

[54] **THREAD DISPENSING BOBBIN**

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206/52 SW, 59 A; 225/66, 79

[56] **References Cited**

UNITED STATES PATENTS

2,478,255	8/1949	Drow	242/137.1
2,479,710	8/1949	Arnold	242/137.1
2,798,681	7/1957	Beverino	242/137.1

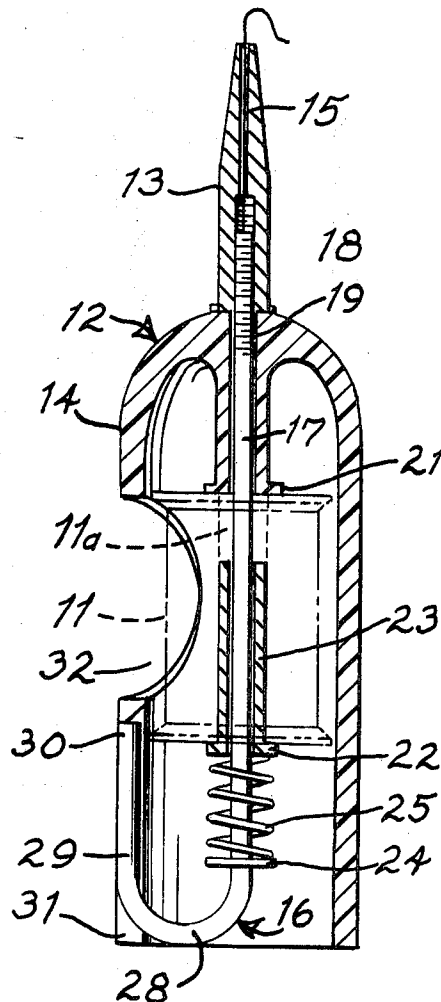
3,344,790	10/1967	Dorner	242/129.8 X
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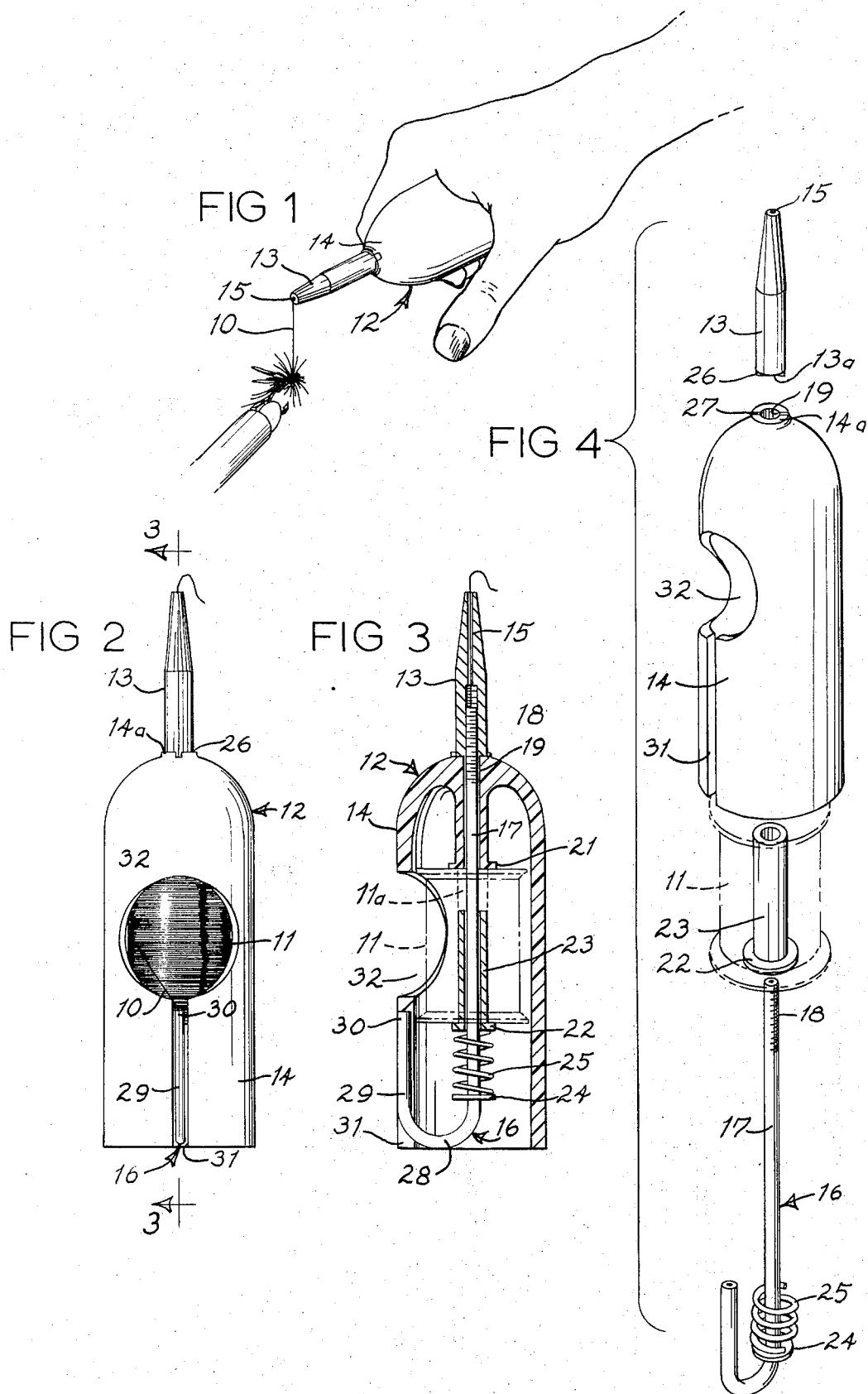
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[57] **ABSTRACT**

A bobbin for manually dispensing thread from a spool rotatably held within an elongated housing. Thread is guided from the spool, through a spool support and out through a thread dispensing tip. Tension is imparted to the thread as it is dispensed through the tip by a compression spring which exerts a constant axial force against the spool. Compression of the spring and tension of the thread is adjustable by turning the tip about its axis with respect to the spool support.

7 Claims, 4 Drawing Figures





THREAD DISPENSING BOBBIN

BACKGROUND OF THE INVENTION

The present invention relates broadly to the field of thread dispensing apparatus and more particularly to bobbins for manually dispensing thread such as that used for fly tying for fishing purposes.

Existing bobbins utilized for fly tying often present some problem during operation since uneven thread tension and excessive bobbin weight often results in breaking of the thread. It is therefore desirable to obtain a thread dispensing bobbin that is relatively lightweight and includes means for dispensing thread at a constant even tension. It is also desirable to obtain such a bobbin that includes means for adjusting the tension without requiring additional tools such as screwdrivers or pliers.

These problems are realized to some degree by the Beverino U.S. Pat. No. 2,798,681 which discloses a hand-operated thread dispensing device utilized specifically for tying flies. The device includes a hyperboloidal-shaped thread tensioning member disposed within a housing between a dispensing nozzle and the thread spool. The thread is extended from the spool, wrapped around the tensioning member, and extended on out through the nozzle. Tension is adjusted by winding the thread about the tensioning member. This device is rather complex in nature.

Another U.S. Pat. granted to Drow, No. 2,478,255 comprises a conical-shaped fly tier which removes thread from a spool and dispenses it through a nozzle at the end of the cone. Tension of the thread is adjusted by means of a screw that may be set with a screwdriver to exert axial force against the spool, thereby increasing its resistance to rotational movement about its spool axis. Although the Drow fly tier is somewhat simpler in construction than the Beverino device, it requires the use of a screwdriver to adjust the tension of the thread.

An additional prior patent granted to Arnold, U.S. Pat. No. 2,479,710 discloses a fly-tying bobbin for dispensing thread from a bobbin transversely aligned with respect to a thread dispensing bore. The bobbin or spool is designed with a head portion having an annular groove for receiving a spring-biased ball. The ball is urged radially against the groove to impose resistance to turning of the bobbin. The resistance may be adjusted by a set screw. The specially designed spool of the Arnold device necessitates transfer of thread thereto from conventional spools.

The apparatus of the present invention includes an elongated thread dispensing tip removably mounted to a hollow housing in which a conventional thread spool is mounted to a hollow thread supporting member. Tension of the thread is adjusted by selectively rotating the elongated thread dispensing tip relative to the support member. Rotation of the thread dispensing tip requires no special tools and is easily accomplished by hand. Thread is evenly distributed from the bobbin under constant tension by means of a compression spring which exerts an axial force against the spool.

SUMMARY OF THE INVENTION

A bobbin is described for manually dispensing thread from a spool having a center longitudinal bore. The bobbin comprises an elongated thread dispensing tip

mounted to one end of a hollow housing having a central cavity formed along a longitudinal axis. The tip includes a longitudinal passage extending therethrough. A tubular spool support member is releasably engaged within the bore and extends therefrom through the housing to mount the spool coaxially within the cavity for rotational movement about the spool axis. Frictional drag means is included along the spool support member for engaging the spool to impart a frictional drag to the spool about its axis. Adjusting means is also included that is responsive to rotation of the tip about its axis relative to the support member for selectively controlling the amount of spool drag imparted by the frictional drag means. The tubular spool support member receives thread from the spool and guides it to the thread dispensing tip.

A first object is to provide such a bobbin that will effectively prevent undesired thread breakage by dispensing thread under constant, even tension.

Another object of my invention is to provide a thread dispensing bobbin that is simple in construction and inexpensive to manufacture.

An additional object is to provide such a bobbin that is lightweight and therefore easy to handle.

A further object is to provide such a bobbin that includes means for adjusting the thread tension manually.

An additional object is to provide a bobbin that requires relatively little time to load.

These and further objects and advantages will become evident upon reading the following description with reference to the attached drawings.

A BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a pictorial operational view of the thread dispensing bobbin;

FIG. 2 is an elevational side view of the bobbin;

FIG. 3 is an elevational sectioned view taken along line 3—3 in FIG. 2; and

FIG. 4 is a pictorial exploded view of the bobbin.

DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT

Referring now to the drawings in greater detail, the thread dispensing bobbin may be seen generally indicated by the reference numeral 12. Bobbin 12 is utilized to dispense thread 10 from a spool 11 as shown in FIGS. 3 and 4 in phantom lines. Such spools 11 are often identical to spools commonly utilized for carrying thread for garment construction purposes. The spool includes a wooden or plastic core with a central longitudinal bore 11a extending therethrough along a longitudinal axis.

Bobbin 12 includes an elongated tip 13 extending from one end of an elongated housing 14 having a central cavity formed along a longitudinal axis. The tip 13 includes a passage 15 extending along its length. Passage 15 is aligned with a complementary aperture 19 within the housing 14 which loosely receives a section of a spool support member 16.

The spool support member is J-shaped in configuration and includes a longitudinal tubular section 17 lying along the cavity axis that includes a threaded end 18 extending through the aperture 19 within the housing to threadably engage a complementary threaded portion of the tip 13. The threaded portions of the tip 13 and the support member 16 comprise in part a fric-

tional drag adjusting means utilized to facilitate adjustment of thread tension and will be discussed in greater detail below.

The support member 16 is utilized to support the spool 11 for rotational movement about the spool axis coaxial to the cavity axis. The tubular section 17 extends through the central bore 11a of the spool. The spool is supported by member 16 in the cavity within the housing with one end against an abutment shoulder 21 (FIG. 3), formed as an integral portion of the housing. A second movable abutment shoulder 22 is provided on a spool mounting bushing 23 which slidably fits over the longitudinal tubular section 17 of support member 16. The movable abutment shoulder 22 is biased against the other end of the spool 11 by means of a compression spring 25 sandwiched between the shoulder 22 and a flange 24 rigidly fixed to the longitudinal section 17. Abutment shoulders 21, 22 along with the coil spring 25 and flange 24 define a frictional drag means which serves to exert an axial force against the spool to impart a frictional drag or resistance of the spool to rotation about the spool axis. The coil spring and the abutment shoulders provide a constant frictional force against the spool.

The longitudinal section 17 extending downwardly from the threaded end 18 of tip 13 to the flange 24 is included in the frictional drag adjusting means that operates in response to rotation of the tip relative to the support member to adjust the compression of spring 25. As may be understood from FIG. 3, rotation of the tip 13 with respect to the support member 16 would cause the support member to move longitudinally with respect to the tip, toward or away from the dispensing end of the tip. Such movement would tend to either compress or relax the compression spring 25 against the lower end of the spool 11 and thereby increase or decrease the frictional drag of the spool.

The frictional drag adjusting means includes means for enabling selective locking of the adjusting means to prevent rotational movement of the thread dispensing tip 13 relative to the spool support 16. Two downwardly protruding lugs 26 on an abutment surface 13a are formed at the inner end of the tip 13, and complementary notches 27 are formed within a complementary surface 14a formed on housing 14. The normal operational condition of the bobbin is shown in FIGS. 1, 2 and 3 with the lugs 26 seated within the notches 27 and surfaces 13a and 14a abutting one another. To release the tip 11 for rotation with respect to the spool support members 16, the operator simply pulls axially outwardly on the tip against the compression of spring 25 to disengage the lugs 26 from notches 27. The tip 13 is then free to rotate relative to the support member 16.

The support member includes a lower curved portion 28 extending radially outward from the longitudinal section 17 to a second longitudinal tubular section 29. The second section 29 extends upwardly to a thread receiving end 30 partially overlapping the spool 11. Second section 29 is held within an open slot 31 (FIG. 2) formed in the housing 14 to prevent rotation of the support member relative to the housing.

As shown in FIG. 2, the thread 10 is extended from the spool 11 to the thread receiving end 30 of the support member 16. The thread is directed downwardly through the second longitudinal tubular section 29 and curved portion 28, then upwardly through the longitu-

dinal section 17 and out through the passage 15 of tip 13.

The slot 31 in housing 14 extends downwardly from a transverse opening 32 within the housing which provides finger access to the spool 11 for further manual thread tensioning adjustments by finger pressure on the spool. As shown in FIG. 2, the end 30 of the spool support member 16 is positioned so that the thread leading from the spool must extend diagonally across at least a portion of the aperture 32. This further facilitates the manual adjustment of tension by finger pressure as described above.

The operation of the present invention may now be easily understood. To load the bobbin, the tip 13 is lifted slightly away from the housing 14 to disengage the lugs 26 from notches 27. The tip may then be unscrewed from the spool support member 16. This frees the support member 16 to slide longitudinally out of the aperture 19 within the housing. Once the spool support member 16 has been removed, a full spool of thread may be placed over the collar 23. It is advisable for proper fly tying that the loose end of the thread be positioned on the left side of the spool 11 as shown in FIG. 2. The loaded support 16 may then be inserted into the housing with the loose end of the thread extending through the aperture 32. The tip 13 may then be threaded onto the end 18 of the support 16.

The thread is then inserted through the end 30 of the support 16 and drawn through the remaining portion of the support 16 and tip 13. This may be accomplished by means of suction directed through the tip 13 or by extending a loop of fine thread or wire through the tip, down through the tubular support member and out the end 30. The loose end of the thread is then extended through the loop to be drawn back through the support and tip. The bobbin is then ready for use.

The thread tension or frictional drag may be adjusted, depending on the intended use for the bobbin, by pulling the tip 13 away from the housing 14 and turning it with respect to the support 16 to selectively adjust the compression of the spring 25 against the spool 11. Further instantaneous adjustment of the thread tension may be accomplished by radial finger pressure directly against the spool through the aperture 32.

It may become obvious from the foregoing description and the attached drawings that various changes and modifications may be made therein without departure from the intended scope of this invention. It is therefore intended that only the following claims define this invention.

What I claim is:

1. A bobbin for manually dispensing thread comprising:
 - an elongated hollow housing having a central cavity formed along a longitudinal axis;
 - an elongated thread dispensing tip protruding outwardly from one longitudinal end of the hollow housing having an open passage extending through its length;
 - a cylindrical spool of thread having a central longitudinal bore;
 - a tubular spool support member including a longitudinal tubular section aligned coaxially along the longitudinal axis; and mounting the spool for rotation about the longitudinal axis;

a first open end of the spool support member in open communication with the passage, said first open end of the tubular spool support member being releasably engaged with the tip within the passage and extending therefrom through an aperture, formed through the one longitudinal end of the housing, coaxially into the cavity;

a remaining end of the spool support member being open to receive thread from the spool and to direct it through the length of the tubular spool support member to the passage within the tip;

frictional drag means operatively connected between the housing, the spool support, and the spool, said frictional drag means being arranged along the longitudinal section of the spool support member and yieldably engaging opposite ends of the spool, urging the first end of the spool support longitudinally inward toward the cavity and for imparting a frictional drag to the spool; and

an abutment formed on the thread dispensing tip engageable with a complementary surface on the housing to limit inward movement relative to the cavity of the tip and spool support member engaged therewith.

2. The thread dispensing bobbin defined in claim 1 further comprising frictional drag adjusting means operatively connected between the thread dispensing tip and the spool support member facilitating selective longitudinal adjustment of the support member relative to the tip.

3. The thread dispensing bobbin defined in claim 2 wherein the frictional drag adjusting means comprises screw threads formed along the first end threadably engageable within a complementary threaded recess formed within the tip adjacent the abutment and aligned with the passage.

4. The thread dispensing bobbin defined in claim 3 wherein the frictional drag adjusting means further

comprises a lug formed on the tip and extending from the abutment inwardly toward the cavity engageable within a complementary notch formed within the complementary surface on the housing; and

5 means operatively connecting the housing and the spool support member for preventing rotation of the spool support member about the longitudinal axis relative to the housing.

5. The thread dispensing bobbin defined in claim 4 wherein the last named means comprises a radially outward curved portion of the tubular spool support member leading to a second longitudinal section laterally spaced from and extending longitudinally therefrom to the remaining end of the spool support member overlapping the spool; and

15 a complementary longitudinal slot formed within the housing for receiving the second longitudinal section to thereby prevent rotation of the spool support member about the longitudinal axis with respect to the housing.

6. The thread dispensing bobbin defined in claim 2 wherein the frictional drag means comprises abutment shoulders positioned along the longitudinal tubular section within the cavity at the ends of the spool with one shoulder being freely movable along the longitudinal tubular section and the other being held stationary relative to the housing; and a compression spring operatively connected between the movable abutment shoulder and the housing to urge the shoulders axially

30 against the ends of the spool.

7. The thread dispensing bobbin defined in claim 6 wherein the frictional drag means further includes a radially projecting flange fixed to the longitudinal tubular section sandwiching the compression spring between it and the movable shoulder whereby the spring is compressed or relaxed against the spool in response to operation of the frictional drag adjusting means.

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