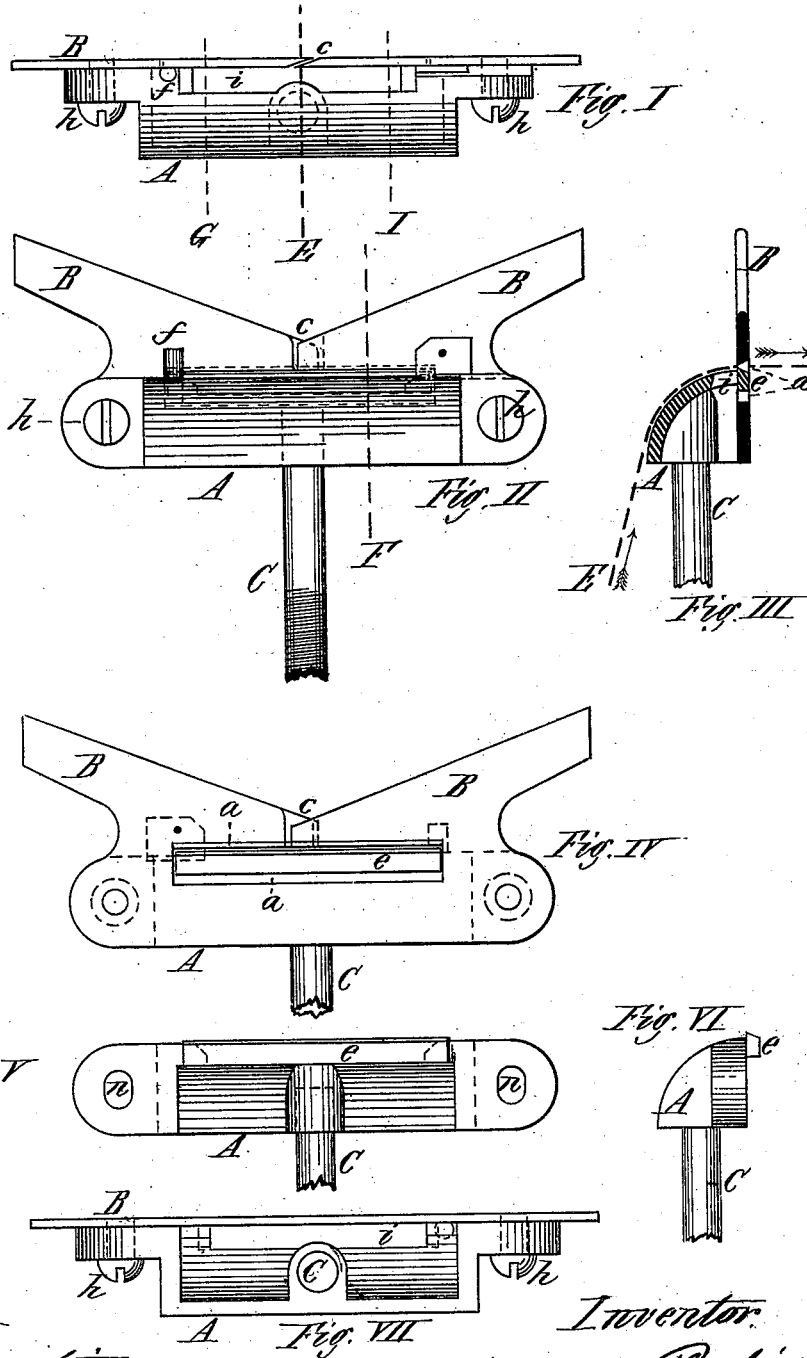


A. PARTRIDGE.
SPOOLING-GUIDES.

No. 195,228.

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Witnesses—
J. Alvario,
E. A. Sawyer.

Inventor:
Andrew Partridge

UNITED STATES PATENT OFFICE.

ANDREW PARTRIDGE, OF SPRINGFIELD, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND T. A. CURTIS, OF SAME PLACE.

IMPROVEMENT IN SPOOLING-GUIDES.

Specification forming part of Letters Patent No. 195,226, dated September 18, 1877; application filed July 27, 1877.

To all whom it may concern:

Be it known that I, ANDREW PARTRIDGE, of Springfield, in the State of Massachusetts, have invented a new and useful Spooling-Guide; and that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, and to the letters of reference marked thereon.

The object of my invention is to cause the thread or yarn to pass freely to the spool without undue or uneven wear of any particular part of the guide, or injury to the thread, to cause the thread to be wound upon the spool uniformly, and to clean the thread from bunches and dirt, and make it of more uniform size and quality.

To this end my invention consists of a beam made of an elongated convex form on its upper side, or partially cylindrical, with a plate attached thereto, having a horizontal slot or recess made therein to permit the thread to traverse horizontally in a direction at right angles to its line of draft. An opening is made in the said plate from the top or upper edge down into said horizontal slot, at such an angle or in such form that a thread passing through the slot at right angles to its length will not pass out of the opening, and the upper edge of the plate is inclined upward each way from the opening. The beam is provided with a vertical opening in front of the plate, to permit the dirt and matter cleaned from the thread or yarn to fall through readily.

Figure I is a plan or top view of my invention. Fig. II is a front view of the same. Fig. III is a vertical transverse section at line F of Fig. II. Fig. IV is a rear view of the guide as arranged for use. Fig. V is a rear view of the beam with the plate removed. Fig. VI is an end view of the same, and Fig. VII is a reverse or bottom view of the guide with the plate attached.

In the drawings, A represents the beam, made cylindrical on its upper side, or partially so, over and upon which passes the thread while being wound, and C is a spindle or stem inserted therein, by which the guide is secured to the rail of a spooling-machine;

and a vertical elongated hole or slot, *z*, is made down through the beam, to permit the dirt to fall through.

The plate B is provided with a longitudinal slot or recess, *a*, into which projects the part *e* of the beam when the plate is secured in place, and the slot *a* is made somewhat wider than the depth of the part *e*, so that when the plate is secured in position there may be a small space between the upper edge of the slot *a* and the upper edge of the part *e* of the beam, as shown clearly in Figs. II, III, and IV. This space in the slot above the beam may be increased or diminished to accommodate different sizes of yarn or thread by making the plate B adjustable in a vertical direction with reference to the beam, which may be done by making the holes *n* elongated, through which the screws *h* are inserted to attach the plate to the beam, as shown clearly in Fig. IV; but when only one size of thread or yarn is used the plate will not require an adjustment.

If the upper edge of the slot *a* is beveled upward from the front to the back, or the upper edge of the part *e* of the beam is beveled downward from the front to the back, or both, as shown clearly in Fig. III, so that the slot in the plate above the beam is widest, or more open on the rear side, the slot will not be liable to get clogged with dirt, as it will easily fall through.

An opening or cut, *c*, is made diagonally across the thickness of the plate B at its lowest part, as shown in Figs. I, II, and IV, so that a thread of yarn pressed down upon any part of the upper edge of the plate B will slide down the incline on either side of the opening *c*, and down through the latter into the slot *a* above the beam, and, when once in, the thread cannot be removed from the slot, unless either the guide or the thread is turned, so that the latter and the opening *c* are both in the same line.

Of course, this cut or opening *c* may be curved or zigzag, as well as straight, so long as its general direction across the thickness of the plate is such as to prevent the thread from getting accidentally out of the horizontal slot *a* while being wound.

In Fig. I the dotted line E represents the

direction of the thread or yarn when being wound, and passing through the slot directly beneath the opening *c*.

I prefer to insert a small pin, as shown at *f*, into the beam, or attach a small disk, as shown at the opposite end of the guide, just inside each end of the horizontal slot *a*, so that, should the thread or yarn get accidentally pushed into or against the end of the slot, it will not get caught in the joints and broken.

In practice I prefer to make the beam hollow, as shown in Figs. III, V, and VII, to lighten the guide and save stock.

The operation of my invention is as follows: The stem *C* is properly secured to the rail of the spooling-machine in the usual manner, and the plate *B* is so adjusted with reference to the beam, or to the part *e* thereof, by means of the screws *h*, as to give the desired width of the slot *a*, above the beam, according to the size of thread to be wound. The end of the thread is then seized and the latter drawn from the bobbin, passed over the guide, and attached to the spool, and is then dropped down upon the upper edge of the plate *B*, and, as the speed of the revolving spool draws the thread taut, it slides down the incline on either side of the opening *c*, through the latter, and into the horizontal slot *a*, and rests upon and slides over the convex surface of the beam, the line of draft of the thread being through the slot *a* at right angles (or nearly so) to its length, and at the same angle to the plane of the plate *B*. When the thread is first begun to be wound upon the spool, the line of draft of the thread will be near one end of the guide, as indicated by the dotted line *G*, and as the spool becomes more and more filled, the thread moves gradually along the slot *a* and beam, in a horizontal direction, until, when the spool is nearly or quite filled, the line of draft of the thread, in passing through the guide, will be about in the position indicated by the dotted line *I* at the opposite end of the slot *a*.

By this lateral movement of the thread, at nearly a right angle to its line of draft, the thread passes to the spool in a line nearly perpendicular to the plane of the plate *B*, instead of being drawn around and against a corner, as is the case with the guides now in use. That is to say, as the guides are ordinarily constructed (there being no provision for the lateral or horizontal movement of the thread along the guide) the thread, when first wound upon the spool, is drawn through the guide in such a manner or at such an angle as to bear hard against one corner and in one place. When the spool is about half filled the thread passes straight to the spool with little friction; but when the spool is nearly filled the thread bears against the opposite corner, and, in one place, with increased friction.

Of course, the result is that the thread is pulled harder at certain times than at others,

or is under an uneven tension while the spool is being wound, so that it breaks oftener, and the thread is wound upon the spool more tightly in some places than in others. The constant wearing of the thread in one place in the guide also operates to cut a channel in the guide, and it is soon unfit for use.

My invention entirely obviates all trouble of this nature, while the wear of the guide, caused by the thread passing over it constantly, from one end to the other, is evenly distributed over its whole length between the two ends of the slot, or between the guard-pins *f*, and operates to give the beam *A* a perfectly even and uniform surface. In fact, owing to this even distribution of the wear of surface of the guide, the latter is improved by use.

The width of the slot *a* above the beam may be adjusted to suit thread or yarn of any size, so that as the thread passes between the upper side of the slot and the upper edge of the beam, or of the part *e* thereon, the thread will rub against both edges slightly, and all bunches, uneven places, and dirt will be cleaned off.

If only one uniform size of thread is to be used, the beam *A* and plate *B* might be made in one piece, and the slot *a* made in the vertical part, instead of making the beam and plate separate and adjustable one with the other.

Having thus described my invention, what I claim as new is—

1. In a spooling-guide, the plate or upright part *B*, provided with a horizontal slot or opening, *a*, and an opening or cut, *c*, made diagonally across the thickness of the upright part into said horizontal opening *a*, substantially as and for the purpose herein set forth.

2. In a spooling-guide, the beam *A*, provided with the vertical opening *i*, in combination with the plate or upright part *B*, having the horizontal slot or opening *a* and the diagonal opening *c* made therein, substantially as set forth.

3. In a spooling-guide, the plate or upright part *B*, provided with the horizontal opening *a*, in combination with the beam *A*, having its rear part *e* located beneath the upper edge of the opening *a*, said upright part and beam being made adjustable with reference to each other, so that the space in said opening *a* above the beam may be made wider or narrower, to accommodate thread of different sizes to be passed through said opening *a*, substantially as described.

4. In combination with the upright part *B* and the beam *A*, the guard *f*, located near the end of the horizontal opening *a*, substantially as and for the purpose described.

ANDREW PARTRIDGE.

Witnesses:

T. A. CURTIS,
E. A. THAYER.