Jan. 14, 1947. R. C. AMIDON 2,414,080

THREAD GUIDE ROCKING MECHANISM

Original Filed Oct. 16, 1943

Fig. 1.

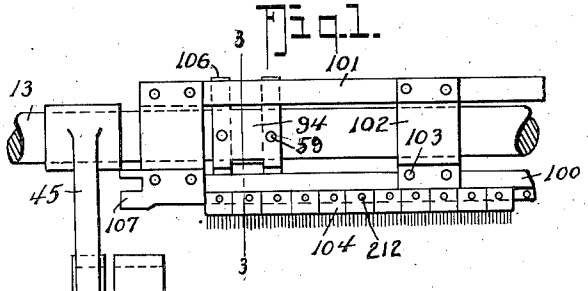
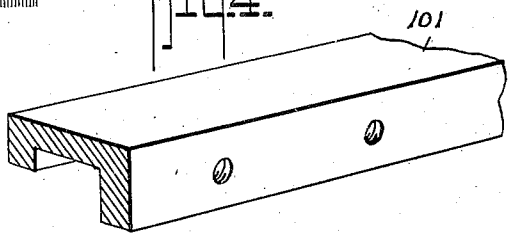


Fig. 4.



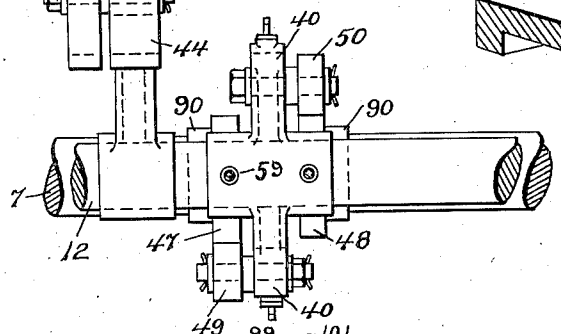
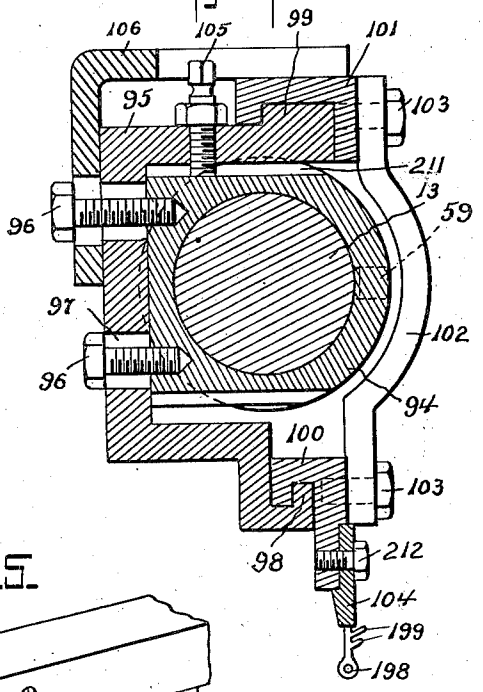


Fig. 3.



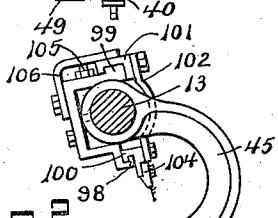


Fig. 2.

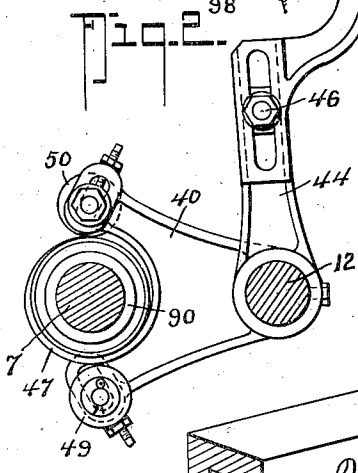
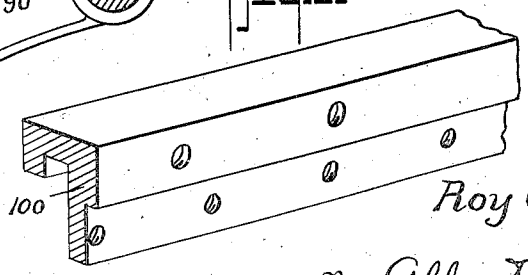


Fig. 5.



Inventor,
Roy C. Amidon,
By Albert E. Dieterich,
Attorney.

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UNITED STATES PATENT OFFICE

2,414,080

THREAD GUIDE ROCKING MECHANISM

Roy C. Amidon, Reading, Pa., assignor to Vanity Fair Mills, Inc., Reading, Pa., a corporation of Pennsylvania

Original application October 16, 1943, Serial No. 506,561. Divided and this application April 23, 1945, Serial No. 589,861

4 Claims. (Cl. 66—86)

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My present invention relates to the class of knitting machines and it particularly has reference to the means for mounting and rocking the thread guides to pass them from front to back of the needles where racking occurs.

More specifically the invention has for an object to provide a thread guide rocking mechanism of a simple and effective construction which will readily serve its intended purpose.

A further object is to provide for a continuous oscillation of the thread guides via the cam shaft of the machine.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends the invention still further resides in the novel details of construction, combination and arrangement of parts which will be first fully described hereinafter and then be specifically pointed out in the appended claims, reference being had to the accompanying drawing in which:

Figure 1 is a front elevation of so much of a knitting machine as is necessary to illustrate my invention.

Figure 2 is a view looking from left to right in Figure 1.

Figure 3 is an enlarged detail section on the line 3—3 of Figure 1.

Figure 4 is a detail perspective view of a portion of the upper racking bar.

Figure 5 is a detail perspective view of a portion of the lower racking bar.

In the drawing in which like numerals of reference indicate like parts in all the figures, 7 is one of the cam shafts of the knitting machine of my application Serial No. 506,561 filed October 16, 1943 (of which application this application is a division), and 13 is the rock shaft by which the thread guides are rockably and slidably carried. 12 designates the front rock shaft of the machine. The shafts 7, 12 and 13 are suitably journalled in bearings (not shown) in the machine as will be obvious to those skilled in the art.

On the shaft 7 is mounted sleeves 90 of a master cam 47 and a follower cam 48, while on the shaft 12 is mounted a roller carriage 40 that carries rollers 49 and 50 to engage the master and follower cams respectively. The carriage 40 is secured to the shaft 12 by set screws 59. Also secured to the shaft 12 is a slotted arm 44 while a slotted arm 45 is secured to the shaft 13, the arms 44 and 45 being connected by a pin 46 adjustably carried by the arm 45. The parts 44, 45, 46 have, as it were, a pin-and-slot connection.

A number of sleeves 94 are secured at intervals

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along and to the upper front rock shaft 13, by set screws 59. These sleeves 94 have slots 211 to receive adjusting screws 105 that are carried by brackets 95 which are fastened in a vertically adjustable manner, by cap screws 96 passing through slots 97 into the sleeves 94. The brackets 95 have upper, 99, and lower, 98, tracks on which the upper and lower bars, 101 and 100, respectively, of the front racking frame slide and are supported. Yokes 102 are secured, by cap screws 103, to the bars 100 and 101 as best shown in Figure 3. The front thread guide element blocks 104 are removably mounted in any suitable way, as by cap screws 212. The front thread guides each has a fork 199 and an eye 198, for guiding the front thread. The front thread guide racking frame is held on its tracks 98, 99 by angle bars 106 vertically adjustably held by cap screws 96.

The racking bar 100 has a fitting 107 attached to one end to which fitting the rack mechanism (not shown) is coupled.

As the shaft 7 turns the cams 47, 48 will rock the roller carriage and in turn rock the shaft 12. The rocking motion of shaft 12 is communicated to shaft 13 via the arms 44 and 45, causing shaft 13 to rock on its axis. When the racking means (not shown) acts the racking frame 100, 101, 102 is moved back and forth along shaft 13.

In case it becomes necessary to remove the racking frame, it may be lifted off as a unit by simply loosening the screws 96 and raising the retaining bars 106 high enough for the bars 101 and 100 to clear the tracks 99 and 98 respectively.

To adjust the guides for position up and down with respect to the needles (not shown) one loosens the screws 96 and adjusts screw 105 accordingly as will be clear by reference to Fig. 3.

From the foregoing description taken in connection with the accompanying drawing it is thought that the construction, operation and advantages of my invention will be clear to those skilled in the art to which it relates.

What I claim is:

1. In a flat knitting machine: a rock shaft; means to rock said shaft; a sleeve mounted on said rock shaft and secured thereto; a bracket secured to said sleeve and having upper and lower tracks extending parallel to said rock shaft; an upper racking bar mounted on the upper track; a lower racking bar mounted on the lower track; a yoke connecting said upper and lower racking bars and constituting therewith a racking frame; and means for mounting a thread guide on said frame.

2. In a flat knitting machine: a rock shaft; means to rock said shaft; a sleeve mounted on said rock shaft and secured thereto; a bracket secured to said sleeve and having upper and lower tracks extending parallel to said rock shaft; an upper racking bar mounted on the upper track; a lower racking bar mounted on the lower track; a yoke connecting said upper and lower racking bars and constituting therewith a racking frame; means for mounting a thread guide on said frame; and means for holding said frame on its tracks.

3. In a flat knitting machine: a rock shaft; means to rock said shaft; a sleeve mounted on said rock shaft and secured thereto; a bracket secured to said sleeve and having upper and lower tracks extending parallel to said rock shaft; an upper racking bar mounted on the upper track; a rower racking bar mounted on the lower track; a yoke connecting said upper and lower racking bars and constituting therewith a racking frame; means for mounting a thread guide on said frame; means for holding said frame on its tracks; and means for adjusting said frame up or down on said sleeve.

4. In a flat knitting machine: a rock shaft; means to rock said shaft; a sleeve mounted on said rock shaft and secured thereto; a bracket secured to said sleeve and having upper and lower tracks extending parallel to said rock shaft; an upper racking bar mounted on the upper track; a lower racking bar mounted on the lower track; a yoke connecting said upper and lower racking bars and constituting therewith a racking frame; means for mounting a thread guide on said frame; means for holding said frame on its tracks; and means for adjusting said frame up or down on said sleeve, said adjusting means comprising a cross slot in said sleeve, and an adjusting screw carried by said bracket to enter said slot and engage said sleeve.

ROY C. AMIDON.