March 19, 1957 W. W. FREEDLE ET AL 2,785,644

TUFTING NEEDLE

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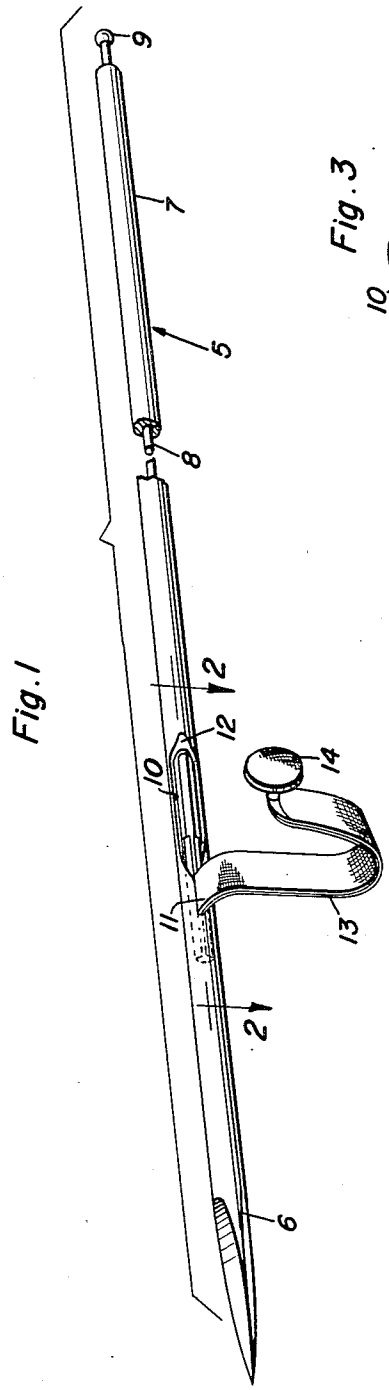


Fig. 1

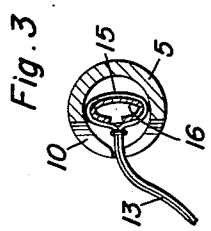


Fig. 3

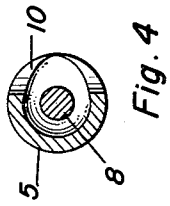


Fig. 4

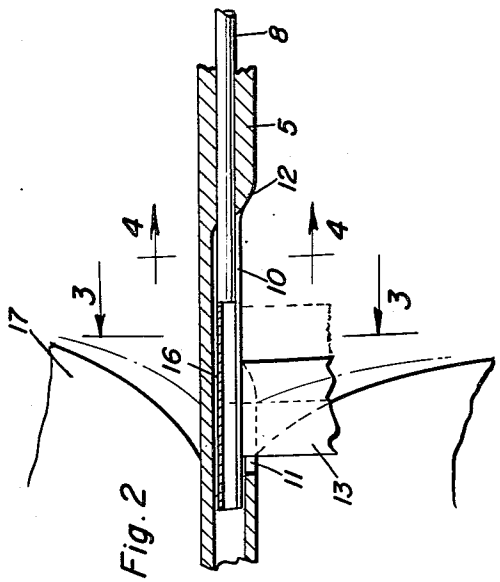


Fig. 2

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TUFTING NEEDLE

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1 Claim. (Cl. 112—223)

The present invention relates to new and useful improvements in needles used in tufting mattresses, or other tufted articles.

An important object of the invention is to provide a tufting needle constructed to receive a plunger for holding the tufting tape in the slot of the needle while the needle passes downwardly through the mattress and automatically to retract the plunger for releasing the tape at the completion of the downward stroke and prior to withdrawing the needle. This invention is distinguishable over conventional types of needles in which the plunger is used to force the tape out of the slot in the needle and not to hold the tape anchored to the needle as herein disclosed.

Another object is to provide a tufting needle in which the bottom anchoring tape is released from the needle by mattress cushioning tension under control of the tape holding plunger.

A further object is to provide a device of this character of simple and practical construction, which is efficient and reliable in operation, relatively inexpensive to manufacture and otherwise well adapted for the purpose for which the same is intended.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view;

Figure 2 is an enlarged fragmentary longitudinal sectional view taken on a line 2—2 of Figure 1; and

Figures 3 and 4 are enlarged transverse sectional views taken respectively on the lines 3—3 and 4—4 of Figure 2.

Referring now to the drawing in detail, wherein for the purpose of illustration, we have disclosed a preferred embodiment of our invention, the numeral 5 designates a tufting needle having a solid pointed front end 6 and a hollow rear barrel portion 7 in which a plunger 8 is slidable. The outer end of the plunger is formed with a knob 9 to facilitate inward and outward manipulation thereof.

A longitudinal main slot 10 is formed in one side of the needle at the front portion of the hollow section of the needle and the front end of the main slot terminates in a relatively narrow slot 11. The rear end of the main slot is beveled, as shown at 12.

A tufting tape 13 is folded upon itself to provide a double thickness and a button 14 is secured to one end of the folded tape and a loop 15 is formed at the other folded end of the tape to receive an elongated rigid hollow metal head 16 of a length sufficient to project outwardly at each side edge of the tape.

The tape is anchored to the needle by inserting the head 16 in main slot 10 and plunger 8 is moved inwardly to push the head forwardly in the needle so that the tape 13 enters the narrow slot 11 and the head is thus anchored behind the narrow slot.

The hand of the operator engages both the barrel portion 7 of the needle as well as the knob 9 of the plunger 8 as the needle is forced downwardly through the mattress and to maintain the plunger in contact with head 16 to hold the latter at the front narrow end of main slot 10, and the tape 13 is carried by the needle into the mattress. The engagement of the button 14 with the top of the mattress compresses the latter and after the head 16 passes therethrough, pressure by the hand of the operator is released from the knob of the plunger while holding the needle stationary and the cushioning tension of the mattress will force the plunger upwardly to release the head 16 which will then be withdrawn from the slot in the needle and turned crosswise at the underside of the mattress to anchor the tape in a tufted position in the mattress. The needle may then be withdrawn.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly, all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

A tufting needle comprising an elongated body having a pointed solid front end, the remainder of said body being hollow to provide a passageway therein open at the rear end of said body, said body having a longitudinal slot therein immediately rearwardly of said solid front end communicating with said passageway and adapted for insertion therethrough into said passageway of an elongated head of a button tufting tape, said slot having a relatively narrow front end behind which the head is slidable in said passageway to anchor the tape to the body, and a plunger in said passageway slidable towards said front end to close the slot behind said narrow front end of the slot to retain the elongated head behind the front end of the slot and in said passageway, said plunger extending at the rear end of said body out of said passageway for grasping to slide the same.

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