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S. BLAKE ET AL
WATERPROOF MATTRESS
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2,238,550

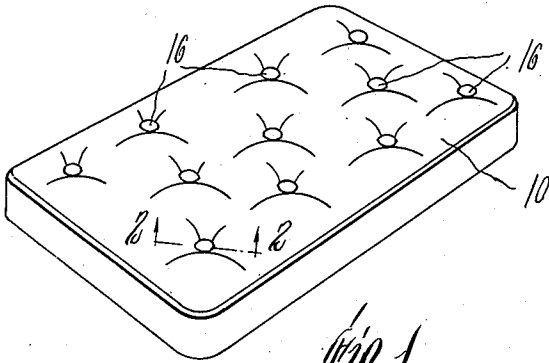


Fig. 1.

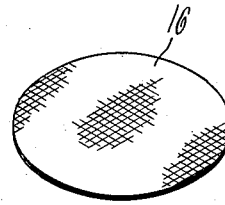


Fig. 3.

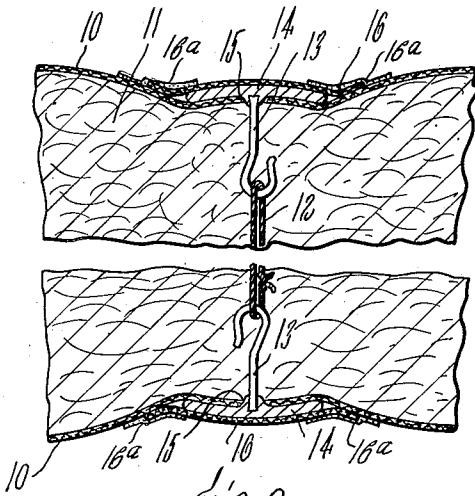


Fig. 2.

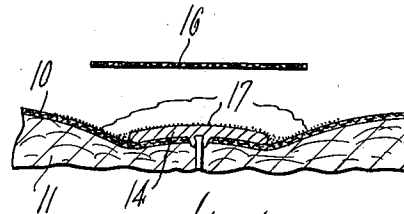


Fig. 4.

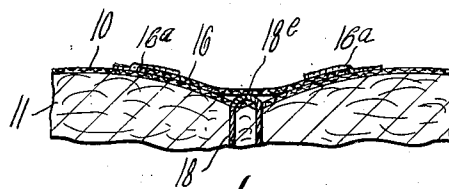


Fig. 5.

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WATERPROOF MATTRESS

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3 Claims. (Cl. 5—356)

This invention relates to a waterproof mattress and more especially a mattress intended to be used in beds or cribs for infants and small children to whom bladder control has not yet been taught.

The mattress of the present invention comprises a waterproof ticking fabric punctured locally by the anchoring portions of the usual tufting but maintained watertight at each punctured locality by a small piece of ticking fabric covering completely the anchoring portion of the tufting and united by waterproof adhesive to such portion and to the ticking fabric immediately surrounding such portion. When the anchoring portion of the tufting comprises a round button, the sealing fabric piece may advantageously assume a circular form of a diameter substantially greater than that of the button and united by the waterproof adhesive to substantially only an annular zone of ticking fabric immediately surrounding the button.

With the foregoing and other features and objects in view, the present invention will now be described in further detail with particular reference to the accompanying drawing, wherein

Fig. 1 shows in miniature perspective a mattress in which the instant invention is embodied.

Fig. 2 is an enlarged section through a tufted portion of the mattress on the line 2—2 of Fig. 1, some of the body or thickness of the mattress being broken away and the anchoring portions of the tufting and the fabric seals being shown enlarged to about twice their normal size so as to illustrate the instant invention to best advantage.

Fig. 3 illustrates in perspective a seal of circular form suitable for the purpose hereof.

Fig. 4 represents a section through a button anchor or tuft and the adjacent mattress through a button-tufted mattress portion and the seal of Fig. 3 just before it has been adhesively fixed in position.

Fig. 5 illustrates a section through a tufted mattress portion whose tufting is anchored by a bight in the tufting cord, such bight and the ticking apertures created thereby being masked by a seal of ticking fabric adhesively secured in place.

The mattress hereof may comprise a waterproof ticking or covering fabric 10, which may enclose or envelop the usual mattress filler materials. While the particular filler material has for convenience been illustrated as being hair or analogous material 11, the mattress hereof may, if desired, be comprised internally of a so-called innerspring assembly covered with cotton felt or like padding material. In any event, tufting

passes at more or less regularly spaced intervals through the body of the mattress from one face to the other so as to inhibit, so far as possible, undesirable movement of the filler material or materials and to impart the desired quilted appearance to each mattress face, as appears in Fig. 1. The particular form of tufting shown in Fig. 2 comprises a closed loop of cord 12, each of whose end portions engages a hook-shaped shank 13 projecting from a round button 14. The inner face of the button 14, which constitutes the anchoring portion of the tufting, may lie next to the outer face of the ticking fabric 10 and create a localized depression or indentation therein by reason of the localized compression of the mattress filler material or materials.

In being forced through the ticking fabric 10 of the mattress, the hook-shaped shank 13 rents the fabric and thereby creates an aperture 15 therein; or such aperture may preliminarily be created by a suitable piercing or prying instrument, whereupon the hook-shaped shank 13 may readily be passed therethrough. Inasmuch as liquid tends to accumulate on the upper face of the mattress at the indented or recessed localities at which the buttons 14 are located, such liquid would ordinarily tend to leak through the apertures 15 into the mattress and thus to foul the mattress filler materials. Such leakage is stopped effectively, in accordance with the present invention, by a circular sealing piece or patch 16 of a diameter substantially greater than that of the button 14. The piece 16, which may advantageously be composed of a waterproof fabric similar to that of the ticking 10, is secured in place over the button 14 by suitable waterproof adhesive 17 applied by brush or otherwise over the external face of such button and over the annular zone of ticking fabric substantially only immediately surrounding such button.

The form of tufting shown in Fig. 5 is distinguished from that hereinbefore described essentially in that the bight or end portion 18e of the closed tufting loop 18 serves to anchor the tufting. However, as in the case of the tufting hereinbefore described, the apertures created in the ticking fabric 10 by passage of the tufting cord 18 therethrough are closed off by a circular piece of fabric 16 fixed in position over the bight or anchoring portion 18e of the cord and over the surrounding ticking fabric by waterproof adhesive. The end portions of the tufting cord may be tied together in closed loop form by a knot (not shown) located inside the mattress body as

is the knot of the closed loop of cord 12 shown in Fig. 2.

It might be noted that waterproof ticking fabric, such as is adapted for the purposes hereof, may advantageously consist of woven cotton fabric or the like suitably impregnated or coated with such waterproofing material as a suitable cellulose ester, artificial resin, rubber compound, etc. When the ticking fabric is thus impregnated or coated with a cellulose ester, such as cellulose acetate, or with a rubber compound, such as rubber latex, the waterproof adhesive employed for uniting the sealing piece 16 in place to the ticking fabric is preferably of a corresponding composition, for instance, is cellulose acetate lacquer or solution in the case of a ticking fabric waterproofed with cellulose acetate and rubber latex cement in the case of a ticking fabric waterproofed with rubber latex composition. By using for the sealing piece 16 a waterproof adhesive or cement of a composition substantially like that of the waterproofing or impregnating compound of the ticking fabric, the desired strong bond between such piece and the ticking is effected, namely, a bond in the nature of an autogenous weld by reason of the similarity between the waterproof fabric of the sealing piece and the waterproof fabric of the ticking and the bonding affinity of the waterproof adhesive for the waterproofing material in both the sealing piece and the ticking.

It is possible to depart in various respects from the particular embodiment of the invention as hereinbefore described. Thus, in lieu of applying the waterproof adhesive to the areas, including the external surface of the button 17 and the surrounding ticking fabric, it is possible to apply such adhesive to the confronting or underface of the sealing piece 16. While such adhesive may be a cellulose ester lacquer and be wet or sticky when the piece 16 is applied to the areas to be covered thereby, yet it is possible to provide sealing pieces 16 whose sealing faces are coated with adhesive in normally dry condition (e. g., a thermoplastic cellulose ester or artificial resin composition) but activatable to an adhesive state under heat. In such case, the piece 16 coated on its sealing face with normally dry or non-sticky adhesive may be applied to the areas to be covered thereby under the pressure of a hot iron or similar instrumentality that activates the adhesive coating to an adhesive condition and thus causes it to unite tenaciously to the underlying areas and to set or congeal to its normally dry state. Although the sealing piece of fabric may be of non-circular form, the circular piece is advantageous in that it is devoid of corners such as might serve to start the loosening of the piece from the surface supposed to be sealed thereby.

The mode of sealing mattress tufting herein described is further advantageous in that it also tends to mask irregularity in the exposed tufting portion or element and thus to minimize discomfort to the body of the sleeper. In so doing, it also does away with such unsightliness as may be attributable to an exposed button or similar tufting anchor, especially a steel or other metallic button subject to rusting or corrosion. Another important advantage presented by the present invention is that sealed ticking areas, that is, substantially only those surrounding the anchoring portions or elements of the tufting, are composed of flexible superposed layers of waterproof fabric united by flexible waterproof adhesive and hence

capable of being flexed indefinitely under the stresses of using the mattress. In other words, the superposed layers of fabric do not tend to separate from one another but, rather, remain in leakproof union, whereas, when it is attempted to form a seal by simply cementing a rigid or comparatively inflexible tufting button or like element to a mattress ticking fabric, leakage of water past the button or like element to the inside of the mattress is apt to occur, since continued use of the mattress and attendant flexing stresses thereon tend to cause the button to separate from or move relatively to the flexible fabric ticking so as to open up passages to and through the ticking aperture through which the button shank or the tufting cord passes. The sealing pieces of the mattress hereof are of a fabric similar to that of the mattress ticking so that they may harmonize or blend with the ticking and thus be practically indistinguishable therefrom. In some instances, it may be desirable to apply waterproof adhesive in liquid form, such as cellulose acetate lacquer or its equivalent, to the exposed face of the marginal portion of the already-applied or adhesively-fixed sealing piece of fabric and to the exposed face of the immediately surrounding ticking fabric, as indicated at 16a of Figs. 2 and 5, so as to seal the edge portions of the piece most effectively and thereby minimize possibility of an edge portion of the piece parting from the ticking fabric or presenting a lifting tab that might be grasped by children. In other words, access to the edge portion of the piece is thereby prevented.

When the sealing fabric pieces to be used for the purposes hereof are coated on their under-faces with a normally dry but thermo-activatable adhesive, they may be cut or died out from a continuous sheet of fabric pre-coated with the adhesive. In much the same way, the sealing fabric pieces to be used for the purposes hereof may be coated on their under-faces with a normally sticky or tacky adhesive and they may be cut or died out from a continuous sheet of fabric that has been coated with such adhesive and then protected on its coated face with so-called Holland cloth or other suitable insulating membrane. The protective cloth or membrane may be stripped from the sealing fabric pieces when the latter are to be applied as sealing members in the fabrication of the mattresses hereof. The normally sticky adhesive may be of any suitable composition known to those skilled in the art.

We claim:

1. A waterproof mattress comprising a waterproof ticking fabric, tufting passing through the body of the mattress from one face to the other, the anchoring portion of said tufting penetrating said ticking fabric and creating an aperture therein, and a small piece of ticking fabric covering completely the anchoring portion of said tufting and united by waterproof adhesive to said portion and to ticking fabric substantially only immediately surrounding said portion and thereby sealing said aperture against leakage, the exposed face of the marginal portion of said piece and the exposed face of the immediately surrounding ticking fabric having waterproof adhesive applied thereto so as to seal the edge portions of said piece against parting from the ticking fabric and to prevent access to the edge portion of said piece.
2. A waterproof mattress comprising a waterproof ticking fabric, tufting passing through the body of the mattress from one face to the other, the anchoring portion of said tufting comprising a round button and a shank penetrating said tick-

ing fabric and creating an aperture therein, and a circular piece of ticking fabric of a diameter substantially greater than that of said button covering completely said button and united by water-proof adhesive to said button and to an annular zone of ticking fabric substantially only immediately surrounding said button and thereby sealing said aperture against leakage, the exposed face of the marginal portion of said piece and the exposed face of the immediately surrounding ticking fabric having waterproof adhesive applied thereto so as to seal the edge portions of said piece against parting from the ticking fabric and to prevent access to the edge portion of said piece.

3. A waterproof mattress comprising a ticking fabric impregnated with waterproofing material, tufting passing through the body of the mattress from one face to the other, the anchoring portion of said tufting comprising a round button and a shank penetrating said ticking fabric and creating an aperture therein, and a circular fabric

piece of a diameter substantially greater than that of said button covering completely said button and united by waterproof adhesive to the external surface of said button and to an annular zone of ticking fabric substantially only immediately surrounding said button, the exposed face of the marginal portion of said piece and the exposed face of the immediately surrounding ticking fabric having waterproof adhesive applied thereto so as to seal the edge portions of said piece against parting from the ticking fabric and to prevent access to the edge portion of said piece, said piece being of a fabric similar to that of said ticking and impregnated with similar waterproofing material and said adhesive being of a composition substantially similar to said waterproofing material so as to create in effect an autogenous weld between said piece and said ticking and thereby seal said aperture against leakage.

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