Oct. 30, 1956 G. S. PORTER ET AL 2,768,799

REPLACEABLE THREAD GUIDE

Filed Nov. 8, 1951

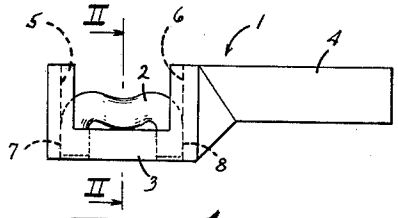


Fig. 1

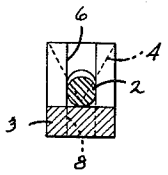


Fig. 2

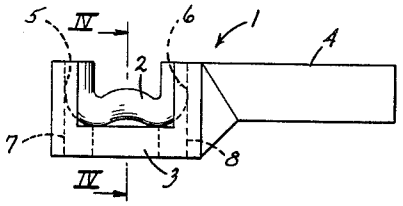


Fig. 3

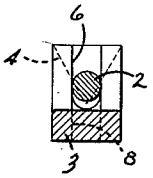


Fig. 4

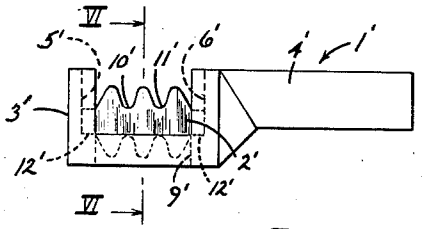


Fig. 5

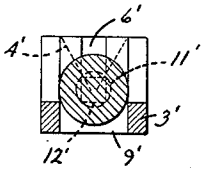


Fig. 6

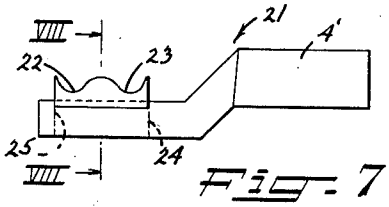


Fig. 7

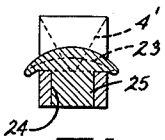


Fig. 8

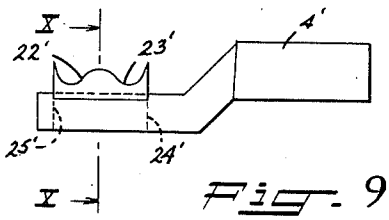


Fig. 9

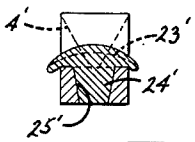


Fig. 10

INVENTORS.
GEORGE S. PORTER
EDWARD N. CORBY

BY Thomas R. O'Malley
ATTORNEY.

United States Patent Office 2,768,799 Patented Oct. 30, 1956

2,768,799

REPLACEABLE THREAD GUIDE

George S. Porter and Edward N. Corby, Roanoke, Va., assignors to American Viscose Corporation, Philadelphia, Pa., a corporation of Delaware

Application November 8, 1951, Serial No. 255,658

3 Claims. (Cl. 242—157)

This invention relates to thread guides which affect and control the lateral displacement of a thread in various textile machine operations. More specifically this invention relates to a thread guide which is particularly constructed and designed to offset the effect of rapid wear due to the movement of the thread over the guide.

In some textile spinning processes such as the viscose rayon spinning process it is difficult to economically prevent the accumulation of harmul spinning bath mud on the guide. Furthermore since such accumulations are very harmful to the yarn quality, the guides must be periodically removed and cleansed. The removal and cleansing of conventional types of guides however is oftentimes time consuming, and damaging to the guide so that the life and high quality performance of the guide is considerably reduced. Moreover since the conventional guide with its specially prepared thread contacting surface is relatively expensive, it is not practical to discard it at the first sign of damage. Thus, the conventional guides which have been used in the past have presented various difficulties in the textile spinning art.

It is the principal object of this invention to minimize these difficulties associated with conventional guides by providing a guide which comprises an insert which is conveniently replaceable, and in certain forms rotatable to provide a variable number of guide paths and/or a plurality of wear surfaces.

Other objects will appear in the course of the following description.

A thread guide which is constructed in accordance with our invention is shown in the accompanying drawing wherein:

Figure 1 is an elevation of one embodiment of the invention in which the insert is positioned to provide a single guide path,

Figure 2 is a section on the line II—II of Figure 1,

Figure 3 is an elevation of the same embodiment in which the insert is reversed to provide a plurality of guide paths,

Figure 4 is a section on the line IV—IV of Figure 3,

Figure 5 is an elevation of another embodiment of the invention in which the insert is conveniently rotatable to any of four different wear positions,

Figure 6 is a section on the line VI—VI of Figure 5,

Figure 7 is an elevation of another embodiment of the invention in which the conveniently removable insert is mounted on the guide holder by means of a rectangular stud,

Figure 8 is a section on the line VIII—VIII of Figure 7,

Figure 9 is an elevation of still another embodiment of the invention in which the insert is mounted on the guide holder by means of a wedge-shaped stud,

Figure 10 is a section on the line X—X of Figure 9.

Referring to Figures 1–4 of the drawing, the first embodiment of the invention comprises the guide mounting means **1** and the guide insert **2**. The guide mounting means comprises a U-shaped insert receiving portion **3** and an elongated shank portion **4** which may be triangular in cross-section as illustrated or have any other convenient sectional configuration. The shank portion serves as an adjustable mounting for the guide simply by placing it within a complementary socket in which it may be held such as by a set screw. One extremity of the shank portion is integral with the U-shaped insert receiving portion **3** and extends laterally therefrom in the plane of the U. Grooves **5** and **6** are cut in the opposite inside edges of the legs of the U-shaped portion **3**. These grooves **5** and **6** are alined with apertures **7** and **8** which extend through the bottom surface of the U-shaped portion thereby providing a means by which the guide insert **2** may be removably positioned within the guide mounting means **1**. The guide insert **2** is circular in cross-section, M-shaped in elevation and dimensioned such that the legs of the M slide snugly in the opposed grooves **5** and **6**. Each of the apices of the M-shaped guide insert are rounded off thereby providing smooth thread contacting surfaces.

In operation, the triangular shank **4** of the guide mounting means **1** is first properly adjusted in its complementary socket. Next, the guide insert **2** may be placed in the holder such as in Figures 1 and 2 wherein the central apex of the M-shaped guide insert provides a single guide path. If two guide paths are desired rather than one, the insert is simply placed in the holder in its reverse position such as is shown in Figures 3 and 4. When the insert becomes worn, it may be readily replaced by a new insert.

Thus, in this embodiment it is seen that an improved thread guide has been provided in which a small relatively inexpensive guide insert is easily replaceable and in which a variable number of guide paths may be selectively provided.

Referring next to Figures 5 and 6 of the drawing, a second embodiment of the invention is disclosed which again comprises two parts, a guide mounting means **1'** and a guide insert **2'**. As in the embodiment of Figures 1–4, the guide mounting means **2'** comprises a U-shaped insert-receiving portion **3'** and an elongated triangular shank portion **4'**. Since the triangular shank portion is identical to the shank of the above-described embodiment of Figures 1–4, it will not be further described at this point. An extremity of the shank of this embodiment is also integral with the U-shaped insert receiving portion **3'** extending laterally therefrom in the plane of the U. A rectangular hole **9'** passes through the bottom surface of the U-shaped portion and grooves **5'** and **6'** extend down thereto along the opposite inside edges of the legs of the U-shaped portion. The insert **2'** comprises two annular thread receiving grooves **10'** and **11'** and a pair of square lugs **12'** one at each of the axial extremities of the guide insert. The square lugs **12'** of the guide insert and the opposed grooves **5'** and **6'** of the guide mounting member cooperate to conveniently permit insertion of the guide member in its mounting means. The guide insert **2'** may be positioned in its guide mounting means in any one of four positions by removing it from the holder, rotating it a quarter of a turn and slidably replacing it in grooves **5'** and **6'**. Thus, in this embodiment of the invention, it is seen that the usable life of the thread guide insert is increased by four times and that the insert is at the same time conveniently replaceable when necessary.

Referring next to Figures 7 and 8 of the drawing, a third embodiment of the improved thread is disclosed. This embodiment also comprises a guide mounting means **21** and a guide insert **22**. The guide mounting means **21** comprises an insert-receiving portion and an integral offset triangular shank portion. As in the above-described embodiments, the triangular shank portion provides an

adjustable mounting for the guide. The insert-receiving portion includes a rectangular aperture 24 which extends from the upper horizontal surface thereof downwardly through its lower surface. The guide insert 22 comprises an upper member 23 which contains a plurality of thread receiving grooves along its upper surface and a rectangular stud 25 integrally attached to and protruding downwardly from the upper member. The stud by being smaller in cross-section than the upper member provides a pair of flanges on the upper member which engage the upper surface of the insert-receiving portion and prevent the insert from slipping through the aperture 24.

The embodiment shown in Figures 9 and 10 is substantially similar to the guide of Figures 7 and 8 except that the stud 25' on the guide insert 22' is wedge-shaped and therefore cooperates with a complementary aperture 24' in the guide mounting means which is also wedge-shaped.

It is to be noted that in each of the disclosed embodiments of the invention an aperture or a plurality of apertures extend through the bottom surface of the guide mounting means whereby a portion of the guide insert may be conveniently contacted. This feature of the invention aids in the removal and replacement of the guide insert. In the embodiments of Figures 1–4 and of Figures 5 and 6, the ease of removal and replacement of the guide insert is still further facilitated by the U-shape of the guide mounting means whereby the guide insert may be also conveniently engaged from above.

Still another feature of each of the embodiments of the invention which should be noted is the manner in which the guide insert extends well above and in the embodiments of Figures 7 and 8 and of Figures 9 and 10 laterally beyond the adjacent portions of the guide mounting means. This additional feature of the invention permits a wide variation in the angle of approach of the thread toward the guide without interference between the thread and the guide mounting means.

While preferred embodiments of the invention have been shown and described, it is not intended that the invention be limited thereto and modification may be made within the scope of the appended claims.

We claim:

1. A thread guide assembly comprising U-shaped support member having a pair of grooves which extend along the inside edges of the legs thereof and a pair of apertures which are aligned with the longitudinal axes of the grooves and extend through the base of the support member; and a removable guide insert slidably bottomed in the grooves and apertures of the support member.

2. A thread guide assembly comprising an elongated supporting shank, an offset elongated extension connected to said shank having a substantially flat upper surface and a centerline substantially parallel to the shank centerline, walls defining a large aperture in said extension, a removable M-shaped thread guiding insert which is substantially circular in cross section supported on said extension in the large aperture, and two additional small apertures cut through the bottom wall of said aperture positioned to receive the legs of the M-shaped thread guiding insert.

3. A thread guide assembly in accordance with claim 2 wherein opposing walls of the large aperture have grooves cut thereinto to slidingly retain the insert when the insert is supported in an inverted position within the large aperture.

References Cited in the file of this patent

UNITED STATES PATENTS

387,984	Mathewson	Aug. 14, 1888
395,853	Snyder et al.	Jan. 8, 1889
1,912,256	Coradi	May 30, 1933
1,964,356	Howe	June 26, 1934
1,964,377	Atwood	June 26, 1934
2,206,212	Wainwright et al.	July 2, 1940
2,307,664	Brookshire	Jan. 5, 1943
2,462,288	Richter	Feb. 22, 1949
2,634,066	Huber	Apr. 7, 1953

FOREIGN PATENTS

201,326	Great Britain	Aug. 2, 1923