

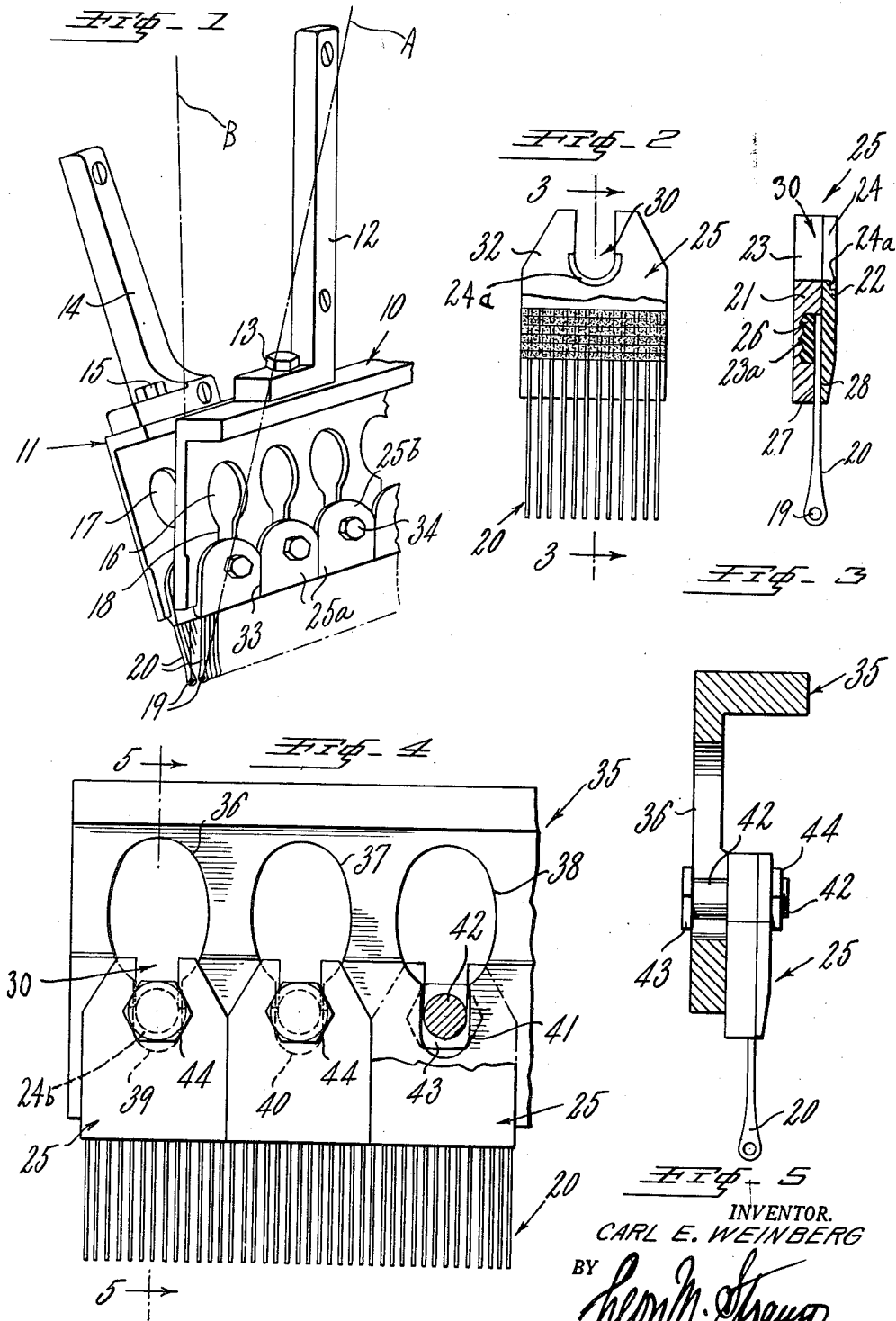
Nov. 16, 1954

C. E. WEINBERG

2,694,302

MECHANISM FOR WARP KNITTING MACHINES

Filed Dec. 31, 1952



INVENTOR.
CARL E. WEINBERG
BY *Leon M. Strauss*
AGT.

1

2

2,694,302

MECHANISM FOR WARP KNITTING MACHINES

Carl E. Weinberg, Tenafly, N. J.

Application December 31, 1952, Serial No. 328,991

5 Claims. (Cl. 66—86)

This invention relates generally to warp knitting machines and more particularly to the structure of guide bars and thread guides attached thereto.

Heretofore, guide bars of knitting and like textile machines were manufactured from steel or like heavy metal which perform reciprocable oscillatory movements for warping the threads about the knitting needles. These known guide bar structures, however, have become more and more unsuitable and uneconomical since the development of modern knitting machines which work with extremely high speeds.

It is, therefore, one of the primary objects of this invention to provide means affording considerable reduction in mass velocity of the movable machine parts, in particular, of the guide bars with their thread guides.

It is another object of the present invention to provide means facilitating easy mounting and replacement of the thread guide holders or carriers with respect to and their accurate alignment and adjustability relative to the guide bars.

It is a further object of the invention to provide means conducive to simplified and improved fixation of the thread guides in position in said holders.

Yet a further object of the present invention is to provide means ensuring continuous and undisturbed operation of the guide bars without regard to any temperature changes or atmospheric variations, which will not substantially affect the working conditions of such sensitive parts as guide bars, needle or guide holders, etc.

Still another object of the invention is to provide means rendering the possibility of reducing the frictional engagement of the warp threads with their guides to a minimum.

A further object of the invention is to provide means affording observation and surveillance of the warp threads, in particular, on the rear or inner guide bar through openings of the outer or front guide bar and from the front of the knitting machine.

Other objects and advantages of this invention will become apparent from the drawing and the description thereof having reference to some of many possible embodiments of the invention.

In the drawing:

Fig. 1 is a perspective view of the guide bars with guide holders of a knitting machine and made in accordance with the invention.

Fig. 2 is an enlarged side elevational view of a guide holder with guide elements fixed thereto and with closure plate partly removed.

Fig. 3 is a sectional view of a complete guide holder with closure plate, the section being taken along line 3—3 of Fig. 2.

Fig. 4 is a front elevational view of one of the guide bars with guide holders attached thereto, but illustrated in somewhat modified form.

Fig. 5 is a sectional view taken along line 5—5 of Fig. 4.

Referring now more particularly to Fig. 1 of the drawing, there is disclosed a portion of a warp knitting machine consisting of the front guide bar 10 and rear guide bar 11. Front or outer guide bar 10 is fixed to a bracket 12 at 13 in a known manner whereas rear or inner guide bar 11 is fixed to bracket 14 at 15. In this particular instance and in accordance with the invention, the guide bars are manufactured either from known reinforced plastic or plastic composition or from aluminum, magnesium or its alloys. As further seen

in Fig. 1, both guide bars are provided with rows of spaced perforations or apertures 16, 17 which may be aligned with each other in predetermined position of said guide bars. Each of these apertures 16, 17 is further provided with a downwardly directed elongated slot 18 for a purpose hereinafter described.

Guide bars 10 and 11 are adapted to receive the thread or yarn guides 20 having the eyes 19 for the insertion of the threads A and B. Guides 20 are fixed and locked in thread guide holders 25a (Fig. 1). In Fig. 2 a guide holder 25 in modified form is shown, which has a base plate 21 and a cover plate 22. Both plates have registering slots 23 and 24, respectively, forming a passage-way 30. Slot 24 of cover plate 22 has further a recess 24a for receiving a washer 24b to thereby lockingly receive a bolt and nut assembly hereinafter referred to. Each guide holder has a plate 21 with a serrated recess 23a for receiving lead or other easily fusible alloy 26 to thereby facilitate embedding therein of the aforesaid thread guides 20. Thus the latter are retained in position between base plate 21 and cover plate 22 and more specifically in registering recesses 27, 28 of these plates.

Guide holders 25a are affixed to the guide bars adjacent apertures 16, 17 and slots 18 by means of bolts 25 34 threadedly engaging tapped holes (not shown) or slots 18 in a manner as seen in Fig. 5. While guide holder 25 of Fig. 2 is shown with a tapered head 32, the head 25b of each guide holder 25a is somewhat arcuate-shaped.

As can be further seen from Fig. 1, the guide holders or carriers 25a may abut against each other along abutting lines 33 and are fixed in aligned position with each other by means of bolts having bolt heads 34.

Fig. 4 shows a portion of guide bar 35 in front elevation having the apertures 36, 37, 38 of similar or dissimilar design. Each of the slots 36, 37, 38 may be further provided with a downwardly directed elongated slot 39, 40, 41 extending from the respective apertures 36, 37, 38.

As may be visualized from Figs. 4 and 5, the thread guide holders 25 may be affixed and adjusted to each other by the engagement of bolts 42 passing through the respective slots 39, 40, 41 and secured on bar 35 by means of heads 43 and nuts 44 whereby each thread guide holder 25 may be aligned and adjusted in position relative to guide bar 35.

It is to be stressed that the thread guides 20 may be held in differently shaped holders which may be readily adjusted to each other in accordance with the slot and nut and bolt connection as herein described. It is further to be noted that this slot and bolt arrangement readily affords replacement and repairs of thread guide holders and contributes to the further advantage that the slots as well as the apertures with which the slots communicate, bring about a considerable reduction in weight of the guide bars, even if the same should be manufactured of steel material.

It is further contemplated, according to the invention, to provide such apertures substantially centrally of and in steel guide bars now in use whereby the apertures may assume different shapes with respect to each other, such as square, oval, rectangular, etc., forms. It has been found in practice that guide bars of the aforesaid construction are sturdy, are not subject to the influence of temperature changes or of atmospheric conditions and may be used with great advantage in modern high-speed knitting machines.

The elongated slots 39, 40, 41, etc., and also slots 23, 24 of each guide holder not only contribute to the further reduction of weight of the guide bars (besides the apertures 16, 17 or 36, 37, 38, etc.) but also afford the employment of guide holders of different makes on one and the same guide bar. The aforesaid bolt and slot connections between guide bar and guide holders facilitate easy threading of the warp yarns A, B through the guides 19, 20 and ready mounting of the latter by means of the guide holders which may be more easily aligned and adjusted as herein referred to.

The friction between the warp threads A, B and guides 19, 20 may be readily regulated and the deflection of the warp threads may be controlled in view of the fact

3

that the guide holders are adjustable relative to the guide bars.

It is to be understood that bolts and nuts herein referred to may also be made of light metal, such as aluminum, magnesium or its alloys to further reduce the mass velocity of the reciprocably movable guide bars and that other means than lead or similar alloy may be employed to fix the guides 20 in their holders or carriers.

The invention is also applicable to sinker and needle construction in a manner herein referred to.

Although several embodiments of the invention have been described and shown in the drawing, it should be noted that the invention may be realized in modified form and adaptations of the arrangements herein disclosed may be made as readily occur to persons skilled in the art without constituting a departure from the spirit and scope of the invention as defined in the objects and in the appended claims.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent, is:

1. In a thread guide mechanism for a warp knitting machine; a guide bar provided with a row of spaced apart apertures, holders for thread guides, and means adjacent said apertures for fixing said guide holders in aligned position with each other and relative to said apertures of said guide bar, said guide bar being made of light-weight material and being provided with respective slots communicating with said apertures.

2. In a mechanism according to claim 1, said fixing means being engageable with said slots, respectively, and for adjustment of said guide holders relative to said guide bar.

3. In a mechanism for a warp knitting machine; a guide bar provided with a row of spaced apart and aligned apertures, a plurality of holders for thread guides, and screw bolt means engaging said bar adjacent said aper-

4

tures for fixing said guide holders in aligned position with each other and relative to said apertures of said guide bar, said guide bar being further provided with elongated slots communicating with and extending from said apertures therebelow for receiving therein said bolt means.

4. In a mechanism according to claim 3, wherein said slots of said guide bar extend in transverse direction to said bar.

5. In a mechanism for a warp knitting machine; a guide bar provided with a row of spaced apart apertures, and holders for thread guide elements attachable to said guide bar and at a level below said apertures, each of said holders being provided with a base plate and with a cover plate, each base plate and each cover plate being provided with respective registering recesses, at least the recess of one of said plates being defined by a serrated wall for receiving therein fusible material, to thereby embed therein portions of said guide elements when the latter are inserted in said guide holders.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
471,350	Cooper	Mar. 22, 1892
2,014,529	Kinsella et al.	Sept. 17, 1935
2,037,798	Kinsella et al.	Apr. 21, 1936
2,259,655	Morton	Oct. 21, 1941
2,414,080	Amidon	Jan. 14, 1947
2,429,231	Lambach	Oct. 21, 1947
2,432,304	Friedmann	Dec. 9, 1947
2,515,253	Noe	July 18, 1950

FOREIGN PATENTS

Number	Country	Date
700,386	Germany	Dec. 19, 1940