July 4, 1939. M. DURAFFOURG 2,164,803

THREAD GUIDE AND ADAPTER THEREFOR

Filed May 26, 1938

Fig. 1

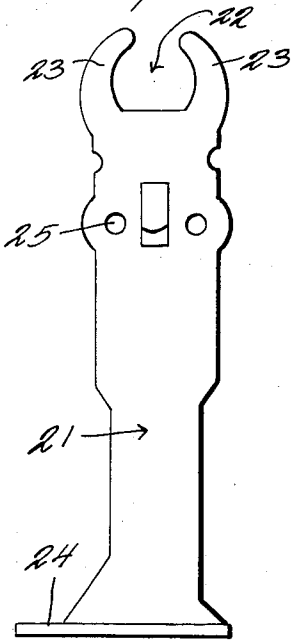


Fig. 2

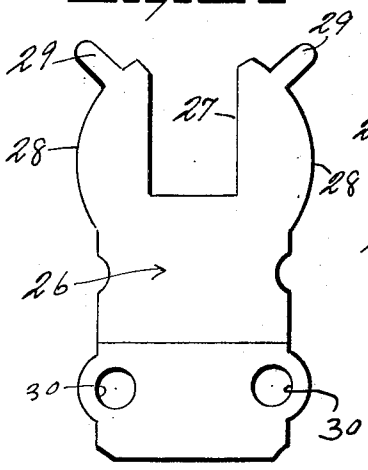


Fig. 4

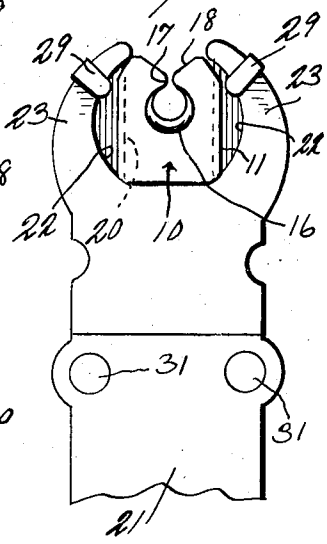


Fig. 5

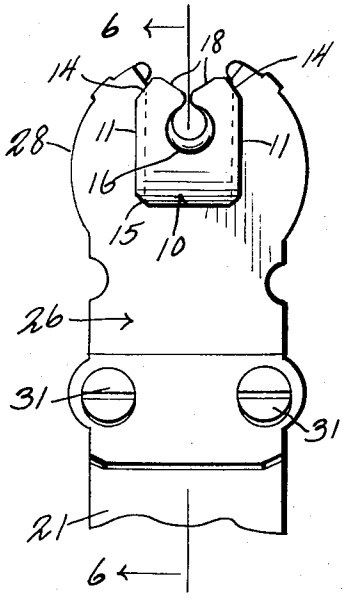


Fig. 6

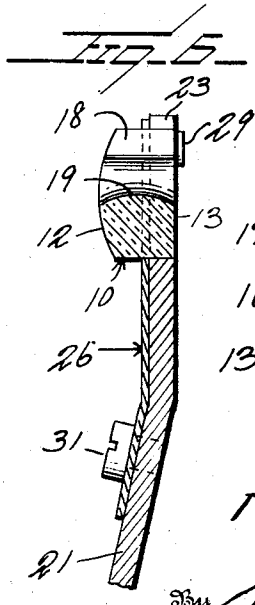
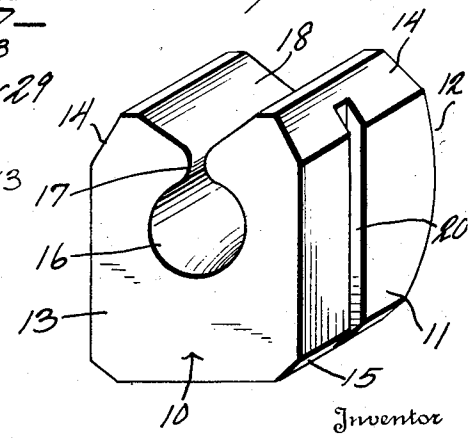


Fig. 3



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THREAD GUIDE AND ADAPTER THEREFOR

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Application May 26, 1938, Serial No. 210,280

3 Claims. (Cl. 242—157)

This invention relates to thread guides such as are used in textile machines as, for instance, on winding, knitting and weaving machines for the purpose of guiding the yarn or thread, and particularly to reciprocating thread guides such as are used on coning machines. These guides are ordinarily supported upon a guide holder having a standard "top" or terminal end, and one of the objects of the invention is to provide a guide of hard and highly polished material such as a synthetic precious stone and an adapter formed to engage grooves in the side faces of the thread guide and in turn formed so as to fit the jaws of the standard holder and be rigidly held in engagement with the upper or outer portion of the standard holder.

A further object is to provide the guide itself, which has a downwardly rounded front face, with a circular passage extending from front to rear of the guide, and a slot coextensive with the passage and opening thereinto, by which the yarn may be inserted in the passage, the passage having its lower portion convexly rounded from front to rear.

Other objects have to do with the details of construction and arrangement of parts, as will be more fully described hereinafter.

My invention is illustrated in the accompanying drawing wherein:

Fig. 1 is a front elevation of a conventional thread guide holder forming in itself no part of my invention.

Fig. 2 is an elevation of the adapter forming part of my invention.

Fig. 3 is a perspective view of the thread guide, of course, very greatly enlarged.

Fig. 4 is a rear elevation of the upper end of the holder showing my adapter and the thread guide in place thereon.

Fig. 5 is a front elevation of the adapter applied to the holder and showing the thread guide in place thereon.

Fig. 6 is a section on the line 6—6 of Fig. 5.

Referring to this drawing, 10 designates the thread guide itself, which is oblong in face view, has the flat and straight side faces 11, the downwardly curved front face 12 and the flat rear face 13. The lower end of the thread guide is flat and the upper lateral corners of the guide are beveled at 14, as are the lower lateral corners of the guide, as at 15. The upper end of the thread guide is formed with a passage 16 extending from front to rear of the guide and having a narrow entrance slot 17. The upper face of the guide is formed with downwardly and inwardly beveled portions 18 extending downward and inward to this throat or slot 17. The passage 16 is curved longitudinally on its bottom, as at 19 (see Fig. 6). The side faces 11 of the guide are formed with longitudinally extending grooves 20 which open at their ends upon the beveled portions 14 and 15.

The standard thread guide holder is designated generally 21 and, as illustrated in Fig. 1, is formed at its upper end with an aperture 22 defined by two arcuate jaws 23. The inner edge of the aperture 22 is transversely straight. The lower end of the holder is slightly angular and is provided with a foot 24. This thread guide is not ordinarily provided with the two apertures 25 but these apertures are used in connection with the adapter now to be described, which adapter is part of my invention. The adapter designated generally 26 is so formed that it may be placed against the face of the holder 21 and at its upper edge the adapter, which is formed of a thin plate or sheet of metal, is formed with the square slot or aperture 27. Each lateral edge of the adapter adjacent the upper end thereof is outwardly curved at 28, and this edge adjacent the upper end of the aperture 27 is formed with the radially extending tongues 29. Adjacent the lower end of the adapter, it is formed with the two openings 30 through which screws 31 pass into the screw-threaded apertures 25.

The rectangular opening 27 permits the thread guide 10 to be slipped into this opening from the open end thereof and the lateral edges or walls of the opening 27 will engage within the grooves 20. The adapter is placed in position against the front face of the holder 21 so that the rear face 13 of the thread guide is flush with the rear face of the holder 21, as shown in Fig. 6. The beveled ends 14 of the thread guide fit just within the tips of the jaws 23 while the bevels 15 conform to the curvature at the junction of these jaws 23 with the body of the holder, as shown in Fig. 5. When the adapter has been put in place against the face of the holder 21 with the thread guide extending through the opening 22 of the holder, then the tongues 29 are bent over the front faces of the jaws 23 and around on the underside of these jaws, thus the adapter is held firmly at four points on the holder and the screws 31 engage the adapter rigidly with the holder and affords a solid and fast hold of the adapter on the holder without any chance of the adapter becoming loosened through use or vibration. With the opening 16 of the thread guide formed as disclosed, the yarn cannot slip and stays in place at all times. Inasmuch as the rear face of the thread

guide is flush with the holder 21, there is no tendency to interfere with the yarn. Inasmuch as the thread guide itself has the two relatively long slots 20 in its lateral faces, it is rigidly engaged with the adapter and cannot vibrate or oscillate therein and the adapter as before stated, is rigidly engaged with the guide holder 21, so that it cannot move. Of course, it is to be understood that in the drawing, the thread guide has been illustrated very considerably enlarged. The thread guides should be made, as before stated, of very hard material, such as synthetic jewel.

It will be understood that in devices of this nature, the holder 21 moves from side to side horizontally and parallel to the cone upon which the yarn is being wound. In devices of this character, there is a stop means, however, that causes the holder 21 with its guide, when it reaches a certain point to the right, to stop and then move to the left and then again move to the right and so on, in other words, the holder is reciprocated. At the end of each of these strokes, there is of necessity a shock. When the shock occurs, the yarn is liable to slip out of the guide opening. The circular opening 16 illustrated in this application will not permit the yarn to slip off or out of the guide opening whereas this slipping of the yarn out of the guide opening will occur where this guide opening is not circular as illustrated in the present application. It will likewise be seen that this opening 16 is rounded transversely, as shown in Fig. 6, so that this form of opening or passage for the yarn conforms to the angle at which the yarn passes through the guide. Since the yarn is soft, the angle usually found in guides of the same general character as mine have often caused the yarn to break. Since the yarn reaches the guide opening 16 from a lower point and then travels horizontally to the cone modifying this angle modifies the tension placed upon the yarn. It is to be particularly noted that the rear face 13 of the thread guide 10 is flush with the rear face of the holder 21. As previously stated, the yarn reaches the rear face of the guide at an acute angle from a lower point and since the yarn is soft, there is always a tendency that some slack will exist. If there is a protrusion of the thread guide at the rear of the holder, this slack will very often catch on the protrusion and the yarn will break. This is entirely obviated with my construction.

What is claimed is:

1. As an article of manufacture, an adapter for supporting a thread guide in a holder, comprising a relatively thin metallic plate having a rectangular recess extending inward from its upper end and adapted to receive a thread guide, the plate having two screw receiving apertures adjacent its lower end and the plate at its upper end on each side of the rectangular opening having a flexible tongue extending from the edge thereof and adapted to be bent over around the jaws of a standard guide holder.

2. The combination of a thread guide for textile machines formed of a block of hard and highly polished material, the block being rectangular in form and having a thread guide passage extending from front to rear at its upper end, the side faces of the thread guide being formed with vertically extending grooves, and an adapter for supporting the thread guide upon a holder, comprising a plate of thin metal having a rectangular opening extending inward from its upper end, the opening having a width slightly less than the transverse width of the thread guide whereby the walls of said recess will enter the grooves in the guide, the adapter at its lower end having a plurality of screw receiving apertures whereby it may be attached to the standard thread guide holder, the upper end of the adapter on each side of the rectangular opening having a flexible tongue extending from the edge thereof and adapted to be bent around against the underfaces of the jaws of the standard thread guide holder, the thread guide itself having a width somewhat greater than the distance between the tips of said horns on the standard thread guide holder.

3. The combination with a thread guide holder having at its upper end opposed outwardly and then inwardly curved jaws defining an opening in the end of the holder, of a thread guide formed of a block of hard and highly polished material, the guide having a thread passage extending from front to rear and having its bottom convexly curved from front to rear, the side faces of the block vertically extending grooves and an adapter for retaining the guide upon the holder, comprising a thin metallic plate having a rectangular opening extending inward from the upper edge of the plate, the plate being adapted to lie against the front face of the upper end of the holder and over the jaws thereof with the thread guide disposed in the jaws of the opening of the holder, the plate being formed with screw receiving openings at its lower end and with flexible tongues extending from the upper end of the adapter on each side of the opening of the adapter, said tongues when the adapter is in place, being bent around said jaws, and screws passing through the openings in the adapter and into screw-threaded openings in the holder whereby to hold the adapter firmly in place against the front face of the holder, the thread guide being maintained by the adapter with the rear face of the thread guide flush with the rear face of the holder.

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