Oct. 7, 1947. G. T. BROBERG 2,428,448

THREAD GUIDE AND MOUNTING FOR TRICOT WARP KNITTING

Filed March 18, 1946

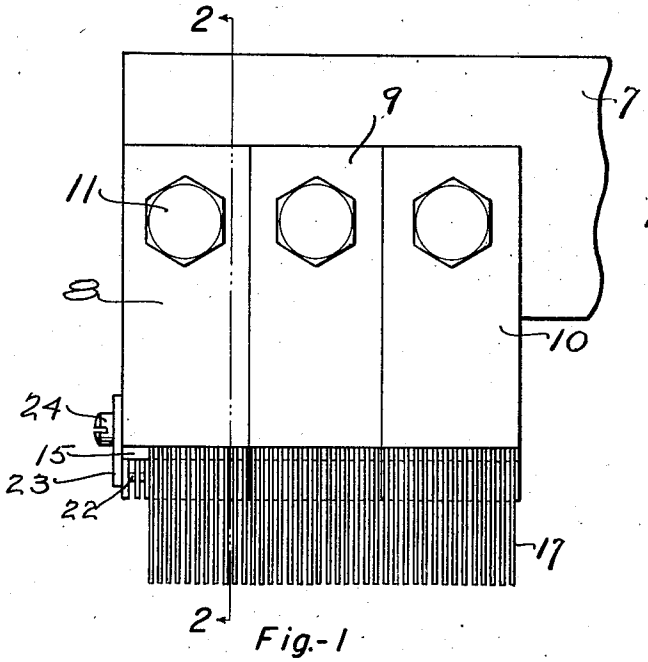


Fig.-1

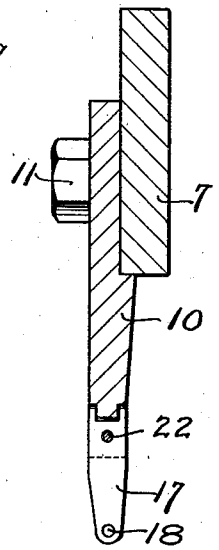


Fig.-2

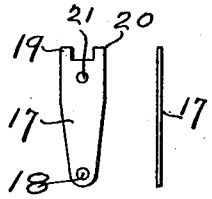


Fig.-3

Fig.-4

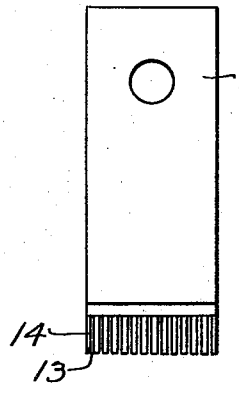


Fig.-5

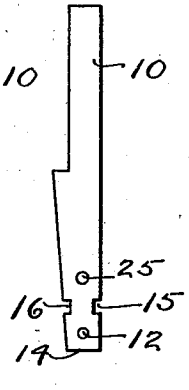


Fig.-6



Fig.-7

Inventor

G. T. BROBERG

By Mason, Porter, Miller & Sturm

Attorneys

Patented Oct. 7, 1947

2,428,448

UNITED STATES PATENT OFFICE

2,428,448

THREAD GUIDE AND MOUNTING FOR TRICOT WARP KNITTING

Gustave Theodore Broberg, Torrington, Conn., assignor to The Torrington Company, Torrington, Conn., a corporation of Maine

Application March 18, 1946, Serial No. 655,108

7 Claims. (Cl. 66—86)

1

The invention of which the following is a detailed description relates to novel thread guides and mountings for tricot warp knitting.

Knitting machines of this type ordinarily include thread guides which are assembled in holders, which latter are in turn mounted on supporting bars. It is essential that the thread guides be lined up square and straightened in order to properly cooperate with the needles and sinkers. It is the usual practice to mount the thread guides first in combs and then cast the holders in a base surrounding the bases of the guides thus held. The holders or mountings together with the thread guides must then be lined up, squared and straightened before being put to use.

Ordinarily from 26 to 30 thread guides will be assembled in one holding unit. If any one of these is broken or roughened, it is necessary first to remove the holder or unit and then recast it with such thread guides as are serviceable. This necessarily requires time and special attention in order to salvage usable parts and reconstruct the holding unit with the thread guides.

My invention has the general purpose of removably mounting thread guides in a permanent holder so that any damaged guide may be removed and replaced without disturbing the positions of the remaining good guides.

It is an object of my invention to simplify and economize the construction of the individual thread guides.

It is a further object of my invention to facilitate the individual mounting and replacement.

Another object of my invention is to provide improved locking means for the thread guides in place of the customary casting operation.

Another object of my invention is to insure permanent and proper spaced positions for the thread guides holding them at all times in proper alignment, squared and forming a straight edge.

Other objects of my invention will be apparent from the following description of the preferred form of my invention as illustrated by way of examples in the accompanying drawings, in which:

Figure 1 is a plan view of the assembled mounting units or holders with the thread guides;

Figure 2 is a longitudinal section of the same taken on line 2—2 of Fig. 1;

Figure 3 is a front view of an individual thread guide;

Figure 4 is a side or edge view of the same;

Figure 5 is a front view of the holder or mounting unit alone;

2

Figure 6 is a side view of the same, and

Figure 7 is a side view of the locking pin.

As illustrating the principles of my invention, I have shown on the drawings the usual supporting bar 7 which is intended to hold a series or plurality of holder units. As is customary, the bar 7 is of considerable length and only that portion has been illustrated that is necessary to indicate the novel features of the thread guides and their holders or mounting units.

The holders or mounting units 8, 9 and 10 are substantially alike and differ only in minor details when designed for use at the end of the row as illustrated by holder 8. The holders are mounted on the supporting bar 7 by means of cap screws 11. The sides of the holders 8, 9 and 10 are fitted together in close contact.

The holders have transverse holes 12 being in alignment and thus forming a continuous passageway transversely of the series of holders.

Each holder is slotted as shown at 13. There is thus formed a comb of spacers or blades 14. These blades are so proportioned that they space the intermediate slots the desired distance for mounting the individual thread guides. It will be apparent from Figure 1 that the spacers on the side edges of the holders are of half the thickness of the intermediate spacers. This maintains uniform spacing of the thread guides throughout the row.

Back of the slots 13 the opposite faces of the holders are grooved transversely. Thus, there is a top groove 15 and a bottom groove 16 with an intermediate restricted portion of the holder as shown more particularly in Figures 2 and 6.

The thread guide 17 is made of sheet metal, stamped or otherwise formed as desired. The material is preferably hardened and tempered steel flat stock although the guides may first be cut into form and then hardened and tempered.

The base of the guide has two opposite parallel ears 19 and 20 which project longitudinally from the guide 17 and are spaced apart. Inwardly of the ears 19 and 20 the guide has a transverse hole 21.

The thread guide is so proportioned that it will fit within the slot between adjacent spacers 14. The ears 19 and 20 straddle the end of the holder within the slot and traverse the grooves 15 and 16 respectively. The guides are thus held in alignment and against lateral movement.

When in this position the hole 21 of the thread guide 17 is in alignment with the hole 12 in the spacers 14.

A locking pin 22 with beveled or rounded edges

is provided for sliding movement in the apertures formed by the holes 12 and 21 and extends for the full distance between the opposite sides of the individual holders. This pin passes through the holes 21 of the guides and holds them from longitudinal movement.

In order to prevent accidental removal of the locking pins 22, each terminal unit 8 has a cover plate 23 which is held over the end of the hole 12 by means of a cap screw 24, which in turn is fastened in a tapped hole 25.

The advantages of the above arrangement will be evident. Each holder 8, 9 and 10 is made of brass or similar material having a low coefficient of expansion with accurate dimensions and is intended to be used repeatedly and form a permanent adjunct to the knitting machine.

The individual thread guides are made of stamped sheet metal and thus are fitted with accuracy. The guides are inserted in the slots between the spacers and are held by means of the locking pins 22 with the ears 19 and 20 straddling the portion of the holders between the grooves 15 and 16. The guides are thus held in spaced alignment and do not need to be further straightened.

The locking pins are easily inserted and also easily removed after the holders are lifted out of the machine. The spacing of the guides near the adjacent sides of the holders is the same as spacing between intermediate guides due to the half thickness of the spacers used.

In the event that it becomes necessary to replace any individual guide after de-threading, it is sufficient if the appropriate holder is removed from the machine, the locking pin 22 slipped out and the single guide may then be removed and replaced without altering the position of the remaining guides.

After the pin has again been inserted the holder is replaced in the machine and the thread guides are then ready for threading and normal operation.

The invention may also be applied to mounting sinkers and needles in the same manner as above described. It will thus be apparent that the above improvement may be varied in minor details of materials, proportion and size without departing from the scope of the following claims.

What I claim:

1. In combination, a holder having spaced parallel portions separated by slots, thread guides held in said slots and a locking pin passing through said guides and spaced portions.

2. In combination, a holder having spaced parallel portions separated by slots, said holder being grooved on opposite sides at the base of said slots, thread guides held in said slots, a locking pin passing through said guides and spaced portions, and ears on said guides and extending across the grooves of the holder.

3. In combination, a holder having spaced parallel portions separated by slots, said holder having grooves on opposite sides at the base of said slots, thread guides held in said slots, parallel spaced ears extending rearwardly from the base of each thread guide and a locking pin passing through said guides and spaced portions and holding said ears in close fitting engagement with the bases of said grooves.

4. In combination, a holder having spaced parallel portions separated by slots, said holder having grooves on opposite sides at the base of said slots, thread guides held in said slots, parallel spaced ears extending rearwardly from the base of each thread guide and a locking pin passing through said guides and spaced portions and holding said ears in contact with the inner walls of the said grooves.

5. In combination, a supporting bar, a series of holders having spaced parallel portions separated by slots, the outermost of said portions being half the width of the intermediate portions, thread guides held in said slots, and locking pins passing through said guides and spaced portions.

6. In combination, a supporting bar, a series of holders having spaced parallel portions separated by slots, the outermost of said portions being half the width of the intermediate portions, thread guides held in said slots, said guides and parallel portions having alined transverse apertures and locking pins passing through said apertures.

7. In combination, a supporting bar, a series of holders having spaced parallel portions separated by slots, thread guides held in said slots, said guides and parallel portions having alined transverse apertures, locking pins passing through said apertures and cover plates detachably fastened on the outer sides of the end holders over the said apertures.

GUSTAVE THEODORE BROBERG.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
694,515	Young	Mar. 4, 1902
1,079,144	Preston	Nov. 18, 1913
1,496,341	Kochenderfer	June 3, 1924
2,022,448	Wirth	Nov. 26, 1935
2,104,815	Richter et al.	Jan. 11, 1938
2,156,185	Levin	Apr. 25, 1939
2,292,941	Holmes	Aug. 11, 1942
2,386,314	Holmes et al.	Oct. 9, 1945

FOREIGN PATENTS

Number	Country	Date
667,602	Germany	Nov. 15, 1938