the cushion 20 looping around the first bar 21 or 22; a relatively inflexible tab 26, Figs. 2 and 3, or a tab 27, Figs. 10, 11, and 14, attached to the fabric 25 by sewing or otherwise disposed in the space between the bars and the cushion 20 spanning the space between the bars thereby anchoring the fabric 25 to the cushion 20.

More particularly, the cushion 20 comprises the bat 30, the mat 31, coil springs 32 or other flexible members, supports 33, and a suitable framework to hold the various elements together in supported and/or supporting relationship. Obviously the cushion can be any type or style, with or without springing, and sized and shaped as desired to suit any general or particular purpose. The automobile seat cushion is used as an example for disclosure and illustration because it is unusually complicated, subject to hard usage, and usually the fabric thereon is permanently mounted.

Referring now to the attaching elements of the device seen in Figs. 1 to 8, the front bar 21 and the rear bar 23 are integral with a common back member 40, which back 40 supports the front bar 21 via a bridge portion 41 U shaped in cross-section, and which back 40 supports the rear bar 23 via the flange portion 42 L shaped in cross-section. The back bar 23 is formed in this instance by lancing the slots 47 in the flange 42. The tab 26 is sewed to the fabric 25 longitudinally intermediate its longitudinal edges at a point adapted to lie along the inside edge of the outside or front bar with a portion 44 of the tab lying behind the front bar 21 and a portion 45 of the tab lying behind the rear bar 23. The fabric 25 loops around the front bar 21 and the U-shaped bridge section 41 and pulls on the tab 26 at the stitching 46 and locates the stitching 46 at the inside edge of the front or outside bar 21 with the portion 44 and the portion 45 of the tab 26 positioned behind the bars 21 and 23 respectively and maintains this position of the tab 26 as the stitching 46 is at dead center as the pull of the fabric at the inside of the outside bar 21 is at an angle of 90° to the tab 26. The edge 44 of the tab 26 is substantially continuous to provide substantially continuous attachment and support for the fabric 25; the edge 45 of the tab 26 is interrupted so that it may enter the slots 47 in the flange 42 below the bar 23. A protective wear-resistant strip 48 is disposed and sewed by the stitching 46 relative to the tab 26 and fabric 25 so as to be adjacent the inside edge of the outside bar 21 and the face of the outside bar 21 between the bar 21 and the cloth or fabric 25 so that all abrasive action by the bar 21 is absorbed by the strip 48.

Referring more particularly now to the attaching elements of the modified device seen in Figs. 9 to 14, the tab 27 is sewed longitudinally to the fabric 25 by the stitching 50 intermediate the longitudinal edges of the tab 27 so that in final or attached condition the tab 27 is trapped behind or below the bars 22 and 24 with the portion 51 of the tab 27 behind the outside or front bar 22 and the portion 52 behind the inside or back bar 24. The front or outside bar 22 is supported and made integral with the back 53 by the bridge portion 54 U shaped in cross-section, and the back or inside bar 24 is also supported and made integral with the back 53 by a bridge portion 55 U shaped in cross-section. An abrasion absorbing strip 56 is interposed between the fabric 25 and the bar 22 so that the cloth 25 is not abraded by the bar 22.

In operation the tabs 26 or 27 are sewed as previously described to the cloth 25 which is previously properly dimensioned and marked so that when the fabric is secured it will have the desired fit. The bars 21 and 23 or 22 and 24 are annexed to the cushion 20. The fabric is laid on a table face down and the cushion 20 placed upside-down on the fabric 25. The cushion is then compressed as seen in Figs. 4, 5, 12, and 13 to provide a relative surplus of fabric 25 with which to work. The portion 45 of the tab 26 or the portion 52 of the tab 27 is then inserted behind the back bar 23 or 24 so that the portion 44 of the tab 26 or the portion 51 of the tab 27 clears the inside edge of the outside bar 21 or 22. The portion 44 of the tab 26 or the portion 51 of the tab 27 is then slid under the outside bar 21 or 22. The cushion 20 is then allowed to expand so that it takes up the relative slack in the fabric 25 causing it to exert tension on the stitches 46 or 50 to pull the stitches 46 or 50 to dead center which is at the inside edge of the outward bar 21 or 22 which stitching 46 or 50 is also the fulcrum point on the tab 26 or 27 as levered between the bars 21 and 23 or 22 and 24. To remove the fabric 25 from the cushion 20 the above described operation is substantially reversed and quite obvious.

It will be noted in Figs. 10 and 11 that the corner section is equipped with bars 21 and 23 co-

operating with an arcuate or sector-like tab 58 while the extending straight sections are equipped with bars 22 and 24 cooperating with tabs 27. Obviously the corner section can utilize bars 22 and 24 and an arcuate tab 27. Fig. 15 shows the cloth or fabric 25A sewed to the tab 27A by stitching 50A with the selvage or edged portion of the fabric 25A oppositely disposed relative to the other figures occupying the area between the bars. It is to be noted that the stitching 50A locates itself at the inside edge of the bar 22 as in the other instances.

It is to be noted, Fig. 1, that the rail 60 embodying the bar 21, bridge 41, back 40, flange 42; and bar 23 is adapted to act as the bottom peripheral support member for the cushion 20 and that the supports 33 are welded thereto. This is also true in the case of the rail 61, Fig. 9, which embodies the bar 22, bridge 54, back 53, bridge 55, and bar 24 as the rail 61 is welded to the supports 33 and constitutes the cushion's bottom peripheral structural member. The rails 60 and 61 can be welded or otherwise secured to the cushion as seen in the drawings or they can "float" on the bottom of a cushion, such as a thick sponge or foam rubber pad with the elasticity of the cushion and/or the fabric tensioning the rail, cushion and fabric into one integrated unit thereby not only providing the attaching means for the fabric but also furnishing a stiff support for the otherwise wobbly pad or cushion. Obviously the tabs can be glued, riveted, or annexed in any other way to the fabric within the purview of the invention.

In the secured position the tabs 26 and 27 in conjunction with the cloth or fabric 25 assume the relation of a T-head bolt in relation to the bars biased by the pull of the fabric constituting the stem of the T into engaging relation with the bars so that the tab will not become disengaged with the "stem" of the T abutted against the inside edge of the outside rail.

In use, the fabric 25 is caught between the bar 21 or 22 over which it looped and the support upon which the cushion is positioned so that when the cushion is compressed as by a heavy person sitting thereon, the fabric does not become slack in the area of the tab even though the fabric becomes slack in the other areas of the cushion, such as along the sides of the cushion. This characteristic insures the proper location of the tab relative to the bars under all conditions of use or non-use. The tab, bar, and rail dimensions are so determined together with the location of the stitching that the tab is easily insertable behind the bars and positionable in locked condition by the fabric pull.

Although but two embodiments of the invention have been shown and described in detail, it is obvious that many changes may be made in the size, shape, detail, and arrangements of the various elements of the invention within the scope of the appended claims.

I claim:

1. An upholstery fabric attaching device for securing fabric under tension effected by the resilience of a cushion or the fabric itself comprising a cushion, a first bar spaced from the bottom of said cushion paralleling the edge of said cushion, a second bar spaced from the bottom of said cushion paralleling said first bar in spaced relation thereto, a fabric covering said cushion looping around said first bar, a tab less flexible than the fabric and attached to the fabric and disposed in the space between said bars and

said cushion and bridging the space between said bars thereby anchoring said fabric over said cushion.

2. In a device as set forth in claim 1, said second bar having longitudinal tab receiving slots in an angularly disposed flange.

3. In a device as set forth in claim 2, said tab being interrupted in its second bar area so as to be receivable in the slots of said angular flange.

4. In a device as set forth in claim 1, said tab being substantially continuous in the area of said first bar to facilitate a substantially continuous sewed attachment between said tab and said fabric to provide said fabric with substantially continuous attachment.

5. A fabric attaching device for securing fabric to an article, such as in upholstering, comprising a member such as a cushion, a fabric for covering said member, a tab, means attaching said tab to said fabric adjacent its edge at a point on said tab intermediate its longitudinal edges, a first bar paralleling the bottom edge of said member, and a second bar spaced from and paralleling said first bar; said tab being inserted between said bars so as to be engaged by said bars with the attaching means attaching said tab to said fabric being positioned between said bars so that pull on said fabric self-locates said tab in spanning relation to said bars to secure said fabric on said member.

6. The combination of a fabric anchor catch and an interfitting fabric anchor for use in the attachment of fabric to an upholstered article; said fabric anchor comprising a tab less flexible than the fabric secured to the fabric adjacent to the edge of the fabric and intermediate the edges of the said tab so that the said tab laterally extends on either side of the longitudinal securing line; said anchor catch comprising a rail member having one side substantially U shaped in cross-section trapping one longitudinal edge of the said anchor therein; and a receiving channel on the other side of the said catch trapping the other edge of the said anchor so that the fabric and the said fabric anchor are thereby annexed to the said anchor catch.

7. The combination of a fabric anchor catch and an interfitting fabric anchor for use in the attachment of fabric to an upholstered article, the said fabric anchor comprising an anchor material less flexible than said fabric and sewed to the fabric adjacent to the edge of the fabric and intermediate the edges of the said anchor so that the anchor material extends on either side of the longitudinal sewing line, one edge of the said fabric anchor being substantially continuous and the other edge of the said fabric anchor having tab like projections; the said anchor catch compressing a rail member having one side substantially U shaped in cross-section trapping the said continuous edge of the said anchor therein and receiving slots in the other side of the said catch trapping the said tab-like projections on the other edge of the said anchor so that the said fabric anchor and attached fabric are thereby annexed to the anchor catch.

8. A means of attaching fabric to an upholstered article comprising an anchor sewed to the fabric and an anchor catch secured to the frame of the upholstered article, the said anchor being made of strip material less flexible than said fabric and sewed on a longitudinal sewing line intermediate the parallel edges of the material near the edge of the fabric, the said anchor catch being formed as a rail-like channel; the sides of the said anchor catch being substantially

U shaped in cross-section removably securing the edges of the said anchor.

9. A fabric anchor catch and a cooperating fabric anchor demountably-mounting fabric on an upholstered article, the fabric anchor comprising a material less flexible than said fabric and secured intermediate its edges adjacent to the edge of the fabric, the fabric anchor catch secured to the frame of the upholstered article comprising a longitudinal receiving portion trapping one edge of the said fabric anchor and a longitudinal restricting portion normally preventing the escapement of the said fabric anchor from the said longitudinal receiving portion of the said anchor catch.

10. An upholstery fabric attaching construction comprising a cushion, a first bar mounted on said cushion in spaced relationship thereto, a second bar mounted on said cushion in spaced relationship thereto and in parallel spaced relationship to said first bar, a fabric cover tensioned on said cushion so that its edge terminates approximately between said bars, and a fiberboard anchor strip disposed between said cushion and said bars spanning said bars stitched to said fabric adjacent the edge of said fabric and at a point on said strip intermediate the edges of said strip; said strip being located in spanning relationship to said bars by the pull of said fabric.

11. An upholstery fabric attaching construction comprising a cushion, a first bar mounted on said cushion in spaced relationship thereto, a second bar mounted on said cushion in spaced relationship thereto and in parallel spaced relationship to said first bar, a fabric covering said cushion so that its edge terminates approximately between said bars, and a fiberboard anchor strip disposed between said cushion and said bars spanning said bars stitched to said fabric adjacent the edge of said fabric and at a point on said strip intermediate the edges of said strip; said strip being located in spanning relationship to said bars by the pull of said fabric; said bars being first mounted on said cushion and said strip being first stitched to said fabric; said strip being manually insertable between said bars and between said bars and said cushion; said strip being located in spanning relationship to said bars by the pull of said fabric thereon.

12. An upholstery fabric attaching construction comprising a cushion, a first bar on said cushion in spaced relationship thereto, a second bar on said cushion in spaced relationship thereto and in parallel spaced relationship to said first bar, a fabric covering said cushion so that its edge terminates approximately between said bars, and a fiberboard anchor strip disposed between said cushion and said bars spanning said bars stitched to said fabric adjacent the edge of said fabric and at a point on said strip intermediate the edges of said strip; said strip being located in spanning relationship to said bars by the pull of said fabric; said bars being first mounted on said cushion and said strip being first stitched to said fabric; said strip being manually insertable between said bars, and, between said bars and said cushion; said strip being automatically located in spanning relationship to said bars by the pull of said fabric thereon; said strip being manually extractable from between said bars and said cushion, and, from between said bars to detach said fabric from said cushion.

13. An upholstery attaching and detaching construction comprising, a cushion, a first bar on said cushion in parallel relationship to an edge thereof, a second bar on said cushion in substantially parallel spaced relationship to said first bar, a fabric covering said cushion terminating in the area of said bars, and a fiberboard anchor strip stitched to said fabric at a point intermediate the longitudinal edges of said strip; said fiberboard strip being sidewise insertable between said bars, and, between said bars and said cushion; said fabric being adapted to exert a pull on said strip to locate their mutual stitched connection between said bars with said strip in spanning relationship to said bars thereby attaching said fabric to said cushion.

14. An upholstery attaching construction comprising, a cushion, a first bar on said cushion in parallel relationship to an edge of said cushion, a second bar in substantially parallel relationship to said first bar, a fabric covering said cushion terminating in the area of said bars, and a fiberboard anchor strip stitched to said fabric at a point intermediate the longitudinal edges of said strip; said fiberboard strip being sidewise insertable between said bars, and, between said bars and said cushion; said fabric being adapted to exert a pull on said strip to locate their mutual stitched connection between said bars with said strip in spanning relationship to said bars thereby attaching said fabric to said cushion; said strip being sidewise extractable from between said bars and said cushion and from between said bars by relieving the pull of said fabric on said strip.

15. In a device as set forth in claim 5, said bars being interconnected by a bridging member.

16. In a device as set forth in claim 5, said fabric securing said bars to said member in floating relationship thereto.

BARTLEY J. NAUGHTON, JR.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,020,407	Foster	Mar. 19, 1912
1,468,624	Bennett	Sept. 25, 1923
1,926,089	Forbes et al.	Sept. 12, 1933
2,101,124	Young	Dec. 7, 1937
2,235,874	Freeman	Mar. 25, 1941
2,323,794	Clark	July 6, 1943
2,538,855	Asaro	Jan. 23, 1951