Nov. 8, 1966 J. A. MARSH ETAL 3,283,346

CUSHION AND METHOD OF MANUFACTURE

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Fig. 1.

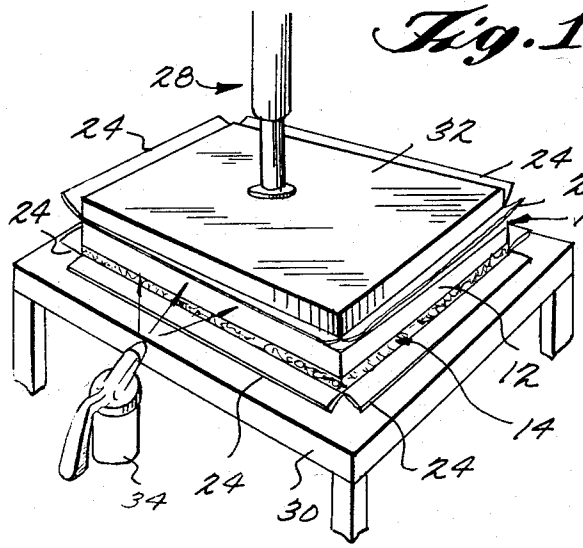


Fig. 2.

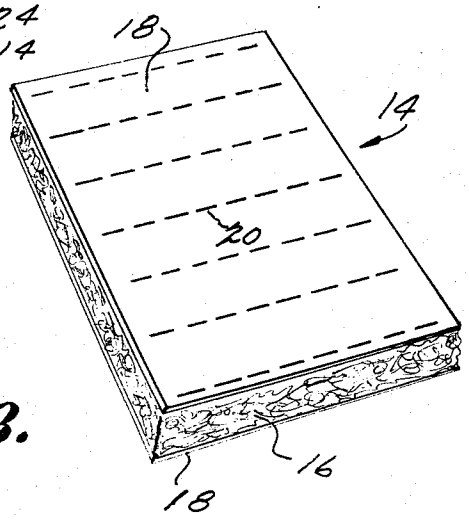


Fig. 3.

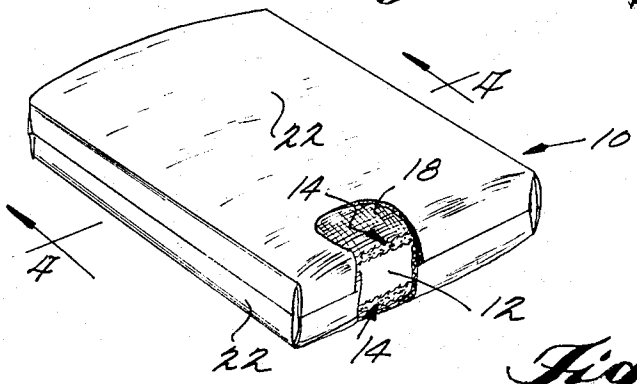
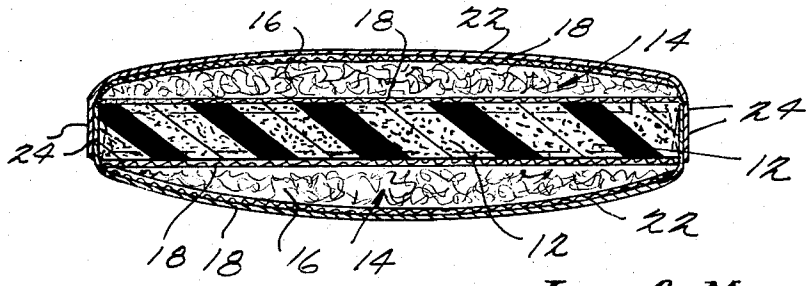


Fig. 4.



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Fig. 5.

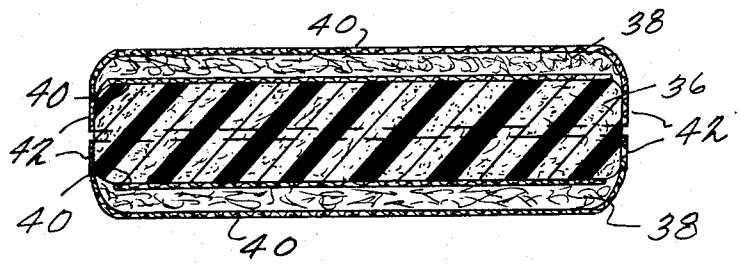


Fig. 6.

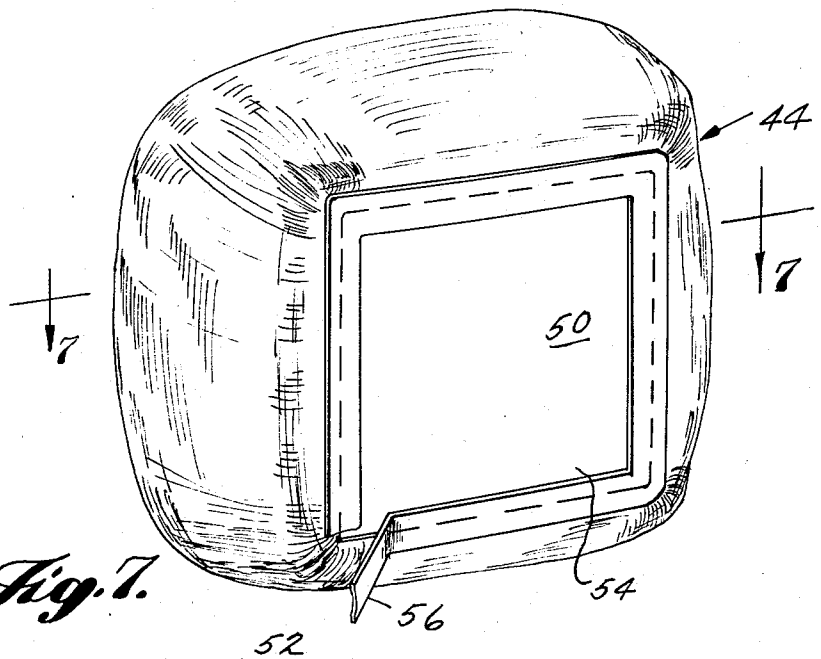
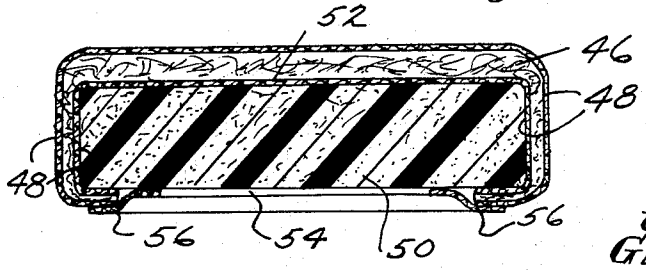


Fig. 7.



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CUSHION AND METHOD OF MANUFACTURE

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7 Claims. (Cl. 5—361)

This invention relates to cushions and pillows and intermediate similar articles of manufacture for making upholstered furniture and to methods for manufacturing the same. Although the invention will be described with reference to cushions and similar intermediate upholstering articles especially adapted for use as a seat or a back for upholstered furniture, it will be realized that cushions or pillows embodying this invention are adapted for other uses.

Cushions of the type with which this invention is concerned are known in the art and consist usually of a somewhat stiff resilient core or backbone, preferably polyurethane, covered on its opposite sides with batts of crimped Dacron fibers. These batts usually are backed on both sides with cheesecloth, commonly called scrim, which is attached to the batts by spaced lines of stitching. The assembly of the core or backbone and batts is enclosed within a cloth cover to form a cushion, which normally is then sold as an entirety to furniture manufactures and is intended to be subsequently covered with upholstery fabric.

Up to the time of the subject development, cushions of the foregoing nature have been assembled by sewing the batts, about their margins, to the cover. Initially during this sewing operation the cover is inside out and has an opening along one edge. After the batts are sewn to the cover, the latter is turned right side out and the core is inserted through the opening between the batts. After the core has been so inserted, the edges of the cover must then be sewn together along the opening.

The foregoing conventional method of assembly not only is time-consuming because of the sewing operation, but also requires the use of two different types of sewing machines, one to sew the batts to the cover, and another to sew together the edges of the cover along the opening. In addition, the Dacron batts must extend beyond the periphery of the block-like core in order to provide marginal edge portions which can be sewn to the cover with lines of stitching that extend along the edge of the cushion. These extended marginal edge portions actually are nonessential in the finished cushion and thus require the use of more batt material than necessary. Moreover, cushions made by the foregoing method have seams that are somewhat bulky.

Additionally, the foregoing mode of assembly results in a product that is subject to variations in cover tightness because of errors occurring in the sewing operation and also in the operation of cutting the batts. In the event that the cover is too tight, the finished cushion lacks the desirable soft downy feel. In the event that the cover is too loose, the cushion will be unsightly and lack smoothness because of wrinkles and so forth.

Furthermore, the block or slab-like core in the conventional type cushion is not positively attached to the cover or to the batts, and, consequently, can shift position or "crawl" within the cushion and thus distort it out of shape. The latter problem does not exist in cushions embodying this invention because all elements of the cushion are secured to each other, i.e., the cover to the core, the cover to the batts, and the batts to the core.

Accordingly, an object of this invention is to provide an improved cushion that results in savings of both material and time in manufacture.

A further object of the invention is to provide an improved cushion that is not subject to variations in cover tightness and which eliminates the bulkiness of sewn seams.

Still another object of the invention is to provide an improved cushion wherein there is no possibility of the core or backbone becoming displaced within the cushion.

Another object of this invention is to provide an improved method of assembling a cushion of the type described which accomplishes the foregoing objects.

A still further object of this invention is to provide a cushion-like intermediate article of manufacture for making upholstered furniture that is inexpensive to manufacture.

Referring now to the drawings forming a part of this specification and illustrating a preferred embodiment of the invention:

FIGURE 1 is a perspective view showing the method embodying this invention for assembling the various elements of the cushion;

FIGURE 2 is a perspective view of one of the batts of fibers covered on both sides with scrim;

FIGURE 3 is a perspective view, partially broken away, of an assembled cushion embodying this invention;

FIGURE 4 is a sectional view taken substantially along the line 4—4 of FIGURE 3;

FIGURE 5 is a sectional view of a modified type of cushion used as an intermediate article of manufacture;

FIGURE 6 is a perspective view of another modified type of cushion; and

FIGURE 7 is a sectional view taken substantially along the line 7—7 of FIGURE 6.

Referring now to FIGURES 3 and 4 of the drawings there is shown a cushion **10** embodying this invention. The cushion **10**, which for exemplary purposes only is illustrated as being generally right parallelepiped in shape and thus adapted for use as a seat or back cushion for a sofa, a chair, or the like, has a slab-like core or backbone **12** of greater width and length than thickness. The core **12** is of a resilient yet somewhat stiff material, preferably a synthetic resinous foam, e.g., polyurethane, or material having similar characteristics of resilience and stiffness.

The core **12** is interposed between two batts of fibers **14**, **14** which are generally coextensive with the core. Each batt **14** comprises loosely matted fibers **16** preferably covered on opposite sides with scrim **18**. The scrim **18** is attached to each batt **14** by spaced lines of stitching **20**, as shown in FIGURE 2. The loosely matted fibers **16** preferably are crimped synthetic fibers, preferably polyester fiber such as Dacron.

The batts **14** with the core **12** therebetween are disposed within a cover, of cloth fabric or the like, formed in two parts **22**, **22**, one for each major side of the cushion, as shown in FIGURES 3 and 4. Each cover part **22** has marginal edge portions or flaps **24** that, prior to assembly, extend beyond the peripheral edges of the batts **14** and core **12**, as seen best in FIGURE 1. After assembly, the marginal edge portions **24** of the cover parts **22** are folded over each other in overlapping relation and are bonded to each other by a suitable adhesive. The under or innermost flap **24**, and also a portion of the outer flap **24** are bonded by the adhesive to the peripheral edges of the core **12**. Moreover, portions of the flaps **24** are bonded by adhesive to the peripheral edge of the batts **14**, while marginal edge portions of the latter are also bonded by adhesive to marginal edge portions of the core **12**. Hence, all elements of the cushion are secured to each other. While various types of adhesive are suitable, it has been found that an emulsion of latex in water is very satisfactory.

Referring to FIGURE 1, the improved cushion preferably is made by stacking the various elements on a press generally indicated at **28** and having a flat bed **30** and a movable top platen **32**, in the following order: (1) cover part **22**, (2) batt **14**, (3) core **12**, and cover part **22**. The assembled elements are compressed vertically, i.e., in a direction transverse to their planes, by descent of the top platen **32**, to precisely the extent which is desired in the finished product. Preferably the top platen **32** is coextensive with the horizontal outline of the assembled cushion **10**, as shown. While the assembly is thus compressed, an operator applies adhesive to the peripheral edges of the batts **14** and core **12**, and to the inner sides of the flaps **24** of the cover parts **22**. The adhesive may be applied by a brush (not shown) or preferably by a spray gun **34**, as shown in FIGURE 1. When using the latter, the marginal edge portions **24** of the cover parts **22** can be held out to receive the adhesive by the current of air from the gun **34**.

After the adhesive has been applied, the operator folds the marginal edge portions **24** of the cover parts **22** into overlapping relation and they become bonded to each and to the peripheral edges of the batts **14** and core **12**. Some adhesive also will penetrate and soak between the batts **14** and the core **12** and thus bond the marginal edges of these elements together. Because of the foregoing construction, it will be seen that all of the elements of the cushion are secured to each other, i.e., the cover to the core, the cover to the batts, and the batts to the core. Consequently, the possibility of the core becoming displaced within the cushion is eliminated. Additionally, the method of assembly provides for a precisely controlled degree of cover-tightness.

It is to be understood that although the invention has been illustrated and described with reference to a cushion generally in the shape of right parallelepiped, which may be termed rectangular, the invention is equally applicable to cushions of other shapes, e.g., round, oval, etc. Furthermore, it will be seen that by omitting a batt from one side of the core a cushion can be constructed, in the same manner as aforedescribed, that can be used for what is usually called a "semi-attached" cushion, i.e., one wherein the cushion, although made as a separate unit, is subsequently sewn to the back of a piece of upholstered furniture.

FIGURE 5 illustrates a simplified modification of the cushion shown in FIGURES 3 and 4 that can be used as a cushion-like intermediate article in making upholstered furniture.

Referring now to FIGURE 5, the core **36** is interposed between two batts of fiber **38**, **38** that are cut to have substantially the same or slightly larger size peripheral outline as the core. Each batt comprises loosely matted fibers covered on opposite sides with scrim **40** made of the same material as previously described. After assembly, the marginal edge portions **42** of the top layer of scrim of the top batt, and the bottom layer of scrim of the bottom batt, are stretched and pulled over the peripheral edges of the core and bonded thereto by a suitable adhesive or cement. Moreover, marginal edge portions of the fibrous portion of the batts **38**, as well as the scrim **40**, are also bonded by adhesive to marginal edge portions of the core **36**. Hence, all elements of the cushion are secured to each other. In this connection, the scrim or cheesecloth is sufficiently stretchy so that it can be pulled and stretched as aforesaid to provide a product wherein the outer surface of the opposite sides of the cushion is relatively tight. If desired, one of the batts can be omitted to provide a semi-attached cushion.

A still further modified embodiment of the invention is shown in FIGURES 6 and 7, indicated generally as **44**. Here, as best seen in FIGURE 7, a batt **46** covered on opposite sides with scrim **48** is first cut to a peripheral outline considerably larger than that of a backbone or

core **50** of polyurethane. The batt **46** is then placed to overlie the front face **52** of the core **50** and the overhanging marginal edges of the batt are wrapped around all four peripheral edges of the slab-like backbone member **50** and bonded to the back face **54** of the backbone member **50**, near the marginal edges thereof, by an adhesive. Additional bonding strength may be provided by applying tape **56** to overlie the marginal edge portion of the batt **46** and the adjacent exposed surface of the back face **54**. All of the elements of this article preferably are of the same material as the cushion shown in FIGURES 3 and 4.

The intermediate cushion-like articles of manufacture shown in FIGURES 5 and 6 can be enclosed in upholstery fabric in a conventional manner, and then used for upholstery purposes. The semi-attached article wherein one of the batts is omitted can be secured in conventional fashion to the back of an upholstered piece of furniture, and subsequently covered with upholstery fabric. The article shown in FIGURE 6 is used where a more rounded appearance is desired.

Although articles of the type shown in FIGURES 5 and 6 are not as finished in appearance as a cushion which is provided with a fabric cover, e.g., FIGURE 3, they are less expensive to make and will suffice for certain purposes of manufacturers of upholstered furniture. In this connection, it will be realized that a simple cushion of the aforesaid type also can be made in a variety of shapes and sizes.

It will be realized that a manufacturer of upholstered furniture could eliminate individual cushions and inner springs, simply secure, to the back or seat of the furniture piece, a polyurethane base element which has a batt of Dacron fibers secured thereto by cement as aforedescribed. In this case, the core of polyurethane would have to be made thick enough to take the place of omitted coil springs.

The method of manufacturing the articles shown in FIGURES 5 and 6 obviously is similar to the method described above for a cushion having a two-part cover. In the case of the article shown in FIGURE 5, the platens used to compress the backbone member **36** and the batt **38** assembled in overlying relation must be sufficiently smaller in cross-sectional area than the batt to enable the marginal edge portions **42** of the scrim on the outer sides of the batt to be pulled into overlapping relation with the peripheral edge portion of the backbone member. Also, in compressing the assembled backbone member **50** and overlying batt **46** shown in FIGURES 6 and 7, the platen used to compress the back face **54** of the backbone member must be of smaller outline than the backbone member to permit the marginal edge portions of the batt to overlie and be cemented to the marginal edge portions of the back face of the backbone member and to permit adhesive tape to be applied in overlying relation with the marginal edge portion of the batt and the adjacent exposed areas of the backbone member.

Although specific embodiments of the invention have been shown to illustrate the principles of the invention, it should be clear that many modifications can be effected that do not depart from these principles and therefore this invention should be limited only by the spirit and scope of the following claims.

What is claimed is:

1. A cushion comprising: a cover and a filler, said filler including a slab-like backbone member of resilient but somewhat stiff material and at least one batt of loosely-matted fibers overlying at least one side of said member, said cover being formed in two parts disposed in overlying relation with the opposite sides of said filler and having marginal edge portions folded in overlapping relation against the peripheral edges of said filler; and an adhesive bonding said marginal edge portions to each other, bonding the marginal edge portions of at least one of said cover parts to the peripheral edges of said

filler, and bonding together portions of the backbone member and the batt.

2. A cushion comprising: a cover and a filler, said filler including a slab-like backbone member of resilient but somewhat stiff material and batts of loosely-matted fibers overlying both sides of said member, said cover being formed in two parts disposed in overlying relation with the opposite sides of said filler and having marginal edge portions folded in overlapping relation against the peripheral edges of said filler; and an adhesive bonding said marginal edge portions to each other, bonding the marginal edge portions of at least one of said cover parts to the peripheral edges of said filler, and bonding together portions of the backbone member and the batt.

3. The structure defined in claim 1 wherein the adhesive bonds the marginal edge portions of the one cover part to the peripheral edges of the backbone member.

4. The structure defined in claim 1 wherein the adhesive bonds the marginal edge portions of the one cover part to the peripheral edges of both the backbone member and the batt.

5. The structure defined in claim 1 wherein the adhesive bonds the marginal edge portions of the one cover part to the peripheral edges of both the backbone member and the batt, and also bonds together marginal edge portions of said backbone member and said batt.

6. The structure defined in claim 2 wherein the adhesive bonds the marginal edge portions of the one cover part to the peripheral edges of the backbone member.

7. The structure defined in claim 2 wherein the adhesive bonds the marginal edge portions of each cover part to the peripheral edges of the backbone member and to the peripheral edges of the corresponding batt.

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