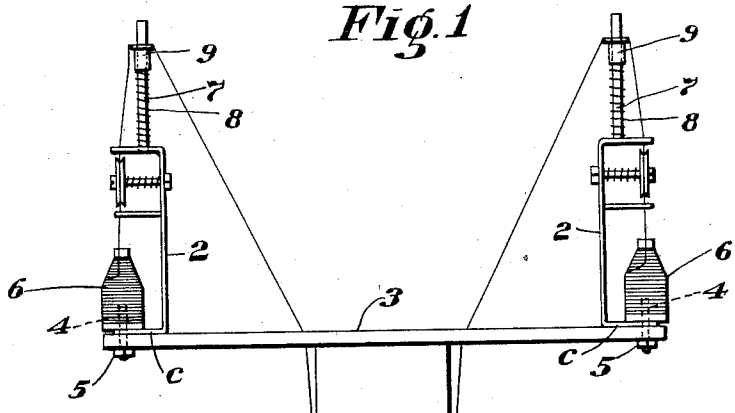
Aug. 30, 1932. A. E. STEWART 1,874,379

YARN SUPPORTING, TENSIONING, AND TAKE-UP DEVICE

Filed Jan. 4, 1930

Fig. 1



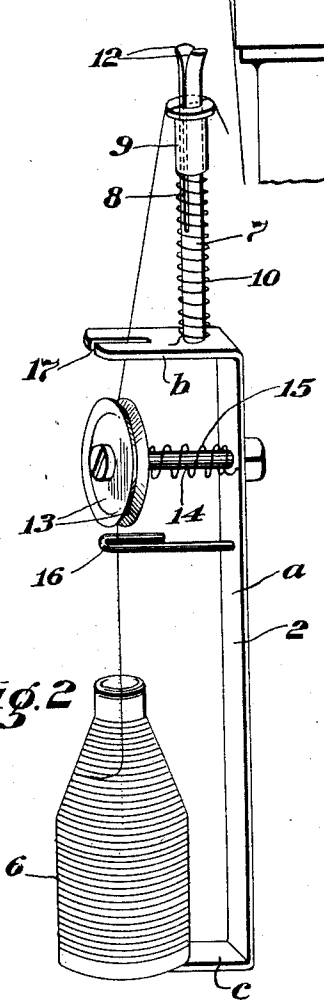


Fig. 2

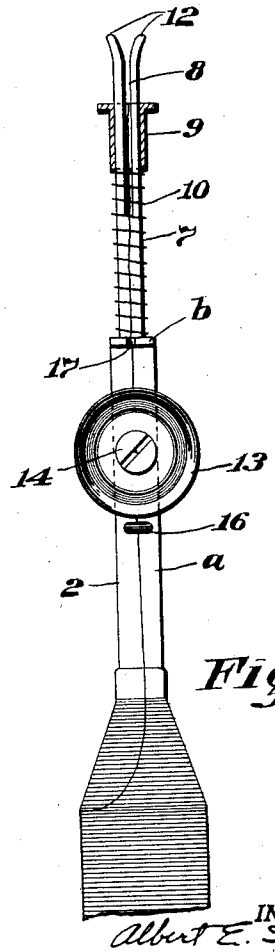


Fig. 3

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YARN SUPPORTING, TENSIONING, AND TAKE UP DEVICE

Application filed January 4, 1930. Serial No. 418,626.

It is frequently necessary in knitting machines to draw thread or yarn from a considerable number of cops or spools. This is particularly true in machine for producing complicated patterns or designs, and especially in those in which the design effects are produced by wrapping supplemental threads of different colors, respectively, around certain of the needles while the machine continues to knit with a main thread or threads.

In addition to supporting the various cops, spools, or other thread bodies, it is also necessary to apply some tension or drag to the individual threads to prevent them feeding too freely, and also to take up in some manner slack in each thread in which may occur between the knitting point and the supply.

The present invention relates to devices for supporting, tensioning, and taking up slack thread. It aims to devise a compact construction for this purpose which can be manufactured economically, and which can readily be mounted on or removed from the machine on which it is to be used.

The nature of the invention will be readily understood from the following description when read in connection with the accompanying drawing, and the novel features will be particularly pointed out in the appended claims.

In the drawing,

Figure 1 is a side elevation of a thread stand for a knitting machine, the stand being equipped with devices embodying this invention;

Fig. 2 is a perspective view of an apparatus constructed in accordance with this invention; and

Fig. 3 is an elevation of the apparatus shown in Fig. 2.

Referring first to Figs. 2 and 3, the construction there shown comprises a bracket or support 2 which preferably is made of a strip or bar of sheet metal and includes an upright portion *a* with end portions *b* and *c* bent over into horizontal positions at the top and bottom of the section *a*. The part *c* forms the foot of the bracket or support, and it is designed to be secured to a thread stand or bobbin stand, such as that shown at 3 in Fig. 1, by a pin 4 shouldered to bear against the part *c* and threaded below said shoulder to receive a nut 5. The pin 4 also serves as a support for a cop, spool, or other thread body 6.

The takeup device comprises an upright post 7 secured to and supported on the part *b*, the post being slotted longitudinally at its upper end, as indicated at 8 to form a guideway for the thread. A slide 9 is mounted to reciprocate freely on the post 7 and is supported by a very light and flexible spring 10 which rests on the part *b*. Preferably the extreme upper end portions of the post 12 are bent away from each other to form a stop for limiting the upper range of movement of the slide 9.

Mounted between the thread body 6 and the takeup device is a thread tension device which, in the particular construction shown, comprises two dished disks 13—13 both supported on a stud 14 which is secured in the part *a* of the support 2, the disks being pressed together lightly by a spring 15 coiled around the stud 14. This is a common form of tension device and any other suitable form may be substituted for it.

A strand of thread or yarn is led from the thread body 6 through the tension device 13 and over the slide 9 of the takeup mechanism, and thence through a hole in the plate 3 to the knitting instrumentalities. It is guided through a thread guide 16 and a slot 17 in the part *b* of the bracket 2, the guide 16 also being mounted on the bracket.

When the machine is taking thread from one of the thread bodies 6 the thread feeds freely, only a very light tension being maintained on it by the pressure of the disks 13—13. The pull on the thread is constantly

varying and the slide 9 yields as the tention increases or rises as the pull on the thread is reduced, the spring 10 yielding freely, as may be necessary for this purpose, but always operating through the slide to hold the thread sufficiently taut to prevent slack occurring in it, so far as the range of movement of the slide will permit it to do so.

It will be observed that the thread holder, the tension, and the takeup are all mounted on the bracket or support 2, and that this assembly forms a unit which can readily be mounted on or removed from a thread stand or bobbin stand. This is a convenience in re-arranging the machine for different designs. Since each unit occupies only a relatively small space, a great number of these units may be mounted on a machine in position to feed thread to the knitting instrumentalities. Usually the units are mounted in a substantially upright position, as shown in Fig. 1, but it is obvious that they can be used in other positions.

While I have herein shown and described a preferred embodiment of my invention, it will be understood that the invention may be embodied in other forms without departing from the spirit or scope thereof.

Having thus described my invention, what I desire to claim as new is:

1. An apparatus of the character described comprising, in combination, a bracket, a pin for supporting a cop, a slotted post supported on said bracket, a tension device mounted on said bracket between said cop and post, a slide mounted to reciprocate on said post, a spring for acting on said slide to urge it yieldingly away from said tension device, and devices for guiding a thread drawn from said cop and running through said tension device and said slot and over said slide.

2. An apparatus of the character described comprising a bracket including an upright section with horizontal members at the top and bottom thereof, a pin carried by the lower of said members for supporting a cop, a post mounted on the upper of said members, the upper end of said post being slotted, a slide mounted on said post to reciprocate thereon, a spring for urging said slide upwardly, and a tension device supported on said stand for engagement with the thread running from said spool through said slot and across said slide.

3. A tension device comprising a bracket, a post mounted thereon, the upper end of said post being slotted longitudinally, a slide mounted on said post to reciprocate thereon, and a spring coiled around said post and acting on said slide to urge it toward said slotted end, the end portions of said post separated by the slot therein being bent away from each other to form a stop for said slide.

4. A tension device comprising a bracket, a post mounted thereon, the upper end of said post being slotted longitudinally, a slide mounted on said post to reciprocate thereon, a spring coiled around said post and acting on said slide to urge it toward said slotted end, and means for preventing said slide from moving off the slotted end of said post due to the action thereon of said spring, said means leaving said slot free and unrestricted for the entrance or removal of the thread thereto through the end of the slot.

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