April 7, 1953 A. A. HUBER 2,634,066

GUIDE

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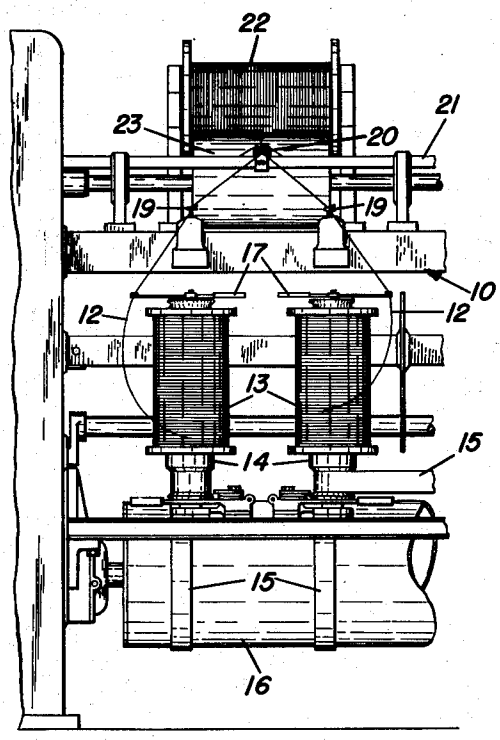


FIG. 1

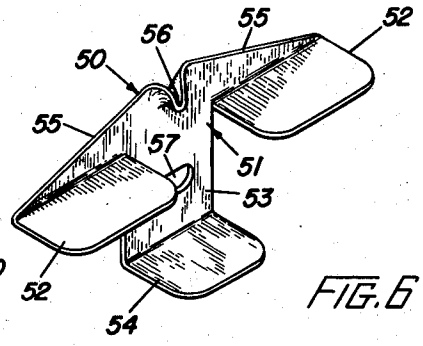


FIG. 6

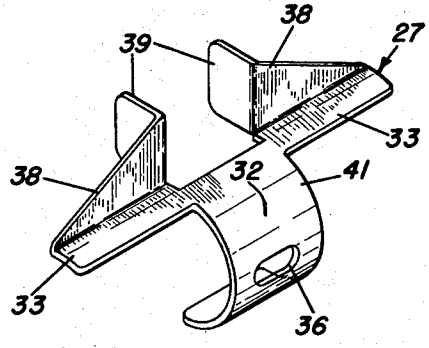


FIG. 4

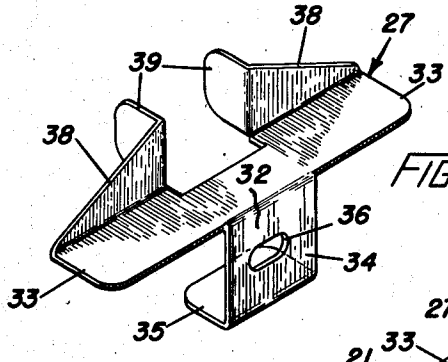


FIG. 3

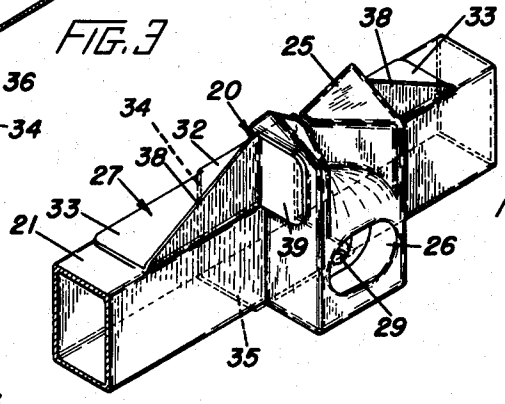


FIG. 2

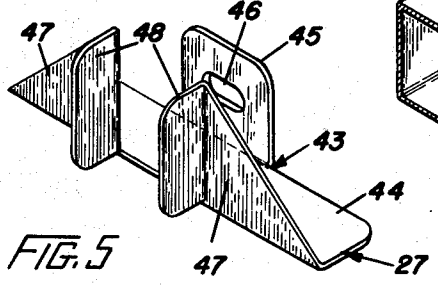


FIG. 5

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GUIDE

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2 Claims. (Cl. 242—157)

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This invention relates to guides and provides for a new and improved guide support as well as a new and improved guide.

The guides to which this invention relates are of the type employed generally in the winding of filamentary or strandular material such as, for example, various textile materials, threads, yarns, cords, wires, etc. For convenience in the further description of this invention, reference will be made to a textile apparatus such as a yarn winding and twisting machine, although it is understood that the invention is also applicable to other types of machinery where guides are employed.

In textile yarn winding and twisting apparatuses, a yarn or thread is pulled off a supply package and passed through a yarn guide which lays it on a take-up package. Guides employed in such winding and twisting apparatuses are usually made from relatively brittle and fragile materials, such as for example, porcelain, lava, etc. Consequently a great deal of care must be taken in mounting and securing them to the reciprocating traverse bar which is part of the winding and twisting apparatus. If the guides are tightened too excessively, the additional pressure may cause them to crack or break. Also, if the guides are not securely fastened to the traverse bar their proper functioning may be impaired.

An evenly wound package is formed by passing the yarn or thread through a securely mounted guide on the traverse bar. Since a traversing motion is employed to form the wound package, such a motion will impart a substantial tension to the yarn. Further, if the yarn is being twisted, an additional tension is placed on it because of the ballooning action as it leaves the supply package. Lateral motion of a traverse bar also tends to vary the tension in the yarn, the tension becoming greater as the guide is moved farther from a central or normal position above the yarn supply. Repeated lateral travel of the guide plus tensions resulting from the pull of the yarn, first from one direction then from an opposite direction will tend to loosen the guide. Should the guide be of a type incapable of withstanding such opposite and repeated pulling it will loosen, and its function will be destroyed, the result being a poorly wound package. Further, a loosening of the guide on such an apparatus is hastened because of vibration of the apparatus itself.

Yarn winding and twisting apparatuses are also employed to twist and wind heavier yarns or cords, such as tire cord, wrapping cord, etc.

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Because these yarns or cords are generally heavier than textile yarns, the tensions in them will be increased during the twisting and winding operations. The additional tensions thus encountered, coupled with the tension created by the motion of the guide and the traverse bar, places an added strain on the guide, which will more readily tend to loosen it, and consequently impair its function.

To overcome these and other difficulties encountered with the use of such guides, this invention advantageously provides for a yarn guide support which is adapted to substantially permanently position a yarn guide on a traverse bar. The construction of the guide support is simple; it is adapted to withstand torsional pull from any direction and it will resist loosening by vibration. The yarn guide supporting member is advantageously constructed to conform to the contour of a traverse bar. Its form is such so as to substantially embrace the traverse bar in a clasping manner making it substantially self-supporting. Where it is desirable to use a guide separate from the support, the guide can be securely positioned in a support having the aforesaid attributes.

This invention will be more fully described by reference to the accompanying drawing in which:

Figure 1 is an elevation of a section of a yarn winding and twisting apparatus in which the yarn guide support is employed;

Figure 2 is an isometric view of the yarn guide and its support;

Figure 3 is an isometric rear view of the yarn guide support of Figure 2;

Figure 4 is an isometric rear view of a modification of the yarn guide support;

Figure 5 is an isometric front view of another modification of the yarn guide support; and

Figure 6 is an isometric rear view of a yarn guide integrated in the yarn guide support.

In Figure 1 of the drawing, is shown a section of a yarn winding and twisting apparatus 10 employing at each winding and twisting position two parallel spindles 14 having mounted thereon supply packages or bobbins 13 carrying yarns 12 which are to be twisted. In order to produce rotation of the spindles 14 to form a twist in the yarn 12 as it leaves the supply package 13 the spindles 14 are driven by means of the driving drum 16 through a belt 15.

The yarns 12 are twisted as they are being pulled off the rotating supply packages 13 and passed through flyers 17 positioned above the

supply packages 13 on spindles 14. On leaving the flyers 17 the yarns 12 next pass through pigtail guides 19 and then are gathered by the traverse guide 20 which is mounted on the traverse bar 21. The traverse guide 20 thereafter lays the yarn in an orderly manner on a yarn collecting spool or bobbin 22 that is surface driven by the take-up roll 23.

Referring to Figure 2 of the drawing, there is shown a traverse guide 20 mounted on a substantially rectangular traverse bar 21. The traverse guide 20, as shown, incorporates a yarn guide 25 and a yarn guide support 27 mounted on the traverse bar 21 and it is secured to the bar 21 by the bolt 29. The support 27 is constructed so that it tends to embrace the periphery of the traverse bar 21 and substantially supports itself thereon. The elements 33, 34, and 35 of the body 32 of support 27 extend along and about the periphery of the traverse bar 21 to prevent lateral and circular displacement as well as displacement in a perpendicular plane to the traverse bar.

As shown, a substantially rectangularly constructed guide 25 is held by the support 27. The support 27 can be modified to provide a support for the guide 25 should it have a form other than that shown. In Figure 2, the guide 25 is held between a pair of spaced arms or projections 39 extending outwardly from the support. These arms are spaced slightly less than the width of the guide in order that a firm hold of the guide can be had. The arms 39 are supported at their sides by the tapering sections 38 attached to the laterally extending elements 33.

The guide 25 is additionally fixed in position by a bolt 29 extending through a slot 26 in the yarn guide 25, through the traverse bar 21, and then through a slot 36 in the yarn guide support 27. The guide 25 is thus, advantageously, held by the arms 39 at its upper portion and by the bolt 29 at its lower portion. The mounted guide 25 will thus resist displacement in any direction.

Figure 3 further illustrates the construction of the yarn guide of Figure 2 as seen from the back. The yarn guide support 27 comprises a main body 32 having laterally extending arms 33, an intermediate portion 34 and a lower extension 35. The support contour conforms to the shape of the traverse bar 21 so that the laterally extending arms 33 and lower portion 35 are adapted to embrace the traverse bar periphery in a clasping manner. The laterally extending arms 33 serve not only to prevent displacement of the guide support but also to carry the outwardly projecting guide aligning, supporting, and protecting members 38. An additional vertical support is provided for the guide by means of arms 39 projecting from members 38. Lateral adjustment for the guide support 27 is also provided by the elongated slot 36 in the intermediate portion 34.

Illustrated in Figure 4 is a further modification of the support 27 whose frictionally bearing portions 32 are arcuate to conform with the periphery of a round traverse bar. Advantageously the support extends at least 180 degrees or more about the periphery of the traverse bar to thereby enable the guide support to clasp the bar and substantially frictionally support itself thereon. In this modification of the support, the arcuate main body portion 32 comprises a laterally extending element 33 and an intermediate portion 41. Lateral adjustment of the yarn guide support 27 is provided by the elongated slot 36 in the periphery of the intermediate arcuate portion 41.

A further modification of the support 27, which can be mounted either from the bottom or the top of the traverse bar, is illustrated in Figure 5. The main body 43 comprises a laterally extending body portion 44, an upwardly extending portion 45, and a pair of upwardly extending guide aligning and embracing elements 47, having outwardly projecting therefrom guide clasping members 48. The form of the body 43 is such so that portion 45 and sections 47 substantially embrace the traverse bar 21 to frictionally support itself thereon. Lateral adjustment for the yarn guide support 27 is provided by the slot 46 in the portion 45.

Figure 6 shows another modification in which the yarn guide is integrated into the support and where such support is mounted on the front of the traverse bar. The yarn guiding element 56 is advantageously made of the same material as the support 50 and it is advantageously plated with a wear-resisting metal. The support 50 comprises a body portion 51 having a pair of laterally extending elements 52, an intermediate portion 53, and a lower portion 54. The upwardly extending element 55 of body portion 51 extends above the traverse bar so that a guide 56 can be formed therein. The guide 56 may be formed by bending and forming a portion of the top edge of the element 55 to a desired contour. Lateral alignment of the yarn guide and support 50 is obtained through slot 57 in the intermediate body portion 53.

Reference to yarn in the specification and claims is intended to include generally any filamentous or strandular material which is subjected to a winding operation or a winding and twisting operation. Although the foregoing description of the invention has reference to the use of a yarn guide support in connection with a yarn winding and twisting apparatus, the invention advantageously can be used in other types of winding apparatus. Further, it is to be understood that the yarn guide support may be modified in various ways without departing from the spirit of this invention.

What I claim is:

1. A unitary support adapted to be positioned on a mounting for supporting a guide, said support having; a body having an aperture and adapted to be secured to said mounting, arms laterally extending from said body and along said mounting, vertical reinforcing sections substantially co-extensive with said lateral arms, spaced clamping elements projecting from said vertical reinforcing sections, a guide having an aperture and adapted to be secured to said mounting, said guide being positioned between said spaced projecting clamping elements, said clamping element, holding and restraining said guide from lateral and pivotal movement, and means extending through said apertures securing said guide and said support to said mounting.

2. In a winding apparatus a combination comprising; a traverse bar having an aperture, a unitary support adapted to be positioned on a traverse bar for supporting a guide, said support having a body having an aperture and adapted to be secured to said traverse bar, arms laterally extending from said body and along said traverse bar, vertical reinforcing sections substantially co-extensive with said lateral arms, spaced clamping elements projecting from said

vertical reinforcing sections, a guide having an aperture and adapted to be secured to said traverse bar, said guide being positioned between said spaced projecting clamping elements, said clamping elements holding and restraining said guide from lateral and pivotal movement, and means extending through said apertures securing said guide and said support to said traverse bar.

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