LATCH HOOK DEVICE

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References Cited
UNITED STATES PATENTS
640,566 1/1900 Hutson 112/80 X
695,788 3/1902 Brown 112/80 X

FOREIGN PATENTS OR APPLICATIONS
1,919,813 7/1933 Tibbutt 112/80
454,684 10/1936 Great Britain 112/80
612,465 11/1948 Great Britain 223/104

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ABSTRACT
A latch hook device for applying yarn strands onto a mesh for making rugs wherein the hook portion is angled and provided near its end with a latch part which is pivotable manually about an arc which moves in a plane generally perpendicular to the shank for the hook portion.

8 Claims, 5 Drawing Figures
LATCH HOOK DEVICE

BACKGROUND OF THE INVENTION

The invention relates to a latch hook device which is utilized in the making of hook rugs wherein strands of yarn are knotted to a mesh. Various tools are available to assist in the knotting operation but the most popular is called a latch hook which has been widely used in this and other countries for many years.

The mesh which has usually about four meshes to the linear inch has the yarn pieces knotted to it by means of initially placing one or more pieces of yarn around the shank of the latch hook device, working the hook into one of the mesh openings and out the adjacent opening where the outer ends of the yarn loop are engaged by the hook which is then pulled back through the mesh openings to form a knot on the intervening webbing with the two yarn ends thus becoming tufts of the rug.

The latch hook device generally is provided with pivotal latch means, a pawl, which closes against the hook when the device is pulled through the canvas to form the knot. In known devices, this occurs automatically with the pawl being automatically opened by being pushed through the mesh and again automatically closed when it is pulled from the mesh. An example of this action is disclosed in U.S. Pat. No. 3,541,980.

A problem with latch hooks which are presently utilized for the manual manufacture of hook rugs is that in order to cause the pawl to close it is necessary that the hook portion be extended through the mesh for greater distance than is actually necessary to perform its function of providing a hook for receiving the strands of the yarn for forming the knot. In addition, the insertion of the latch hook into the mesh whereby it enters one of the openings and is brought out of an adjacent opening for receiving the yarn, requires that the operator distort the mesh to some extent which, in turn, renders the method more difficult than would exist if this were not the case.

SUMMARY OF THE INVENTION

The instant invention is directed to the solution of the foregoing problems which have existed for a number of years in the art of making hook rugs. Thus, in accordance with the invention, the problem that the hook engages the mesh so that its tendency to distort same is largely eliminated by the provision of an angular portion provided for the hook part whereby the hook part may be brought into one opening in the mesh, under mesh strands or webs and up into the adjacent opening of the mesh due to the angular structure of the hook member. The problem of the hook member being required to extend an undue distance through the mesh is solved by utilizing a latch part for engagement with the hook portion within the angular part of the hook member which can be rotated in an arc substantially about a pivotable axis substantially parallel to the axis of the hook member. The rotation is accomplished by a resiliently biased lever which can be operated manually by the individual who is utilizing the tool. In other words, my invention facilitates the correct penetration of the tool into the mesh and its withdrawal over the prior art. At the same time, the strand loops may be grasped nearer their roots than permitted by the prior art and, in effect, shorter strands may be used without undue difficulty if desired. The invention renders the work of making a latch hook rug significantly easier and less tiring than the latch hook devices of the prior art.

Other objects, adaptabilities and capabilities of the invention will be appreciated by those skilled in the art as the description progresses, reference being had to the accompanying drawings, in which:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of a latch hook device in accordance with the invention;
FIG. 2 is a side elevational view of the device shown in FIG. 1;
FIG. 3 is a front view of the device shown in FIGS. 1 and 2;
FIG. 4 is a further perspective view which shows the latch part rotated into an opened position; and
FIG. 5 is a front view of the latch part opened as shown in FIG. 4.

BRIEF DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring to the Figures, in FIG. 1 it will be noted that the latch hook device in accordance with the invention comprises a handle 10 from which extends a rigidly attached support member 11. A hook member designated generally by reference number 12 is rigidly attached and extends forwardly from the support member 11. As will be noted from FIG. 1, the hook member 12 has, as seen from above, the shape of an elongated "U" with the legs anchored in the support member 11. However, as seen from the side, FIG. 2, the hook member 12 is bent at its outer end to form an obtuse angle of about 135°. The dimensions of hook member 12 are such that it is readily received in openings of the mesh utilized as a foundation for the hook rug to be manufactured. This is also true insofar as the dimensions of the hook portion are concerned—particularly so that the hook portion may be readily received in the mesh opening adjacent to that concurrently receiving the shank portion of the hook member. In this connection, it will be appreciated that hook member 12 comprises a shank portion 15 which is rigidly attached to the support member 11 in its after end and merges with the hook portion 16 at its forward end. Adjacent and parallel to shank portion 15 is pivot bar 17 which is rotatably received in support member 11 in its after end and merges with a latch part 20 at its forward end, latch part 20 engaging the hook portion 16 as shown in the Figures. Referring in particular to FIG. 3, it will be noted that the end of hook portion 16 and the end of latch part 20 engage each other with a matching bias so that they overlap—forming, in effect, a plane of engagement.

The support member 11 includes a slot 21 which overlaps the after end of the pivot bar 17. A swing bar comprising a lever part 22 which is provided with an opening 24 to receive the after portion of pivot bar 17 includes a bolt 25 which bears on the after portion of pivot bar 17 whereby the lever part 22 causes by its rotation the similar rotation of the pivot bar 17 along its longitudinal axis of rotation 18. That other structure may be provided which will secure lever part 22 to pivot bar 17 to permit the same rotation will be appreciated by those skilled in the art. It will be noted at the end of the lever part 22, a cap 28 is secured so that it
can be readily operated by the thumb or index finger of an individual grasping handle 10 in his right hand. A tension spring 26 is provided between an anchor bolt 27, which is secured to the after portions of support member 11, and lever part 22 and latch part 20 are urged into the closed position as shown in FIGS. 1 – 3. It will also be noted that by moving the lever part 22 whereby it is rotated to the right as shown in FIG. 4, relative to FIGS. 1 and 3, the latch part 20 is rotated in an arc of movement designated in FIGS. 2, 4 and 5 by reference numeral 30. It will be noted from the Figures that a plane containing the arc 30 is perpendicular to axis 18 and also shank portion 15.

In operation, the latch member 12 is introduced into an opening in a hook rug mesh and the hook portion 16 is brought through the adjacent opening wherein the cap 28 is caused to rotate so that the latch part 20 moves through the arc of movement as shown in FIGS. 2, 4 and 5. At this time, the ends of one or more strands of yarn which are looped around the after portion of hook member 12 are brought into the inside of hook portion 16. The cap 28 together with lever part 22 is then permitted to return to its normal position wherein pivot bar 17 rotates back to the position shown in FIGS. 1 – 3 and the hook member is withdrawn, so that the yarn is automatically knotted about the strand or strands of mesh material separating the adjacent openings. The specific cooperation of the hook member device in accordance with the invention with the mesh for a hook rug is not illustrated inasmuch as this is conventional in the art and the utilization of the invention will be readily apparent in view of the disclosure of the invention to those who have experience in this art.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. A latch hook device which comprises:
   supporting means;
   a hook member extending from said supporting means, said hook member including a shank portion extending outwardly from said supporting means and a hook portion extending from the end of said shank portion, said hook portion extending at an angle relative to said shank portion;
   a pivot bar extending from said supporting means having an axis of rotation substantially parallel to said shank portion, a latch part extending from said pivot bar and at an angle relative thereto, the outer portion of said latch bar engaging said hook portion;
   means for selectively rotating said pivot bar whereby said latch part where it engages said hook portion is selectively rotatable away from said hook portion through an arc of motion wherein a plane containing said arc of motion is perpendicular to the axis of rotation of said pivot bar.

2. A latch hook device in accordance with claim 1 wherein said means for selectively rotating said pivot bar comprises a lever extending normally from said pivot bar.

3. A latch hook device in accordance with claim 2 wherein said lever is resiliently biased whereby said latch part is urged into engagement with said hook portion.

4. A latch hook device in accordance with claim 3 wherein said lever extends from a slot in said supporting means.

5. A latch hook device in accordance with claim 3 wherein said lever is connected to a spring which is in a state of tension and is anchored to said supporting means.

6. A latch hook device in accordance with claim 1 wherein said latch part and said hook part are overlapping.

7. A latch hook device in accordance with claim 6 wherein said overlap of said latch part and said hook part comprises a substantially planar area which is disposed at an angle to said plane containing said arc of motion.

8. A latch hook device in accordance with claim 1 wherein said supporting means is included on a handle.