June 16, 1931. E. E. FISCHER 1,810,007

THREAD MOISTENING GUIDE

Filed July 17, 1929

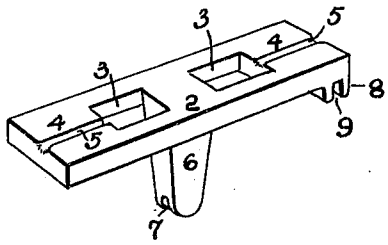


FIG. 1

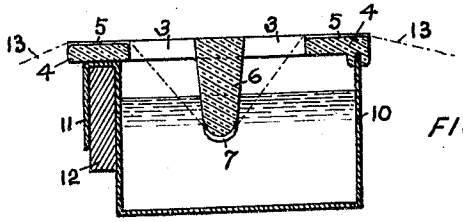


FIG. 2

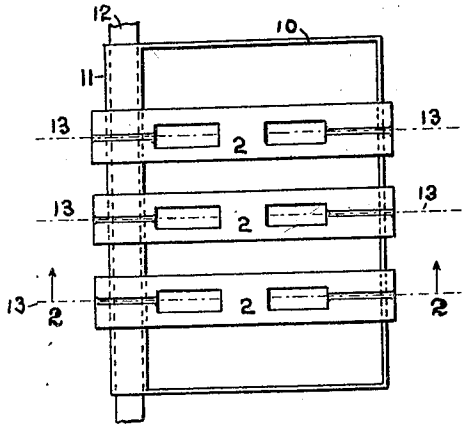
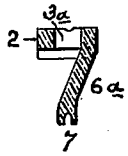


FIG. 3

FIG. 5



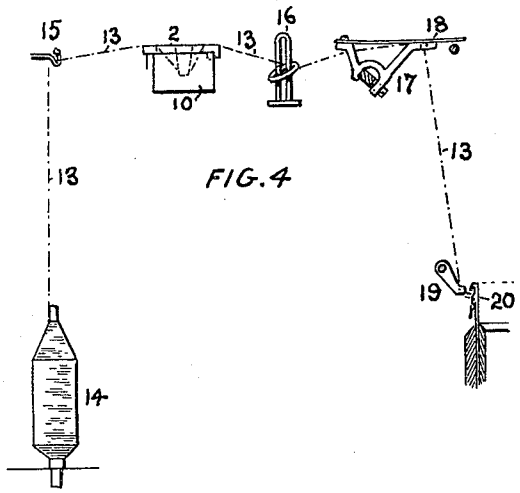


FIG. 4

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UNITED STATES PATENT OFFICE

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THREAD MOISTENING GUIDE

Application filed July 17, 1929. Serial No. 378,891.

The object of my invention is to provide an effective and inexpensive thread guide having capacity for moistening the thread prior to being fed to the needles of a knitting machine or to other textile machines in which moistened threads or yarns are required.

Heretofore, in knitting machines for making full fashioned hose, it has been customary to provide the machine with a water trough in which a felt pad was partly immersed so as to be maintained in a moist condition, and to guide the thread or yarn over the moist surface of the felt pad and preferably through an incision in its upper exposed portion. A structure of this character soon clogged and not only ceased to satisfactorily perform its function as a moistening means, but the guiding surface became hard and abrading to such an extent as to injure the thread and prohibit the use of fine silk thread unless the moistening pad surface was constantly being renewed. This requirement was costly, both for materials and the labor required.

By my improvements, not only is the moistening accomplished in a perfect manner, but the device remains in operative condition for long periods without any attention except to maintain its supply of water.

My invention comprises a porcelain or other hard vitreous thread guide having two upper spaced guiding portions and an intermediate guiding lower portion which extends downwardly between them, said guide as a whole resting upon the upper edges of and across a water trough or box in the water of which the intermediate thread guiding portion extends, so as to have its lower end submerged in the water, the thread being guided over the two upper spaced guiding portions and downward under the intermediate portion and thereby through the water for moistening purposes.

My invention also comprises other features of construction which, together with those above stated, are fully described hereinafter and defined in the claims.

Referring to the drawings: Fig. 1 is a perspective view of a thread guide embodying my invention; Fig. 2 is a vertical section taken on line 2—2 of Fig. 3, and showing my improved guide in association with the moistening trough or box; Fig. 3 is a plan view showing three of my improved thread guides assembled in operative relation with one water trough or box; Fig. 4 is a diagrammatic view showing my improved thread guide in association with other guiding means as employed in a knitting machine; and Fig. 5 is a transverse vertical section showing a modified construction of my thread guide.

The thread guide proper, shown in Fig. 1, comprises a rectangular or elongated body 2 having spaced guide portions at its opposite ends as indicated at 4, 4, and said surfaces preferably having shallow guiding grooves 5. At the middle part of the body, I provide a downwardly extending intermediate guide portion 6, the lower end of which is grooved on its under side as at 7, the guide grooves 5 and 7 being in the same alinement and preferably lying in the same vertical plane. Between the guide portions 4, 4, and the intermediate downwardly extending guide portion 6, the body is provided with open portions or apertures 3, 3, through which the thread or yarn 13 passes from guide grooves 5 to and from the guide grooves 7 on the said intermediate guide portion 6. The openings 3, 3, are shown of large size, but it will be evident that they may be formed very much smaller, if so desired. The body 2, at one end, may be provided with a downwardly extension lug 8 having a transverse groove 9 for positioning the guide upon the trough as herein later explained.

In Fig. 2, I have illustrated the application of my improved thread guide to the water trough or box 10, across the upper edges of which the guides are positioned and supported. As shown, the upper edge of one of the sides of the box 10 is received in the transverse groove 9 of the guide, and by this means the guide is positioned and held against shifting under the pull or drag of the thread.

One of the longitudinal sides of the box is provided with a downward lip 11, forming a hook-shaped flange, which fits over a longi-

tudinal bar 12 and by which the trough or box is detachably supported. In Fig. 2, the water is shown in the trough or box 10 and it will be seen that the lower end of the downwardly extending portion 6 is submerged, and hence guides the thread or yarn 13 into and through the water so that it becomes wet or moist.

In Fig. 3, I have shown three embodiments of my invention; there being three thread guides applied in working position and one water box. These thread guides may be employed in feeding moist thread or yarn of different colors or textures, or as reinforcing or splice threads, to separate guides at the knitting needles.

Referring to Fig. 4, the thread bobbin is shown at 14 and from it the thread 13 is guided upwardly and through fixed guide 15, thence horizontally to the thread guide 2 and box 10 embodying my invention, thence through a ring tension 16, thence through the tension control guide 17 having adjustable spring tension 18, thence downward to the guide 19 and by it delivered to the needles. It will be seen, therefore, that my improvements are primarily for moistening the thread and incidentally thereto guiding the thread during such moistening operation.

By constructing my improved moistening guide of porcelain, vitrified clays, glass or similar materials, which may be molded, I am enabled to produce accurate duplicates at relatively small cost. Moreover, a guide of this character is very durable, is well adapted to keep clean and to be cleaned when necessary. If desired, the guide may be formed of metal provided with a vitrified coating, such as employed in enameled ware.

In place of requiring threading of a thread end through the apertures 3, 3, as in the construction of Fig. 1, the body may have a single aperture 3*a* and the downward guide extension formed as in Fig. 5, in which 6*a* shows such extension made integral with one side only of the body 2. With a construction of this character, the thread at any place along its length may be pressed down between the guide portions 4, 4, and engaged with the groove 7 of the extension 6*a*.

It will now be apparent that I have devised a novel and useful construction which embodies the features of advantage enumerated as desirable, and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to give satisfactory and reliable results, it is to be understood that I do not restrict myself to the details as the same are susceptible of modification in various particulars, without departing from the spirit or scope of the invention.

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

1. A unitary detachable thread guide adapted for use with and supported by a water box having substantially parallel opposite walls, formed of molded vitreous material having a longitudinal body part provided with thread guiding portions spaced apart and an intermediate downwardly extending part having a thread guiding portion at its free end whereby the thread is caused to travel through a relatively lower path and in contact with the water within the box while passing between the spaced guiding portions, said body part having the underside of one end provided with a downwardly opening transverse grooved portion adapted to fit upon one edge of the box while permitting adjustment longitudinally of said edge thereof and having its other end extended so as to rest upon and be supported by the other edge of the water box.

2. The invention according to claim 1, wherein further, the thread guide is formed of a single molded porcelain structure in which the transverse grooved portion extends downwardly below the longitudinal body in the same direction as the downwardly extending thread guiding portion but to a lesser degree.

In testimony of which invention, I hereunto set my hand.

ERNST ERWIN FISCHER.