G. A. METCALF.

ATTACHMENT FOR SPOOLING OR WINDING MACHINES.

APPLICATION FILED OCT. 15, 1908.

913,416.

Patented Feb. 23, 1909.

Fig. 1.

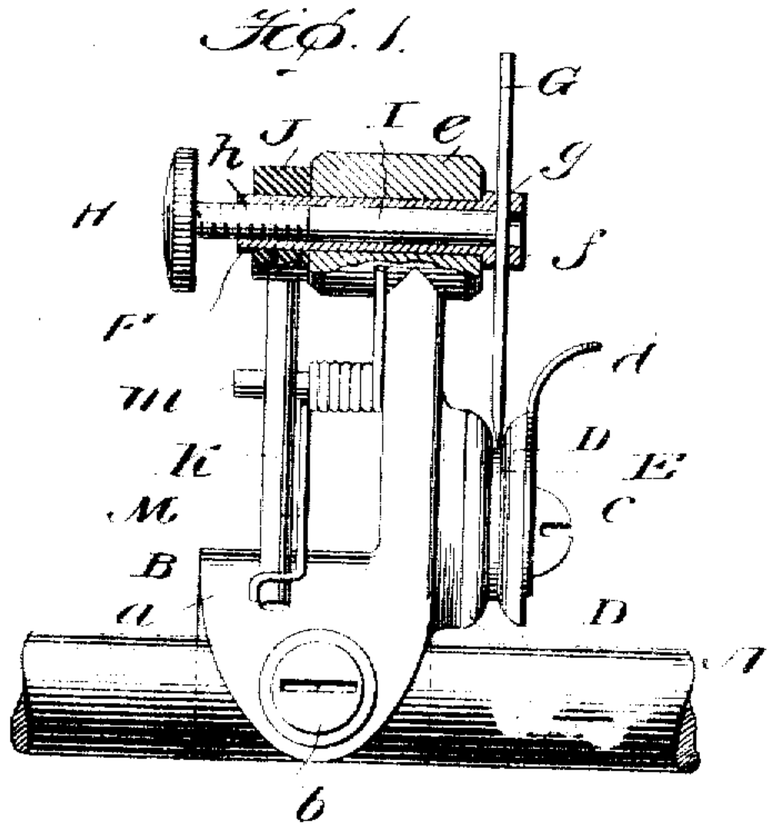


Fig. 3.

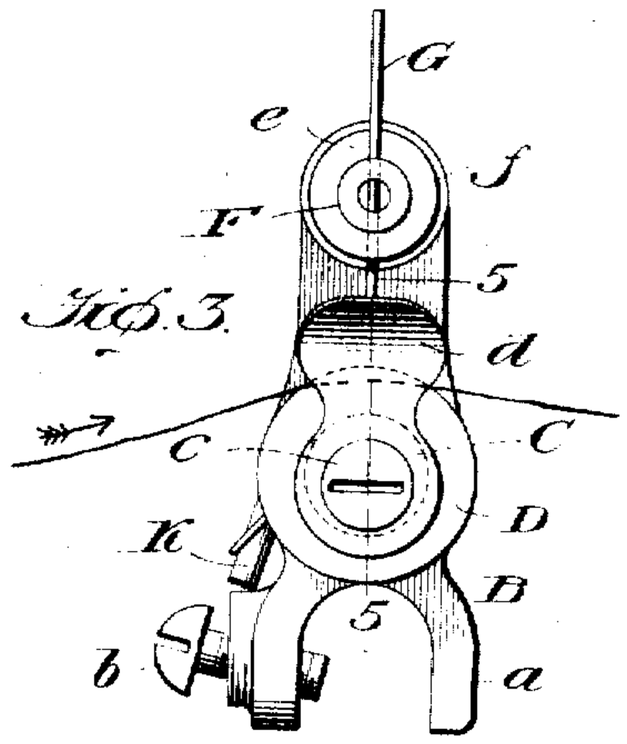


Fig. 2.

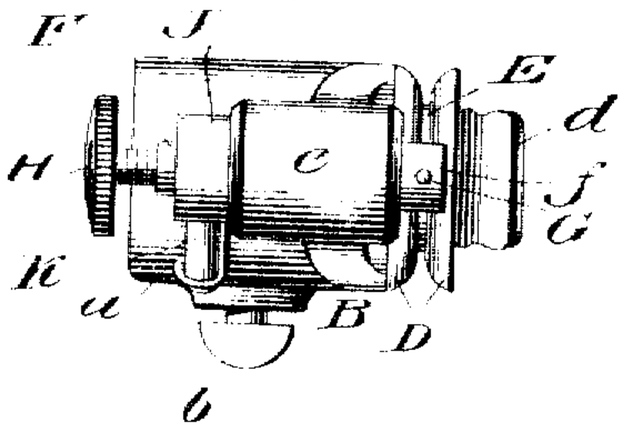


Fig. 4.

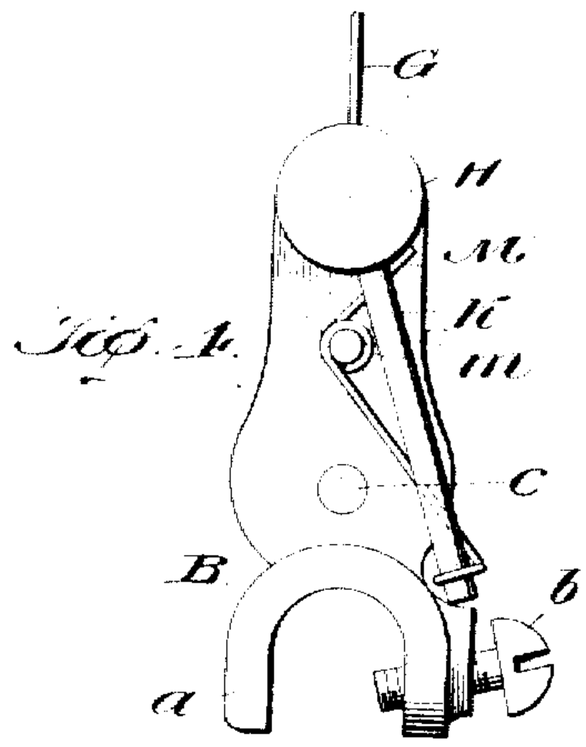
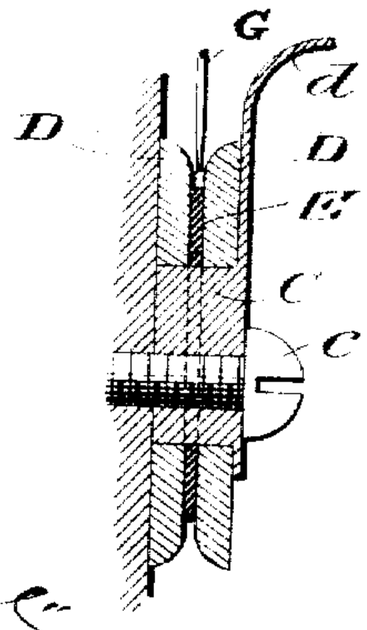


Fig. 5.



Witnesses.

[illegible]

N. E. [illegible]

Inventor.

George A. Metcalf.

by James J. Shelby

Attorney.

UNITED STATES PATENT OFFICE.

GEORGE A. METCALF, OF WOONSOCKET, RHODE ISLAND, ASSIGNOR TO THE RATHBUN KNITTING COMPANY, OF WOONSOCKET, RHODE ISLAND.

ATTACHMENT FOR SPOOLING OR WINDING MACHINES.

No. 913,416. Specification of Letters Patent. Patented Feb. 23, 1909.

Application filed October 15, 1908. Serial No. 457,921.

To all whom it may concern:

Be it known that I, GEORGE A. METCALF, citizen of the United States, residing at Woonsocket, in the county of Providence and State of Rhode Island, have invented new and useful Improvements in Attachments for Spooling or Winding Machines, of which the following is a specification.

My invention has relation to yarn spooling or winding machines; and it contemplates the provision of a simple, reliable and easily-cleaned attachment for such machines, constructed with a view of receiving the yarn *en route* into the machine, and breaking the yarn when a knot, bunch or analogous imperfection occurs therein, this in order to prevent the knot or bunch entering the machine and causing imperfect work.

My invention also contemplates utilizing the mentioned breaking of the yarn to put into action a stop-motion mechanism connected with the machine, but inasmuch as said stop motion mechanism forms no part of my invention and may be of the conventional or any other suitable construction, I have deemed it unnecessary to illustrate the same.

With the foregoing in mind, the invention will be fully understood from the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is an elevation, partly in section, illustrating a knot-arresting and yarn-breaking attachment constituting a practical embodiment of my invention, as the same appears when properly positioned on a bar of a spooling or winding machine. Fig. 2 is a plan view of the attachment. Fig. 3 is an elevation taken at a right angle to Fig. 1 and showing one side of the attachment. Fig. 4 is a view similar to Fig. 3, showing the opposite side of the attachment. Fig. 5 is a detail section, taken in the plane indicated by the line 5—5 of Fig. 3 and showing the eccentric bushing for adjusting the disks of the attachment, relative to the yarn-breaking device thereof, and in that way adapting the attachment to different yarns.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which:

A is a bar which forms part of and extends lengthwise of the frame of a spooling or winding machine, and B is the body or main frame of my attachment. The lower portion *a* of the said body is bifurcated to straddle the bar A and is provided in one side with a threaded aperture to receive a screw *b* through which the body is preferably fixed on the bar.

C is an eccentric bushing arranged on and connected by a screw *c* to the side of the body A, and having an upwardly extending and outwardly flared finger-piece and yarn-guide *d*, and D D are disks mounted on the said bushing and preferably shaped as shown in cross-section. When necessary one or a plurality of spacing washers such as E may be arranged on the bushing C and between the disks D, as shown. The part *d* is denominated a finger-piece and yarn-guide inasmuch as it serves for the manipulation of the bushing C to raise or lower the disks D, and also serves to facilitate the threading of the attachment—*i. e.*, the placing of the yarn in proper position with respect thereto. By raising and lowering the disks D, as stated, the operator is enabled to regulate the position of the same relative to the point of the yarn-breaking device or needle G to suit yarns of different kinds.

F is a tubular rock-shaft journaled in the upper portion *e* of body B and having an enlargement *f* at its forward end in which is a diametrical bore *g* and also having an interior thread *h* in its rear portion.

G is the yarn breaking device of the attachment which is preferably in the form of a needle, and extends through the bore *g* of shaft F and downwardly to a point between the disks D.

H is a thumb-screw arranged in the rear threaded portion of the shaft F, and I, a rod disposed in the shaft F and between the screw H and the yarn-breaking device G and having for its office to bind and adjustably fix the latter in the bore *g* of the shaft. At the back of the body B, a collar J is mounted on the rock-shaft, and bearing in a threaded aperture of said collar and set against the shaft F is a rod K which serves to fix the collar to the shaft. The said rod K extends downwardly to a point in rear of the bifurcated body portion *a* and is yieldingly held against said body portion by a spring M which is coiled about a lateral projection *m*

on the body B, and has an arm which bears against the body and another arm which bears against the rod K. By virtue of the construction just described, it will be manifest that the yarn-breaking device G is normally held against movement in the direction in which yarn is fed through the attachment, Fig. 3, but when it is necessary to remove collected lint from the disks and yarn-breaking device, the said rod K may, against the action of the spring M, be readily swung away from the body portion *a* so as to rock the shaft F and swing the pointed end of the yarn-breaking device rearwardly from its normal and working position between the disks D. It will also be manifest from the foregoing that the space between the disks D may be increased by placing washers such as described between said disks, and while the attachment is in use, the disks may be quickly adjusted, relative to the yarn-breaking device, to meet different conditions as the same arise.

In the practical use of my novel attachment, the yarn is fed between the disks D and between the point of the device G and the perimeter of the washer in the manner and direction indicated in Fig. 3, and so long as the yarn is free from knots, bunches or the like it will freely pass through the attachment and into the spooling and winding machine. When, however, a knot, bunch or other imperfection in the yarn brings up against the device G the said device will break the yarn.

In addition to the advantages hereinbefore ascribed to my novel attachment, it will be noted that the yarn-breaking device G is susceptible of vertical adjustment, and that when portions of the disks D are worn by the passage of yarn between the same, the screw *c* may be loosened and the disk turned to present fresh or unworn surfaces to the yarn.

The construction herein shown and described constitutes the best practical embodiment of my invention of which I am cognizant, but it is obvious that in the future practice of the invention such changes or modifications may be made as fairly fall within the scope of my invention, as defined in the claims appended.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

1. A knot arresting and yarn-breaking attachment for spooling or winding machines and the like, comprising suitably-supported means forming a channel for the passage of yarn, a yarn-breaking device extending into the said channel, and means for positively holding said device against movement in the direction in which the yarn is fed and for yieldingly holding the device to its work and against movement in the opposite direction.

2. A knot arresting and yarn-breaking attachment for spooling or winding machines and the like, comprising suitably-supported, spaced disks adapted to be turned to present fresh surfaces to the yarn, a yarn-breaking device extending into the space between the disks, and means for positively holding said device against movement in which the yarn is fed and for yieldingly holding the device to its work and against movement in the opposite direction.

3. A knot arresting and yarn-breaking attachment for spooling or winding machines, comprising suitably supported and adjustable eccentric means, disks mounted thereon, and a suitably supported yarn-breaking device extending into a space or channel between the disks.

4. A knot arresting and yarn-breaking attachment for spooling or winding machines, comprising suitably supported and adjustable eccentric means having a finger-piece and guide, disks mounted on said eccentric means, and a suitably supported yarn-breaking device extending into a space or channel between the disks.

5. A knot arresting and yarn-breaking attachment for spooling or winding machines and the like, comprising a body, disks carried thereby, a rock-shaft journaled in the body, a yarn-breaking device adjustably fixed in said rock-shaft, a rod connected with the rock-shaft and adapted to bear against the body and prevent movement of the yarn-breaking device in one direction, and means for yieldingly holding the rod and the yarn-breaking device against movement in the opposite direction.

6. A knot arresting and yarn-breaking attachment for spooling or winding machines and the like, comprising a body, an eccentric bushing having a finger-piece and guide, a screw connecting said bushing to the body, disks mounted on the bushing, a rock-shaft journaled in the body, a yarn-breaking device adjustably fixed in the rock-shaft, a rod connected with the rock-shaft and adapted to bear against the body and prevent movement of the yarn-breaking device in one direction, and means for yieldingly holding the rod and the yarn-breaking device against movement in the opposite direction.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE A. METCALF.

Witnesses:
EDGAR L. SPAULDING,
ISABELLE SMITH.