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E. L. McROSKEY
MATTRESS TUFTING DEVICE

2,176,141

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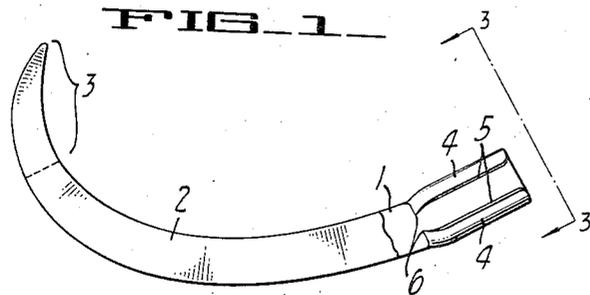


FIG. 2.

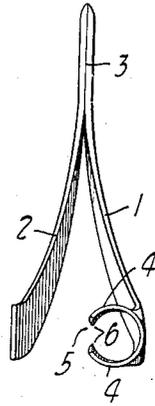
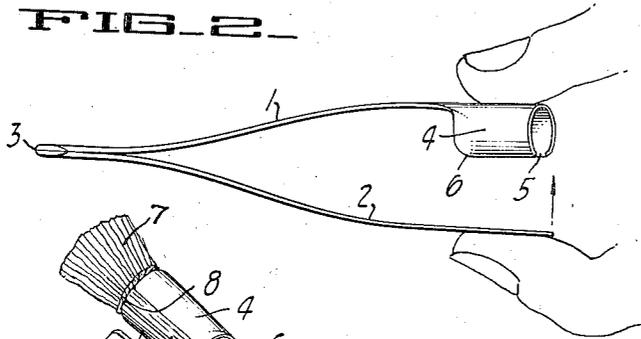


FIG. 3.

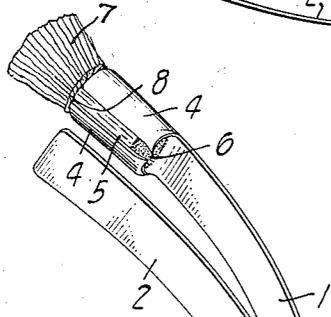


FIG. 4.

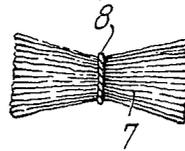


FIG. 5.

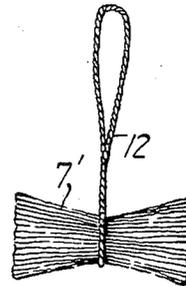
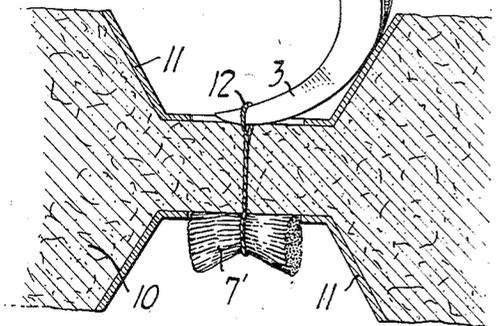


FIG. 4a.

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MATTRESS TUFTING DEVICE

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6 Claims. (Cl. 45—138)

This invention relates to mattress tufting devices and has for its objects the provision of a simple, economically made, and easily operated device for neatly and quickly "tufting" mattresses in few operations. Other objects and advantages will appear in the specification and drawing annexed hereto.

A brief description of present method and my method of tufting mattresses by hand will show the advantages of my invention.

In the tufting of a mattress, particularly where a machine of the type disclosed in my United States Letters Patent No. 1,977,857, dated October 23, 1934, is used, it is customary to use tufts having a cord loop secured thereto. The mattress is compressed by an exterior force at a predetermined point or points for tufting and the cord of each loop is thrust through the mattress, transversely thereof, at each point of compression thus placing the tuft against one side of the mattress with a small portion of the loop exposed at the opposite side of the mattress for insertion of a second tuft through said loop thereby tying the mattress sides together against springing apart at said points of compression after the exterior force causing compression at said points has been removed. In ordinary mattresses, not using inner springs, it is very essential that the mattress sides, at the tufts, resiliently react against the tufts with sufficient force to preclude any possibility of the tufts slipping out of the loops after the mattress has been used over a period of time since the natural resiliency of the filling within the mattress naturally decreases with usage of the mattress.

Heretofore after each cord loop is passed through the mattress, an implement, similar to a button hook, is used to engage the loop. The implement is then pulled outwardly of the mattress with one hand to draw the loop outwardly of the side of the mattress a sufficient distance to enable the operator to slip a tuft through the loop with the other hand. The hook is then disengaged from the loop to allow the loop to engage around the tuft for holding the latter in place. It will readily be seen that by this method, the loop must be initially drawn outwardly of one side of the mattress a greater distance than is necessary, to permit insertion of the tuft thereon, thus destroying a certain amount of the natural and highly desirable resiliency of the mattress at the tuft, and also, the tuft eventually inserted in the loop is generally unsymmetrically positioned relative to the loop and lacks both the

desired neatness in appearance and the full measure of its efficiency for its intended purpose.

With my device, the tufting is accomplished in one operation after the cord loop is thrust through the mattress, by merely threading my device, with the tuft secured thereto, through the loop. There is practically no breaking down of the desired natural resiliency of the mattress. Also each tuft is engaged by each loop at the desired position where there is the greatest efficiency and the tufts are neat and uniform in appearance.

In the drawing, Fig. 1 shows my device in elevation.

Fig. 2 is a plan view of my device showing a tuft secured thereto and the thumb and forefinger of a hand holding the device preparatory to using the same.

Fig. 3 is an end view of the device of Fig. 1 as seen from the line 3—3 of Fig. 1.

Fig. 4 is an elevational view of a loose tuft adapted to be inserted in the cord loop that is secured to a similar tuft.

Fig. 4A is an elevational view of a tuft with a cord attached thereto.

Fig. 5 is a view, partly in section and partly in perspective, showing a portion of a mattress under compression at one point with my device in position with a tuft carried thereby for inserting the tuft in a loop that extends through the mattress.

In detail, my tufting device comprises a pair of generally similar-sized flat metal strips 1, 2, which strips are arched edgewise and secured together at one of their ends. The strips are disposed with their flat sides in opposed relation and extend divergently from each other from their connected ends and said strips are pointed at their connected ends with the opposite edges of each strip gradually diverging from their pointed ends in a direction toward their opposite free ends. The strips are preferably secured close together along a distance, such as is indicated at 3 in Fig. 1, at their pointed ends and the curvature of the strips in a direction from the free ends thereof toward said pointed ends becomes progressively more pronounced upon approaching the pointed ends, thereby giving each of the strips, when viewed from the side, the general shape of the blade of a narrow bladed bill-hook.

The free end of strip 1 is formed with extensions 4 along its opposite edges, which extensions together with the portion of the strip therebetween, are shaped to provide a substantially cylindrical socket on the side of the strip adjacent strip 2, the axis of which socket extends longitudinally of strip 1 and which socket is open at 5

along its side nearest strip 1. Said socket is open at its end facing outwardly of strip 1 and the ends 6 of extensions 4 opposite said open end are slightly turned inwardly toward each other. This socket is for the purpose of substantially enclosing therein one end of the tuft 7, shown in Fig. 4, which tuft is centrally tied by a cord 8.

The end of strip 2 that is opposed to the socket formed at the end of strip 1 is fiat and preferably of a width at least equal to about the outside diameter of the cylindrical socket in the direction of the width of strip 2 so as to fully cover and extend slightly beyond the edges of the opening or slot 5 in said socket.

Either one of the strips 1, 2, or both of said strips, may be of spring metal so the free ends of the strips will normally be held in spaced relation but which will permit the free ends of the strips to be yieldably moved toward each other for closing the slot in strip 1 as is indicated in dotted lines in Figs. 2, 3.

In operation, a mattress 10 is compressed at various points, as indicated in Fig. 5, by generally cup-like members 11, the bases of which are formed with openings to permit the loop of cord 12 to be pushed through the mattress at the point of compression of the latter. The cord 12 is secured to a tuft (Fig. 4A) and is pushed through the mattress by means of a conventional needle used for this purpose, whereby a small end of the loop will project outwardly of one side of the mattress while the tuft 7' engages the other side.

After the above operation, one end of tuft 7 is pushed laterally of the socket on strip 1 into said socket through slot 5. The outermost end of said tuft is positioned by the intumed ends 6 of the socket sides so that cord 8 of the tuft will be at the free outer end of the socket as best indicated in Figs. 2, 5. Approximately one-half of tuft 7 is thus practically enclosed within the socket while the opposite half of the tuft projects outwardly of the end of the socket.

When the tuft 7 is positioned in the socket, as above described, my device is held between the thumb and forefinger of one hand of the operator, as indicated in Fig. 2, and the free ends of the strips may be pressed together as shown in dotted line in Fig. 2, whereby the end of strip 2 covers the slot in the socket on strip 1. The pointed end of the device is then inserted through the end of the loop projecting from one side of the mattress as seen in Fig. 5, and the device is pushed through the loop thus progressively drawing the loop outwardly of the side adjacent the projecting end thereof. After the strips 1, 2 are fairly well pushed through the loop, the operator may then grasp the pointed ends and pull the device, in a direction longitudinally of the strips, completely through the loop, and as the loop passes over the free ends of the strips opposite the pointed ends thereof, said loop will drop onto the tuft at about the point of the tie cord 8 and will draw the tuft 7 out of the socket, leaving the tuft 7 in proper position, and the tension under which the loop was placed in drawing the end of the loop outwardly of the mattress will securely hold tuft 7 in position until the pressure of members 11 is released when the full resilient outward force of the mattress filling will be placed upon the tufts, the cord 12 effectively holding the mattress under compression at the points where the tufts are positioned.

It will, of course, be obvious that the operator may merely force my device through the loop of cord 12 without manually forcing the strips together at their free ends, in which case the strips will automatically move together to effect a covering of slot 5 by strip 2. The covering of this slot is necessary to prevent the loop from dragging on any portion of the tuft that may project through said slot. It is also important to note that the strips 1, 2 are formed so that the normal spacing between the slot 5 and strip 1 is preferably sufficient to accommodate a finger of the operator for forcing the tuft through said slot into the cylindrical socket.

Unless otherwise specified, the use of the word "tuft" in the claims is intended to include the conventional rubber tufts as well as tufts of fibrous material, such conventional rubber "tufts" being merely centrally restricted or grooved rubber buttonlike elements, the ends at opposite sides of the central recessed portions corresponding to the ends of the tufts illustrated in Fig. 4 and the central recessed portion corresponding to the portion of the tuft of Fig. 4 restricted by cord 8.

Various modifications may be made in my construction that incorporate a tuft receiving socket and a tapered, generally needle-like extension therefrom for threading through a loop, and while the construction as described is preferable, the following claims are intended to cover the invention insofar as all reasonable modifications of the type of device above described are concerned.

Having described my invention, I claim:

1. A device for tufting mattresses comprising a pair of flat strips similarly curved edgewise and disposed with their flat sides in generally opposed relation, said strips being pointed at one of their ends and secured together at their pointed end and normally extending divergently from their connected ends to spaced relation at their opposite ends, one of the strips being resilient for permitting movement of the end opposite its pointed end toward the opposed end of the other strip, and means on said opposed end of the other strip arranged and adapted for removably holding one end of a sheaf-like tuft therein with the opposite end of the tuft projecting outwardly of said opposed end in a direction away from the pointed end.

2. In a construction as defined in claim 1, the opposite edges of said strips respectively extending gradually divergently from said pointed ends in the direction of said pointed ends, and said strips being substantially equal in length.

3. A device for tufting mattresses comprising an elongated element pointed at one end and provided with a generally tubular member at the opposite end extending longitudinally thereof, said tubular member being open at its outer end remote from said pointed end, one side of said member being formed with a slot extending from said outer end toward the opposite inner end thereof for passing an end of an elongated tuft in direction laterally thereof through said slot and into said member to between the sides thereof, slot closure means disposed over said slot and normally spaced therefrom to permit positioning a tuft between said closure means and slot for insertion of the tuft to within said member, and means yieldably and resiliently supporting said closure means on the element and spaced over said slot for yieldable movement of the closure means toward the slot and against said member

upon pressure against said closure means in direction toward said slot.

5 4. A device for tufting mattresses comprising an elongated element pointed at one end and provided with a generally tubular member at the opposite end extending longitudinally thereof, said tubular member being open at its outer end remote from said pointed end and of substantially uniform diameter from said outer end to adjacent the opposite end thereof, one side of said tubular member being formed with an elongated slot extending from said outer end of the member toward the opposite end thereof, the opposite edges of said slot being uniformly spaced apart from said outer end of the member to adjacent the opposite inner end thereof for passing an end of an elongated tuft in direction laterally thereof through said slot and into said member to between the sides thereof, the inner surfaces of the sides of said tubular member from end to end being smooth and free of any obstruction to permit free longitudinal sliding of the tuft out of said open end of the tubular member, slot closure means normally spaced from said slot, and means mounting said closure means on the element for movement of said member and closure means relatively toward each other to a position in which the closure means engages the member and covers said slot.

30 5. In a construction as defined in claim 4, said element being curved lengthwise and the tubular member being substantially straight in the direction of its length.

35 6. A device for tufting mattresses comprising an elongated element pointed at one end and

provided with a generally tubular socket member at the opposite end thereof extending longitudinally of said element, said member being open at its outer end remote from the pointed end of said element and formed with a longitudinally extending slot in one side only and said slot opening outwardly of the member at said outer end whereby one end of a mattress tuft may be inserted laterally through said slot and into said member with the other end of the tuft projecting outwardly of said outer end, said element being curved longitudinally from a point adjacent its pointed end to facilitate passing the element in a direction longitudinally thereof through a loop adjacent a side of a mattress with the said pointed end foremost for carrying the tuft to a position within said loop, a closure for said slot comprising a second elongated element secured at one end to said element and extending from said one end longitudinally of the element to a position over but normally spaced from said slot, at least one of the above mentioned elements being of spring material whereby the end of said second elongated element over said slot and the said tubular member will move relatively toward each other to a slot-closing position by said second element by engagement of the said elements with opposite sides of said loop during passage of the elements through said loop and whereby said second element and said member will automatically move apart to spaced relation when the elements have passed through said loop.

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