Oct. 19, 1948. J. H. BARNES 2,451,795

THREAD GUIDE HOLDER

Filed Aug. 1, 1946

2 Sheets-Sheet 1

FIG. 1.

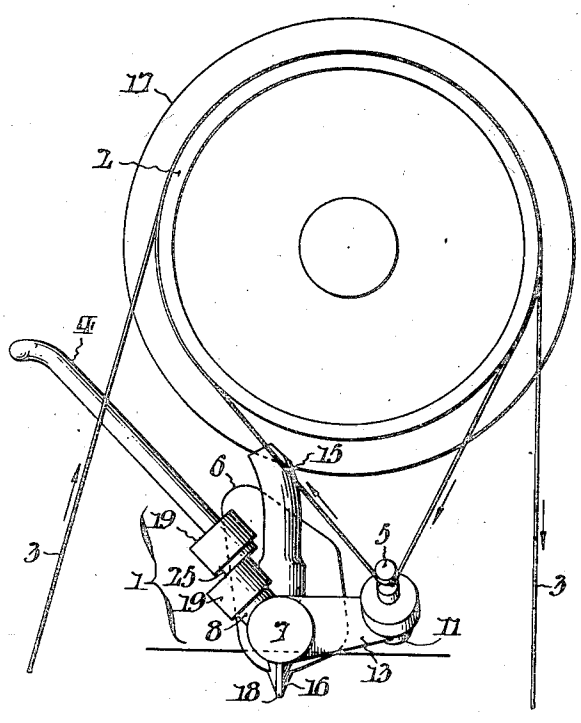
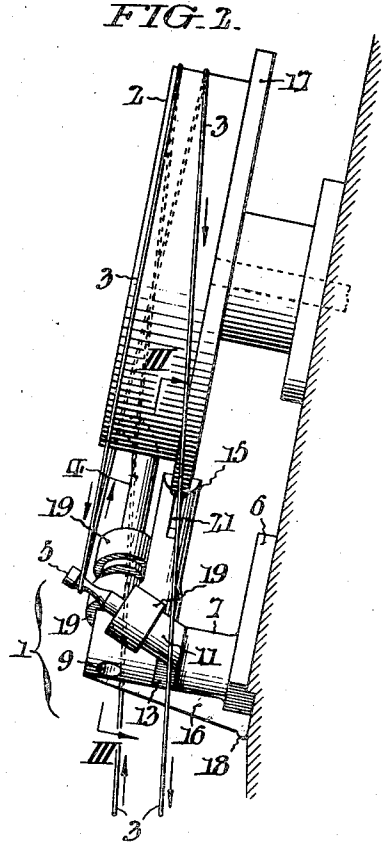


FIG. 2.



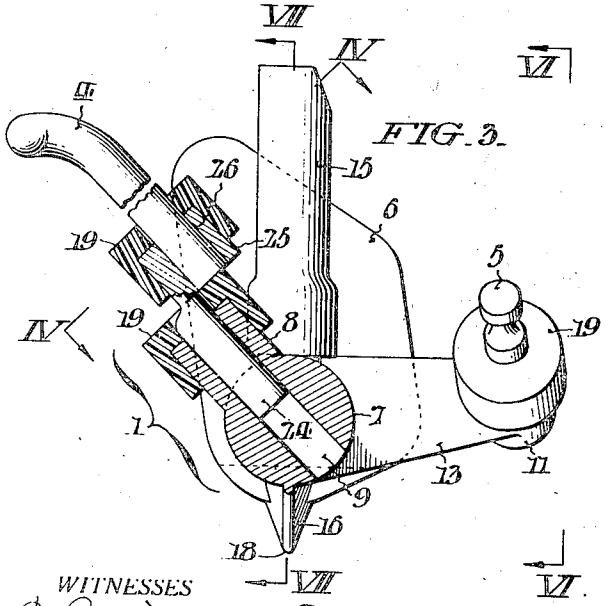
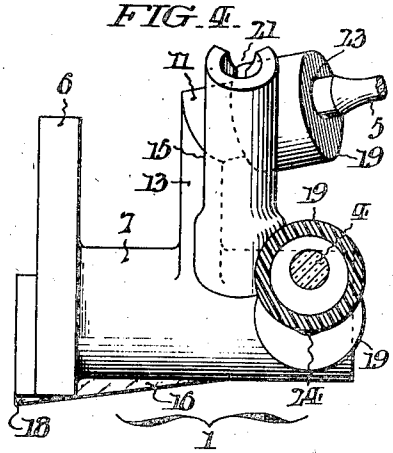


FIG. 3.

FIG. 4.



WITNESSES

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FIG. 6.

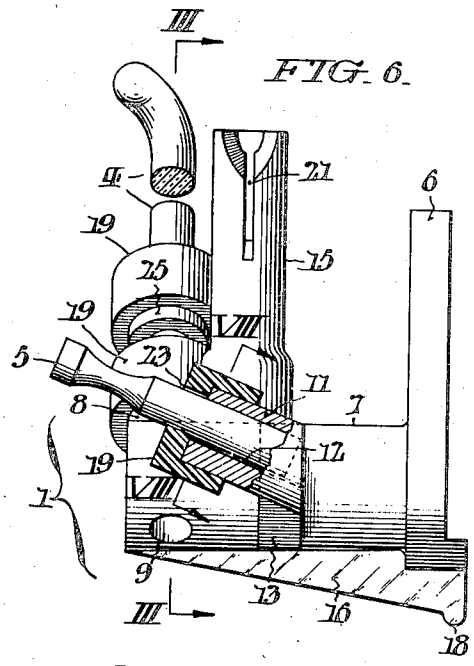


FIG. 5.

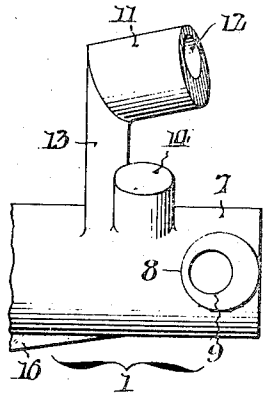


FIG. 9.

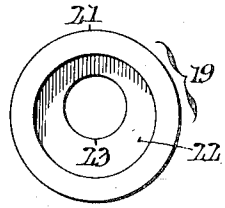


FIG. 8.

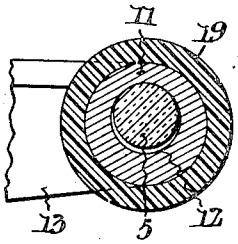


FIG. 7.

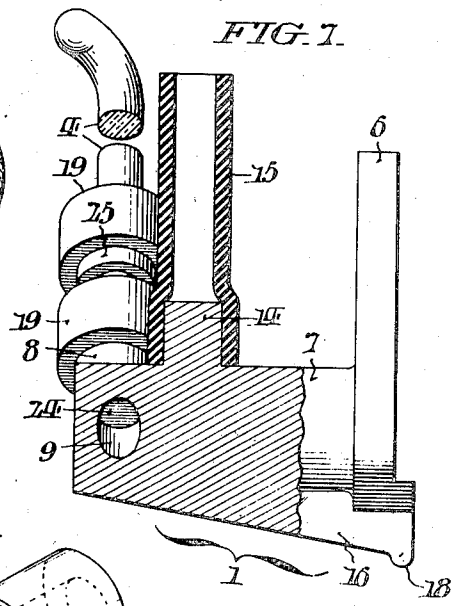


FIG. 10.

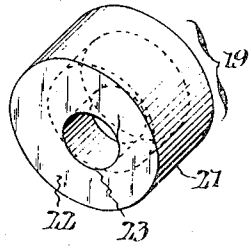
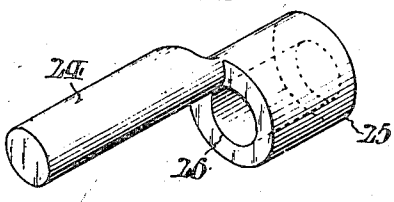


FIG. 11.



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Patented Oct. 19, 1948 2,451,795

UNITED STATES PATENT OFFICE

2,451,795

THREAD GUIDE HOLDER

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Application August 1, 1946, Serial No. 687,760

6 Claims. (Cl. 242—157)

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This invention relates to thread guide holders and more particularly to thread guiding devices such as are used in connection with rayon spinning machines for controlling the path of the thread to a spinning bucket. In the manufacture of rayon yarn it is customary to guide the thread from the bath to a godet wheel upon which several turns of the thread may be carried, and thence to a spinning bucket. It is important that the thread be fed to the godet wheel in a particular manner so that it will run satisfactorily and so that one turn thereof will not interfere with or cross another turn.

Heretofore it has been proposed to provide means permitting such a thread guide to be turned to different positions about its axis so that as the surface becomes worn or grooved in one place a new surface may be presented, thus adding to the life of the thread guide. Various difficulties have been encountered with the devices used for setting the thread guide in position, the principal problem beig that the thread guide must be capable of being firmly clamped in any position in which it is set so that it cannot accidentally become displaced and at the same time it should be capable of being quickly released by a simple movement of the hand.

Accordingly the object of the present invention is to provide a relatively simple and efficient device for permitting a rapid adjustment of the position of a thread guide with respect to the holder which supports it, the device being capable of firmly gripping the thread guide to prevent its accidental displacement and of being readily released so that a readjustment of the position can be effected quickly and easily. In the preferred form of the invention the thread guide holder is also provided with a device which permits the thread guide to be adjusted in three directions. It may be bodily moved with respect to the holder, either laterally or in the direction of its longitudinal axis, or it may be turned upon its axis and clamped in any position to which it is thus moved. This effects a better control over the thread as it is fed to the godet wheel in addition to making it possible to turn the thread guide to allow the thread to run on a new surface whenever such adjustment is desirable.

Other objects and advantages characterizing my invention will become more apparent from the description hereinafter set forth of one embodiment of the invention as applied to a rayon spinning machine, having reference to the accompanying drawings, whereof:

Fig. 1 represents a front elevation of a guide holder of this invention as applied to a godet wheel of a rayon spinning machine;

Fig. 2 represents a side elevation of the same;

Fig. 3 represents an enlarged front elevation of the guide holder by itself with portions thereof

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shown in cross section taken as indicated by the arrows III—III of Figs. 2 and 6;

Fig. 4 is an enlarged elevation of the guide holder with portions thereof shown in cross section; taken as indicated by the arrows IV—IV of Fig. 3;

Fig. 5 is an end elevation similar to Fig. 4, but showing only a portion of the guide holder with the thread guides, lock nuts and wiper removed;

Fig. 6 is an enlarged elevation of the guide holder viewed as in Fig. 2, but showing portions of the guide holder and the locking devices for one of the thread guides in cross section;

Fig. 7 represents a cross section of the same taken by the arrows VII—VII of Fig. 3;

Fig. 8 represents a cross section of a portion of the guide holder taken as indicated by the arrows VIII—VIII of Fig. 6;

Fig. 9 represents a plan view of an eccentric lock nut;

Fig. 10 represents a perspective view of a lock nut; and

Fig. 11 represents a perspective view of an offset pin.

In the drawings, see Fig. 1, a guide holder embodying the present invention is shown at 1 and is applied to a godet wheel 2 of a rayon spinning machine. It may be assumed in this example, which is only intended to illustrate one specific practical application of the novel guide holder, that the rayon thread 3 leads upwardly from the bath in the direction indicated by the arrow at the left of Fig. 1 and that it engages a relatively long thread guide 4 in its path to the godet wheel 2. It may further be assumed that the rayon thread 3 makes one complete turn around the godet wheel 2 with incidental passage beneath a short thread guide 5, and that from the godet wheel the thread leads downwardly to a spinning pot which is not shown. With such a thread guiding arrangement it is important that the turns in the thread as it passes around the godet wheel shall be maintained in the proper position relative to each other and to the cylindrical surface of the godet wheel, and particularly that one turn shall not overlap or interfere with another turn. This end is accomplished by adjusting the positions of thread guides 4 and 5 with respect to the guide holder 1 as hereinafter more particularly described.

The guide holder 1 comprises a bracket having a flat plate 6 which serves as a convenient means for attachment of the same to a flat surface of the spinning machine in the vicinity of the godet wheel 2 and a body portion 7 of cylindrical shape. At one end of the body portion 7 there is a cylindrical portion 8, see Figs. 3 and 5, extending at right angles thereto and having an eccentric aperture 9 which may be somewhat larger in diameter than the thread guide 4 to be received

therein. A similar cylindrical extension 11 with an eccentric aperture 12 is formed on a wing joining the body portion 7 near the center thereof, see Figs. 4 and 5. Above the body portion 7 there is a lug 14 to which a tubular wiper 15 is attached, and beneath the body portion an inclined drip collecting surface 16 is desirably formed. As the wiper 15 which engages the flange 17 of godet wheel 2 collects liquid therefrom, such liquid will flow through the slot 21 of the wiper and along the outside thereof to the body portion 7 and thence along the inclined surface 16 to the point 18 which is the point from whence it is desired to drip.

As shown in Figs. 1, 2 and 6 the relatively short thread guide 5 is frictionally and detachably held in place by a single eccentric lock nut 19 which engages the eccentrically apertured cylindrical portion 11 of the guide holder. The lock nut 19, as shown in Figs. 9 and 10, consists of a cylindrical surface 21 with a head 22 at one end having an eccentric aperture 23 which may be somewhat larger than the diameter of the thread guide to be inserted therein. To apply the thread guide 5 to the guide holder the lock nut 19 is fitted over the cylindrical portion 11 and turned until the aperture 23 is in registry with the aperture 12. Thread guide 5 is then inserted through both eccentric apertures and the lock nut is rotated until the thread guide is firmly gripped.

As shown in Figs. 1 and 3 the relatively long thread guide 4 is held in place by double eccentric lock nuts 19 and an offset pin 24. By means of one lock nut 19 the pin 24 is secured to the cylindrical portion 8 of the guide holder, and by means of another lock nut 19 the thread guide 4 is secured to the pin. At one end the pin 24, which is shown in perspective in Fig. 11, has an offset cylindrical portion 25 with an eccentric aperture 26 for receiving the end of thread guide 4. By rotating the offset pin 24 within the cylindrical portion 8 of the guide holder a lateral shifting of thread guide 4 may be accomplished thus permitting a fine adjustment of the position of the thread guide 4 to give the proper lead to the thread 3 as it approaches the godet wheel 2. When the proper position for thread guide 4 has been determined the offset pin is secured in place by turning the lock nut 19 which engages the cylindrical extension 8 of the guide holder.

Each of the two thread guides 4, 5 may be rotated to different positions about its axis or moved longitudinally so that as the surface becomes worn or grooved in one place a new surface may be engaged by the thread. This is accomplished by the simple expedient of loosening the lock nut 19 at the lower end of thread guide, and then, after the thread guide has been turned to the desired position, by tightening the lock nut to reset the thread guide in its adjusted position. Thus each thread guide 4, 5 is detachably secured by interfitting eccentrically apertured elements which by relative rotation to different positions may be caused to frictionally grip the thread guide or to release the same, and one thread guide, that which is designated at 4, has additional capacity for lateral adjustment which is accomplished by rotating the offset pin 24. Such an arrangement enables the operator quickly and easily to make all of the necessary adjustments for causing the thread 3 to run satisfactorily on the godet wheel, as well as to move either thread guide by rotation, or in the direction of its length, to present a new surface for engagement with the thread.

Although I have described one particular form of guide holder of this invention and a specific use to which it may be applied, it will be apparent to those skilled in the art that various modifications may be made in the form of the guide holder and the manner in which it is used without departing from the spirit of the invention as defined in the annexed claims.

Having thus described my invention, I claim:

1. A thread guide holder comprising cylindrically interfitting elements, each eccentrically apertured to receive a thread guide, one of said elements constituting a lock nut which by rotation to different positions with respect to the other element is caused to frictionally grip the thread guide or to release the same.

2. A thread guide holder comprising a bracket having a cylindrical portion eccentrically apertured to receive and support one end of a thread guide, and a lock nut rotatably engaging said cylindrical portion and having an eccentric aperture whereby it is adapted to grip the thread guide adjacent to said supported end thereof.

3. A thread guide holder comprising a bracket having an apertured cylindrical portion, a pin fitting in the aperture thereof and having an eccentrically apertured offset portion for receiving the end of a thread guide, means for detachably holding said pin in place, and a lock nut rotatably engaging said offset portion of the pin and having an eccentric aperture whereby it is adapted to grip the thread guide for detachably holding the same in place.

4. A thread guide holder comprising a bracket having an apertured cylindrical portion, a pin fitting in the aperture thereof and having an eccentrically apertured offset cylindrical portion for receiving the end of a thread guide, and lock nuts rotatably engaging the cylindrical portions of the bracket and pin and having eccentric apertures so that when rotated to different positions they will serve respectively to frictionally grip or release the pin or the thread guide.

5. A thread guide holder comprising a bracket having an eccentrically apertured cylindrical portion, a pin fitting in the aperture thereof and having an eccentrically apertured offset cylindrical portion for receiving the end of a thread guide, and cylindrical lock nuts rotatably engaging the cylindrical portions of the bracket and pin, each lock nut being eccentrically apertured whereby the thread guide may be rotated and laterally moved with respect to the guide holder and set in any position to which it is thus adjusted.

6. A thread guide holder comprising cylindrically interfitting elements, each having an aperture of a size to receive a thread guide, and each said aperture being eccentrically disposed with relation to the cylindrically interfitting surfaces whereby the thread guide may be frictionally gripped or released by relative rotation of said elements.

JOSEPH H. BARNES.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
786,380	Pierce	Apr. 4, 1905
910,415	Pohl	Jan. 19, 1909
942,362	Appleby	Dec. 7, 1909
2,256,248	Hansen	Sept. 16, 1941