May 18, 1937. R. M. BASHORE 2,080,996

MOISTENING MECHANISM FOR FEEDING THREADS

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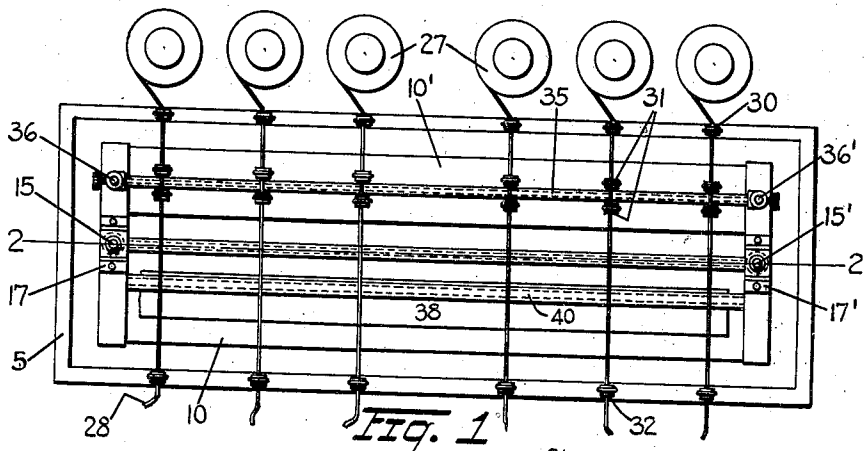


Fig. 1

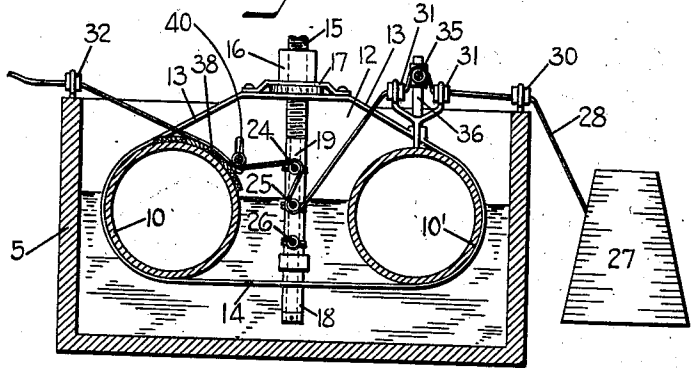


Fig. 3

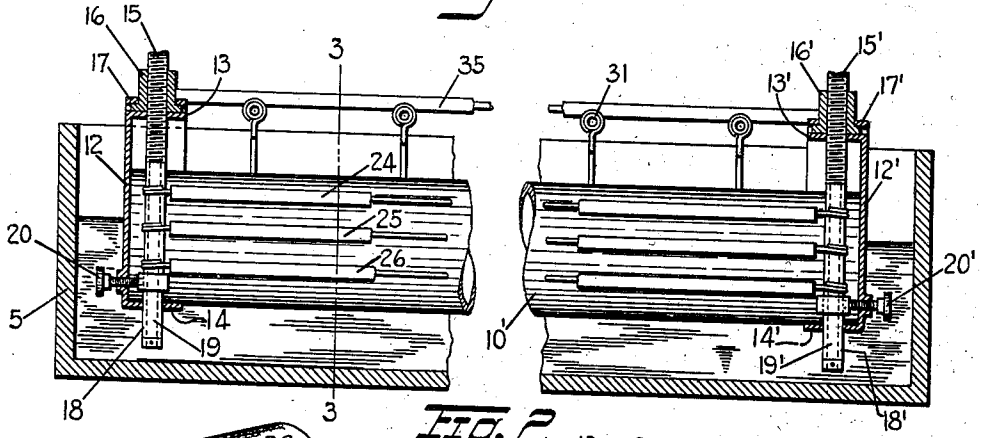


Fig. 2

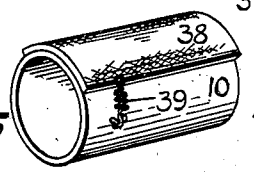


Fig. 5

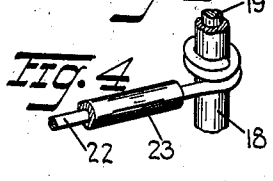


Fig. 4

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MOISTENING MECHANISM FOR FEEDING THREADS

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10 Claims. (Cl. 66—125)

My invention relates to mechanism for moistening threads employed in textile fabrication, as the threads passing from the supply cones to the needles of a knitting machine, and more particularly to means for guiding the feeding threads through a liquid container; my main objects being to insure a constantly adequate moistening of the threads, with desired variations for different requirements, and a maintained uniformity of selected submergence regardless of changes in the liquid supply in the container.

With these objects in view, and with others that will appear later herein, my present invention comprises a novel thread guide mechanism adapted to float in the liquid container and to control the submergence of the passing threads for uniform moistening.

The invention is more fully described in connection with the accompanying drawing indicating one embodiment thereof, and the novel features are specifically set forth in the appended claims.

Referring to the drawing,—

Fig. 1 is a plan view showing a liquid container with a float mechanism therein embodying my improvements.

Fig. 2 is a longitudinal sectional elevation, taken on the line 2—2 of Fig. 1, shown on an enlarged scale, and a central portion of both container and float broken away and the end sections closed together for economy of space.

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

Fig. 4 is an enlarged fragmentary perspective showing of a guide rod wire and its encasing tube. Fig. 5 shows in fragmentary detail a wiper fabric for one float.

The moistening of the threads, as well understood, is to facilitate better fabrication, and it is recognized as particularly desirable for silk threads, especially of high-twist threads now much used, and various means have heretofore been devised for the purpose, some employing a float device with more or less success.

My improved mechanism, now to be described in detail, is particularly applicable to threads employed in full fashioned knitting machines operating on high twist silk threads, which require a careful and controlled moistening to prevent snarling and consequent defective knitting, too much and too little moistening both having bad results.

In the drawing 5, indicates a liquid container, shown as an open-top rectangular tank, which may be constructed of any suitable material, and is of a size to be mounted on the frame of a knitting machine to moisten the threads of one or more sections of the machine, additional similar containers being added for the other sections as required. Water or other moistening liquid is supplied to the tank in any convenient manner, and for my present improvements variations of the liquid level are unimportant as long as there is a sufficient amount to support my float mechanism.

The float mechanism indicated in the drawing is formed by two cylinders 10 and 10', fixedly spaced apart in parallel relation and their open ends sealed by end plates 12 and 12', shown as similarly formed from sheet material with top flanges 13, 13' and bottom flanges 14, 14' extending between the cylinders, which flanges have respectively top and bottom bearing apertures for end shafts 15 and 15' mounted vertically therein intermediate the fixedly spaced floats. The shafts 15 and 15' at their upper ends are shown as threaded and engaged by nuts 16 and 16' secured to their respective end plates as by saddle clips 17 and 17', so that turning of the nuts moves the shafts longitudinally to vertically adjust them. The shafts 15 and 15' are shown as each having a relatively rotatable section 18 below the top flange, turnable on a central pin portion 19, 19' which sections may be rotated manually or in any convenient manner, and are shown as held against rotation by a collar and set screw 20, 20' engaging through the respective end plates 12 and 12'. Such rotation of the shaft sections 18, 18' is provided to stretch one or more guide wires 22 extending between the posts 15, 15', the wires wrapping around the sections 18, 18', and set screws 20, 20' holding them properly tautened. Because of the known cutting action of silk threads sliding over metal, I have shown the wires provided with a protective covering, a simple form being a glass tube 23 strung upon the wires, and such tube may be of a continuous length though preferably of several lengths both for economy in case of breakage and to prevent breakage due to flexing of the wires. Three wires 22 are shown spaced vertically and each having a protective glass tube, forming three thread guide rods 24, 25, and 26 extending parallel to the floats 10 and 10' and intermediate the latter.

Thread supply cops are indicated at 27, and may be mounted on the machine in any known or convenient manner to feed their threads 28

through my moistening mechanism to the machine needles. And to guide the threads suitable guide eyes and tension exerting rods are shown in the drawing, the purpose of which will appear in the following description of the thread passage.

Assuming the container **5** filled with moistening liquid and my above described guiding mechanism floating therein: A thread **28** from a cop **27** is passed through one of a number of guide eyes **30** on a container wall, thence through a spaced pair of eyes **31**, **31**, to pass beneath guide rod **25**, and back over guide rod **24**, and then through a guide eye **32** on another container wall, and then to the machine thread guides. The spaced guide eyes **31**, **31** are shown as carried by float **10'** and a rod **35** is indicated as lying between them and extending parallel to the float **10'**, with posts **36**, **36'** on end plates **12** and **12'** supporting said rod in a vertically adjustable position. The purpose of rod **35** is to provide a controlled tension on the passing thread **28**, raising and lowering thereof changing the tension. A wiper fabric **38** is shown as carried on float **10**, being shown as secured to the latter by spring tension hooks **39** (Fig. 5), and a rod **40** is shown as carried by end plates **12** and **12'** in adjusted parallel relation to float **10**, the purpose of said rod being to provide tension and insure wiping of the passing thread on wiper **38**.

For the above described thread guiding passage, the posts **15** and **15'** are vertically adjusted to position guide rod **25** at approximately the level of the liquid in the container, or just submerged, which position I have found best adapted to best moisten the silk threads for satisfactory results. The reverse bend of thread **28** back on rod **24** prevents any further dipping of the moistened thread which might occur as slack develops in the machine feeding traverse. The positions of rods **35** and **40** may be varied for different desired tensions, and these rods it will be understood may have tubular glass protective covers, or other protective means.

Certain threads for a specific purpose or of different moistening requirements may be passed under rod **26** which in the position above described is submerged to a given depth, and it is not essential that all threads traverse the guide eyes as above set forth, but may omit some for certain purposes. Vertical adjustment of posts **15** and **15'** will positively locate the rods **24**, **25**, and **26** relative to the container liquid level and maintain such relative position regardless of raising or lowering of that level by new additions or reduction through moistening or other withdrawals.

In describing one particular thread pass it is to be understood as merely indicative of one of many passes possible with my improved device, and it will be apparent from the foregoing description that I provide for a great variety of positive controls of the degree of moistening, and for maintaining a uniformity at each adjustment, and for different moistening degrees at one setting of the guide rods.

The particular details of construction may of course be modified or changed, and other changes made to adapt my mechanism for moistening purposes for other textile fabrications and machines, and I therefore do not desire to limit myself to the particular construction shown and described, and intend to include all changes and modifications within the spirit of my invention as defined in the following claims.

What I claim is:

1. In a moistening mechanism for feeding threads, the combination with a liquid container, of thread-guide means in said container comprising parallel float members spacedly connected and carrying between them a parallel thread-guide rod positioned by said floats in determined vertical relation to the container liquid level.

2. In a moistening mechanism for feeding threads, the combination with a liquid container, of thread-guide means in said container comprising parallel float members spacedly connected and carrying between them a plurality of vertically-spaced parallel thread-guide rods determinedly positioned by said floats at determined different heights relative to the container liquid level.

3. In a moistening mechanism for feeding threads, the combination with a liquid container, of thread-guide means in said container comprising a pair of parallel float members spacedly connected and carrying between them a parallel thread-guide rod vertically adjustable for determined thread moistening position by said floats.

4. In a moistening mechanism for feeding threads, the combination with a liquid container, of thread-guide means in said container comprising a pair of parallel float members spacedly connected and carrying between them a plurality of vertically spaced parallel thread-guide rods vertically adjustable for determined thread moistening positions by said floats.

5. In a moistening mechanism for feeding threads, the combination with a liquid container, of thread guide means in said container comprising a pair of parallel float members, end members spacedly connecting said float members, a vertical shaft carried by each end member intermediate said floats, a thread-guide rod carried by said shafts in parallel relation to said floats, and means for vertically adjusting said shafts to position said guide rod in determined thread moistening position by said floats.

6. In a moistening mechanism for feeding threads, the combination with a liquid container, of thread guide means in said container comprising a pair of parallel float members, end members spacedly connecting said float members, a vertical shaft carried by each end member intermediate said float, a plurality of vertically spaced thread-guide rods carried by said shafts in parallel relation to said floats, and means for vertically adjusting said shafts to position said spaced rods at different heights relative to the container liquid level.

7. In a moistening mechanism for feeding threads, the combination with a liquid container, of thread-guide means in said container comprising a pair of parallel float members spacedly connected and carrying between them a pair of spaced vertical shafts independently rotatable and vertically adjustable, a guide wire connecting said shafts and longitudinally tautened by said shaft rotations, and a tubular guide rod strung upon said guide wire and positioned by said shaft vertical adjustments in adjusted parallel relation between said floats for determined thread moistening position by the latter.

8. In a moistening mechanism for feeding threads, a liquid container having marginal edge thread-guide eyes, a float device in said container comprising a pair of spaced parallel float members, a parallel thread-guide rod carried between said float members in an adjustable thread moistening position determined by said floats, and

thread-guide eyes on said floats cooperating with said container guide eyes to guide said threads to and from said float supported guide rod.

9. In a moistening mechanism for feeding threads, a liquid container having marginal edge thread-guide eyes, a float device in said container comprising a pair of spaced parallel float members, a parallel thread-guide rod carried between said float members in an adjustable thread moistening position by said floats, spaced thread guide eyes on one float member having an intermediate transverse rod adjustably positioned to control thread tension, and a wiper fabric on the other float member adapted to remove excess moisture.

10. In a moistening mechanism for feeding threads, a liquid container, a float device in said container comprising a pair of spaced parallel float members, a parallel thread-guide rod supported between said floats in an adjustable position relative to the container liquid level, thread guide means to guide the thread to and from said float supported guide rod, and a float-carried wiper adapted to remove excess moisture from the passing thread.

RALPH M. BASHORE.