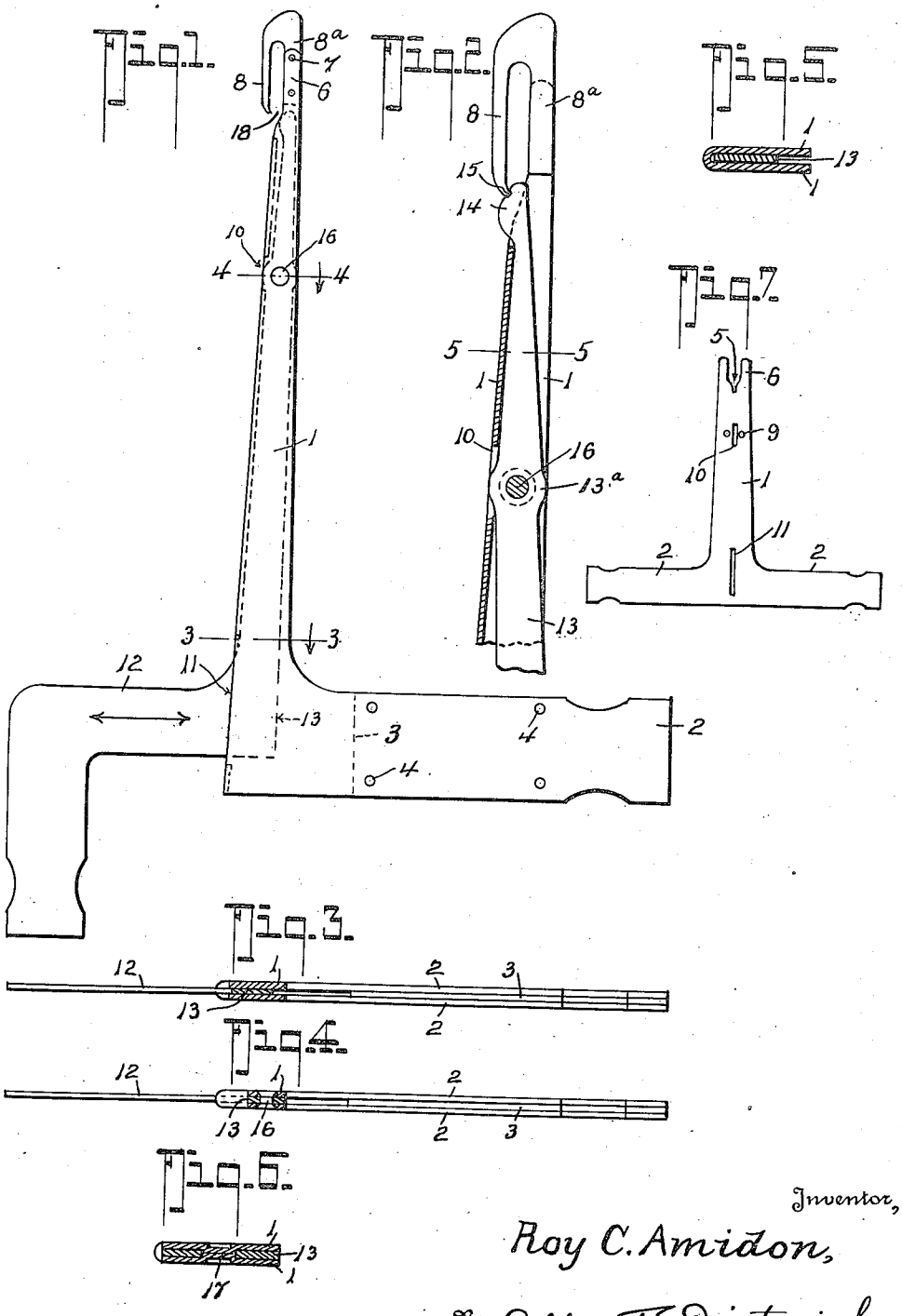
April 30, 1946. R. C. AMIDON 2,399,308

KNITTING MACHINE NEEDLE

Filed Nov. 17, 1944



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Patented Apr. 30, 1946

2,399,308

UNITED STATES PATENT OFFICE

2,399,308

KNITTING MACHINE NEEDLE

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Application November 17, 1944, Serial No. 563,896

3 Claims. (Cl. 66—121)

My present invention relates to knitting machine needles of the type disclosed in my application filed August 18, 1944, Serial No. 550,061.

The present invention has for an object to provide a needle of the type stated which can be manufactured from sheet metal at low cost.

Another object is to provide a needle of such construction that the hook-closing tongue is operated to close the hook by movement of the bases toward one another instead apart as in my needle of the application aforesaid.

Again it is an object to provide a needle with a tongue that is without a springy section so as to avoid all danger of tongue breakage due to fatigue.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, the invention further resides in those novel details of construction, combination and arrangement of parts all of which will be first described in detail and then be specifically pointed out in the appended claims, reference being had to the accompanying drawing in which:

Fig. 1 is a side elevation of my improved needle with the hook open.

Fig. 2 is an enlarged detail vertical section and part elevation showing the hook closed.

Figs. 3 and 4 are, respectively, cross sections on the lines 3—3 and 4—4 of Fig. 1.

Fig. 5 is a cross section on the line 5—5 of Fig. 2.

Fig. 6 is a detail cross section showing a modified pivot for the tongue.

Fig. 7 is a diagrammatic view of the needle, before folding over to form the grooved base and shank of the needle.

In the drawing in which like parts bear the same reference numerals in all the figures, 1 represents the shank part of the needle, 2 the base, the sides of which are spaced by an insert piece 3 which is spot welded or riveted to the sides, as at 4, or secured in any other suitable way.

The upper end of the shank 1 is cut out, as at 5 in Fig. 7, to provide two portions 6 between which the shank portion 8a of the hook 8 is secured by welding, as at 7, Fig. 1, or in any other desired way.

The shank 1 may have a slot 10 to receive the enlargement 13a of the pivot joint of the tongue 13, and a slot 11 through which the tongue shank 12 is passed so that the tongue will lie between the sides of the needle shank 1.

The tongue includes the base 12, the shank 13 and the hook-closing end 14, the hook-engaging edge of which is preferably convex and is provided with a recess 15 to receive the tip of the hook (Fig. 2).

The tongue shank is pivoted to the needle shank at a place between the hook and the base of the needle by means of a rivet (16 in Fig. 4) or by stamped indentations (17, Fig. 6).

Of course, in practice, a plurality of needles have their bases cast in blocks; so also the bases of the tongues, according to the well known practice.

From the foregoing it will be seen that when the tongue is in the position shown in Fig. 1, the hook will be open and a thread passage 18 will be provided, but when the bases of the tongue and needle are moved together, either by holding one of them stationary and moving the other or by moving both of them at the same time, the hook-closing end 14 will be swung out to engage the hook and close the passage 18.

When used in a knitting machine the machine will be so designed that the times when the passage 18 is opened and closed will occur at the proper intervals to effect the desired knitting operation.

From the foregoing description taken with the accompanying drawing it is thought the construction, operation and advantages of my invention will be clear to those skilled in the art to which it appertains.

What I claim is:

1. A knitting machine needle having a shank composed of sheet metal bent upon itself to form a longitudinal groove, a hook having a shank portion secured between the folds of the upper end of the needle shank and having a point spaced from the shank to provide a thread passage; a flat sheet metal tongue having a shank to lie in said groove and having a hook-engaging end; means pivoting said tongue and needle shanks together, the arrangement being such that when the shanks of the tongue and needle are moved relatively away from one another in opposite directions the thread passage will be closed and when the same are moved in the opposite direction the thread passage will be opened, the needle shank having a base slot in its bend and said tongue having its base projecting through said slot.

2. A knitting machine needle having a sheet metal body provided with a base and a shank of U-shape in cross section, the end of the shank which is remote from the base being slotted and reduced in width, a hook member having a shank portion secured to said reduced end and having

a hook spaced from the shank to provide a thread passage; a sheet metal tongue lying within the U-shaped body and pivoted thereto at a place between said thread passage and said base, said tongue having a hook-engaging element for closing said thread passage when the tongue is in a position to project said hook-engaging element through said slotted end of the needle shank.

3. A knitting machine needle having a sheet metal body including two parallel side members spaced apart and providing a needle shank and a needle base, a spacer between the side members of the base, a hook member having a hook portion and a shank portion, the latter serving as a spacer between the ends of the shank sides that are remote from the base, and means to fixedly secure the hook member to the shank of the needle as a continuation thereof; a tongue composed of a flat body having a shank located between said side members and having a base projecting outside said side members and having a hook-engaging end; and means pivoting said tongue and needle shanks together at a place between the hook engaging member and the bases of the needle and the tongue.

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