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A. J. SIGNORET

2,800,096

TUFTER HOOK

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Fig. 2.

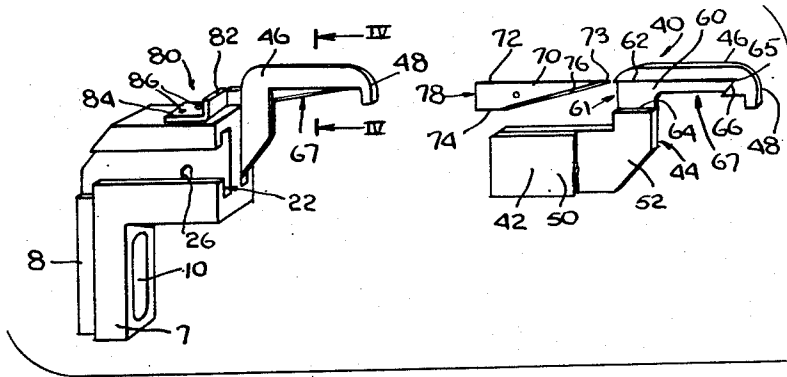


Fig. 1.

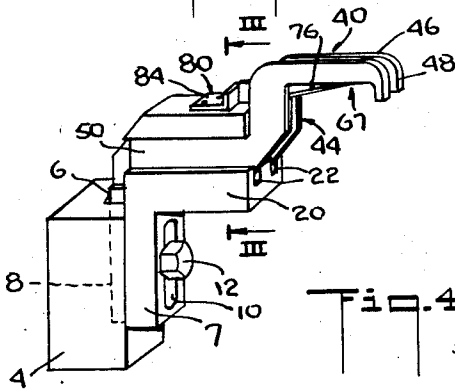


Fig. 4.

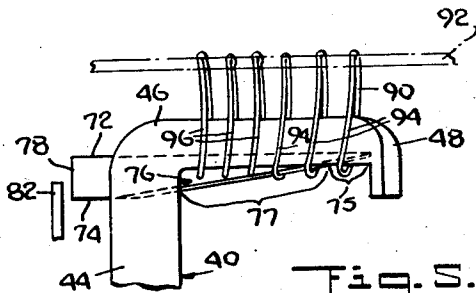
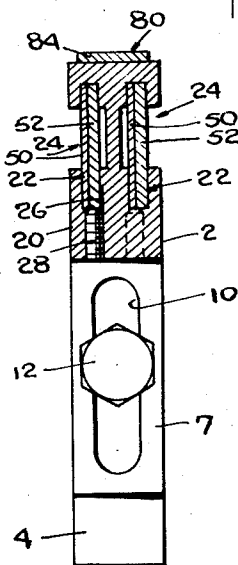


Fig. 5.

Fig. 3.



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2,800,096

TUFTER HOOK

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2 Claims. (Cl. 112-79)

The invention relates to a tufter hook which forms and cuts tuft loops.

The general object of the invention is the provision in the tufter hook, of improved means whereby a cutter can be replaced expeditiously and without the use of special tools; and a coordinate object is a specially devised blade to serve such purpose.

Another object of the invention is the provision with a tufter hook of improved means whereby a blade separably associated therewith will be locked or unlocked in such association.

A further object of this invention is the provision with a tufter hook of means whereby a blade separably associated therewith may be automatically locked or unlocked in such association; and more particularly the provision with a removable hook of means for locking or unlocking the blade in said removable hook upon attachment or detachment of said hook.

The accompanying drawings illustrate the preferred form of my invention. In the drawings:

Fig. 1 is a perspective view showing the tufter hook assembly;

Fig. 2 is an exploded view of the tufter hook assembly shown in Fig. 1;

Fig. 3 is a section taken along line III-III of Fig. 1;

Fig. 4 is a section taken along line IV-IV of Fig. 2; and

Fig. 5 is a detailed elevation showing the tufter hook and blade in operation.

Referring more particularly to the drawings, the hook mount or bracket is given the numeral 2, the hook is given the numeral 40, and the blade is given the numeral 70. The bracket 2 is shown as being L-shaped, having legs 7 and 20 and mounted on the carrier or block 4 of a rocker arm (not shown) in any desired or conventional manner. In the drawings the bracket 2 is shown mounted on block 4 by providing a slot 6 in the block 4 and a key 8 in the leg 7 which is adapted to enter the slot 6. The leg 7 has the elongated slot 10 therein which serves to fasten the bracket 2 onto the block 4 by means of bolt 12 and to enable the bracket 2 to be adjusted vertically.

The leg 20 of bracket 2 has the hook-receiving slots 22 therein. In the drawings, two such slots 22 are shown, but it will be understood that the leg 20 may have more or less than the two slots shown and still be within the scope of this invention. The slots 22 are shown as having the opening 24 at one side thereof and the leg 20 is shown as having the threaded bores 26 communicating with the slots 22 to accommodate set screws 28 therein for securement of the hooks 40 on the bracket 2, as will be more fully described below. On the leg 20 is also mounted the limit stop 80, which will be more fully described below.

The hook 40 is comprised of the tail or body portion 42, the upstanding neck portion 44, and the protruding finger portion 46 which has the nose 48 extending downwardly therefrom. The body portion 42 is adapted to slide into the slots 22 and to be retained therein by tightening the

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set screws 28. Each of the hooks 40 has the blade receiving slot 60 therein which has an open and unrestricted rear end 61. The slot 60 is defined by the top wall 62, the bottom wall 64, and the front wall 66. In the drawings, the top wall 62 lies wholly in the finger portion 46 and the bottom wall 64 which lies wholly in the neck portion 44. The top wall 62 is shown as extending beyond bottom wall 64 and terminating at point 65 which is short of the front end or nose 48 of the hook 40. Since the bottom wall 64 is shorter than top wall 62, the slot 60 has an elongated access opening 67 in its bottom wall to permit the cutting edge of the blade 70 to be exposed. The front wall 66 is inclined downwardly away from the nose 48 and extends from the terminating point 65 of the top wall 62 to the opening 67 in the bottom wall so that the front wall is spaced from the nose 48 of the hook 40 and forms an apex with the top wall 62 at 65. Thus the slot is open at its rear 61, partially open at its bottom at access opening 67, closed at its top 62 and front 66, and partially closed at its bottom at 64. In the drawings the hook 40 is shown as comprised of two side sections 50 and 52 and the slot 60 is formed and inset wholly in the side section 52; the side section 50 abutting the section 52 to thereby complete the slot 60.

The blade 70 is adapted to be received in the slot 60 and is comprised of the opposed edges 72 and 74 and the inclined cutting edge 76 which extends from the edge 72 to the edge 74, thereby coming to an apex at 73. In the drawings, the opposed edges 72 and 74 are shown parallel to each other and the top edge 72 extends beyond the bottom edge 74. The top edge 72 is adapted to be guided by bottom wall 64. The cutting edge 76 is inclined parallel to front wall 66 and abuts the front wall 66 for a portion 75 adjacent the top edge 72 and hence is masked by said front wall 66. A substantial portion 77 of the cutting edge 76 is exposed through the open bottom 67 of slot 60 and is spaced from the nose 48 of the hook 40. The blade 70 is slightly longer than the slot 60 and has its rear end 78 protruding through and beyond open rear end 61 of the slot 60 in order to facilitate grasping of the blade 70 for removal.

The limit stop 80 mounted on the leg 20 of bracket 2 behind the open rear end 61 of slot 60 prevents the blade 70 from falling out of the open rear end 61 and presents a lock for automatically locking the blade 70 in slot 60 upon attachment of the hook 40 to the bracket 2. In the drawings, stop 80 is shown as an L-shaped member having the upstanding leg 82 and the attaching leg 84. In the drawings, the stop 80 is shown as attached to the leg 20 of bracket 2 by a spot weld at offset depression 86, although it is within the scope of the invention to have the stop 80 attached in any other manner or to have the stop 80 removably attached.

The upstanding leg 82 of stop 80 is shown as spaced from the forward end of the leg 20 of bracket 2 and the rear end 78 of blade 70 is shown as being slightly spaced from upstanding leg 82 to provide for tolerances in manufacture and to prevent any stress on the blade 70. In the drawings, the upstanding leg 82 is shown as being a stop member for both blades 70, but it will be understood that this leg 82 can be shortened or extended to provide stops for less or more than the two blades 70 shown in the drawings.

In operation, the bracket 2 is rocked back and forth through mounting block 4 by a rocker arm (not shown). This rocking movement reciprocates hook 40 and enables the nose 48 of hook 40 to grasp the yarn 90 to form tuft loops 94 after the yarn 90 has been passed through base fabric 92 by a tuft needle (not shown). The loops 94 are moved along the hook 40 by the rocking action of the hook 40 and the movement of the base fabric 92 until they are cut by the exposed portion 77 of the cutting edge

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76 of blade 70 thereby leaving loose strands 96. Since the exposed portion 77 of the cutting edge 76 is spaced from nose 48, a few loops 94 are formed by the hook 40 before they are cut by the cutting edge 76.

When the cutting edge 76 of blade 70 wears out, the operator finds the bracket 2 which contains the defective blade to remove the blade. This removal is effected by loosening set screw 28 and sliding the hook 40 out of slot 22. When the hook 40 is removed from the bracket 2, the hook 40 is moved away from the limit stop 80. Thus the blade 70 is automatically unlocked from hook 40 and is free to be moved out of the rear open end 61 of slot 60 without the use of special tools. The fact that the rear edge 78 of blade 70 extends beyond open rear end 61 of slot 60 facilitates grasping of the blade for removal. A new blade 70 is inserted into slot 60 from open rear end 61 and in the insertion of such blade 70 the top edge 72 of blade 70 will abut the top wall 62 of slot 60 and the blade will slide along this top wall 62 until the apex 73 of blade 70 strikes apex 65 of slot 60 and the portion 75 of cutting edge 76 abuts the front wall 66 and the bottom edge 74 of blade 70 abuts the bottom wall 64. The blade is held in the slot 60 by top wall 62, front wall 66, and bottom wall 64, with the portion 77 of the cutting edge 76 exposed. The hook 40 is then replaced in the bracket 2 by sliding the body 42 into the slot 22 and tightening the set screw 28. This attachment of the hook 40 onto bracket 2 enables leg 82 of stop 80 to prevent the blade 70 from falling out of the open rear end 61 of slot 60 and thereby to automatically lock the blade 70 in the hook 40 upon attachment of the hook 40 on the bracket 2.

If it is desired to adjust the whole bracket 2 vertically, the bolt 12 is loosened, the bracket 2 moved up or down, and the bolt 12 retightened.

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It will be seen that this arrangement provides a tufter hook assembly in which a blade can be replaced in a tufter hook expeditiously and without the use of special tools; and in which the blade will be locked securely in the hook.

I claim:

1. A loop cutting tufter hook for receiving a cutter blade, said tufter hook being comprised of a forwardly extending neck portion, a hook end extending downwardly from the front end thereof and a leg member extending downwardly from the rear end portion thereof to a level below the bottom of the neck portion, a blade receiving channel extending rearwardly from adjacent the hook end and through said neck and leg portions and unobstructed throughout its entire length and open at its rearmost end through the distal end wall of said leg portion, said channel being shorter than the blade to be received therein, whereby a blade can be entered into the channel for the full length of the channel by a rectilinear movement, and when so entered will present its distal end free of and beyond the channel, to facilitate manual blade replacement.

2. A tufter hook as set forth in claim 1 wherein means are provided rearwardly of and spaced from the rear end of the channel to prevent the blade from accidentally dropping out of the channel.

References Cited in the file of this patent

UNITED STATES PATENTS

1,902,704	Kadlec	Mar. 21, 1933
1,917,334	Smith	July 11, 1933
1,963,349	Boyce	June 19, 1934
2,090,021	Baynton et al.	Aug. 17, 1937
2,411,267	Hamrick	Nov. 19, 1946