

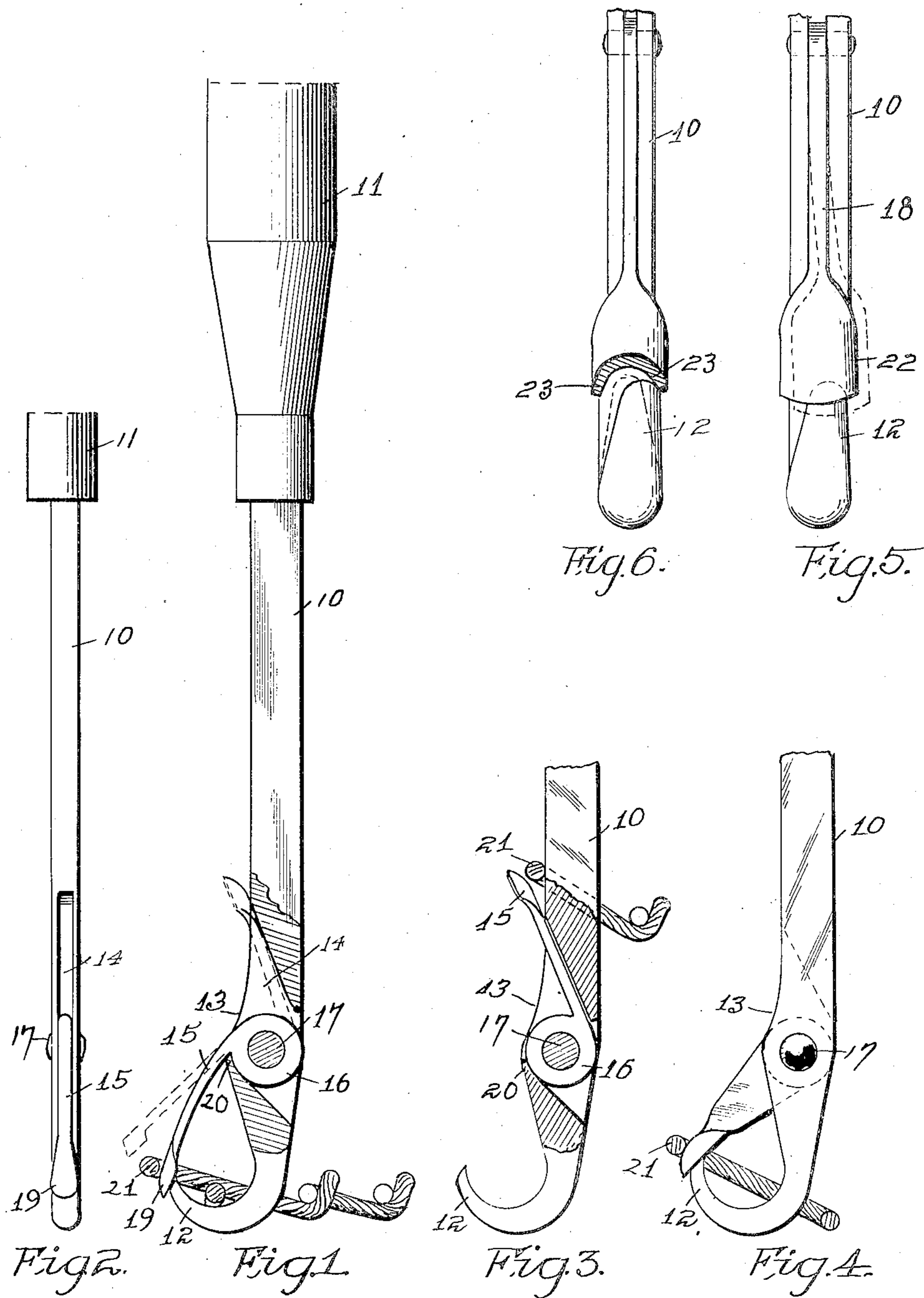
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NEEDLE FOR REPAIRING RUNS IN KNITTED FABRICS

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NEEDLE FOR REPAIRING RUNS IN KNITTED FABRICS.

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My invention relates to that class of needles in which there is employed a hook and a pivoted latch which cooperates with the hook, and which, in use, at times closes the hook and at other times assumes a position at its limit of movement away from the hook.

The object of my invention is to provide a needle having a latch or hook member formed of spring material, and to arrange the parts in such a manner that when the latch is moved to a closed position, bending strain will be imparted to one or both of the members in such a manner that as the latch is released after being moved to a closed position, the relaxation of the bent member as it returns to its normal position will cause the latch to be thrown from a closed position to an open position.

My invention consists in the construction, arrangement and combination of the various parts of the device, whereby the objects contemplated are attained, as hereinafter more fully set forth, pointed out in my claim, and illustrated in the accompanying drawings, in which:

Figure 1 is a side elevation of the preferred form of my needle, a portion of the body being broken away to show the manner in which the latch is pivotally mounted therein.

Figure 2 is a front elevation of same.

Figure 3 is a side elevation of the lower end of the needle, showing the latch in its open position, a portion of the body being broken away.

Figure 4 is a side elevation of a modified form of my device with the latch in its closed position.

Figure 5 is a front elevation of same; and

Figure 6 is a front elevation of same with the latch in a partially closed position, the end of the latch being broken away.

My improved needle comprises a body portion 10 having a handle 11 at its upper end and its lower end formed into a hook 12. The body 10 is enlarged at the point 13, said enlarged portion being provided with a slot 14 in which is pivotally mounted one end of the latch 15. The said latch 15 comprises a head 16 pivotally mounted in the slot 14 by means of a suitable rivet 17. The head 16 is formed with a tongue 18 which projects tangentially from the head 16 and is formed of spring material and of such dimensions that it may be bent under the

action of the needle passing through the loop of a thread. The outer end of the member 18 terminates in an enlarged portion 19 for covering the free end of the hook 12.

The body portion 10 is provided with a shoulder 20 designed to engage the inner face of the inner end of the member 18 at the time the said member is moved to a partially closed position, as illustrated by dotted lines in Figure 1, in such a manner that if inward pressure is applied to the outer end of the member 18, it will be bent from the position shown by dotted lines to the position shown by solid lines in Figure 1, with the member 19 engaging the free end of the hook 12. It will be seen that if the hook is released at this time, it will spring to its normal shape and that the momentum of the movement of the free end of the member 18, from the position shown by the solid lines to the position shown by dotted lines in Figure 1, will carry the hook to its open position shown in Figure 3, with the free end of the hook extending outwardly a slight distance from the front edge of the body 10, so it may be engaged by the thread 21 as the hook is moved upwardly, causing the member 18 to be moved to the position shown by dotted lines in Figure 1. Upon further upward movement of the needle, the thread 21 will bend the free end downwardly to a closed position.

The operation of my needle is as follows: The needle is first passed through the loop of the thread 21 and moved downwardly until the said loop 21 is supported above the free end of the latch, as illustrated in Figure 3. The needle is then moved upwardly, causing the member 21 to engage the upper edge of the latch 15 and move the same to the position shown by dotted lines in Figure 1, at which time the inner face of the inner end of the member 18 will engage the lug 20. A further upward movement of the needle will cause the member 18 to be bent as the said member is pulled through the loop 21, and to be moved to a closed position. After the needle has passed through the loop and the member 19 disengages the loop 21, the member 18 will release to its position shown by dotted lines and be carried to the open position by momentum as before described.

In Figures 4, 5 and 6 I have shown a slightly modified form in which the latch member 18 is provided at its lower end with

a curved enlarged portion 22, the under surface of the latch being concaved to provide inclined surfaces 23. The free end of the hook member 12 is bent to one side of the plane extending longitudinally through the center of the latch and body portion, in the manner illustrated in Figures 5 and 6. The member 18 is formed comparatively thin so that its free end may be bent laterally to the position illustrated by dotted lines in Figure 5. The parts are so arranged that one of the inclined surfaces 23 will engage one side of the free end of the member 12 before the member 22 has been moved to a completely closed position, so that further pressure applied to the free end of the member 22 will cause the member 18 to be bent to position shown by dotted lines in Figure 6, as the member 22 is moved to a completely closed position. Upon the release of the thread from the member 22, the member 18 will straighten to the position shown by solid lines in Figure 5, and when doing so the free end of the member 22 will be thrown upwardly and the latch carried to its open position by momentum.

The construction may be further modified by forming the hook member 12 of comparatively light and spring material, instead of making the member 13 of spring material. The parts are otherwise con-

structed as illustrated in Figures 4, 5 and 6. By this construction it will be seen that if the latch member 22 is moved inwardly, the free end of the member 12 will be twisted laterally to the position shown by dotted lines in Figure 6, and the latch will be thrown upwardly by the member 12 springing back to its position shown by solid lines in said figure. The operation of the needle is the same as with the preferred form.

Thus it will be seen that I have provided a needle of simple, durable and inexpensive construction, which is provided with means for automatically throwing the latch from its closed position to an open position without the use of auxiliary devices, such as springs or levers.

I claim as my invention:

A knitting needle comprising a handle having one end terminating in a hook, a pivoted latch formed of spring material adapted to move from a position closing said hook to an open position adjacent to one side of said handle, said parts being so constructed and arranged that as the latch is forced to its closed position it will bend, and upon being released it will spring back to its normal shape and be thrown toward open position.

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