March 29, 1966 L. K. SMITHSON 3,242,508

COMPOSITE BATT FOR QUILTING

Filed Aug. 15, 1963

FIG. 1

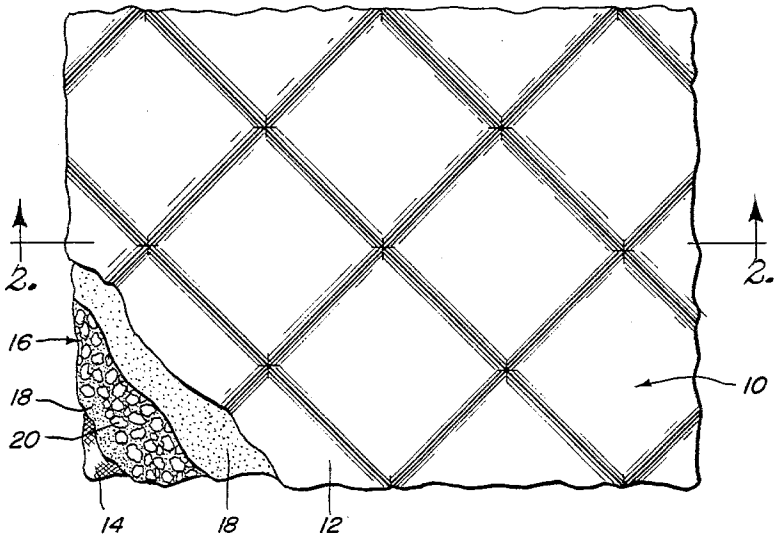


FIG. 2

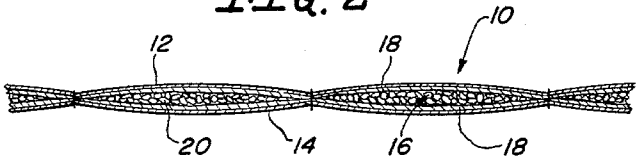
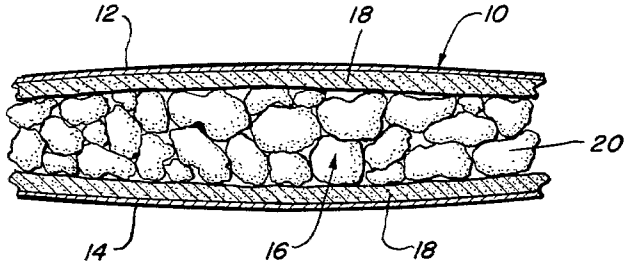


FIG. 3



INVENTOR.
Lee K. Smithson
BY Richard W. Carpenter
Atty.

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COMPOSITE BATT FOR QUILTING

Lee K. Smithson, P.O. Box 980, Southern Pines, N.C.

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1 Claim. (Cl. 5—334)

This invention relates to quilting, and more particularly to an improved padding or batt, and method of making same, for use in a quilted fabric.

It is well known to those familiar with the art that conventional quilting of the type commonly employed in the covering or upholstering of furniture is formed by interposing a uniformly thick blanket or batt of a garnetted material, such as cotton, between a pair of relatively thin, outer, sheets of face and back cloth materials.

The composite fabric is then formed by stitching back and forth across all of the layers of material in a plurality of intersecting rows of stitches to achieve a "quilted" effect by compressing the material at the rows of stitches.

In many instances where the top or face sheet of the quilting has a particular pattern or design, such as a floral pattern or geometric design, it is possible, and highly desirable to enhance the beauty of the quilting by using the location of the rows of stitches to emphasize or bring out the pattern or design. This can be accomplished by positioning the rows or lines of stitches at the edges or borders of the figures of the pattern.

In order for this to be effective, however, it is essential that the padding or batt be resilient enough to fluff out or expand to provide a thicker cross section for the material between the lines of stitching.

Also, it is necessary that the filling or batt be capable of retaining substantially all of its resilient character throughout the life of the quilted fabric, so that the quilting will not flatten out in time and lose a portion of its beauty or appearance.

Although conventional cotton batting in roll or sheet form is most commonly used as the filler or padding in the formation of quilted fabrics, plain cotton batting does not possess a sufficient degree of resiliency to achieve the desired result in the finished product. Further, cotton tends to lose its resiliency after a relatively short period of time, when compressed between a pair of outer sheets of cloth by rows of stitching.

In an effort to improve the quality and beauty of quilting several other materials have been employed as fillers, but most of these substitutes have other disadvantages which render their use unsatisfactory or impractical.

Attempts have been made to use a solid sheet or slab of foamed plastic or rubber as a batt or filler for quilting, but this has several disadvantages. In the first place it is extremely unwieldly and difficult to maneuver for the operator forming the quilting. Also, without using a filler having an excessive thickness, it is difficult to provide the same degree of variance in thickness for a quilted fabric having a one-piece batt, as can be accomplished by using a composite batt including a layer of particulate material.

Also, attempts have been made to substitute for conventional batting a filter comprised entirely of separate pieces of plastic material or rubber in a foamed state or condition, but these arrangements have also been unsatisfactory, because the outer sheets are drawn into direct face-to-face contact at the lines of stitching, with the pieces gathering in the pockets between the lines of stitching to form lumps or mounds, rather than a uniformly quilted effect. This formation is also considerably weaker, from a structural standpoint, when the outer sheets are pulled together in direct contact with each other by the stitching.

It is, therefore, a primary object of the invention to provide an improved composite batt, and method of making same, for quilting which has a high degree of resiliency throughout its entire area, but which can be readily compressed at the lines of stitching to form a cross section of uniformly varying thickness.

A more specific object of the invention is the provision of a composite quilting batt having a layer of finely shredded particles of resilient material interposed in a continuous blanket between a pair of sheets or layers of a less resilient garnetted material.

These and other objects of the invention will be apparent from an examination of the following description and drawing, wherein:

FIGURE 1 is a plan view of a quilted fabric having a batt embodying features of the invention, with portions of the structure broken away;

FIGURE 2 is a transverse section taken on line **2—2** of FIGURE 1; and

FIGURE 3 is a greatly enlarged view of a portion of the structure illustrated in FIGURE 2.

It will be understood that, for purposes of clarity, certain elements have been intentionally omitted from certain views where they are illustrated to better advantage in other views.

Referring now to the drawing for a better understanding of the invention, it will be seen, that a quilting or quilted fabric, indicated generally at **10**, comprises a pair of top and bottom outer sheets **12**, and **14**, respectively, of face and back cloth materials positioned on opposite sides of and secured to a composite inner pad or batt, indicated generally at **16**, embodying features of the invention.

As best seen in FIGURE 3, batt **16** includes a pair of uninterrupted outer layers or sheets **18** of a conventional garnetted material, such as cotton, Dacron, or other synthetic material between which is interposed a highly resilient central layer **20** formed from particulate foamed material.

The central layer comprises a substantially continuous blanket of uniformly disposed, finely shredded or ground particles of a foamed material such as polyether, polyurethane, or other plastic having similar characteristics.

The particles of foamed material are deposited between the outer layers of the batt while they still retain the charge of static electricity created by their formation, so that the attraction of the adjacent particles to each other and to the outer layers of the batt obviate the necessity for any foreign bonding or adhesive material.

As best seen in FIGURE 2, the high degree of resiliency of the central layer of particulate foamed material in the composite batt causes those portions of the batt disposed between the rows or lines of stitches to fluff or spring out and thereby produce the uniformly varying thickness in the quilted fabric which is essential to achieve the desired "quilted" effect.

An essential feature of the invention resides in the method of forming the composite batt by utilizing the attraction caused by the shredding of the foamed material to adhere the resilient particles to each other to provide a relatively uniform, substantially continuous blanket of particulate foamed material for the central layer of the batt.

Although the use of foamed material in one form or another in cushioning is not new per se, it is believed that the use of a mass of particles of foamed material held together by static electricity to form a continuous blanket without the use of foreign adhesive compositions in a composite multi-ply batt is completely new to the art of fabric forming.

Now to describe the method of making the novel composite batt, and the quilting in which it can be used.

The shredding or grinding of the foamed material causes the particles to develop the static electricity previously referred to, and it has been discovered that so long as the particles are kept together in a large mass, as for example in a bin or box, without their coming into contact with foreign materials they will retain their charges of static electricity indefinitely. However, once the large mass is broken up and the particles dispersed, the charges of static electricity tend to dissipate in a relatively short period of time, usually in a matter of a few days.

Therefore, it is essential to the method for forming the composite batt of the invention that the particles of foamed material be distributed over one of the layers of garnetted material of the batt, either immediately after they have been formed by shredding, or immediately after they have been dispersed from their mass in a bulk shipping-container.

In the practice of the invention the particles, upon their removal from a bulk shipping container, are immediately placed into a particle distributing or spreading apparatus, and a web of garnetted material is passed under the apparatus on a conveyor. As the web of garnetted material passes under the apparatus, the particles of foamed material are uniformly deposited over the entire area of the web in a continuous operation, so that the attraction caused by the static electricity between adjacent particles will cause them to adhere to each other and form a substantially continuous blanket of relatively uniform thickness and texture, which becomes the central layer of the batt.

As soon as the central layer of particulate foamed material has been deposited on the upper surface of one outer layer of garnetted material, another web or outer layer of garnetted material is passed over the first outer layer and central layer and the three layers are brought together to form the composite batt.

If it is desired to form a quilted fabric at this time, the composite batt may be interposed between a pair of outer sheets of face and back cloth materials and secured thereto by a plurality of intersecting rows or lines of stitches.

Once the composite batt is completely formed, however, the three layers will remain in position, and the batt can be rolled and stored until it is needed.

I claim:

A quilted fabric of the type employed in the upholstery of furniture and the like, comprising:

(a) a pair of top and bottom outer sheets of face and back cloth materials; and

(b) a composite, multi-ply batt interposed between said outer sheets and secured thereto by a plurality of intersecting lines of stitches extending completely through both of said outer sheets and said batt in a predetermined pattern;

(c) said batt including a pair of relatively thin, flat, uninterrupted outer layers of garnetted material; and

(d) a single layer of finely shredded particles of foamed, resilient plastic material interposed between said layers of garnetted material;

(e) said particles being initially adhered to each other entirely by the attraction of static electricity to form a continuous blanket of substantially uniform thickness in the areas between said lines of stitches.

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FRANK B. SHERRY, *Primary Examiner.*

A. M. CALVERT, *Assistant Examiner.*