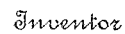


NEEDLE.

1,054,117.

Patented Feb. 25, 1913.



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NEEDLE.

1,054,117.

Specification of Letters Patent.

Patented Feb. 25, 1913.

Application filed July 31, 1911. Serial No. 641,630.

To all whom it may concern:

Be it known that I, WILLIAM H. HENDERSON, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented certain new and useful Improvements in Needles, of which the following is a specification.

This invention relates to an improved needle, and particularly to a needle for sewing machines, formed with a lateral slot opening upon the eye for the passage of thread when "threading" the needle.

Needles have been formed heretofore with slots at the side of and opening upon the eye for the above purposes, but they have not gone into extensive use for the reason that the meeting ends of the arms or tangs have had square or parallel faces so that threading was difficult, or the construction has been such that the slot has been open and unprotected. In the use of the last named needles, when sewing loosely woven fabrics, lace or the like, the threads or strands composing the fabric enter the eye through the slot, and prevent operation.

It is considered that the arms or tangs of a needle of this class should have bearings against each other so that the stresses directed longitudinally of the needle may be sustained. Also an entrance way or convergently formed recess should be provided at the meeting place of the tangs, so that the needle may be conveniently threaded. The tangs or one of them, should be so constructed that a sufficient degree of elasticity will be provided to allow it to yield enough to permit the passage of the thread into the eye. Also a hump or curved projection should be formed near the slot between the point of the needle and the slot, to cause the strands or threads of the fabric to make a clearance, or to pass over the convergent recess and ends of the tangs.

All of the above features are provided for in the construction as herein shown, and with these objects in view the invention presents a novel construction, combination and arrangement of parts as will be fully described, and as herein claimed.

In the accompanying drawing Figure 1 is a side view of a sewing machine needle illustrating one embodiment of my invention. Fig. 2 is an enlarged side view partly broken away of the needle. Fig. 3 is a view of the

side of the needle opposite to that shown in Fig. 2. Fig. 4 is a plan view of the same.

Referring now to the drawing for a more particular description, the needle consists of the usual stem 5 with a tapered end portion 6 to provide the point 7, the eye being indicated at 8 with the usual depressions or longitudinal channels 9 formed on its sides at opposite ends of and opening upon the eye.

At 10 is indicated an inwardly convergent recess formed in the body of the needle adjacent to the eye, and an incision 11 is made transversely, at the bottom of the recess, thereby forming the tangs 12 and 13, this incision being so slight or attenuated, however, that it does not prevent, normally, a contact of the ends of the tangs.

By the construction as described, the tangs may bear against each other to resist the longitudinal stresses occasioned by the plunging movement of the needle when sewing heavy fabrics, leather, or like material, and this feature tends to prevent bending or breaking of the needle.

In order that the thread 14 may be readily disposed in the eye of the needle, tang 12 is constructed thin or attenuated in a degree sufficient to readily admit an inwardly yielding movement; and in the operation of threading the needle, the thread when disposed transversely may be drawn longitudinally of the stem and it will enter recess 10, and a downward pressure of the thread when held taut will cause an inward swinging movement of tang 12 and the thread thereupon will enter the eye between the ends of the tangs.

In order that tang 12 may be sufficiently reduced to provide the required degree of resiliency and in order that the end of the tang may not be obtrusive while threading the needle said tang 12 is formed inwardly tapered as indicated by numeral 15 in Fig. 4.

An enlargement, deflecting-head or outward projection is indicated at 16 between the point 7 and recess 10. It is preferably oval in plan, having a front wall 17 with a slight inclination, its pitch being forwardly and inwardly to the point 7, and a rear wall 18 inclined inwardly and rearwardly, the degree of inclination being greater than that of wall 17.

The projection or head 16 is tapered rearwardly at its sides as indicated at 19 in Fig.

4, and in connection with the tapered wall 15 of tang 12, recess 10 provides an adequate space in which the thread may be conveniently caught by an operator when threading the needle.

In operation, the projection 16 when passing through a fabric, will cause a perforation to be formed therein, greater in diameter than the stem 5 and since recess 10 is adjacent to this projection, the threads or strands of a fabric will be moved along over or deflected from the reduced or tapered ends of the tangs, and over recess 10 without being caught in the incision 11 and this is the function discharged by the projection or head 16.

In the drawing the longitudinal axis of the needle is indicated by a broken line. In the operation of sewing, the thread may move longitudinally of the elongated eye 8 and when in a taut condition the thread will be disposed in one of the terminals *a* or *b* of the elongated eye. It will be understood therefore that these terminals and the point of the needle should be in alinement, midway between the sides of the stem, and the present construction embodies these features.

At *c*, between the ends of the eye, is indicated a recess or enlarged portion of the eye. The formation of this enlarged part does not interfere in any manner with the movement of the thread during the operation of sewing, but it reduces the thickness of tang 12 so that this member will yield to the com-

pression above mentioned, when threading the needle.

Having fully described my invention, what I claim and desire to secure by Letters Patent is,—

A needle comprising a shank portion and a head portion, said head portion being pointed at its forward end and of ovaloid form at the rear, said head portion being of larger diameter than the shank portion, but being formed in continuous alinement with said shank portion at one side and projecting beyond said shank portion at the opposite side, there being an eye formed in said needle at the juncture of the head and shank, said eye extending beneath the rear of said head to form an overhanging ledge, said eye being located centrally with relation to the shank, but off center with relation to the head, the metal of the shank at the side of the eye toward the projecting portion of the head being cut away both longitudinally and transversely to form a thinned and tapering tang the body of which lies in continuous alinement with the shank and the free end of which is intumed and bears against the rear of the head.

In testimony whereof I have affixed my signature in presence of two witnesses.

WILLIAM H. HENDERSON.

Witnesses:

A. F. CLARK.

HIRAM A. STURGEON