

C. RYDEN.
YARN GUIDE.

APPLICATION FILED APR. 26, 1911.

1,050.850.

Patented Jan. 21, 1913.

2 SHEETS—SHEET 1.

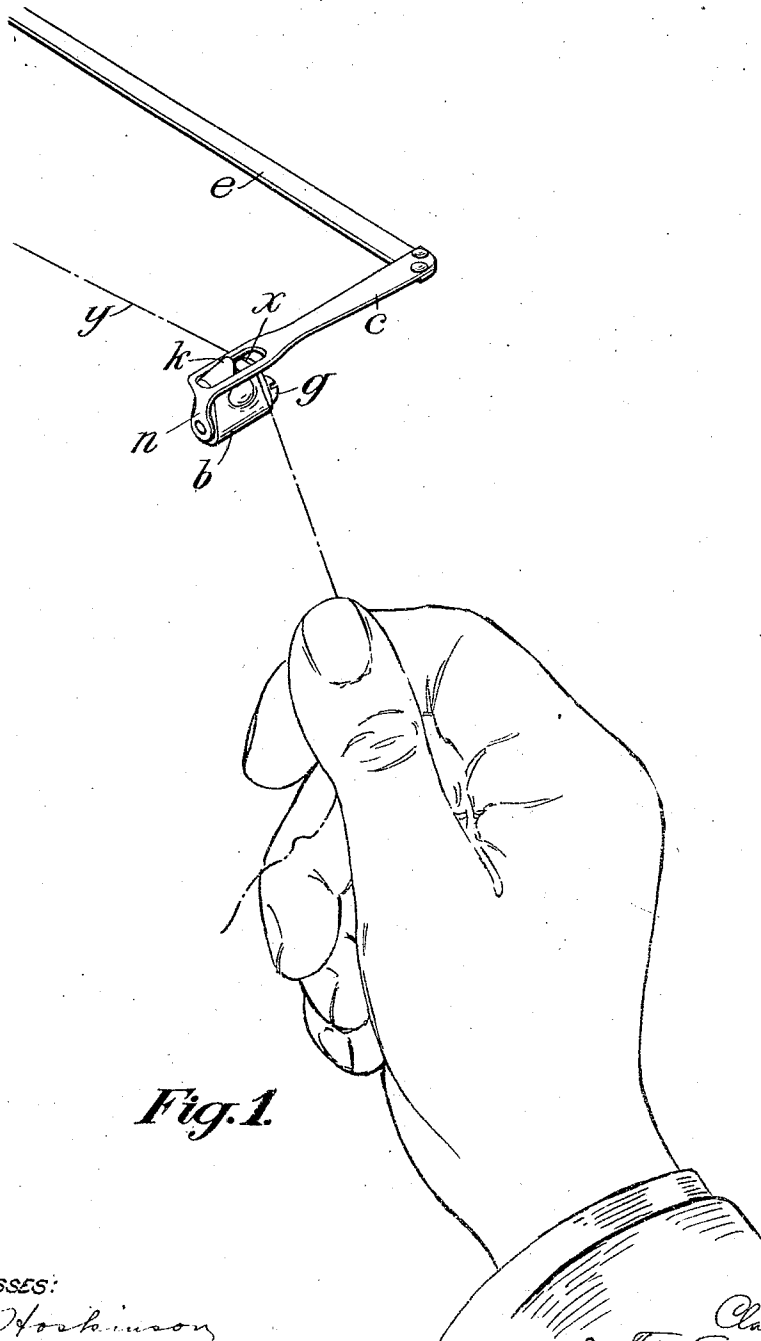


Fig. 1.

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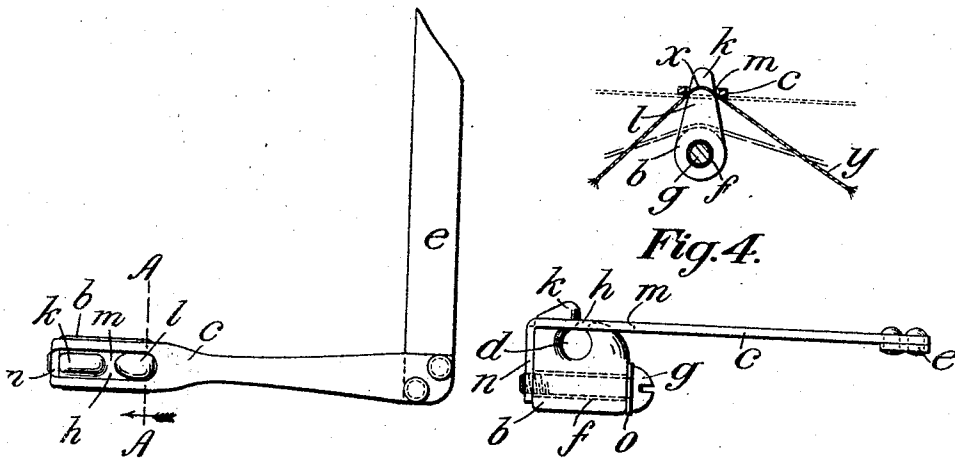


Fig. 2.

Fig. 3.

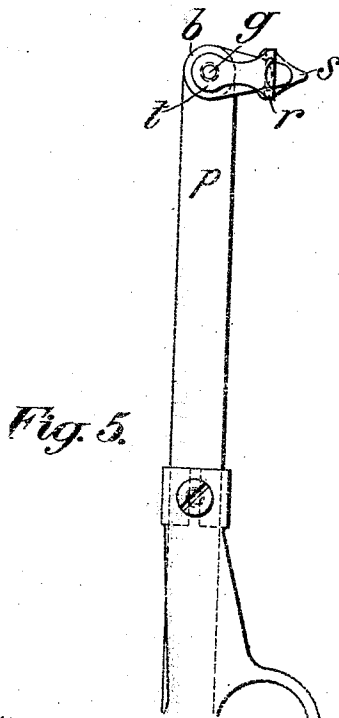


Fig. 5.

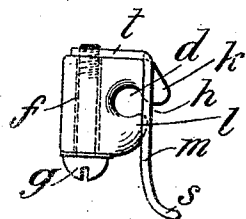


Fig. 6.

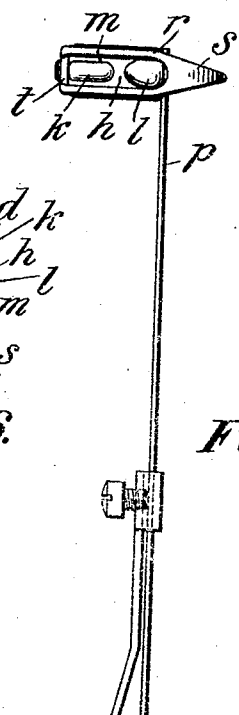


Fig. 7.

WITNESSES

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UNITED STATES PATENT OFFICE.

CLAES RYDEN, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO UNIVERSAL WINDING COMPANY, OF PORTLAND, MAINE, A CORPORATION OF MAINE.

YARN-GUIDE.

1,050,850.

Specification of Letters Patent.

Patented Jan. 21, 1913.

Application filed April 26, 1911. Serial No. 623,506.

To all whom it may concern:

Be it known that I, CLAES RYDEN, 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 winding machines, spinning frames and other like apparatus.

The object of my improvement is to provide a self-threading yarn-guide which can be threaded with greater ease and convenience than the usual "pigtail" or spiral guiding eye and which is adapted to prevent the thread or yarn from whipping or jumping out as it draws rapidly through the eye.

A further object of my invention is to provide a bearing surface for the thread which will resist wear and prevent the cutting of a groove or channel from the abrasive action of materials such as silk, linen or other hard twisted threads.

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

Figure 1 is a perspective view of my improved guide illustrating the method of drawing the thread into its opening or eye; Fig. 2, an enlarged plan view of the same; Fig. 3, a side elevation; Fig. 4, an end elevation, part sectional on the line A—A of Fig. 2, and showing the manner in which the thread draws into the eye and also the position it assumes when leading through the eye; Fig. 5, an end view showing a modification in the construction of the invention; Fig. 6, a side view of the same; and Fig. 7, a plan view.

My improved guide might be constructed of steel, brass or any suitable material, but I prefer to make it with the main portion of porcelain, glass or other vitreous substance capable of resisting the abrasive action of the thread drawing through it. As shown in the drawings it consists essentially of the guide proper, designated *b*, and a cross-bar *c* extending across the eye or opening *d* which is formed in the member *b*. In Figs. 1 to 4 inclusive, the cross-bar *c* is shown as constructed of sheet metal with the member *b* attached to it and extends at right-angles from the end of an arm *e* which might be a part of member of any textile machine.

In Fig. 1 the arm *e* is shown in a position which would adapt it to be applied to an unwinding device such as described in my United States Patent, No. 981,950, dated January 17th, 1911, to be used in place of the arm which controls the rotation of the skein-holder through the tension of the yarn drawing through the guide at its end. It will be obvious, however, that the exact position of the guide and its arrangement in connection with the machine is not essential to the novelty of the invention.

The member *b*, as before stated, is preferably constructed of porcelain and is formed with a longitudinal hole *f* adapted to receive the screw *g* which secures it to the cross-bar *c*. The threadway or eye *d* in the member *b* is preferably circular in shape with a contracted opening *h* at its top, see Fig. 3. On one side of this opening is an abutment *k* and on the other a curved horn-like prong *l*. The cross-bar *c* is slotted at *m* and bridges the opening *h* with the abutment *k* and prong *l* extending up into the slot, see Figs. 2 and 3. It is to be noted, however, that while the abutment *k* extends some distance through the slot *m* and reaches up beyond the cross-bar, the prong *l* does not project clear through the slot in the bar. The end of the cross-bar *c* is bent at right-angles in the extension *n* which abuts the end of the member *b*, the latter being held in place by the screw *g*. Preferably a washer *o* of fiber, leather, or some similar yielding material is interposed between the head of the screw *g* and the end of the member *b* so that the latter will not be chipped or cracked by the clamping pressure of the screw.

In Figs. 5, 6 and 7 a modification of the above described structure is shown in which the member *b* is secured to an arm *p* and the cross-bar *r* is made in a separate piece. The arm *p* here shown is a portion of the stopping lever used on a well known form of winding machine, but is not illustrated in detail as its relation to the machine is not essential to the present invention. In this arrangement the screw *g* extends first through the arm *p*, then through the member *b* with its threaded end screwed into the right-angled extension *t* of the cross-bar *r*. As in the previously described arrangement the cross-bar bridges the opening *h* of the member *b* and the sides of the slot *m* straddles

dle the abutment *k* and prong *l*. The opposite extremity of the cross-bar is tapered off to a point and curled up in the crook *s* which serves as a guide for the thread in drawing it into the eye *d* as later explained.

The method of operation of the device is as follows: To thread the guide the yarn *y* is drawn up against the under side of the cross-bar *c* and pulled toward the member *b*, as illustrated in Fig. 1. The curved side of the prong *l* causes the loop *x* of the yarn to ride up through the slot *m* of the cross-bar and by drawing the forward end of the yarn down at an angle it will be caused to pass under the sides of the cross-bar as shown by full lines in Fig. 4. The loop *x* is thus passed over the end of the prong *l* and the yarn will seat itself in the eye *c*, taking the position illustrated by dash lines in Fig. 4. The purpose of the abutment *k* is to guide the yarn down into the eye *d* when it is drawn past the end of the prong *l* and also to prevent the yarn from whipping out of the eye. After the yarn is in position leading through the eye *d* it is impossible to dislodge it from the guide while its ends are held taut. Should it whip up against the cross-bar *c*, as illustrated by dotted lines in Fig. 4, it is restrained thereby from throwing out through the opening *h*. The only possible manner in which the yarn can be removed from the guide without breaking it is to loop it up over the prong *l* and under ordinary conditions when the yarn is drawn taut under tension this could not be accomplished.

It will be seen that my invention provides a guide which can be threaded with extreme quickness and facility and when the yarn is in its proper position in the guiding eye it cannot whip or jump out or be otherwise accidentally dislodged. With the usual form of "pigtail" or helical guide wire 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 unless the operator is extremely careful a bight is liable to be formed around the wire and when the yarn is pulled taut it will break. In my improved guide herein described it is practically impossible to form a loop or bight in the yarn in threading it into the guide, and the operation is so extremely simple that there is no chance for a misappliance. Furthermore, the invention provides against wear in the guide-eye and therefore the device is much more durable.

It will be understood that my invention is not limited in exact form or dimension to the embodiments herein illustrated. Various modifications might be made in the structure and arrangement of the parts 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. In a yarn guide, the combination of a member *b* having an eye for the thread formed with a contracted opening at its top having one of its sides extending above the other and a cross-member *c* bridging the opening into the eye and straddling the sides of the member *b* closely adjacent thereto, substantially as shown and described.

2. In a yarn-guide, the combination of a member *b* having an eye for the thread with an opening leading into the eye formed with one of its sides extending above the other, and a cross-bar *c* having portions extending along the sides of the member *b* across the opening in a plane below the top of both sides of the opening.

3. An improved yarn-guide comprising a member *b* having an eye for the thread with a contracted opening leading into the eye, and a cross-bar *c* formed with a slot *m* and arranged with the portions of the member *b* adjacent the opening extending up into said slot, substantially as shown and described.

4. An improved yarn-guide comprising a member *b* having an eye formed with one of its sides extending above the other for the thread with an opening leading into said eye, and a cross-bar *c* having parallel sides extending along the sides of the member *b* closely adjacent thereto and across the opening therein.

5. A self-threading yarn-guide consisting of a guide-member *b* formed with a thread-way *d* having an opening *h* with an abutment *k* on one side of the opening and a prong *l* on the opposite side thereof, and a cross-bar *c* having portions extending along the sides of the member *b* and arranged to straddle the abutment *k* and prong *l* to bridge the opening between them.

6. In a yarn-guide the combination with the guide-member *b* formed with an eye *d* having an opening *h* with an abutment *k* on one side of the opening and a prong *l* on the opposite side thereof, of a cross bar *c* having a slot *m* and arranged with the prong *l* extending into said slot and the abutment *k* extending through the slot, substantially as shown and described.

7. In a yarn-guide the combination with a guide-member *b* having an eye *d* with a contracted opening formed by the abutment *k* and prong *l*, and a cross-bar *c* secured to said member and having parallel side portions extending along the sides of the member *b*, with said portions arranged in line with the opening between the abutment and prong.

8. In a yarn-guide the combination with a member *b* having an eye *d* with an opening *h* leading into said eye and formed with an abutment *k* and prong *l* on opposite sides of

said opening, the abutment *k* extending above the prong *l*, and a cross-bar *c* having portions extending across the opening *h* below the top of the abutment *k* and in line with the top of the prong *l*, substantially as shown and described.

9. In a yarn-guide the combination with a member *b* having an eye *d* with an opening leading into said eye and formed with an abutment *k* on one side of the opening and a prong *l* on the opposite side, the abutment reaching above the top of the prong, and a cross-bar *c* formed with a longitudinal slot and arranged with the abutment *k* extending through the slot and the prong *l* reaching up into the slot and with the sides of the slot spaced away from the sides of the prong to provide a clearance for the yarn to allow

it to ride over the end of the prong when threading it into the eye. 20

10. In a self-threading yarn-guide, the combination with a member *b* of vitreous material formed with an eye *d* and an opening *h* leading into the eye formed with one of its sides extending above the other, and a cross-bar *c* having portions extending along the sides of the member *b* below the top of the opening *h* and spaced away from the member *b* to provide an entrance for the yarn. 25

In testimony whereof I affix my signature in presence of two witnesses. 30

CLAES RYDEN.

Witnesses:

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GRACE B. HOOKER.