Oct. 24, 1933. J. W. DROLL ET AL 1,932,207

MATTRESS TUFTING

Filed June 2, 1932

Fig. 1

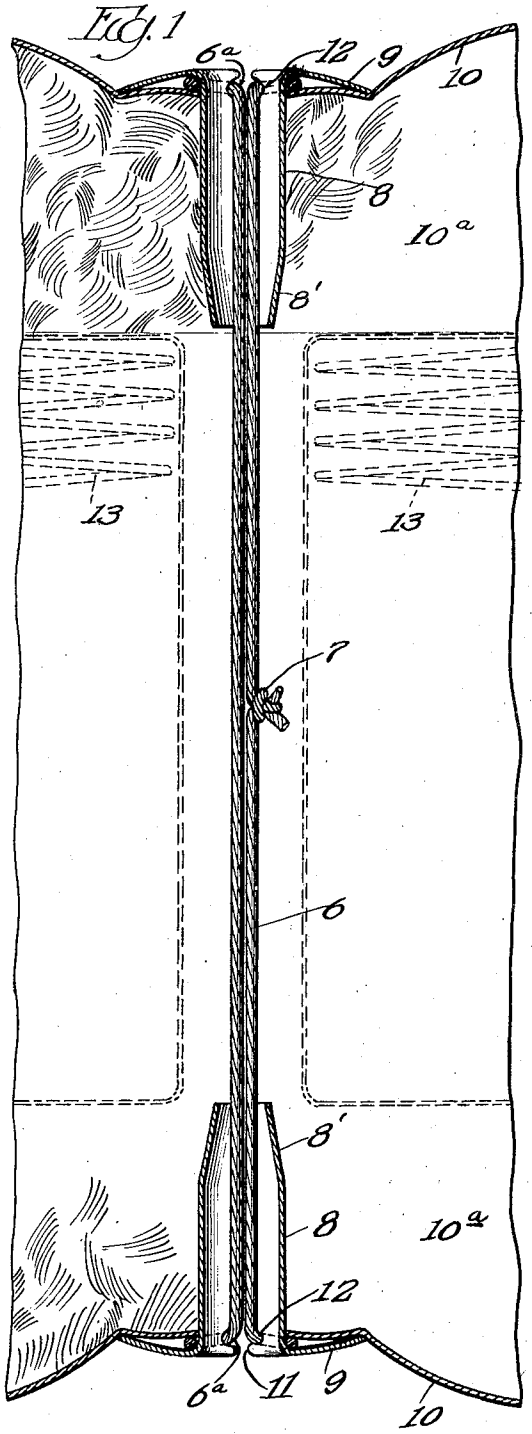


Fig. 2

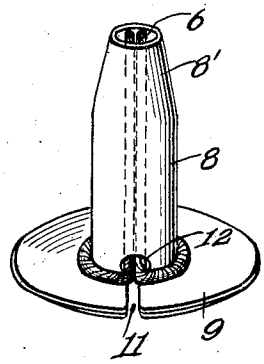


Fig. 3

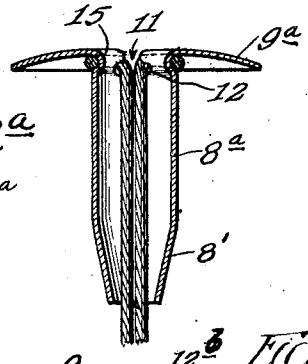


Fig. 2a

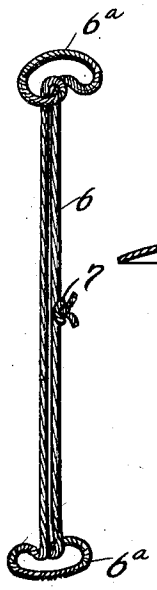
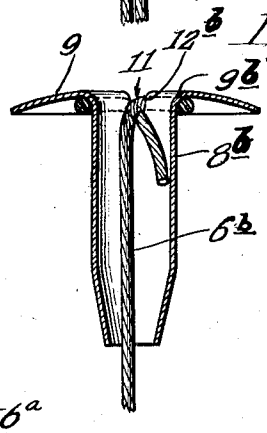


Fig. 4



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MATTRESS TUFTING

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Application June 2, 1932. Serial No. 615,056

10 Claims. (Cl. 5—356)

The invention relates to mattress tufting. The objects of the invention are: to provide a tufting device which is simple in construction, will efficiently hold the filling of the mattress, and can be quickly applied to the mattress; to provide a mattress with improved tufting devices whereby the filling will be ventilated; and to provide an improved method of tufting.

Other objects of the invention and the various advantages and characteristics of the present mattress tufting will be apparent from a consideration of the following detailed description.

The invention consists in the several novel features which are hereinafter set forth and are more particularly defined by claims at the conclusion hereof.

In the drawing which accompanies and forms a part of the present disclosure or specification and in which like numbers of reference denote corresponding parts throughout the several views: Fig. 1 is a section of a mattress having tufting devices embodying the present invention. Fig. 2 is a perspective of one of the studs of a device. Fig. 2ª is a detail showing the tie of a device in the position assumed by the loops at its ends when they are attached to studs. Fig. 3 is a section of a modified form of the stud. Fig. 4 is a similar view illustrating another form of stud.

In tufting mattresses, it is customary to compress the mattress, to pass a tufting tie through the mattress tick and filling by means of a needle and to attach a button to the end of the tie which has passed through the mattress. The other button is usually applied to the tie before the latter is passed through the mattress. When the pressure of the apparatus used is released, the springs in the mattress will take up the slack in the tie and draw it taut to hold the buttons in engagement with the mattress tick.

In the preferred form of the invention, the tufting devices comprise a tie and a pair of studs. Each tie consists of a strip of cord or twine 6 of the desired length which is formed into a closed loop by knotting its ends together as at 7, so that there will be a looped portion 6ª at either end of the tie for connection to a stud. Each stud comprises a tubular stem 8, and an out-turned curved flange 9 of sufficient width to bear against the outside of the mattress tick 10 around the hole made by the needle in passing the tie through the mattress. The inner end of each button is tapered, as at 8', to facilitate the entry of the tubular stem 8 through the mattress tick and into the filling 10ª, through the hole made by the needle. An approximately radial slot 11 is cut through the flange 9 of each stud, and the stem 8 adjacent the flange is formed with notch 12 which communicates with the slot 11, so the tie can pass from the inside to the outside of the stem or vice versa.

In the manufacture of a mattress in accordance with the invention, the loop 6ª at one end of the tie is threaded through the inner end of the tubular stem 8 of a stud, slipped through the slot 11 in the flange 9 of the stud, then passed over the flange 9 and around the stem under the flange. The tie is then drawn to tighten the loop around the tubular stem in the annular corner between the stem 8 and flange 9. This will attach one end of the tie to a stud. The other looped end of the tie is then threaded into a suitable needle which is then forced completely through the mattress to carry the second loop of the tie to the opposite face of the mattress. This second loop is then threaded through the inner end of the tubular stem 8 of another stud, slipped through slot 11 in flange 9 and into notch 12, and looped over the flange and around the stem. This attaches the second stud to the tie so that when the pressure on the mattress is released, the springs 13 will expand the mattress until the tie is taut. The tapered portions 8' of the stems of the studs will pass through the holes in the tick made by the needle. The loops of the twine will underlie the flanges 9 snugly and be held around the stems 8 between the mattress-tick and the flanges, so the studs will hold the different portions of the mattress against displacement.

The inner ends of the stems 8 of the studs are open for the passage of the tie therethrough, and the openings are of greater area than is necessary for the twine forming the tie, to provide an air passage to ventilate the material in the mattress. The studs, to which the ties are connected, thus serve to ventilate the mattress. The construction of these studs makes it possible to use a pre-formed loop, as a tie, and to attach the tie to the studs without any knotting or tying operations betwen the tie and the studs, thus materially expediting the work in applying the tufting devices to the mattress.

In Fig. 3 the stud is shown as provided with an exteriorly formed annular groove 15 at the corner between the flange 9ª and stem 8ª to form a seat for the portion of the tie 6ª which is lapped around the stem.

In Fig. 4 the invention is illustrated as applied to a stud without a closed loop in the tie. In

this construction, the notch 12^b in the stem 8^b and joining the radial slot in the flange 9^b is not undercut so that one end of a cord 6^b, after it has been drawn through the inner end of the stem 8^b and lapped around the stem 8^b under the flange 9^b, can be slipped under that portion of the tie which has been laid in notch 12^b, so the end will be pinched by the overlying portion sufficiently to secure one end portion of the tie to the stud.

The invention exemplifies; a mattress tufting device, which is simple in construction, can be produced at a low cost, can be expeditiously attached to the mattress and will efficiently hold and ventilate the filling in the mattress; a mattress which is provided with tufting devices which will securely hold and ventilate the filling; and a method by which the mattress can be tufted at a low cost and expeditiously without requiring the tying of knots at the end of the tie which passes through the mattress.

The invention is not to be understood as restricted to the details set forth, since these may be modified within the scope of the appended claims, without departing from the spirit and scope of the invention.

Having thus described the invention, what we claim as new and desire to secure by Letters Patent, is:

1. The combination with a mattress, of a tufting device comprising a stud having a tubular stem open at its inner end and an outwardly extending flange at the outer end of the stem, and a flexible tie extending longitudinally through the inner open end of and looped under the flange around the outside of the stem, said tie extending through the mattress and being secured to the opposite side of the mattress, the stud being provided with means whereby the loop of the tie will be retained on the stem.

2. In combination with a mattress, a tufting device comprising a stud located at one side of the mattress tick and embodying a stem piercing said one side of the tick and having a longitudinal duct leading through its inner end and a side opening communicating with the duct and a flange member extending outwardly from the outer end of the stem and lapping the tick, and a flexible tie extending through the mattress and having one end thereof anchored to the other side of the mattress tick and its other end passing through the duct in the stem and out the side opening and extending and anchored around the outside of the stem.

3. In combination with a mattress, a tufting device comprising a pair of studs located at opposite sides of the mattress tick and each embodying a stem piercing the tick and having a duct leading through its inner end and a side opening adjacent the outer end of the duct and a flange member extending outwardly from the outer end of the stem and lapping the tick, and a flexible tie in the form of a preformed loop extending through the mattress and having the ends thereof passing longitudinally through the ducts in the stems and out the side opening and looped around the stems.

4. In combination with a mattress, a tufting device comprising a stud located at one side of the mattress tick and embodying a tubular, open-ended stem piercing said one side of the tick and having a side opening at its outer end and a flange extending outwardly from the outer end of the stem and lapping the tick, and a flexible tie extending through the mattress and having one end thereof anchored to the other side of the mattress tick and its other end passing longitudinally through the stem and out the side opening and extending around the outside of the stem and anchored under the flange.

5. In combination with a mattress, a tufting device comprising a stud located at one side of the mattress tick and embodying a tubular open-ended stem piercing said one side of the tick and a flange extending outwardly from the outer end of the stem and lapping the tick, and a tie extending through the mattress and having one end thereof anchored to the other side of the mattress tick and its other end in the form of a loop and extending longitudinally through the stem and looped around the outside of the stem under the flange, said flange having a radial slot for permitting said other end of the tie to pass under the flange.

6. A stud for a tufting device, comprising a tick-piercing stem and an outwardly extending, tick-engaging flange at one end of the stem, said stem having a longitudinal duct leading through its other end and a side opening communicating with the duct whereby the stud may be connected to a flexible tie with a looped end by passing said end of the tie through the duct and out the side opening and looping it around the outside of the stem.

7. A stud for a tufting device, comprising a tubular, open-ended, tick-piercing stem and an outwardly extending, tick-engaging flange at one end of the stem, said stem being provided adjacent the flange with a side opening whereby the stud may be connected to a flexible tie with a looped end by passing said end of the tie through the stud and out the side opening and looping it around the stem and under the flange.

8. A stud for a tufting device, comprising a tubular, open-ended, tick-piercing stem and a tick-engaging flange extending outwardly from one end of the stem and having a radial slot in the flange whereby a flexible tie with a looped end passing longitudinally through the stem may be connected to, and retained on, the stud by looping the looped end of the tie around the outside of the stem and under the flange.

9. A stud for a tufting device, comprising a tubular, open-ended, tick-piercing stem and a tick-engaging flange extending outwardly from one end of the flange and having a radial slot in the flange and an opening in the stem at the base of the slot whereby a flexible tie with a looped end passing longitudinally through the stem may be connected to, and retained on, the stud by looping the looped end of the tie around the outside of the stem and under the flange.

10. As a new article of manufacture, a stud for mattress-tufting purposes comprises a tubular, open-ended, tick-piercing stem and an integral, outturned flange at one end of the stem, and having a radial slot in the flange and an opening in the stem at the base of the flange and of greater width than the slot.

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