Nov. 11, 1941. E. BLUMSTOCK 2,262,161

TUFTING ELEMENT FOR MATTRESSES OR THE LIKE

Filed Aug. 10, 1939

FIG. 1.

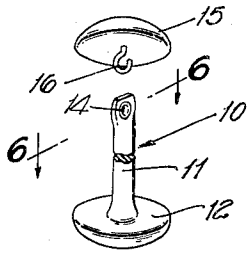


FIG. 2.

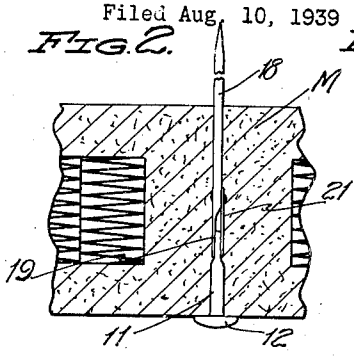


FIG. 3.

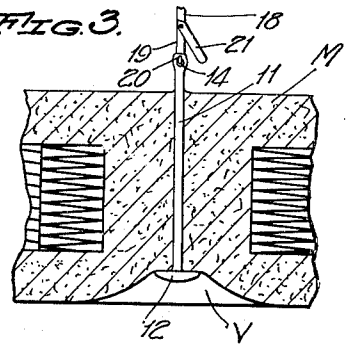


FIG. 4.

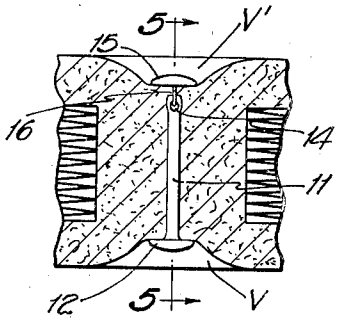


FIG. 5.

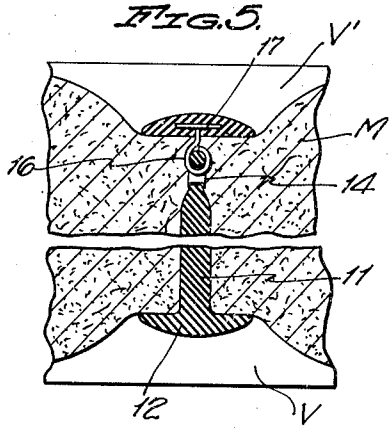


FIG. 6.

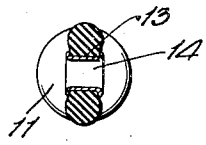


FIG. 7.

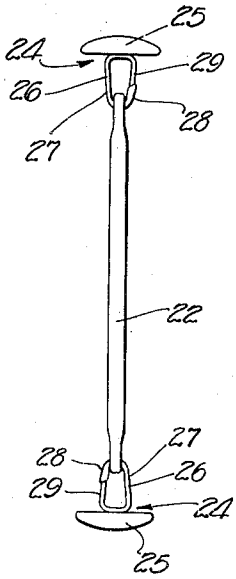


FIG. 8.

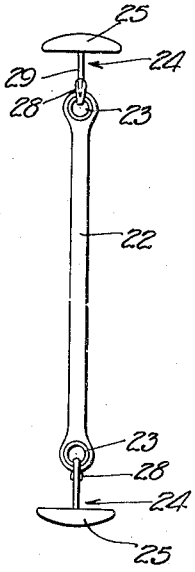


FIG. 9.

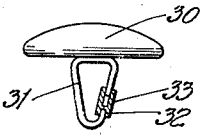


FIG. 10.

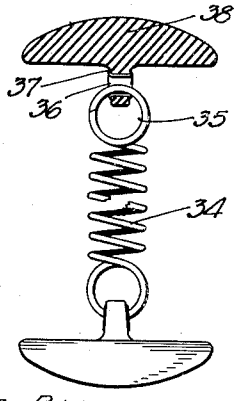
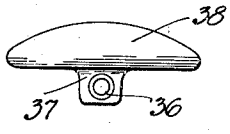


FIG. 11.



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ATTORNEYS.

WITNESS:

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TUFTING ELEMENT FOR MATTRESSES OR THE LIKE

Ernest Blumstock, Long Island City, N. Y.

Application August 10, 1939, Serial No. 289,460

4 Claims. (Cl. 24—102)

This invention relates to improvements in tufting elements for mattresses, upholstered chairs, couches, and the like.

In the mattress constructions with which I am familiar, the same are tufted by tufting buttons which become loose due to the pressure caused by the weight of a person lying thereon. When the tufting buttons on the upper surface of a mattress become loose, it produces an uncomfortable feeling to a person lying thereon, and further, makes the buttons liable to separation from its connecting element by reason of the body movements of a person when lying thereon. It is therefore one of the main features of this invention, to provide a tufting element which is continuously under a contracting tension so as to contract under the weight of a person lying upon the mattress to compensate for any compression of the tufted surfaces, and which will expand under the normal outward pressure of the compressed tufted body of the mattress when the mattress is relieved of the weight of a person.

Another feature of the invention resides in a mattress tufting element in which the two heads thereof tightly engage opposite tufted sides of the mattress under the weight of a person lying thereon.

A further feature of the invention is the provision of a mattress tufting element which includes an expansible and contractible shank having buttons at opposite ends thereof, the element being applied to a mattress with the shank under a contracting tension so as to be capable of further contraction when the tufted filling of the mattress is compressed beyond its normal compressed position which prevents any loosening of the buttons relative to the tufted surface of the mattress.

A still further aim of the invention is the provision of a tufting element having the above features which is simple and inexpensive of construction, easy to apply to a mattress, and capable of long use without repair or replacement.

Other features of the invention will be apparent as the following specification is read in conjunction with the accompanying drawing, in which:

Figure 1 is a perspective view of my improved tufting element illustrating the separable button detached from the shank.

Figure 2 is a fragmentary vertical sectional view through an innerspring mattress, illustrating the manner in which the tufting element is initially inserted and held preparatory to being pulled through the mattress and placed under tension.

Figure 3 is a view similar to Figure 2, but illustrating the shank of the tufting element pulled through the mattress and held under tension preparatory to the attachment of the separable button.

Figure 4 is a view similar to Figure 3, illustrating the tufting element in its completed condition with the shank under tension.

Figure 5 is an enlarged vertical sectional view on the line 5—5 of Figure 4.

Figure 6 is an enlarged horizontal sectional view on the line 6—6 of Figure 1.

Figure 7 is a side elevational view of a modified form of tufting element.

Figure 8 is a front elevational view of the tufting element illustrated in Figure 7.

Figure 9 is a side elevational view of a modified form of detachable tufting button.

Figure 10 is a sectional side elevational view of a further modified form of tufting element.

Figure 11 is a detail elevational view of the button shown in the form of tufting element illustrated in Figure 10.

Referring to the drawing by reference characters, and at present to the form of the invention illustrated in Figures 1 to 6 inclusive, the numeral 10 designates one form of my improved tufting element which includes an elastic shank 11 which is round in cross section, and which shank is constructed of rubber. The rubber characteristics of the shank 11 are such as to permit longitudinal stretch of the shank for a purpose to be hereinafter explained. Also formed of rubber and integral with one end of the shank 11 is a button or head 12, which is made of a rubber slightly harder than the rubber of the shank 11. In view of the fact that both the shank 11 and the button 12 are made of rubber, the same may be vulcanized together to form a single unit. The free end of the shank 11 is pierced with an opening 13, the same extending transversely through the shank and the walls of the opening are reinforced by an eyelet or grommet 14. When the eyelet 14 is inserted through the opening 13 and crimped, it tends to slightly flatten the free end of the shank 11 as illustrated in Figures 1 and 6 of the drawing.

Attachable to the eye 14 of the shank 11 is a separable button 15 which may also be made of hard rubber or any other molded composition. The underside of the button 15 is flat and extending from the underside is a hook member 16. The hook member 16 is provided

with an anchoring head 17 which is embedded within the button 15. The hook member 16 extends centrally from the flat inner side of the button 15 and is attachable to the shank 11 by inserting the hook member through the eye 14.

In Figures 2 to 5 of the drawing, I have illustrated the several steps in the method of attaching a tufting element to an inner spring mattress M. The operator first attaches the free end of the shank 11 of the tufting element to the blunt end of a pointed piercing rod or needle 18. The blunt end of the needle or rod 18 is reduced to provide a flat tail piece 19, the said tail piece having a hook 20 extending therefrom. The eye 14 of the shank 11 is engaged on the hook 20, after which a pivoted latch 21 carried by the rod 18 is swung to a position parallel to the tail piece 19 and against one side of the shank 11, whereby the shank 11 is connected to the blunt end of the rod 18 against accidental separation. Referring to Figure 2 of the drawing, it will be seen that the operator inserts the pointed end of the rod or needle 18 through one side of the mattress M, thus providing a passage through the mattress, and as the rod 18 is pulled through the reverse side of the mattress, the shank 11 is drawn into the mattress and the button 12 engages one side thereof. Up until now, the elastic shank 11 has retained its normal contracted position and it will be noted that the length of the shank 11 is considerably less than the thickness of the mattress M to be tufted. After inserting the rod 18 through the mattress, in the manner shown in Figure 2, the operator continues to pull upon the rod in order to stretch the shank 11 and pull the eye 14 to a position clear of the reverse side of the mattress as shown in Figure 3 of the drawing.

With the shank 11 under stretch as illustrated in Figure 3, the button 12 has compressed a portion of the mattress from one side thereof to provide a recess or valley V. With the eye end of the shank pulled through the mattress, and with the shank held under stretch, the hook member 16 of the button 15 is engaged with the eye 14, and the hook member 16 may be bent so as to close the hook, after which the eye 14 is disconnected from the hook 20 of the rod 18 and as the pull on the shank 11 is released, the button 15 snaps down against the adjacent side of the mattress M and also forms a recess or valley V'. Thus opposed sides of the mattress M are compressed with the buttons 12 and 15 countersunk in the valleys V and V'. Although the elastic shank 11 has contracted, it is still under tension as will be seen by comparing the length of the shank 11 in Figure 4 with the normal length of the shank illustrated in Figure 2. This contracting tension of the shank 11 holds the buttons 12 and 15 tightly against opposite sides of the mattress, and these buttons are prevented from becoming loose by a compression which occurs when a person reclines upon the mattress, for any further compression of the mattress will permit the shank 11 to further contract and of course draw the buttons 12 and 15 closer together against the walls of the valleys V and V'. The length of the shank 11 with respect to the thickness of the mattress to be tufted, is such that the elastic shank will always be under a contracting tension when the mattress is compressed to its limit, thus there is no chance of the buttons 12 and 15 becoming loose, which loosening would subject them to accidental breaking away from the shank, and will also cause discomfort to a person reclining on the mattress.

In Figures 7 and 8 of the drawing, I have illustrated a modified form of tufting element which includes an elastic cord 22 of any predetermined length which is round in cross section, and provided at the ends of the cord 22 are reinforcing eyelets 23—23. The elastic cord 22 being round in cross section and normally of uniform thickness, it follows that when the ends are pierced to provide openings in the cord for the eyelets and after the eyelets are inserted into the openings, the ends of the cord become distended into enlarged flat heads. Engageable with each eyelet 23 is a button 24, and each button includes a head 25 of any composition of material. The head 25 is flat on the inner side and secured to the inner side and projecting therefrom is an attaching eye 26 which includes a hook body 27, the bill of the hook being shaped to provide a keeper 28. Formed integral with the hook body 27 is a flexible spring latch 29 which when engaged with the keeper 28 forms the eye 26 but which eye may be opened by disengaging the latch 29 from the keeper 28 for the purpose of engaging the hook body 27 with an eyelet 23. The buttons 24 are respectively connected to the eyelets 23 at the ends of the elastic cord 22 and when inserted through a mattress, this form of the invention produces the same result as the tufting element 10.

In Figure 9 of the drawing I have illustrated a further modified form of button which may be used with the eye on the end of the shank 11 or may be used in connection with the eye 23 of the elastic cord 22. In Figure 9, the button includes a head 30 which is flat on its inner side and this flat side carries a triangular shaped eye 31, one leg of the triangular shaped eye being split to provide a passage 32 which is normally closed by a sleeve latch 33 slidable on one section of the split leg of the eye. This sleeve 33 drops to a closed position by gravity, but may be manually slid toward the head 30 in order to expose the passage 32 to facilitate the connection of the triangular shaped eye 31 with the eye of an elastic shank or cord.

In Figures 10 and 11 of the drawing, there is illustrated a further modified form wherein a length of helically wound contractile spring 34 constitutes the elastic element which is the equivalent to the shank 11 or elastic cord 22. The ends of the spring 34 are bent into convoluted eyes 35 for attachment to the reinforced eye 36 provided in a projecting stub 37 formed integral with and extending from the inner side of a button 38. The button 38 may be made of hard rubber or other composition material. When the spring 34 is drawn through the thickness of a mattress to be tufted, and the buttons 38 are applied, the result is the same as that accomplished by the tufting element 10.

In the drawing, I have illustrated the tufting element as applied to an inner spring mattress M, but I wish it to be understood that the same may be used with ordinary stuffed mattresses and upholstered chairs, couches, cushions, and the like if desired.

Having shown and described several different forms of the invention, I do not wish to be limited thereto, for other changes and modifications as come within the scope of the appended claims may be resorted to if desired.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A tufting element for mattresses or the like comprising a single length of elastic cord having eyes adjacent opposite ends thereof, a pair of buttons, each button being provided with an eye member centrally of the inner side thereof, the eye members of the pair of buttons respectively engaging the eyes at the ends of said elastic cord.

2. A tufting element for mattresses or the like comprising a single length of elastic cord having reinforced eyes adjacent the opposed ends thereof, a pair of buttons, each of said pair of buttons being provided with a hook member extending centrally from the inner side thereof, a spring latch, and a keeper on the bill portion of the hook member for receiving the spring latch, the hook members of the pair of buttons respectively passing through the eyes and being prevented from separation therefrom by said spring latch.

3. In a tufting element for mattresses or the like, a button, a triangular shaped eye secured to and extending centrally from the underside of said button, one of the side legs of the triangular shaped eyes being split to provide a passage therein for connecting the triangular eye to the eye of a connecting member, and a sleeve like closure slidably mounted exteriorly on one of the sections of the split leg for telescoping engagement with the other section of the split leg for closing said passage.

4. A tufting element for mattresses or other tufted articles comprising a single elastic cord of a predetermined length having a stretchable elongated body portion which is round in cross section, reinforcing eyelets passing through the cord adjacent opposite ends thereof and providing enlarged flat portions at the ends of the cord, a pair of buttons, each of said pair of buttons being provided with a hook member extending centrally from the inner side thereof, a spring latch associated with each hook member, and a keeper on the bill portion of the hook member for receiving the latch to close the hook member, the hook members of the pair of buttons respectively passing through the eyes and being prevented from accidental separation therefrom by the related latches and keepers.

ERNEST BLUMSTOCK.