The present invention relates to new and useful improvements in upholsterers' needles and more particularly to a combined needle for use in tufting material, attaching tufting buttons to the material, or for tying springs to upholstered furniture.

An important object of the invention is to provide a needle constructed to carry a thread fastening device to the under side of the material whereby the thread may be anchored to the material for use in tufting or other purposes and to further provide means for temporarily securing the fastener in position to the needle for passing through the material and for quickly releasing the fastener therewith when the needle is withdrawn.

A still further object of the invention is to provide a fastener for a tufting thread which automatically adjusts itself into an anchoring position when released from the tufting needle and which secures the thread to the under side of the material against accidental separation from the thread.

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

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a side elevational view showing the thread fastener carried by the needle for insertion in the needle;

Figure 2 is a similar view showing the needle and fastener passing through the material;

Figure 3 is a similar view showing the releasing and withdrawing action of the needle;

Figure 4 is a similar view showing the fastener in its position for anchoring the thread;

Figure 5 is a fragmentary perspective view of the needle with the fastener in position thereon;

Figure 6 is a perspective view of one of the fasteners;

Figure 7 is a side elevational view showing the needle and thread-tying fasteners used for tying a spring to the material;

Figure 8 is a fragmentary bottom plan view of the material showing a group of the fasteners in circular arrangement for tying the springs;

Figure 9 is a top plan view showing the springs after being tied by the thread;

Figure 10 is a perspective view of another form of fasteners; and

Figure 11 is a perspective view of another fastener.

Referring now to the drawings in detail wherein for the purpose of illustration we have disclosed a preferred embodiment of the invention, the numeral 5 designates a handle which may be constructed of wood or other suitable material and having a longitudinal groove 6 at one side thereof at its front end, the inner end of the groove terminating in a recess 7 extending radially inwardly of the handle. A needle 8 is seated in the groove 6 and is formed with an angular locking extension 9 at its inner end for entering the recess 7. The needle is held in the groove 6 by a ring or ferrule 10 suitably secured on the front end of the handle.

The needle 8 is pointed at its outer end as shown at 11 and one side of the needle adjacent its outer end is formed with a longitudinally extending recess 12 with beveled end portions 13.

A longitudinally extending groove 14 is formed in the needle forwardly of the recess 12 and extending forwardly from the front beveled end 13 of the recess. The front end of the groove 14 terminates in a rearwardly inclined recess or slot 15 of a depth greater than the depth of groove 14.

A thread fastener designated generally at 16 is constructed of a strand of substantially rigid wire having its intermediate portion coiled to form a partially closed eye 17 and with its front end formed with a rearwardly inclined hook 18. The rear end of the fastener is inclined from the plane of the coil as shown at 19 in a direction opposite from hook 18, when the fastener is placed in recess 12.

Another thread fastener designated at 160 is constructed of a strand of substantially rigid wire having its intermediate portion coiled as at 170 to form a partially closed eye. The rearwardly inclined hook 180 is supplied for the same purpose as the inclined hook 18.

Another alternative hook generally indicated at 200 is supplied with an eye 270 and hooks 280 at each end thereof. Utility of any of the three thread fasteners may obviously be resorted to in accordance with the prerogative of the user of the invention.

A tufting thread 20 is inserted in the eye 17 of the fastener by sliding the thread through the open side of the coil and the coil 17 is placed in
recess 12 of the needle 8 and with the front end of the fastener seated in groove 14 and the hook 18 engaged in recess 15. The thread extends rearwardly along the needle and a rearward pulling force exerted thereon by the fingers of a person holding the handle 5 and which thus holds the hook 18 in recess 15.

The rear beveled end 13 of recess 12 springs the rear end 19 of the fastener outwardly at the side of the needle as shown in Figure 1 of the drawings and the needle 8 is then inserted through the material 21 and carries the fastener 16 and thread with the needle. When the rear end 19 of the fastener passes through the material the same springs away from the side of the needle and the needle 8 is slightly twisted or turned which releases the hook 18 from recess 15 and the needle is then withdrawn as shown in Figure 3.

The thread 20 then holds the fastener 16 crosswise of the opening in the material formed by the needle and is then pulled tightly against the inner surface of the material by the thread and a tufting button may then be attached to the outer ends of the thread.

Figures 7 to 9, inclusive, illustrate the manner in which the tufting needle 8 and fasteners 16 may be used for tying a spring 22 to the upholstery material 23.

In using the invention in this manner a plurality of the fasteners 16 are secured in position on the thread 24 and the fasteners with the thread attached thereto are fed through the material in a circular arrangement as shown in Figures 8 and 9 in a manner to place the thread over the spring and drawn tight to tie the spring to the material.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

Having described the invention, what is claimed as new is:

1. A tufting needle comprising a handle, a needle anchored to one side of the handle, and a thread attaching fastener releasely carried by the needle, said needle having a relatively small recess and a relatively large recess at one side, and said fastener comprising a wire member having an eye intermediate its ends for engaging a thread, said eye being seated in said larger recess, and a hook at the front end of the fastener engaged in the smaller recess, said fastener being held to the needle when inserted through work by a rearward pulling force exerted on the thread and said fastener being automatically releasable from the needle for withdrawing the thread, and said fastener having an outwardly inclined resilient rear portion for engaging the work to obstruct withdrawing movement of the fastener.

2. A tufting needle comprising a handle, a needle anchored to one side of the handle, and a thread attaching fastener releasely carried by the needle, said needle having a relatively small recess and a relatively large recess rearwardly of the small recess, a longitudinal groove in the needle connecting the recess, and said fastener comprising a wire member including an eye intermediate its ends seated in the large recess, a hook at its front end engaged in the small recess and having a straight portion between the hook and eye seated in said groove, said eye having a thread loosely inserted therein to hold the fastener in position at one side of the needle by a rearward pulling force exerted on the thread and said fastener and thread being carried through the work by the needle, said fastener being automatically releasable from the needle after passing through the work for withdrawing the needle.

3. A tufting device comprising a handle, a needle anchored to one side of the handle, and a thread attaching fastener releasely carried by the needle, said needle having a relatively small recess and a relatively large recess at one side, said small recess terminating at its front end in a rearwardly inclined slot, and said fastener comprising a wire member having an eye intermediate its ends for engaging a thread, said eye being seated in said larger recess, the front end of the fastener being inserted in the smaller recess, and a hook at the front end of the fastener disposed in the rearwardly inclined slot.

4. A tufting device comprising a handle, a needle anchored to one side of the handle, and a thread attaching fastener releasely carried by the needle, said needle having a relatively small recess and a relatively large recess at one side, said small recess terminating at its front end in a rearwardly inclined slot, and said fastener comprising a wire member having an eye intermediate its ends for engaging a thread, said eye being seated in said larger recess, the front end of the fastener being inserted in the smaller recess, the hook at the front end of the fastener disposed in the rearwardly inclined slot, and said fastener having an outwardly inclined resilient rear portion for engaging a surface of material after the needle and fastener have been passed through the material and when the needle is being withdrawn from the material to release the fastener hook from the slot thereby releasing the fastener from the needle.

5. A tufting device comprising a handle, a needle anchored to one side of the handle, and a thread attaching fastener releasely carried by the needle, said needle having a relatively small recess and a relatively large recess at one side, said small recess terminating at its front end in a rearwardly inclined slot, and said fastener comprising a wire member having an eye intermediate its ends for engaging a thread, said eye being seated in said larger recess, the front end of the fastener being inserted in the smaller recess, the smaller recess being of such depth that the inserted front portion of the fastener is flush with the outer surface of the needle, and a hook at the front end of the fastener disposed in the rearwardly inclined slot.

6. A tufting device comprising a handle, a needle anchored to one side of the handle, and a thread attaching fastener releasely carried by the needle, said needle having a relatively small recess and a relatively large recess at one side, said small recess terminating at its front end in a rearwardly inclined slot, and said fastener comprising a wire member having an eye intermediate its ends for engaging a thread, said eye being seated in said larger recess, the front end of the fastener being inserted in the smaller recess.
cession, a hook at the front end of the fastener disposed in the rearwardly inclined slot, and said fastener having an outwardly inclined resilient rear portion for engaging a surface of material after the needle and fastener have been passed through the material and when the needle is being withdrawn from the material to release the fastener hook from the slot thereby releasing the fastener from the needle, the smaller recess being beveled at its rear end to form a fulcrum to spring the outwardly inclined resilient rear portion of the fastener.

7. A tufting device comprising a handle, a needle anchored to one side of the handle, and a thread attaching fastener releasably carried by the needle, said needle having a relatively small recess and a relatively large recess at one side, said smaller recess terminating at its front end in a rearwardly inclined slot, and said fastener comprising a wire member having an eye intermediate its ends for engaging a thread, said eye being seated in said larger recess, the front end of the fastener being inserted in the smaller recess, a hook at the front end of the fastener disposed in the rearwardly inclined slot, and said fastener having an outwardly inclined resilient rear portion for engaging a surface of material after the needle and fastener have been passed through the material and when the needle is being withdrawn from the material to release the fastener hook from the slot thereby releasing the fastener from the needle, the smaller recess being beveled at its rear end to form a fulcrum to spring the outwardly inclined resilient rear portion of the fastener, and said fastener being held to the needle when inserted through material by a rearward pulling force exerted on the thread.

8. A tufting device comprising a handle, a needle fixed to said handle and having its longitudinal axis parallel to the longitudinal axis of the handle, a thread attaching fastener releasably carried by the handle, said needle having a recess in one side thereof, a groove communicating with said recess and on the same side of the needle as the recess, a rearwardly inclined slot opening into said recess, said thread attaching fastener comprising a wire member having an eye intermediate its ends for holding a thread, said eye being disposed in said recess, a part of said wire member being releasably disposed in said groove and having a hook at the end thereof, said hook being rearwardly inclined and disposed in said slot so that when said needle and said wire member is passed through a piece of material the hook is pressed firmly into the slot, but when said needle is withdrawn, the upper end of said wire member engages the lower surface of the material thereby releasing the hook from the slot.

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