TUBED THREAD EMBODYING THREAD END RETAINER

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Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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The present invention relates to cotton, silk, nylon, yarn and similar thread wound upon a tube, and the manner of retaining such thread upon the tube when not in use.

Thread has been wound on wooden tubes with the end of the thread retained against the tube by forcing it into a notch in the tube. Such wood tubes are relatively bulky and heavy, and add considerably to shipping costs, particularly with large tubes used in various industries. In further tubes made of wood, threads have been wound on tubes made of suitable synthetic resin having a relatively thin wall. Although such tubes are light in weight, with attendant savings in shipping costs, the end of the thread wound thereon is not held by a suitable retainer. Instead, it is either tied in the middle of the tube or left loose. In either case, the operator has difficulty in finding the end of the thread. Moreover, when left loose, a separate jacket, which may be made of paper, is slipped over the tube thread to prevent unravelling.

An object of the invention is to provide an improved relatively light tube on which thread is wound having a retainer secured to the tube for holding the end of the thread, thereby preventing unravelling in the absence of a jacket, and rendering the end of the thread readily apparent to the operator.

Another object of the invention is to provide an improved relatively light tube on which thread is wound having a retainer fastened to the tube for holding the thread end between the tube and retainer, the end of the thread being easily removed from its caught position between the retainer and tube and easily replaced in such position whenever desired.

A further object of the invention is to provide a tube on which thread is wound having a retainer or thread end catch that is easily assembled on the tube and which holds itself in appropriate position on the tube, the thread end being easily released from the catch and replaced whenever desired.

This invention possesses many other advantages, and has other objects which may be made more clearly apparent from a consideration of a form in which it may be embodied. This form is shown in the drawings accompanying and forming part of the present specification. It will now be described in detail, for the purpose of illustrating the general principles of the invention; but it is to be understood that such detailed description is not to be taken in a limiting sense, since the scope of the invention is best defined by the appended claims.

Referring to the drawings:

FIG. 1 is an isometric projection of a tubed thread embodying a retainer or catch for the end portion of the thread;

FIG. 2 is an enlarged front elevational view of the lower portion of the device shown in FIG. 1;

FIG. 3 is an enlarged section taken along the line 3-3 on FIG. 2;

FIG. 4 is a section taken along the line 4-4 on FIG. 2.

As illustrated in the drawings, thread 10 of any desired type, such as cotton, silk, nylon or yarn, is wound on a cylindrical tube 11 having a comparatively thin wall, the wound thread usually running from the upper end of the tube to the lower portion of the tube. The tube 11 includes a hollow cylindrical portion 12, constituting the major part of its length, which is integral with a tapered flange or frusto-conical base 13 extending outwardly from its lower end. The outer portion of this flange or base 13 is integral with a depending cylindrical skirt or rim 14.

The thread 10 is wound upon the cylindrical portion 12 of the hollow tube, and the lower portion of the wound thread bears against the upper surface 15 of the frusto-conical base 13. The thread is prevented from unravelling by securing its end portion 16 between a retainer, catch or holder 17 and the flange or base portion 13 of the tube, and more particularly the cylindrical skirt or rim 14 thereof. As specifically disclosed, the retainer, catch or holder 17 consists of a split cotter pin, the shank or arm portions 18 of which are inserted through a generally radial hole 19 in the cylindrical skirt or rim 14, with the head portion 20 of the pin bearing against the inner surface 21 of the skirt or rim, and with the outer portions 22 of the shanks or arms bent in opposite directions away from one another and downwards to lie adjacent to the periphery 23 of the skirt or rim, there being a gap or space 24 between the outer portions and the rim periphery.

The outwardly bent portions 22 of the cotter pin arms coat with the head 20 to prevent removal of the retainer or catch 17 from the base 13 of the tube 11 in the position disclosed, with the outer arms 22 extending circumferentially along or around the rim periphery 23.

The end portion 16 of the thread 10 is retained in place merely by slipping it between one of the outer portions 22 of a shank or arm 18 and the periphery 23 of the rim, the thread end being clamped between the rim and outer arm portion.

By releasably attaching the thread end 16 between the tube 11 and its catch 17, the thread is prevented from unravelling, even in the absence of any jacket or other enclosure placed upon the wound thread, when the tube thread is not in use. When the thread 10 is to be used, it can be unwound from the tube very readily merely by grasping the thread end 16 and removing it from its clamped or held position between the outer portion 22 of the arm and the cylindrical skirt periphery 23. After its use ceases, the end of the thread need merely be reinserted by the operator between the outer arm portion 22 and the rim periphery 23. The catch or holder 17 is easily visible to the operator, as well as the end 16 of the thread which it retains in place. No time is wasted in removing the thread from its caught position between the retainer and the tube, nor is any time lost in replacing the end portion of the thread in such caught position.

The split cotter pin arrangement lends itself very readily to attachment to lightweight plastic tubes, which effects substantial savings in shipping charges, as well as effecting great savings in time for the operator in placing tubes on sewing apparatus and releasing the thread end 16 for use, replacing the thread end in its caught position, and removing the tubed thread from the sewing apparatus.

The inventor claims:

1. In a thread holder and thread end retainer: a hollow tube on which thread is adapted to be wound and having a lower hollow base portion; said base portion having a hole extending laterally between its exterior and interior; a retainer extending through said hole and having a head portion engageable with an inner peripheral surface of said base portion and an outer peripherally partially along and adjacent to the external periphery of said base portion and defining a space with said external periphery of said base portion into which the thread can be inserted and held in place.

2. In a thread holder and thread end retainer: a hollow tube on which thread is adapted to be wound and having a lower hollow base portion; said base portion having a hole extending laterally between its exterior and interior; a retainer extending through said hole and having a head portion engageable with an inner peripheral surface of said base portion, outer portions extending in
3. In a thread holder and thread end retainer: a hollow tube on which thread is adapted to be wound and having a lower hollow base portion; said base portion having a hole extending laterally between its exterior and interior; a split cotter pin having a head portion engageable with an inner peripheral surface of said base, inner shank portions integral with said head and extending through said hole, and an outer shank portion integral with one of said inner shank portions and extending circumferentially partially along and adjacent to the external periphery of said base portion and defining a space with the external periphery of said base portion into which the thread can be inserted and held in place.

4. In a thread holder and thread end retainer: a hollow tube comprising a generally cylindrical portion on which thread is adapted to be wound and a lower frustoconical base portion integral with said cylindrical portion and terminating in a lower generally cylindrical skirt; said skirt having a generally radial hole therethrough; a split cotter pin having a head portion engageable with an inner peripheral surface of said skirt, inner shank portions integral with said head and extending through said hole, and outer shank portions integral with said inner shank portions and extending in opposite directions away from each other circumferentially partially along and adjacent to the external periphery of said base portion, each of said outer shank portions defining a space with the external periphery of said base portion into which the thread can be inserted and held in place.

5. In a thread holder and thread end retainer: a hollow tube comprising a generally cylindrical portion on which thread is adapted to be wound and a lower frustoconical base portion integral with said cylindrical portion and terminating in a lower generally cylindrical skirt; said skirt having a generally radial hole therethrough; a split cotter pin having a head portion engageable with an inner peripheral surface of said skirt, inner shank portions integral with said head and extending through said hole, and outer shank portions integral with said inner shank portions and extending in opposite directions away from each other circumferentially partially along and adjacent to the external periphery of said skirt.