May 29, 1956 L. TRAPIDO 2,747,815

YARN GUIDE

Filed Aug. 21, 1953

FIG. 1

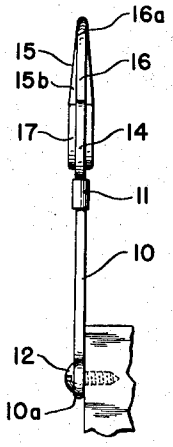


FIG. 2

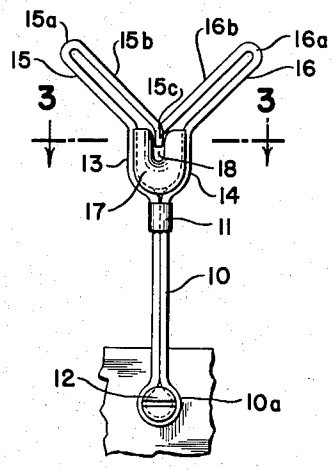
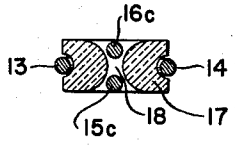


FIG. 3



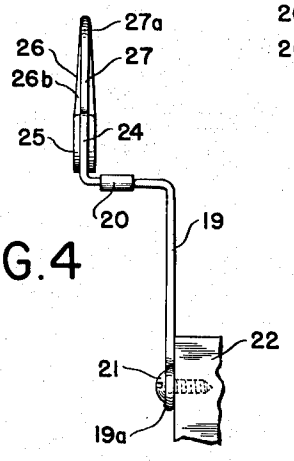


FIG. 4

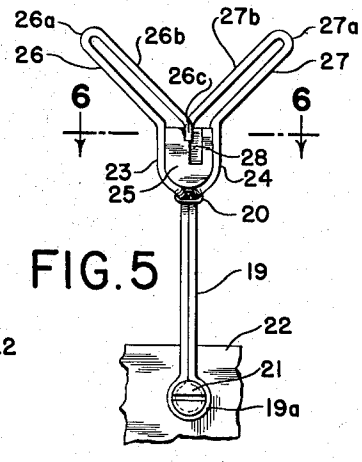
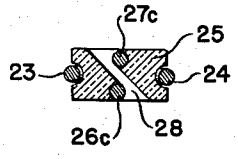


FIG. 5

FIG. 6



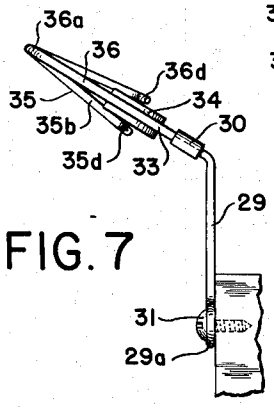


FIG. 7

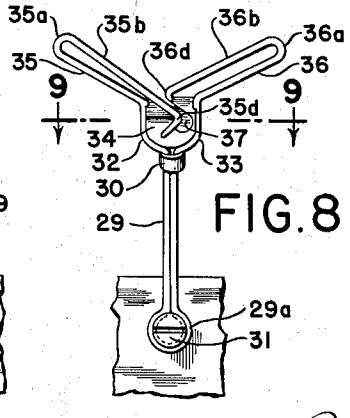
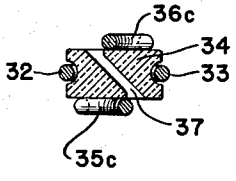


FIG. 8

FIG. 9



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YARN GUIDE

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8 Claims. (Cl. 242—157)

This invention relates to yarn guides for use in textile apparatus and is concerned more particularly with a novel guide, which is superior to prior similar guides in a number of respects. The new guide is of the insert type and is so constructed that, although the insert can be readily removed and replaced in a few seconds, the guide can be readily threaded without the possibility of trapping the yarn between the insert and its holder. The insert is held firmly in place by parts of the guide without the necessity of using cement or other adhesive and, since there is no looseness or play between the insert and holder, the guide may be used for traverse purposes and provides a good winding traverse, even when the traverse action is rapid and subjects the guide to jarring. The new guide may be employed in textile machines of various kinds, including redrawing machines, twisters, etc., and the insert may be made of porcelain or other ceramic material capable of withstanding the cutting action of such yarns as nylon.

For a better understanding of the invention, reference may be made to the accompanying drawing, in which

Figs. 1 and 2 are views in side and front elevation, respectively, of one form of the new guide;

Fig. 3 is a sectional view on the line 3—3 of Fig. 2;

Figs. 4 and 5 are side elevational views, respectively, of another form of the guide;

Fig. 6 is a sectional view on the line 6—6 of Fig. 5;

Figs. 7 and 8 are side and front elevational views, respectively, of a third form of the new guide; and

Fig. 9 is a sectional view on the line 9—9 of Fig. 8.

The guide shown in Figs. 1 to 3, inclusive, is made of a length of wire and it comprises a shank **10** formed of a loop of wire, the sides of which lie in contact for the major portion of the length of the loop and may be enclosed within a sheet metal clip or sleeve **11** tightly encircling the shank. At the closed end of the loop, the wire is bent to form a ring **10***a*, through which may pass a screw **12**, by which the guide may be attached to a rail or other part of the textile machine. At the top of the shank, the wire is bent to form a pair of arms **13**, **14**, which are spaced apart and define a seat. At the top of the seat, the wire is formed into a pair of loops **15**, **16**, which have parallel sides and are upwardly divergent. From the closed ends **15***a*, **16***a* of the loops, the inner sides **15***b*, **16***b* of the loops extend downwardly to terminate in end sections **15***c*, **16***c*, which lie in alignment in a direction transverse to the plane of the seat.

An insert **17** of wear-resistant material, such as porcelain or other ceramic, is mounted in the seat and held firmly in place by the arms **13**, **14**. In the guide illustrated, the insert has a semi-circular bottom and vertical sides and the sides and bottom are formed with a peripheral groove in which arms **13**, **14** are received. The insert has a slot **18** extending through it from face to face transverse to the plane of the seat and the walls of the insert defining the entrance openings into the slot are rounded off. The end sections **15***c*, **16***c* of the downwardly convergent inner sides of loops **15**, **16** extend into the top of the slot and terminate a substantial distance below the top of the insert.

The form of guide shown in Figs. 1 to 3, inclusive, is preferred for use when lively yarn is being handled. The yarn can be readily threaded into the guide and, for this purpose, is laid in the V-shaped recess defined by the inner sides **15***b*, **16***b* of the loops **15**, **16**. When the yarn is pushed downward, it passes between the end sections **15***c*, **16***c* of the wire and then enters the slot beneath the lower ends of the end sections. The threading of the guide is a simple operation and, since the end sections **15***c*, **16***c* terminate within and below the top of the slot, there is no chance of the yarn being trapped between the insert and its seat. The lower ends of the end sections **15***c*, **16***c* lying within the slot are flat and tend to prevent the yarn from rising out of the slot.

The guide shown in Figs. 4–6, inclusive, is made of a single length of wire and comprises a shank **19** similar to shank **10** and formed of a wire loop, the sides of which lie in contact and may be enclosed within a clip **20**. At its lower end, the shank has a ring **19***a* to receive a screw **21** for attaching the shank to a part **22** of the textile machine. The shank is bent, so that its upper and lower ends are offset from each other, and, beyond the upper end of the shank, the wire is bent to form spaced arms **23**, **24** to form a seat for an insert **25** having a peripheral groove, in which the arms are received to hold the insert tightly in place.

A pair of loops **26**, **27** extend divergently upward from the tops of the arms **23**, **24** and the loops have parallel sides connected at their closed ends **26***a*, **27***a*. The insert has an open top slot **28** extending through it from one face to the other at an oblique angle to the planes of its faces and the inner edge of each slot is cut away at its top to form a channel leading to a shoulder. The inner sides **26***b*, **27***b* of the loops **26**, **27** have end sections **26***c*, **27***c*, which lie within the channels and engage the shoulders. The end section **26***c*, **27***c* lie substantially in alignment in a direction transverse to the plane of the seat and the lower ends of the end sections project into the slot beyond the shoulders and thus overlie the entrance openings into the slot.

Because of the inclination of the slot **28** to the planes of the faces of insert **25**, the yarn tends to pass through the guide in contact with the inner vertical edges of the entrance openings to the slot. The lower ends of the sections **26***c*, **27***c* of loops **26**, **27** thus overhang the yarn and tend to keep it from rising out of the slot. At the same time, the yarn can be easily threaded through the guide and trapping of the yarn between the guide and the seat is prevented. While the guide shown in Figs. 4–6, inclusive, is intended primarily for use with normal running yarn, it may be employed with lively yarn.

In some textile machines, it is necessary to remove the yarn at short intervals from the traverse guides and, for this purpose, the form of the new guide shown in Figs. 7–9, inclusive, may be used to advantage. Like the preceding forms, the guide is made of a length of wire, which is bent to provide a shank **29** in the form of a wire loop, the sides of which lie in contact and may be enclosed within a clip **30**. At its lower end, the loop is opened to provide a ring **29***a* for reception of an attaching screw **31**. The shank is shown as having been bent, so that its lower portion extends vertically, while its upper ends lies at a low angle to the horizontal. Beyond the upper end of the shank, the wire is bent to form spaced arms **32**, **33** providing a seat for an insert **34**. At the upper ends of the arms, the forms loops **35**, **36** having closed ends **35***a*, **36***a*. The insert **34** has a slot **37** extending through it at an oblique angle to the planes of its faces and the inner sides **35***b*, **36***b* of loops **35**, **36** terminate in end sections **35***c*, **36***c*, which lie against the

opposite faces of the insert 34. The end sections 35*c*, 36*c* lie at an angle and are connected to their associated sides 35*b*, 36*b* by bends 35*d*, 36*d*, and each bend partially overlies an entrance opening into the slot 37. While the insert 34 in the guide is held tightly in position between arms 32, 33 and by the pressure of the end sections 35*c*, 36*c* of the loops 35, 36, the insert can be readily removed. The yarn may be easily inserted into the slot 37 in the insert by being passed first beyond bend 36*d* and then beyond bend 35*d* and removal of the yarn is equally easy. As the bends 35*d*, 36*d* are smooth, the insertion and removal of the yarn does no injury thereto.

I claim:

1. A yarn guide, which comprises a shank, a pair of wire arms extending upwardly in spaced relation from the top of the shank to define a seat and terminating in loops extending divergently upwardly above the seat, and an insert of wear-resistant material mounted in the seat and held in place by the arms, the insert having an open top slot extending through it at an angle to the plane of the seat, the loops having free ends near opposite ends of the slot and lying substantially aligned in a direction transverse to said plane.

2. A yarn guide, which comprises a shank, a pair of wire arms extending upwardly in spaced relation from the top of the shank to define a seat and terminating in loops extending divergently upwardly above the seat, and an insert of wear-resistant material in the seat, the insert having a peripheral channel receiving the arms and wide faces on opposite sides of the plane of the seat, the insert having an open top slot extending through it from one of said faces to the other, and the loops having free ends near opposite ends of the slot and substantially aligned in a direction transverse to said plane.

3. A yarn guide, which comprises a shank, a pair of wire arms extending upwardly in spaced relation from the top of the shank to define a seat and terminating in loops extending divergently upwardly above the seat, and an insert of wear-resistant material mounted in the seat and held in place by the arms, the insert having an open top slot extending through it at an angle to the plane of the seat, the loops having free ends lying at least partially within the slot.

4. A yarn guide, which comprises a shank, a pair of wire arms extending upwardly in spaced relation from the top of the shank to define a seat and terminating in loops extending divergently upwardly above the seat, and an insert of wear-resistant material in the seat, the insert having a peripheral channel receiving the arms and wide faces on opposite sides of the plane of the seat, the insert having an open top slot extending through it from one of said faces to the other, and the loops having free ends engaging the opposite faces of the insert adjacent the opposite ends of the slot.

5. A yarn guide, which comprises a length of wire bent to form a shank of loop form, a pair of arms extending upwardly from the top of the shank in spaced relation to form a seat, and loops extending divergently upwardly from the upper ends of the arms, and an insert of wear-resistant material mounted in the seat and held in place by the arms, the insert having an open top slot extending through it at an angle to the plane of the seat, the loops having free ends near opposite ends of the slot and lying substantially aligned transverse to said plane.

6. A yarn guide, which comprises a length of wire bent to form a shank of loop form, a pair of arms extending upwardly from the top of the shank in spaced relation to form a seat, and loops extending divergently upwardly from the upper ends of the arms, a sleeve enclosing the shank and holding the lengths of wire in the loop close together, and an insert of wear-resistant material in the seat having an open top slot extending through it at an angle to the plane of the seat, the loops having free ends near opposite ends of the slot and lying substantially aligned transverse to said plane.

7. A yarn guide, which comprises a length of wire bent to form a shank of loop form, a pair of arms extending upwardly from the top of the shank in spaced relation to form a seat, and loops extending divergently upwardly from the upper ends of the arms, and an insert of wear-resistant non-metallic material in the seat, the insert having a peripheral channel along its bottom and sides for receiving the arms and faces on opposite sides of the plane of the seat, the insert having an open top slot extending through it from one of said faces to the other and the loops having free ends near opposite ends of the slot and lying substantially aligned in a direction transverse to said plane.

8. A yarn guide, which comprises a length of wire bent to form a shank of loop form, a pair of arms extending upwardly from the top of the shank in spaced relation to form a seat, and loops extending divergently upwardly from the upper ends of the arms, the lengths of wire in the shank defining an opening at the end of the shank and lying substantially in contact from the opening to the other end of the shank, a sleeve enclosing the shank and holding said lengths of wire close together, and an insert of wear-resistant material in the seat having an open top slot extending through it at an angle to the plane of the seat, the loops having free ends near opposite ends of the slot and lying substantially aligned transverse to said plane.

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