Sept. 2, 1958 C. W. MINTON 2,849,872

KNITTING MACHINE NEEDLE

Filed Aug. 26, 1954

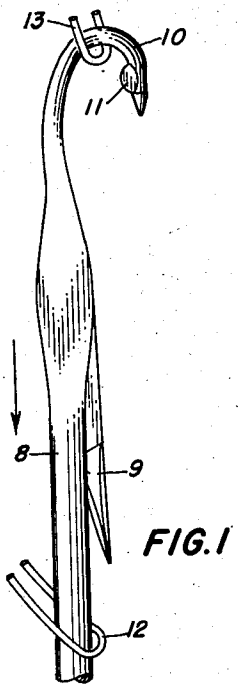

FIG. 1

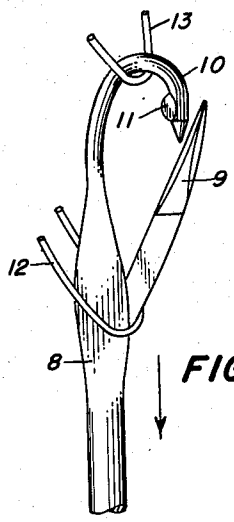

FIG. 2

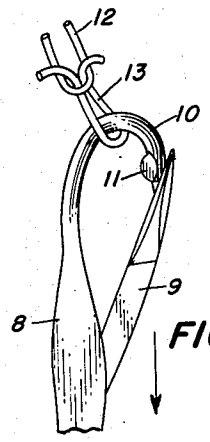

FIG. 3

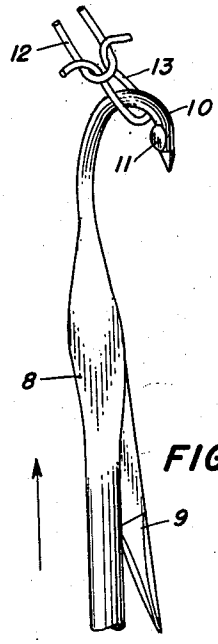

FIG. 4

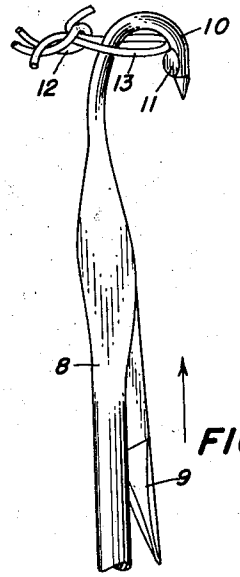

FIG. 5

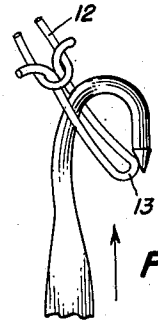

FIG. 6

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KNITTING MACHINE NEEDLE

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2 Claims. (Cl. 66—121)

An improved knitting machine needle is described in detail in the following specification. The needle is adapted for use in a variety of knitting operations and is an improvement upon needles of several different types.

In many instances, the yarn is held in the hook of a knitting machine needle in the form of a loop for a desired number of courses before the next stitch is taken. The loop in the hook has a tendency to get longer where the yarn is held slack in order to make a loose fabric. Even where the next succeeding loop is made on the hook immediately, the slack of the yarn in the first loop may cause the loop to become disengaged from the hook before it is locked by the next loop.

The primary object of the present invention is to provide the knitting machine needle hook with means which will definitely prevent the loop from escaping the hook until the succeeding stitch is taken. This will result in fewer drop stitches.

It is a further object of the invention to insure retention of the loop last formed on the hook through the successive movements by which additional yarn is taken on the hook without casting off for a desired number of courses depending upon the pattern.

A still further object of the invention is to provide a needle of greater efficiency on a float stitch construction. Here knitting is done on one or more needles depending upon the pattern. The stitch is held under the hook without taking any more yarn for a considerable number of courses depending upon the pattern being made. The improved hook will hold this loop under the hook and will not allow it to slide out and cause a drop stitch.

As illustrating the invention applied to the usual latch needle, the improved structure has been shown in the accompanying drawings in which

Fig. 1 is a side elevation of a knitting machine needle at the start of the transfer movement;

Fig. 2 is a side elevation of the needle during the formation of the new loop;

Fig. 3 is a like view at the conclusion of the formation of the loop;

Fig. 4 is a side elevation of the needle rising to engage yarn or thread for the next loop;

Fig. 5 is a similar view of the needle with the hook rising past the loop; and

Fig. 6 is a side elevation of loop escaping from the ordinary needle.

Briefly described, the present needle differs from the ones customarily employed in that the hook of the needle is provided on the inner side with a protuberance, boss or knob. This feature engages the loop in the hook and prevents it from slipping out of the hook if the loop becomes large.

As shown by way of example on the drawings, a needle **8** is provided of the usual latch type, having a pivoted latch **9**. The needle ends in a rigid curved hook **10** of usual construction having a substantially round cross-section.

In order to accomplish the result of this invention, the

inner side of the hook **10** is swaged or pinched in any suitable way to form the protuberance or knob **11**. This knob has an inner curved edge. This edge will not damage the yarn but will be of sufficient height to stop the loop of yarn as it slides around the inner edge of the hook.

In Fig. 1 I have shown the needle **8** at its upper limit of movement. Here the latch **9** is down and the first loop **12** is below the latch. The yarn or thread to form the second loop **13** has been picked up by the hook **10** and will be held during the downward movement of the needle **8**.

As the needle is brought down in the direction shown by the arrow in Fig. 2, the lower loop **12** will bring the latch **9** into its upper position engaging with the hook **10**. Further downward movement of the needle brings the loop **12** over the hook **10** and into the position around the second loop **13**.

The second loop **13** then takes the position shown in Fig. 3. Here the first loop **12** is locked by the second loop **13** at the end of the downward movement of the needle **8**.

In the knitting of loose fabrics, the loop **13** may be large and not under tension. In its slackness it may have a tendency to ride out of the hook. This occurs when the latch **9** drops into its lower position (see Fig. 6).

Fig. 4 shows the needle **8** in its upward movement. Here the loop **13** slides around the inner edge of the hook **10** until it is stopped by the knob **11**. This retains the loop **13** and prevents its escape from the hook **10** or the formation of a drop stitch.

The upward extent of movement of the needle **8** is shown in Fig. 5, where the last loop **13** is still retained on the hook by the knob **11**, regardless of slackness or extent of angular movement. The only release possible by the loop **13** is during the final stage of the upward movement of the needle when the loop **13** travels down past the lowered latch **9**. The loop **13** then takes the position shown by the loop **12** in Fig. 1, while a new loop or stitch is formed within the hook of the needle.

For the sake of comparison, the action of the ordinary needle is shown in Fig. 6. Here the loop **13** is not restrained. If the loop is sufficiently loose, the resilience of the yarn causes it to spring beyond the hook **10**, thus resulting in a drop stitch.

From the above it will be evident that the improved form of the hook can be applied to numerous types of needles. In each instance it forms a positive obstruction to the inadvertent loss of the loop of yarn.

The specific form and location of the knob may be varied without departing from the scope of the invention as defined in the following claims.

What I claim is:

1. A latch knitting needle having a rigid curved hook of substantially round cross-section with its end rearwardly directed in the same plane and spaced parallel to the main portion and an integral protuberance with a curved edge on the inner side of the hook end.

2. A latch knitting needle having a rigid curved hook of substantially round cross-section with its end rearwardly directed in the same plane and spaced parallel to the main portion and an integral protuberance with a relatively thinner curved edge on the inner side of the hook end.

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