Oct. 15, 1946. M. M. NEWMAN 2,409,445

SEWING MACHINE NEEDLE

Filed May 2, 1944

Fig. 1

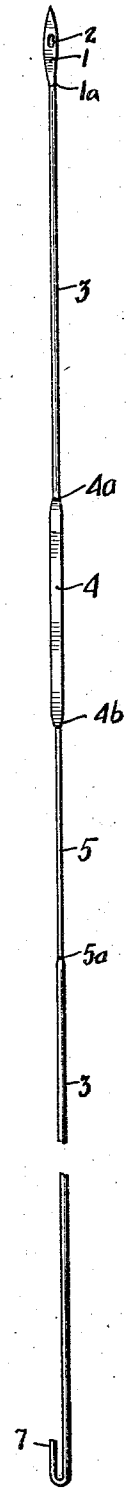


Fig. 2

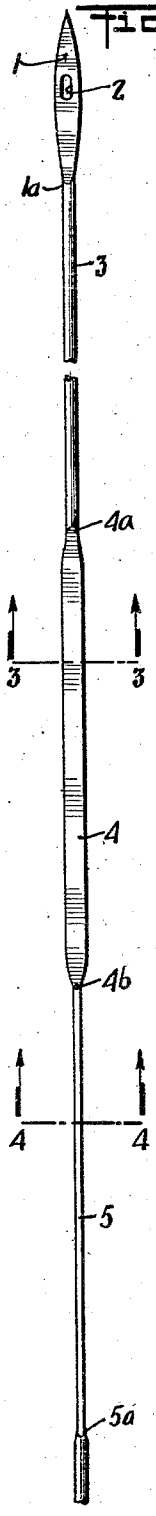


Fig. 3

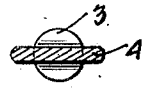
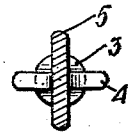


Fig. 4



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SEWING MACHINE NEEDLE

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3 Claims. (Cl. 112—222)

1

My invention relates to a new and improved needle.

The principal object of my invention is to provide a needle which will eliminate or minimize the tearing of the sewing thread, at or adjacent the eye of the needle.

Another object of my invention is to provide the long and flexible needle which is used in sewing neckties. This type of needle is shown in U. S. Patent No. 2,098,009, dated Nov. 2, 1937.

This type of long needle perforates a pleated fabric piece, in order to make a series of holes, through which the thread must be passed, together with the point of the needle.

According to my invention, the shank of the needle is of cylindrical stock and said shank is provided with one or more flattened portions, between the eye of the needle and the butt-end of the needle.

Other objects of my invention will be stated in the annexed description and drawing which illustrate a preferred embodiment thereof.

Fig. 1 is a top elevation of the improved needle.

Fig. 2 is an enlarged detail top elevation of said needle.

Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

Fig. 4 is a sectional view on the line 4—4 of Fig. 2.

Without limiting the invention to the details stated herein, and as a working example of the invention, the length of a needle which is used for the type of work which is illustrated in said U. S. Patent No. 2,098,009 is approximately 34 inches. This needle is made of flexible metal or alloy, so that it is very bendable, and said needle can be bent and tied to form a closed loop. Experience has shown that in using this type of needle, the thread frequently breaks at the eye thereof.

As a working example of my invention, if the length of the needle is about 34 inches, the eye-portion 1 in which the eye 2 is located, has a length of about .5 inch. The shank 3 of said needle is of cylindrical shape, save where the flattened area or areas are provided. In the working example above mentioned, the front tip 4*a* of the flattened portion 4, is located substantially 3 inches behind the rear end 1*a* of the eye-portion 2. The length of this flattened portion 4 between its front end 4*a* and its rear end 4*b* is substantially 1.25 inch.

The invention is not limited to the number of said flattened portions. I prefer to have two such flattened portions, which immediately succeed

2

each other. The flattened portion 5 therefore has its front end coincident with the rear end 4*b* of the front flattened portion 5. The rear end of the second flattened portion 5 is indicated by the reference numeral 5*a*. The needle has the usual hook shape 7 at its butt end.

As shown in the drawing which is substantially to scale, the shank of the needle is transversely enlarged at each flattened portion thereof. This is, and as shown in Fig. 3, the lateral dimension or width of the flattened portion 4, is substantially 200% of the diameter of the cylindrical shank 3. The height of the flattened portion 5, equals the width of flattened portion 4. These flattened portions are formed by suitably compressing and deforming the material of the shank 3, by means of dies. The flattened portions 4 and 5 are identical in all respects, save that they are located in respective planes which are perpendicular to each other. For convenience, the front flattened portion 4 may be designated as a horizontal flattened portion, because it has planar top and bottom surfaces which are parallel to the planar top and bottom surfaces of the eye-portion 1. For the same reason, the flattened portion 5 is designated as the vertically flattened portion, because said flattened portion 5 has parallel planar faces which are perpendicular to the planar top and bottom faces of the flattened portion 4. Each said flattened portion 4 and 5 has respective planar faces which are parallel to each other.

The length of the front flattened portion 4 is at least twice the length of the flattened eye-portion 1. The distance between the rear end 1*a* of the eye-portion 1 and the front end 4*a* of the front flattened portion 4, exceeds the length of said flattened portion 4.

The flattened portion 4, or the flattened portions 4 and 5, or any desired number of said flattened portions, constitute a lateral enlarged section of the shank. This lateral enlarged shape can be produced by the initial formation of the shank or by operating upon the shank after it has been initially formed.

The enlargement of the flattened portion or portions, relative to the cylindrical shank 3, spreads the holes in the fabric, so that the thread is protected against breakage.

While I have described the preferred embodiment of my invention, numerous changes and omissions and additions can be made without departing from its scope.

I claim:

1. A needle which has a flattened eye-portion

and a shank which has a free end, said shank being of cylindrical cross-section, said shank having a flattened portion in its sewing portion intermediate the free end of said shank and the rear end of said eye-portion, the length of said flattened shank portion being at least twice the length of said eye-portion, the distance between the rear end of said eye-portion and the front end of said flattened portion being greater than the length of said flattened portion and the width of said flattened portion being greater than the diameter of said shank.

2. A flexible needle which has an eye-portion and a cylindrical shank which has a free end, said eye-portion having a thread-receiving eye therein, said shank having a laterally enlarged section between the free end of said shank and

the rear end of said eye-portion, said laterally enlarged section consisting of a plurality of flattened portions which are flattened in respective planes which are perpendicular to each other, the width of each said flattened portion being greater than the diameter of said shank.

3. A needle which has a flattened and pointed eye-portion and a cylindrical shank, said shank having a flattened portion in its sewing portion intermediate the flattened eye-portion and end of the shank, the length of said flattened shank portion being at least twice the length of said eye-portion, and the distance between the rear end of said eye-portion and the front end of said flattened portion being greater than the length of said flattened portion.

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