

F. S. RAND.
YARN GUIDE.
APPLICATION FILED OCT. 5, 1910.

1,029,399.

Patented June 11, 1912.
2 SHEETS—SHEET 1.

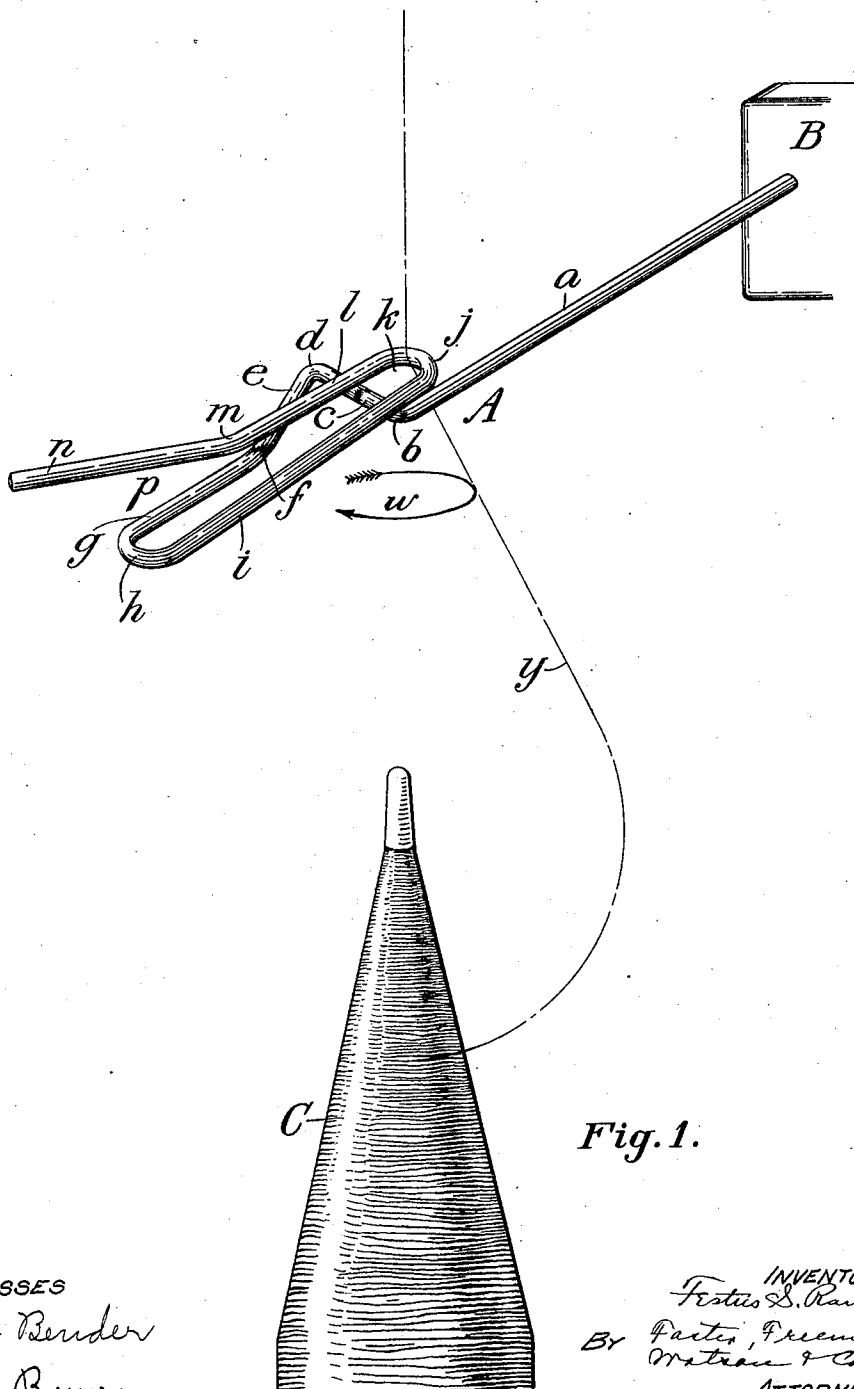


Fig. 1.

WITNESSES
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ATTORNEYS

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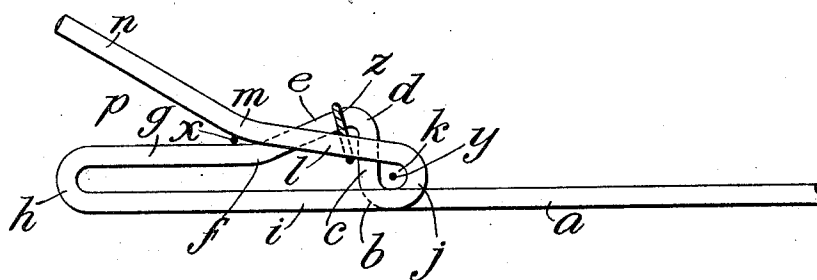


Fig. 2.

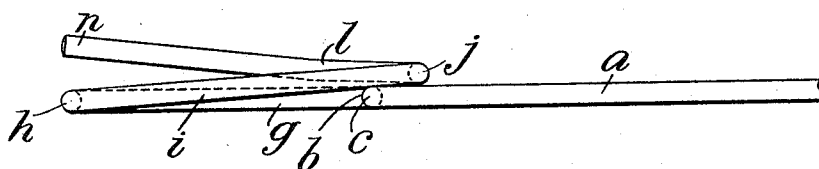


Fig. 3.

WITNESSES

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UNITED STATES PATENT OFFICE.

FESTUS S. RAND, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO UNIVERSAL WINDING COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

YARN-GUIDE.

1,029,399.

Specification of Letters Patent.

Patented June 11, 1912.

Application filed October 5, 1910. Serial No. 585,453.

To all whom it may concern:

Be it known that I, FESTUS S. RAND, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Yarn-Guides, of which the following is a specification.

My invention relates to improvements in thread- or yarn-guides for use on textile machinery such as spinning-frames, winding machines and other like apparatus.

The object of my improvement is to provide a self-threading yarn-guide which can be threaded with greater convenience and rapidity than the usual "pigtail" or spiral guiding eye; and which will direct the thread or yarn in its proper course and reduce the tendency to whip out or "balloon" as it delivers from the supply cop.

The invention is fully described in the following specification, illustrated by the accompanying drawings, in which:—

Figure 1 is an isometric projection of my improved guide showing it in use for controlling the thread delivering from an underneath supply cop; Fig. 2, a plan view of the guide; Fig. 3, a side elevation.

My improved guide A is preferably constructed of wire, bent in the form shown in the drawings, and attached to the machine in any suitable manner. As here illustrated the main portion or shank *a* is driven into the bar B which represents a portion of the frame of the machine on which the guide is used. The shank *a* extends outward to a point above the center of the supply cop or bobbin C and is bent at right-angles at *b* in a horizontal plane to form the offset portion or cross-bar *c*. A short distance from the bend *b* the wire is bent again in the same plane at an acute angle, forming the elbow *d*. The inclined portion *e* of the wire is then bent again at *f* and continues outward with the portion *g* extending parallel to and in the same plane with the shank *a*. At *h* the wire is bent back in the opposite direction forming a hairpin loop with the side *i* substantially parallel to the side *g*. The side *i* is also bent upward slightly from the plane of the shank *a* and rests on top of the bend *b*. From this point the wire is bent in a loop *j* forming with the cross-bar *c* the eye *k* through which the thread *y* leads. From the loop *j* the wire continues outward with

the portion *l* extending at a slight angle to the side *i*. As before stated, the side *i* rests on top of the bend *b* at the end of the shank *a*, but the portion *l* is bent upward out of the plane of the side *i* so as to provide a clearance where it crosses the bar *c* and angle portion *e*. Above the bend *f* the wire is bent at *m* and continues in the portion *n* extending at an angle to the portion *g*. The portions *n* and *g* form a flaring, V-shaped mouth or opening *p* for receiving the thread and guiding it into the loop *k*.

The operation of threading the guide is as follows: The thread or yarn *y* is drawn up from the supply cop C and directed into the opening *p*, see Fig. 2. As the yarn is drawn into the crotch of the guide to the position illustrated at *x*, Fig. 2, the pull on the yarn causes it to ride under the bend *m* and out over the inclined side *e* of the elbow *d*, as illustrated at *z*. Continued pull on the yarn toward the eye *k* will carry the loop *z* over the elbow *d* and along the cross-bar *c*, under the portion *l* and into the eye *k*. As the yarn is drawn up through the eye *k* with a rapid draft, in unwinding from the cop C, there will be a decided tendency for it to fly out and "balloon" as illustrated in Fig. 1. The direction of movement of the yarn in unwinding is indicated by the arrow *w* and as it swings around under the guide A the cross-bar *c* prevents it from whipping out of the eye *k*. The guide as here shown might be termed left-handed and where it is required to unwind the yarn in the opposite direction a right-handed guide is used; that is, the guide is formed with the cross-bar *c* extending in the opposite direction and the other portions of the wire formed correspondingly. If the left-handed guide were used in the position illustrated for a cop unwinding in the opposite direction from that here shown the yarn would be liable to whip out and catch over the elbow *d*. The left-handed guide, however, could be adapted for such use by simply turning it over.

It will be seen that my new guide provides for threading the yarn into the eye or loop *k* by simply drawing it up through the mouth or opening *p*. In the usual helical form of "pigtail" guide it is necessary for the operator to give the yarn a turn under and around the spiral in threading it through the eye. This not only requires more time

and care, but it is also liable to result in forming a loop or bight in the yarn which catches on the end of the guide. In other words, unless the operator is extremely careful, the yarn is liable to loop around the wire of the guide, and then when it is taken up under tension, in delivering to the machine, the pull will break it and cause damage and loss of time. In my improved device there is no chance for the forming of a loop or bight in the yarn as the end is drawn up straight from the cop and simply pulled into the crotch *p*. Furthermore, the yarn is prevented from flying up and catching on the guide by the cross-bar *c* which directs its course in whirling around the bobbin.

My invention is not limited to the dimensions and exact form here shown and described nor to a guide constructed of wire. Various modifications might be made in the form and relations of the several parts, and other materials used for its construction, without departing from the spirit or scope of the invention.

Therefore, without limiting myself to the exact form shown and described, what I claim is:—

1. An improved yarn-guide consisting of a length of wire extending in a shank portion *a*, bent at substantially right-angles at *b* to form the cross-bar *c*; then bent in the same plane at an acute angle, forming the elbow *d* with the inclined arm *e*; bent again at *f* and continued in the side *g* extending in the direction of the shank portion *a*; then

bent back at *h* and continuing in the opposite direction to form a hairpin loop, with the side *i* resting on top of the bend *b*; then bent around over the cross-bar *c* to form the loop *j*; extending out over the bar *c* and arm *e* with a clearance between the overlapping portions; and continued in an extension *n* diverging from the portion *g* to form a V-shaped opening *p*.

2. A self-threading yarn-guide consisting of the shank *a* having an offset cross-bar *c*; an elbow *d* at the end of the cross-bar; and a double loop *g, h, i, j, l* extending outward then back and around over the cross-bar *c* to form the eye *k*; and terminating in the diverging end *n*, with an entrance space for the yarn between one side of the loop and the underlying portions of the guide.

3. A self-threading yarn-guide formed with a double hairpin loop having an underlying portion at one end of the loop bent in an elbow with a transverse bar crossing the loop to form an eye *k*, with the portion of the loop adjacent the elbow inclined to the sides thereof and adapted to lead the yarn under one side of the loop and back of the cross-bar, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

FESTUS S. RAND.

Witnesses:

ARTHUR A. ARMINGTON,
GRACE W. BROWN.