Oct. 6, 1936. L. J. P. BUNKER ET AL 2,056,342

THREAD SEVERING AND HOLDING DEVICE

Filed March 25, 1935

FIG. 1

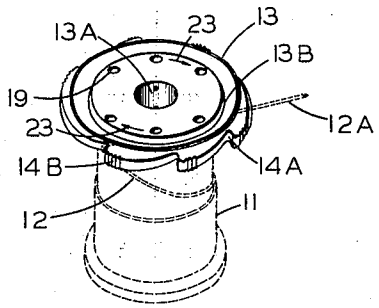


FIG. 2

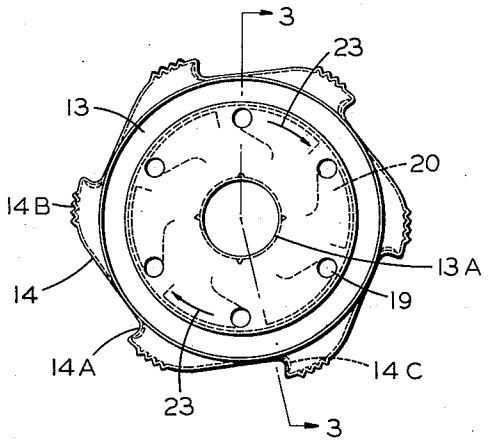


FIG. 3

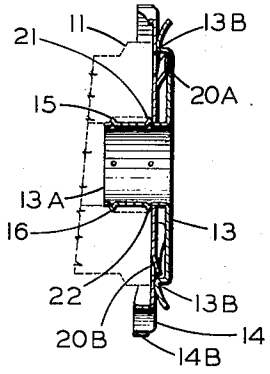
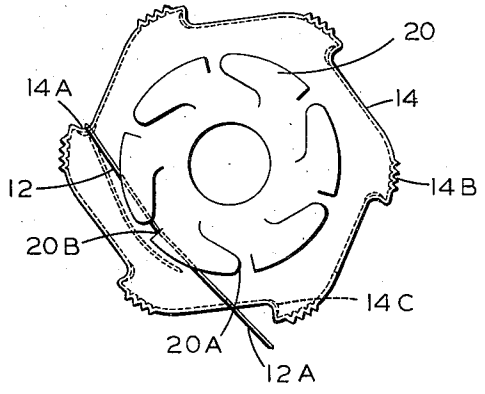


FIG. 4



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THREAD SEVERING AND HOLDING DEVICE

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12 Claims. (Cl. 242—126)

This invention relates to thread severing and holding means and more particularly to a portable device for mounting on a spool of sewing thread to sever the thread where desired and to hold the free end of thread from further unwinding.

An object of the invention is the provision of a thread severing device which will releasably retain a free end of thread in a protected position from accidental release by contact with other sewing equipment. Likewise the thread end is protected from fraying which would make subsequent threading of a needle very difficult.

A further object of the invention is to provide means for mechanically releasing the free end of thread when it is desirable to unwind more thread from the spool.

An object of the invention is to provide such a thread severing and holding device that does not interfere with the free unwinding of thread when the spool is used on a sewing machine.

A further object is the provision of a severing and holding means that is adapted to a wide range of sizes in spools which have an equal bore.

The invention provides means for severing and holding the thread that does not obscure the size, color and amount of thread on the spool.

Another object is to provide a severing and holding means for thread that prevents the spool from rolling freely when placed or accidently dropped on a flat surface.

The invention further provides a severing and holding device that can be easily and quickly changed from an empty spool to a full one.

Other objects and uses of the invention will be obvious from the following description and the accompanying drawing, wherein:

Fig. 1 is an isometric view of the invention as it appears when attached to a spool.

Fig. 2 is an enlarged plan view of the device.

Fig. 3 is an enlarged sectional view taken substantially on lines 3—3 of the Fig. 2.

Fig. 4 is an enlarged plan view of the severing and releasing disc as it appears when detached from the other portion of the device.

In a preferred form, as shown, the device comprises a pair of discs rotatably mounted with respect to each other and adapted for mounting on one end of a standard thread spool. One of the said discs is provided with thread severing means, and the two discs cooperate to resiliently retain the free end of thread between them, subject to freeing thereof by relative rotation of the disc.

Referring to the drawing in detail the device comprises a disc 13 having a sleeve 13A rigid therewith and adapted to enter and be retained rigidly within the bore of a standard spool 11, means such as extrusions 15 and 16 being employed to retain said sleeve against rotation in said bore. Rotatably mounted on sleeve 13A adjacent to disc 13 is a second disc 14, and one of said discs should be sufficiently resilient adjacent its peripheral portion to permit it to yield sufficiently to clamp the free end of thread between the discs.

A plurality of tongues 20 are formed from the stock of disc 14, as it is clearly shown in Figure 4. The points 20A are radially and angularly arranged to mate with holes 19 pierced in the cooperating disc 13. These tongues are adapted to function in cooperation with these holes as pawls and are formed considerably above the plane of disc 14 so that they may be depressed when disc 13 and disc 14 are assembled as shown in Figure 3.

The formation of tongues 20 is such that at the edge marked 20B the thread can not be drawn freely between the two planes of the metal and this junction of the tongue with the disc forms a sharp cutting edge adapted to sever the thread 12 when it is pulled into the position shown in Figure 4.

The extruded points such as 21 and 22 hold the disc 14 closely in contact with a formed rim 13B of disc 13. It should be understood that the position of disc 14 on the sleeve 13A is such that tongues 20 are all slightly deflected to insure their engagement in holes 19 and that a gentle resilient pressure is exerted between rim 13B and the disc 14.

One method of utilizing the invention on a spool of thread is as follows: The device is connected to one end of the spool with the thread winding in clockwise direction as viewed in Figure 1. With the end of thread 12A held in the right hand and the first finger and thumb of the left hand slightly pressed into the hole at the top and bottom of the spool, any desired portion of the thread can be very conveniently unwound. By holding the spool more firmly to prevent further turning, and shifting the right hand to grasp the thread near the spool it is a simple operation to loop the thread around any one of the plurality of hooks 14A and draw it between disc 13 and the disc 14 until the knife edge 20B severs the thread. The portion thus cut off may then be pulled from between the rim 13B and the disc 14.

In forming hooks such as 14A the stock is rolled as indicated in the Figures 2 and 4 by the two

sets of dotted lines at 14C to present a smooth and rounded surface which will not cut the thread. The free end of the thread still connected to the spool is held by the gripping action of the rim 13B and the disc 14, and in this condition the spool can be placed with the other sewing equipment without the objectionable menace of the thread unwinding and tangling.

When it is desirable to unwind more thread, the free end may be released by holding the spool firmly in one hand, with the other hand gripping the disc 14 at any of the knurled surfaces such as 14B and then turning it clockwise for a short distance as indicated by arrows 23.

Since the device is assembled on the spool with the thread winding in the same direction that the disc 14 is permitted to turn it is evident that the hook 14A attempts to rewind the thread onto the spool, with the result that the free end is pulled from the yieldable grip of the rim 13B and the disc 14.

When the spool to which the invention is attached is empty of thread the device can be removed by a pulling action exerted in a longitudinal direction and then connected to a new spool.

When not holding the thread the invention in no way interferes with the free and normal turning of the spool, whether the thread is used for hand sewing or on a sewing machine.

During the releasing operation the pawl points 20A are all depressed as the disc 14 is rotated and they are again allowed to snap into the holes 19 when a predetermined portion of a revolution has been made. The pawl action prevents the disc 14 from being turned counter-clockwise when the thread is looped around any one of the hooks 14A and drawn into a knife for severing. It is obvious that the number of knives and hooks can be slightly increased or decreased without any marked difference in the operation of the device, nevertheless, it is preferable to use six hooks and six knives with approximately the same angular relationship between them as shown in the drawing.

The distance between any hook 14A and its corresponding knife 20B is slightly less than the distance advanced by the hooks relative to the spool during one sixth of a revolution of the disc 14, therefore, the thread end is pulled free of the disc 14 and rim 13B during the releasing operation.

By using no more than six hooks on disc 14 ample space is provided for a practical length of tongues 20 and the hooks 14A are far enough apart to prevent the spool to which the invention is attached from rolling freely when placed or accidentally dropped on a flat surface. A further advantage of having no less than six sets of hooks and knives resides in the fact that one set is always conveniently available for severing and retaining the thread when the spool is positioned in the operator's hand.

It is evident that one hole 19 in disc 13 would serve a plurality of pawl points and likewise a single pawl point would function dependably with a plurality of holes, but as an article of manufacture the operation is smoother and more dependable when the invention is constructed as disclosed in the drawing.

It is within the scope of this invention to construct a metal spool with a structure similar to the one heretofore disclosed forming a permanent part of one end thereof. It is also possible to form a rim such as 13B on the movable disc located next to the spool and likewise arrange the formation of tongues and knives in the stationary disc such as 13. This construction lacks the advantages of the embodiment disclosed in the drawing and previously described inasmuch as little flat surface would be available in the outside disc for embossing or printing of advertising matter thereon.

Although a specific embodiment of the invention has been shown and described herein, it will be apparent that many modifications and other applications thereof are possible, and the invention, therefore, is not to be restricted except in so far as is necessitated by the prior art and by the scope of the appended claims.

We claim:

1. A device of the class described, comprising a spool, a fixed member connected thereto and a member movable with respect to said fixed member and cooperating therewith to retain and shield a free end of thread from said spool, and means associated with said movable member to release the free end of thread from said retaining means upon movement of said movable member.

2. A device of the class described, comprising a spool, a fixed member connected thereto and a member movable with respect to said fixed member and cooperating therewith to retain and shield a free end of thread from said spool, and means associated with said movable member to release the free end of thread from said retaining means and withdraw it from said shielding means upon movement of said movable member.

3. In a spool attachment, a fixed member having means associated therewith for attaching said member to a spool and a member movable with respect to said fixed member and cooperating therewith to retain and shield a free end of thread from said spool, and means associated with said movable member to release the free end of thread from said retaining means upon movement of said movable members.

4. In a spool attachment, a fixed member having means associated therewith for attaching said member to a spool and a member movable with respect to said fixed member and cooperating therewith to retain and shield a free end of thread from said spool, and means associated with said movable member to release the free end of thread from said retaining means and withdraw it from said shielding means upon movement of said movable member.

5. A device of the class described, comprising a spool, a fixed member connected thereto and a member movable with respect to said fixed member and cooperating therewith to retain and shield a free end of thread from said spool, means associated with one of the members to sever the thread when it is drawn into the retaining means and drawn against the severing means, and means associated with said movable member to release the free end of thread from said retaining means upon movement of said movable member.

6. A device of the class described, comprising a spool, a fixed member connected thereto and a member movable with respect to said fixed member and cooperating therewith to retain and shield a free end of thread from said spool, means associated with one of the members to sever the thread when it is drawn into the retaining means and drawn against the severing means, and means associated with the said movable member to release the free end of thread from said retaining means and withdraw it from said shield-

ing means upon movement of said movable member.

7. In a spool attachment, a fixed member having means associated therewith for attaching said member to a spool and a member movable with respect to said fixed member and cooperating therewith to retain and shield a free end of thread from said spool, means associated with one of the members to sever the thread when it is drawn into the retaining means and drawn against the severing means, and means associated with said movable member to release the free end of thread from said retaining means upon movement of said movable member.

8. In a spool attachment, a fixed member having means associated therewith for attaching said member to a spool and a member movable with respect to said fixed member and cooperating therewith to retain and shield a free end of thread from said spool, means associated with one of the members to sever the thread when it is drawn into the retaining means and drawn against the severing means, and means associated with said movable member to release the free end of thread from said retaining means and withdraw it from said shielding means upon movement of said movable member.

9. A device of the class described, comprising a disc having means associated therewith for attaching said disc to a spool and a member movable with respect to said disc and frictionally held against a portion thereof to retain and shield a free end of thread from said spool, means associated with the movable member for severing the thread as it is drawn into the retaining means and drawn against the severing means, and means associated with said movable member to release the free end of thread from said retaining means upon rotation of said movable member.

10. A device of the class described, comprising a disc having means associated therewith for attaching said disc to a spool and a member movable with respect to said disc and frictionally held against a portion thereof to retain and shield a free end of thread from said spool, means associated with the movable member for severing the thread as it is drawn into the retaining means and drawn against the severing means, and means associated with said movable member to release the free end of thread from said retaining means and withdraw it from said shielding means upon rotation of said movable member.

11. A device of the class described, comprising a disc with a central sleeve adapted to frictionally engage within one end of the bore of a spool and a member movable with respect to said disc and frictionally held against a portion thereof to retain and shield a free end of thread from said spool, means associated with the movable member for severing the thread as it is drawn into the retaining means and drawn against the severing means, and means associated with said movable member to release the free end of thread from said retaining means and withdraw it from said shielding means upon rotation of said movable member.

12. In a spool attachment, a disc comprising a central sleeve adapted to frictionally engage within one end of the bore of a spool and a rim formation in the disc disposed in the direction of the sleeve, a member movable with respect to said disc and frictionally held against the rim portion thereof to retain and shield a free end of thread from said spool, means associated with the movable member for severing the thread as it is drawn into the retaining means and drawn against the severing means, and means associated with said movable member to release the free end of thread from said retaining means and withdraw it from said shielding means upon rotation of said movable member.

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