Sept. 15, 1931. L. E. PITTONI 1,823,700

TUFTED MATTRESS

Filed June 6, 1928

Fig. 1.

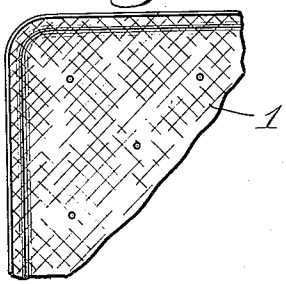


Fig. 2.

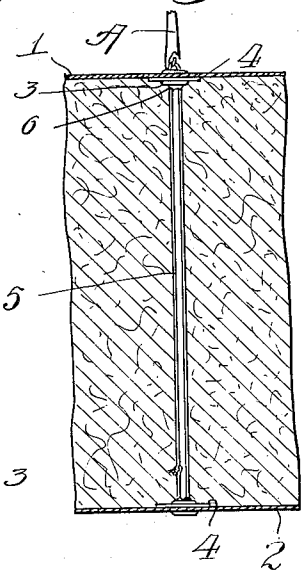


Fig. 3.

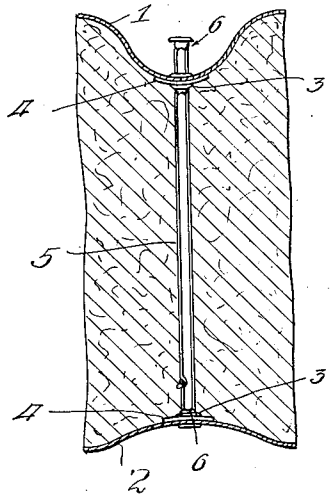


Fig. 4.

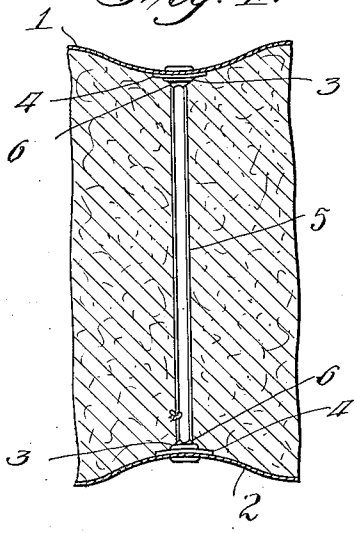


Fig. 5.

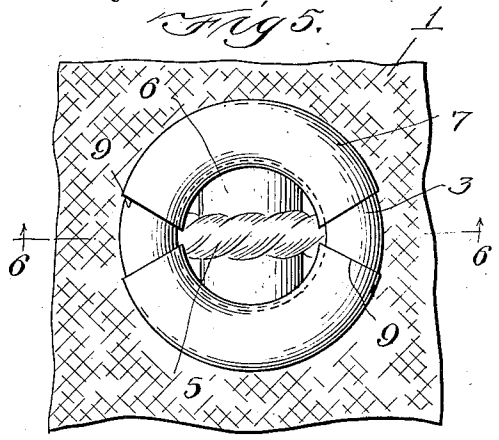


Fig. 7.

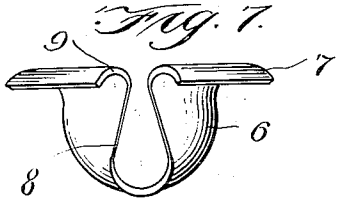
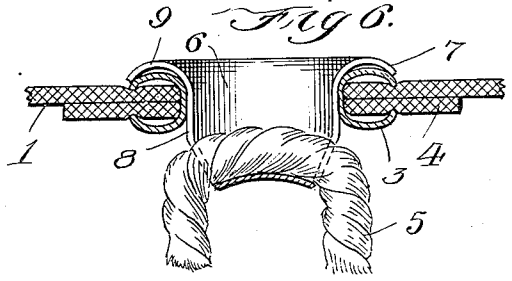


Fig. 6.



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1,823,700

UNITED STATES PATENT OFFICE

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TUFTED MATTRESS

Application filed June 6, 1928. Serial No. 283,444.

The usual method of tufting a mattress is to secure a tuft or button to the loop end of a doubled string passing through the mattress from top to bottom; the loose ends of the string being then tied about another tuft, or being simply tied and looped over a button. By this old method the length of string between top and bottom tufts may not be the same at any two points in the mattress, and may vary as much as an inch; because the final length of string depends upon the pull exerted by the workmen in tying a string, as well as the resistance encountered.

In my prior application Serial Number 278,611 I have disclosed a means for overcoming the foregoing objections, making it possible for unskilled persons to secure uniform thickness of the mattress throughout.

In the specific embodiment of my invention illustrated in the aforesaid application, the positions of the tufts depends upon the skill of the operator in locating the tying strings. Furthermore, the ends of the strings are engaged with tufts or buttons lying on the outside of the fabric. In the case of hard mattresses the projections on the outside are of no importance, since they are located in depressions formed by pulling the top and bottom of the mattress toward each other. However, where the mattresses are soft, as is true of spring-filled mattresses, projecting tufts or buttons are objectionable because they will be felt by a person lying in bed on the mattress; and the user, for this reason frequently cuts off projecting tuft elements on the soft mattresses.

The object of the present invention is to make possible so-called tufting of a mattress without leaving projections or protuberances that will make the mattress uncomfortable to a person lying on the same, particularly in the case of soft mattresses.

I prefer to use preformed endless strings by means of which uniformity of thickness at the tufts will be obtained. Therefore, viewed in one of its aspects, the present invention may be said to have for its object to make it possible quickly and easily to tuft a mattress uniformly throughout, without leaving projections or protuberances.

In carrying out my invention I provide the top and bottom sheet of the mattress boxing with eyelets properly spaced, so that the tufting strings may pass through the mattress from each upper eyelet to a lower eyelet. By this means the positions of the tufts are predetermined and do not depend upon the skill of the person applying the tufts. Eyelets have heretofore been used but, because they leave openings in the top and bottom of the boxing, dirt is able to enter the mattress through the eyelets, and the mattress stuffing sometimes pushes out through the eyelets.

Viewed in one of its aspects, the present invention may be said to have for its object a simple and novel means for tufting a mattress in which the strings pass between top and bottom eyelets, whereby the openings in the eyelets will be closed so as to prevent the entrance of dirt and the escape of the stuffing material.

The various features of novelty whereby my invention is characterized will hereinafter be pointed out with particularity in the claims; but, for a full understanding of my invention and of its objects and advantages, reference may be had to the following detailed description taken in connection with the accompanying drawings, wherein:

Figure 1 is a top plan view of a corner of a mattress tufted in accordance with the present invention; Fig. 2 is a vertical section, on a larger scale than Fig. 1, through a fragment of a mattress, illustrating a step in the process of making one of the tufts; Fig. 3 is a view similar to Fig. 2, illustrating a further stage in the process of making a tuft; Fig. 4 is a view similar to Figs. 2 and 3, showing the tuft completed; Fig. 5 is a plan view, on a greatly enlarged scale of one of the upper or lower tuft terminals as it appears in the completed mattress; Fig. 6 is a section taken approximately on line 6—6 of Fig. 5; and Fig. 7 is a side view of the grommet, one of which is set into each eyelet.

Referring to the drawings, 1 and 2 represent the top and bottom sheets or walls of a mattress boxing, the thickness of the same being exaggerated in the drawings. Before

the elements of the boxing are assembled, each of these sheets is provided with a series of eyelets 3 distributed over the same in accordance with any predetermined design. In order to strengthen the fabric at the eyelets, a washer-like piece of fabric, as indicated at 4, is preferably placed on the under or inner side of the boxing fabric at each eyelet, so that each eyelet will be clinched upon a double thickness of fabric.

The tufting strings 5 are of the endless type, preformed in any suitable manner, so that they will be of uniform length where a mattress of uniform thickness is desired. These strings are supported from the eyelets by means of grommet-like elements 6, preferably made of spring sheet metal of bowl-shape and having an outwardly and downwardly curved rim 7. Each grommet is split across one diameter so as to leave only a portion of the bottom of the bowl intact. The openings between the two halves of the sides and rim of the grommet are preferably shaped as indicated at 8 in Fig. 7, so that at the bottom they are semi-circular in shape, of a diameter about equal to the diameter of the tufting string. The sides of the openings gradually approach each other toward the top of the grommet, so that at the top the width of the openings is less than the thickness of the string. Furthermore, the rim or flange portions of the grommet are cut away at the slit, as indicated at 9, to provide a wide tapered mouth on each side of the grommet, which mouths will serve to guide the string into the slits or slots in the sides of the bowl or cup of the grommet.

After the mattress has been completed, except for the tufting, the tufting may be performed by any unskilled person as follows: A preformed endless string is pressed into the slit of one of the grommets which yields to let it pass through the narrow necks of the slits. Then, with the knot in the string lying close to the grommet, a long needle, a fragment of which is shown at A in Fig. 2, is used to draw the string up through the mattress; the needle going through one of the eyelets in the bottom of the mattress boxing and passing up through the corresponding eyelet in the top. A pull on the string will draw the grommet tightly into the lower eyelet. The mattress is then pressed down, as indicated in Fig. 3, so as to permit a section of the string to extend above the top thereof. A second grommet is then slipped into the loop of the string at the top, as shown in Fig. 3. Then, upon releasing the pressure on the mattress, the latter expands, causing the upper grommet to be drawn down into the upper eyelet as shown in Fig. 4. This process is repeated until all of the tufting strings have been applied.

By making the grommets of spring metal, or at least of metal that possesses a certain degree of resiliency, they will be held tightly in the eyelets and will not come out when the mattress is pressed down by the weight of a person lying on the same. It will be seen that by making the bowl or cup of the grommet of the proper depth the loop of the string will lie just under the eyelet, forming a substantial closure for the major portions of the slits in the grommet. Consequently there are no openings left for the escape of the mattress stuffing, and no substantial openings through which dirt can enter the mattress. The vertical thickness of the eyelets is exaggerated in the drawings, but it will be seen that if the eyelets and the grommets are made of thin sheet metal, there would be no appreciable elevation of the surface of the mattress where the tufts appear, even when the fabric is flattened out. The eyelets and the grommets may be made of any suitable material and be of any suitable color so as to harmonize with the color scheme of the mattress fabric, or be in contrast therewith, as may be desired.

While I prefer to use grommets that are bowl-shaped or cup-shaped, to secure a large holding surface and effect a substantially complete closure for the openings in the eyelets, yet other suitable means may be employed for hooking the loops at the ends of the doubled strings to the top and bottom walls of the mattress boxing. Also, while eyelets for the openings through which the grommets or suspending means pass are preferably used, these openings could be otherwise reinforced if reinforcing be desired. Also, while I prefer to use the endless strings in order to secure all of the advantages of the invention, strings of any kind or other suitable flexible members might be utilized; so that where I use the word "strings" I mean any flexible elements suitable for the purpose. Therefore, while I have illustrated and described with particularity only a single preferred form of my invention, I do not desire to be limited to the exact structural details thus illustrated and described; but intend to cover all forms and arrangements which come within the definitions of my invention constituting the appended claims.

I claim:—

1. The combination with a mattress and its boxing, of cup-shaped elements, each having a slit leading inwardly through the top, extending through the top and bottom walls of the boxing and having flanges resting on the outer sides of said walls, and flexible ties extending through the mattress and engaged in the slits of said elements, there being a tie between each of said elements and the corresponding element in the opposite wall of the boxing.

2. The combination with a mattress and its boxing, of cup-shaped elements, each hav-

ing a slit leading inwardly through the top, extending through the top and bottom walls of the boxing and having flanges resting against the outer sides of said walls, and endless strings each extending through the mattress between two of the said elements at one wall and the corresponding elements at the opposite wall, the strings passing through the slits in said elements.

3. The combination with a mattress and its boxing, of eyelets fixed in the top and bottom sheets of the boxing, grommets fitting frictionally in said eyelets and having flanges resting against the outer faces of the latter, the grommets being long enough to extend into the mattress beyond the eyelets and being split across from the outer ends to points inwardly from the eyelets, and endless strings passing through the mattress and each passing through the slit in two corresponding grommets in opposite sheets of the boxing.

4. The combination with a mattress and its boxing, of eyelets in the top and bottom sheets of the boxing, cup-shaped elements, each having a slit leading inwardly through the top, extending through and frictionally fitting in said eyelets and having flanges resting against the outer faces of the latter, and ties passing through the mattress and each extending through the slit in an upper cup-shaped element and the slit in the corresponding lower cup-shaped element, the parts being so proportioned that the ties substantially close the openings made by the slits and thereby prevent dirt from entering the mattress through the eyelets.

5. The combination with a mattress having eyelets in the top, grommets slitted downwardly from the top fitting frictionally into said eyelets, and flexible ties extending through the slits in the grommets and down through the mattress.

6. An anchor for the end of a tie element comprising an eyelet, a cup-shaped sheet metal member fitting frictionally within the eyelet, the depth of the cup-shaped member being considerably greater than the thickness of the eyelet, said sheet metal member having a flange overlying the eyelet, and there being an opening in said cup-shaped member below the eyelet to receive the tie element.

7. The combination with a cushion member and a cover therefor, of eyelets distributed over two opposed walls of the cover, grommets movable into and out of the eyelets from the outside, each grommet having an inner part fitting into the corresponding eyelet so as to be frictionally held therein against withdrawal and an outer part too wide to pass through the eyelet, and ties extending through the cushion between said opposed walls and each connected at one end to a grommet in one of said walls and at the opposite end to a grommet in the opposite wall.

8. The combination with a cushion member and a cover therefor, of eyelets distributed over two opposed walls of the cover, grommets movable into and out of said eyelets from the outside, each grommet having a body portion fitting into the corresponding eyelet with sufficient friction yieldingly to hold the grommet against withdrawal, each grommet also having a thin flange resting on the corresponding eyelet, and flexible ties extending through the cushion transversely of said walls, each tie being connected at one end to a grommet in one of said walls and at its other end to a grommet in the other of said walls.

In testimony whereof, I sign this specification.

LOUIS E. PITTONI.