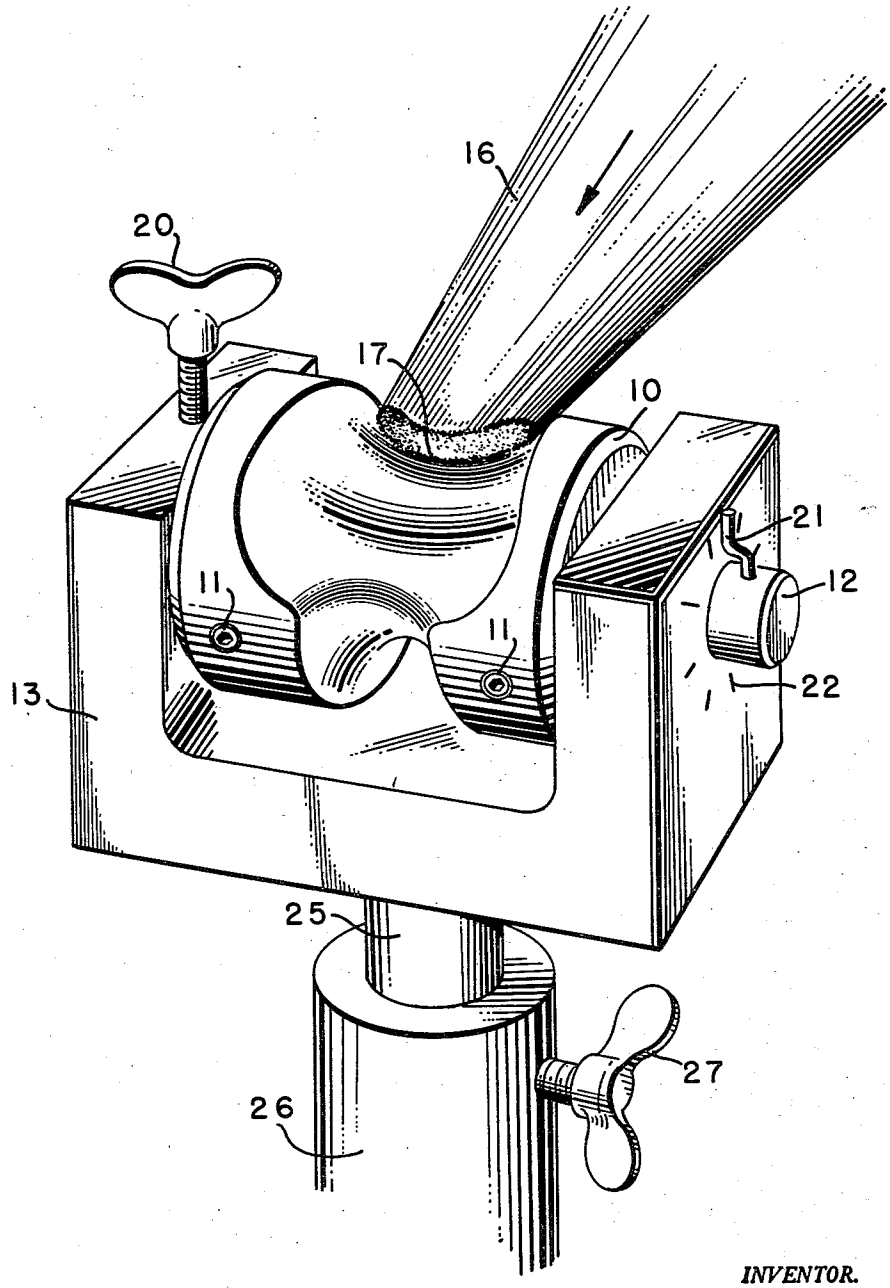
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TOW PROCESSING GUIDE

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1

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TOW PROCESSING GUIDE

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This invention relates to strand guides and more particularly to tow guides.

In the manufacture of chemical textiles it is always necessary to advance a bundle or ribbon of filaments, or tow, from one point to another. Since careful handling of the tow is essential to a marketable product, it is necessary to use the greatest care in the moving of a continuous tow from one point to another, the moving being accomplished by the use of rolls. Guides are used at frequent intervals along the path of the tow. The guides may be used to change the direction of the tow, confine the tow path or to change the cross-sectional configuration of the tow.

A considerable amount of effort has been expended in developing tow guides which achieve the desired result without disarranging the filaments or otherwise damaging the tow. However, most guides have not been completely satisfactory for one reason or another and effort is still being expended to produce completely satisfactory guides. With these problems in mind, one of the objects of this invention is to provide a novel and improved strand guide.

Another object of this invention is to provide a guide having a varying guide surface.

A further object of this invention is to provide a tow guide having a guide groove which varies in width.

A still further object of this invention is to provide a cylindrical tow guide having an arcuate guide groove of uniform depth and varying width.

One embodiment of the present invention contemplates an adjustably mounted tow guide having a cylindrical configuration and an arcuate guide groove of uniform depth and varying width. By rotating the guide, different portions of the groove can be presented to the tow to form the tow into a tight bundle or a larger, looser bundle.

Other objects and advantages of the invention will become apparent when the following detailed description is read in conjunction with the drawing, in which the single figure is a perspective view of the guide showing the varying configuration of the groove therein.

Referring now in detail to the drawing, a tow guide 10 is shown secured by screws 11 to a shaft 12 which is adjustably supported on a yoke 13. The guide 10, which is provided for converging a wide, flat ribbon or tow of filaments 16, has a cylindrical configuration with a guide groove 17 extending around the periphery thereof.

The groove 17 is arcuate in cross section and has a uniformly varying width and a constant depth as it extends around the guide 10. The flat tow 16 passes through the groove 17 at a tangent thereto, assumes an arcuate cross-sectional configuration and is converged by the arcuate surface or wall of the groove 17.

2

The guide 10 may be rotated to present any portion of the groove 17 to the tow 16, a set screw 20 being provided for engaging the shaft 12 to hold the guide 10 in its adjusted position. A pin or pointer 21 attached to one end of the shaft 12 is used to indicate the position of the guide 10 so that precise settings can be made, a scale 22 being provided on the yoke 13 adjacent to the pin 21.

For support of the yoke 13, a post 25 secured to the yoke extends downward into a sleeve 26 which may be supported in any desirable manner. A set screw 27 extends through the sleeve 26 and engages the post 25 to hold the yoke in its adjusted position.

In operation, the yoke 13 is positioned so that the axis of the guide 10 is perpendicular to the path of travel of the tow ribbon 16 and the guide is rotated until the desired portion of the guide groove 17 is presented to the tow, the tow path leading through the groove. The tow is then fed across the guide and is converged to the desired width. The cross section of the tow in the guide groove is that of an arcuate ribbon. As the tow leaves the guide it is passed over a cylindrical roll (not shown) which again flattens the tow, the width of the tow ribbon now being less than before it reached the guide. The width of the tow leaving the guide will depend upon the portion of the groove through which the tow or ribbon passes.

By rotating the guide 10 to different positions the tow ribbon can be converged to different widths. If it is desired to converge one side of the tow ribbon more or less than the other side, the yoke 13 can be turned so that the guide 10 is at some angle other than perpendicular to the tow path.

It is to be understood that the embodiment disclosed herein may be altered or modified and that numerous other embodiments may be contemplated without departing from the spirit and scope of the invention.

What is claimed is:

1. A tow guide, comprising support means, a cylindrical guide mounted on the support means and having in the periphery thereof a groove having a uniform depth, said groove having a uniformly varying arcuate cross section, said guide being adjustable in position to present different portions of said groove to a tow being advanced therepast.

2. A device for guiding a tow, comprising a support, a yoke adjustably mounted on the support, a cylindrical guide adjustably mounted on the yoke and having in the periphery thereof a groove having an arcuate cross section and a varying width for receiving and guiding a tow, said groove having a constant depth around the cylindrical guide, and means connected to the guide for indicating the position of said guide.

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