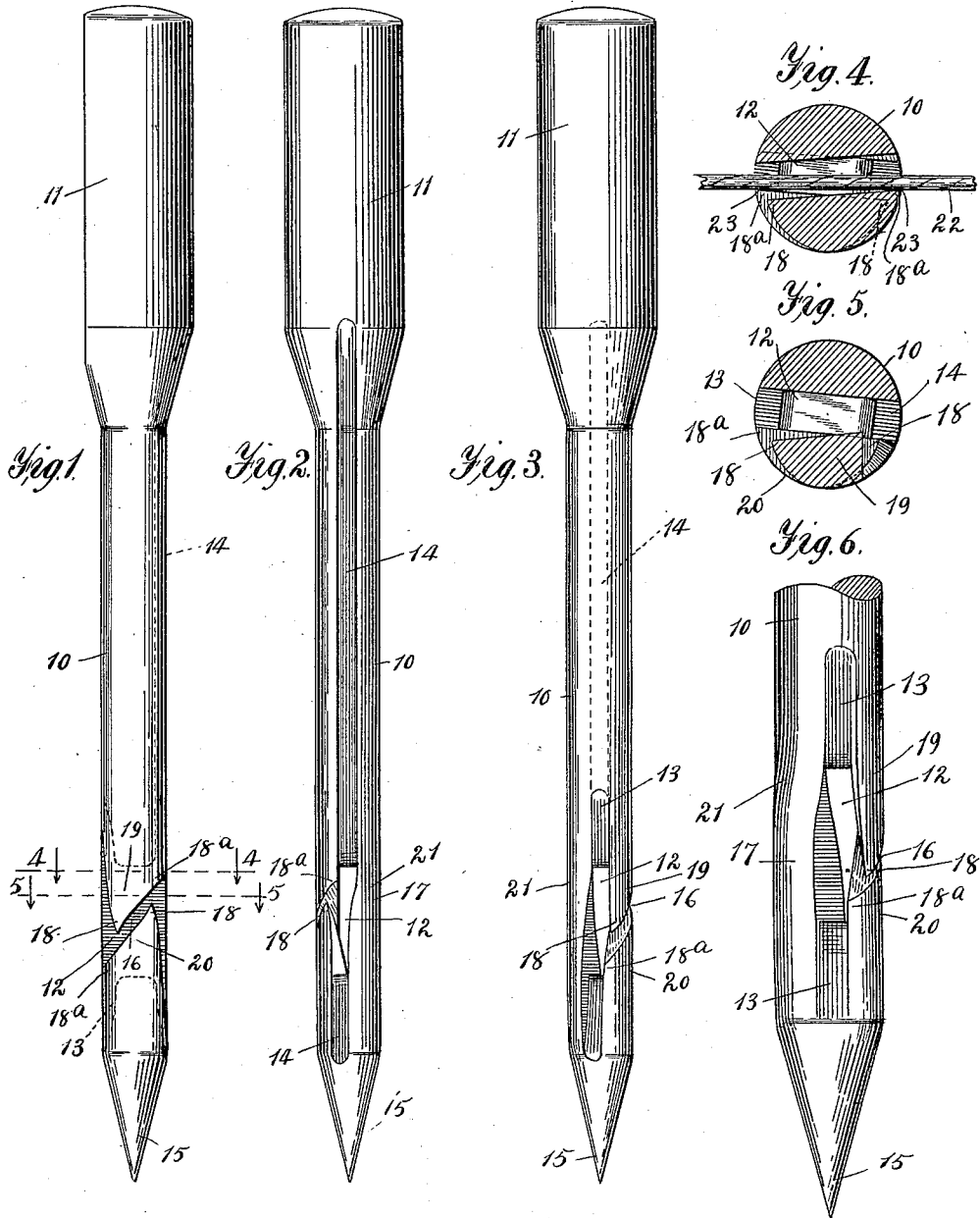


A. P. MYER.
SEWING MACHINE NEEDLE.
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1,024,416.

Patented Apr. 23, 1912.



Witnesses:

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UNITED STATES PATENT OFFICE.

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SEWING-MACHINE NEEDLE.

1,024,416.

Specification of Letters Patent.

Patented Apr. 23, 1912.

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To all whom it may concern:

Be it known that I, ALBERT P. MYER, citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Sewing-Machine Needles, of which the following is a specification.

My invention relates to needles of the "self threading" type and the chief object of the improvements which constitute the subject matter of this application for patent is to produce a needle so constructed that the thread may be made to enter the eye of the needle at any point intermediate of the thread ends, and when so placed the thread will be held securely against displacement, running freely and smoothly through the eye without any possibility of engaging with the margins or angles of the slot or entrance passage.

A further object of the novel construction of my needle is to strengthen the reduced portion of the body opposite the eye which would otherwise be the weaker part, by giving it a twist which will result in a molecular change at this point giving an increased rigidity very desirable in open eye needles.

A very great defect in needles of the open eye type is the tendency of the angles formed by the slot in the eye to engage the fabric and when the latter is of certain material, such as silk, this engagement may result in the "drawing" of a thread of the warp throughout the entire length of the seam. In my improved needle I cut the entrance slot diagonally to the body and swage the sharper angles so that they will recede from the outer surface line thus giving the requisite clearance and preventing any danger of catching the cloth by the said angles. The inclination of the slot above referred to, aids in preventing the escape of the thread since only one point or angle will be opposite the thread at one time, and as the thread remains in a position transverse to the needle axis making it impossible for the needle to become accidentally unthreaded.

Other objects of my invention are to improve the construction of needles of the class under consideration thereby simplifying the processes necessary in their manufacture and enabling them to be economically produced in quantities.

I accomplish the desired results by the construction illustrated in the accompanying drawing, which forms a part of this application, the details being disclosed in the following views:—

Figures 1, 2, and 3, are elevational views of a sewing machine needle embodying my improvements; Figs. 4 and 5 are sectional views, enlarged, taken on the lines 4—4 and 5—5, respectively, of Fig. 1, and Fig. 6 is an enlarged fragmentary view of the point of the needle viewed from a different angle than in the preceding figures.

Referring to the details of the drawing, the numeral 10 indicates the body, and 11 the shank of a needle adapted for use in a sewing machine. The body is furnished with the usual eye 12, and upon diametrically opposite sides are placed longitudinal slots 13, 14, the slot 14 extending from the vicinity of the point 15 to the shank 11, as in ordinary needles, both of said slots merging into the said eye. Opposite the eye 12 the body is cut through upon one side as indicated at 16 the line of cut being inclined at an angle with the axis of the needle body as shown in Fig. 1. In making this cut a portion of the metal is removed leaving an interval or slot of sufficient width to admit the thread. That part of the needle below the slot 16 is thus attached to the main portion of the body by the connection 17 forming the intact side of the eye.

The shape of the needle and the relation of the parts so far as described do not differ materially from needles previously devised, but as such forms of the device are rendered inefficient by reason of the tendency of the thread to escape through the slot of entrance or to become engaged by the margins or angles of the slot so as to cause the thread to become broken, I change the relation of the parts in such a manner as to prevent such engagement or dislodgment of the thread. This is done by giving the part of the needle below the eye a slight axial twist or turn, the angle of torsion being sufficient to cause the points 18 and shoulders 18^a of the projections 19, 20, forming the opposite sides of the slot 16, to have a staggered relation, as shown in Fig. 1, and the inner faces of the said projections to be inclined in opposite directions as clearly presented in Figs. 4 and 5. The torsional force will affect the connection 17 only, the location of the twist

being indicated at 21, and the effect of the strain upon the molecules will stiffen this part very materially.

It will be understood that the thread is to be inserted by passing it laterally through the slot 16 in the usual manner, and when so placed the relative inclination of the planes of the inner faces of the projections 19, 20, will prevent interference of the points 18 or shoulders 18^a with the thread 22, which will be held away from said angles by the salient portions of said projections, as shown in Fig. 4, where the thread is seen to be in contact with the projections at the outer margins, the contact points being indicated at 23 only, the location of the twist being indicated at 21, and the effect of the strain upon the molecules will stiffen this part very materially. As a precaution against any possible catching of the more acute angles or corners 18 with the fabric through which the needle is passed, in the operation of sewing, the said corners are bent inwardly by the process of swaging as shown in Fig. 1, thus tending to hold the thread in the needle at the same time being covered by the shoulders 18^a.

A very important feature of my improved

needle is the unusually long eye so as to enable the thread to slip beyond the points 18 and thus prevent the thread from catching thereon or slipping off the eye. The twist given to the point of the needle, as described, will in no wise interfere with its proper penetration into and withdrawal from the material operated upon, and extensive working experiments have demonstrated that the needle above described will operate with equal efficiency on the thinner fabrics or coarser material of great thickness even when composed of a large number of layers, and will carry any variety of silk or cotton thread.

Having thus described my invention what I claim is:—

A needle having an eye extending longitudinally of the needle, a slit extending diagonally through one wall of said eye, one portion of the slitted wall and the opposite wall being axially twisted.

In testimony whereof I affix my signature in the presence of two witnesses.

ALBERT P. MYER.

Witnesses:

I. A. DUNSMOOR,
GEO. H. TOWLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."