

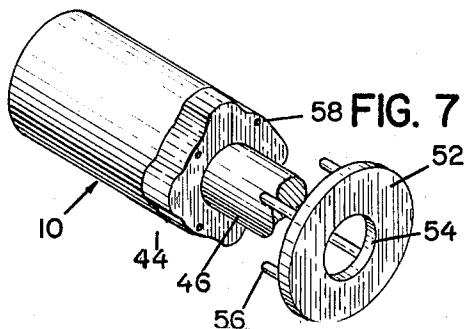
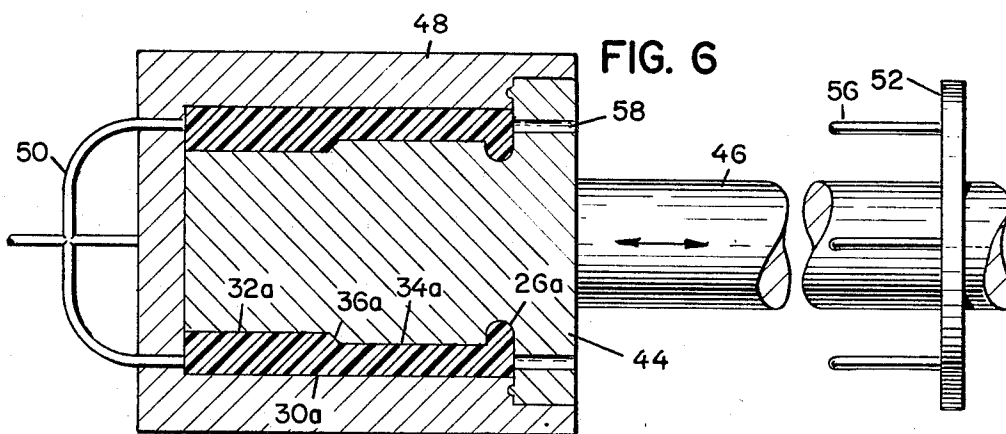
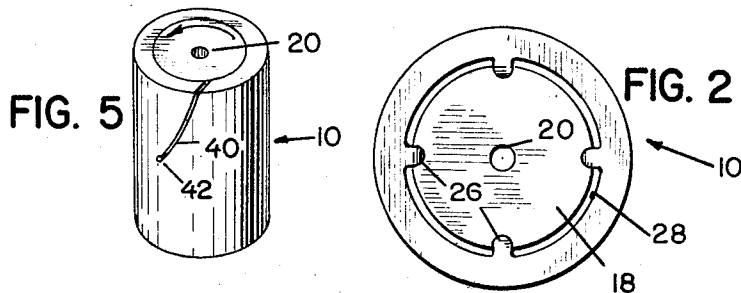
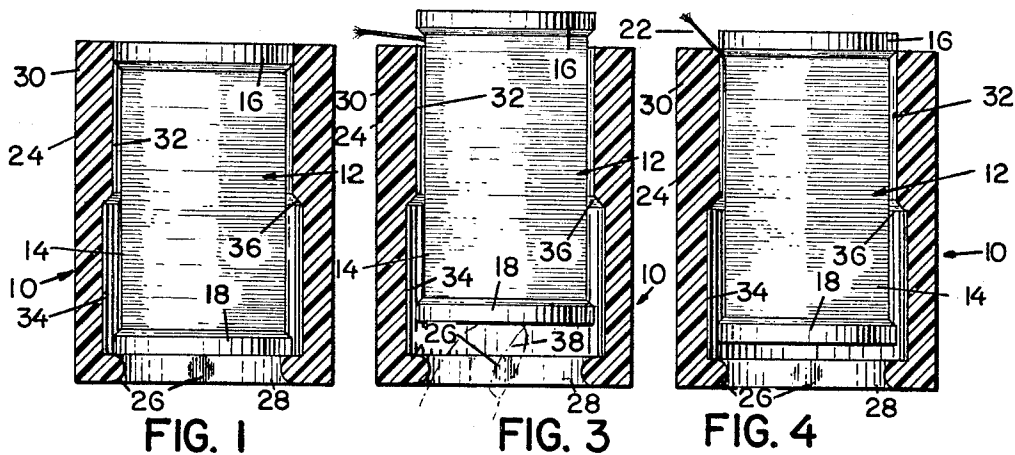
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L. B. ROSEN

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PROTECTIVE CONTAINER FOR SPOOLS OF THREAD

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INVENTOR.
Leonard B. Rosen
BY *Jacobi & Davidson*
ATTORNEYS

1

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PROTECTIVE CONTAINER FOR SPOOLS OF THREAD

Leonard B. Rosen, R.D. 2, Jamestown, Pa.

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This invention relates to a protective container for spools of thread and more particularly it relates to a protective container which permits thread dispensing without complete removal of the spool from the container.

Although spools of thread are common items of commerce, one customarily thinks of a spool of thread as being limited to a wooden spool having textile thread coiled thereon. While my invention is basically directed to such spools of thread, it is not limited thereto, and as used herein, the term "thread" is intended to comprehend textile thread, string, cord, rope, wire, yarn, and various other forms of filamentary material. Similarly, the term "spool" is not necessarily limited to a wooden spool, but can refer to a metal spool, a plastic spool, or a spool fabricated of any other suitable material, so long as such a spool takes the structural form hereinafter described.

One of the principal problems which has been encountered in the past with conventional spools of thread is that of dirt and soilage. This problem can occur in multiple ways. For instance, in handling spools of thread during packing or shipment thereof, it is possible for dirt to be rubbed off onto the thread coiled on the spool. Another area where this problem arises is in displaying the thread in commercial outlets, as for instance, in variety stores. In such stores, the spools of thread are generally displayed on an open counter where they are often handled by the sales personnel and by prospective customers. Also, if the spools of thread remain on such a counter for any length of time, dust, tends to collect thereon.

Finally, even after such spools of thread have been purchased by the ultimate user, there is still the problem of continued dirt and spoilage. A housewife will purchase such a spool of thread and will generally utilize only a small amount thereof at one time. After such use is completed, the housewife will put the spool away in some storage area, usually not completely closed, and in such a storage area there is again the likelihood that dust dirt can collect upon the unused portion of the thread on the spool. If, on the other hand, the spool is purchased for use on a sewing machine, and the thread on such a spool is only partially used during a sewing operation, it is often the practice to leave the spool with the remaining thread thereon, mounted on the bobbin of the sewing machine. In such an instance, there is a tendency for dust and dirt to accumulate thereon.

Any accumulation of dust and dirt on the thread, which can occur in any of the foregoing ways, naturally tends to produce an unsightly and unattractive appearance. Moreover, and of equal importance, the dust and dirt may tend to discolor the thread itself. Since such dust and dirt can accumulate only on the exterior windings of the thread, the inner or interior windings of the thread remain clean and retain their original color and appearance. It will thus be appreciated that, when the thread is used in a sewing operation, the color and appearance of such thread will gradually change as the soiled exterior thread is used up and the clean interior windings of thread are dispensed from the spool. Naturally, any article sewn with such thread will tend to have an unattractive appearance, since the color and appearance of the thread used to sew such an article will gradually change.

2

Another consideration in the use of conventional spools of thread is the manner of severing the thread and the manner of retaining the remaining thread in a neatly wound condition upon the spool. For many years, manufacturers have provided a small notch in the end of the wooden spool upon which the thread is wound, and when it is desired to sever a length of thread, such thread can merely be inserted into the notch and torn. While this is satisfactory in some instances, particularly with manual sewing operations, it is all together unsatisfactory when the spool of thread is mounted upon the bobbin of the sewing machine. With such an arrangement, the thread is merely severed at or near the needle, and thus an end hangs freely from the spool of thread. This free dangling end of thread often becomes tangled, knotted, frayed, or otherwise unusable, and when it is desired to resume a sewing operation, it is necessary to sever this entire free end and dispose of it as scrap. This, of course, is wasteful and serves to increase the costs of a manufacturing operation with such thread. It has also been discovered that, in use, repeated severing operations in the conventional notch at the end of the wooden spool, often cause the wood to break at the notch, and in such an instance, the notch can no longer be used for severing purposes. If this occurs, there is again the likelihood that a free end of thread will remain dangling from the spool after a piece has been severed.

In an effort to overcome some of these difficulties encountered in severing thread from a spool, there have in the past been numerous proposals to utilize auxiliary cutters, hooks, buttons, and other similar attachments which could be mounted to the spool of thread, but naturally, such devices have never reached any appreciable level of commercial success. The reason for this lack of commercial success will be obvious when it is realized that a spool of thread is an extremely inexpensive item, and any attachment or auxiliary device utilized with such a spool of thread, must likewise be extremely inexpensive, so as not to materially affect the sales price of the thread.

It might also be pointed out herein that there has in the past been a recognition of the fact that thread tends to accumulate dirt and dust during storage and display, and various attempts have been made to overcome this problem. For the most part, however, such attempts took the form of providing a container in which the thread could be housed, but from which the thread could not be conveniently dispensed. Those few containers which did have some small opening for dispensing of the thread, did not permit a rewinding of the thread about the spool, once a length of thread had been severed therefrom. At the present time, the only commercial form of package in which spools of thread are protected is the so-called "blister pack." In such a blister pack, a series of spools of thread are located on the face of a cardboard sheet, and a plastic layer is vacuum formed over the top of such spools and is adhered about its edges to the cardboard sheet. While a blister pack of this type does satisfactorily protect the thread while the same is being displayed in a store, such a pack must be destroyed or torn open to enable removal of the thread, and the thread cannot be used while remaining housed within the blister pack. Additionally, due to the expense involved in manufacturing such blister pack, it is only commercially feasible to use such pack to form a display containing several spools of thread. It would be wholly impractical and commercially unacceptable to use such a blister pack to house a single spool of thread.

With the foregoing matter firmly in mind, it is, therefore, an object of the present invention to overcome the

3

difficulties and deficiencies associated with prior art forms of thread dispensing and protecting devices.

Another object of the present invention is to provide a protective enclosure for a spool of thread, with such an enclosure permitting dispensing of thread from the spool while the spool is disposed within the enclosure.

Another object of the present invention is to provide a package formed of a spool of thread and a specially designed protective housing therefor.

Further objects of the present invention include the provision of a protective enclosure for a spool of thread, wherein the enclosure: (a) maintains a spool of thread therein in a neatly wound condition; (b) cooperates with a portion of the spool of thread to effect a severing of a pre-selected length of thread; (c) is extremely inexpensive to produce, yet is rugged and durable in operation; (d) permits a spool of thread disposed therein to be mounted upon a sewing machine for an automatic sewing operation; and (e) permits visual observation of a spool of thread disposed therein to determine the color and character of such thread.

Still further objects of the present invention include the provision of a package formed of a spool of thread and a protective housing within which such a spool is disposed, said package: (a) being readily manipulable to permit selective dispensing of the thread from the spool; (b) having a novel co-acting and cooperating relationship between the spool and the housing to aid in the severing of the thread and to prevent undesired unwinding of such thread; (c) having a neat and attractive appearance which enables the same to be readily utilized in an advertising display; (d) providing an improved manner of selectively re-winding thread onto the spool, when an excess thereof has been dispensed; (e) enabling a spool to be removed from the housing when the thread on such a spool has been exhausted, and permitting ready insertion of a new spool of thread; and, (f) being equally adaptable for use on an automatic sewing machine or in a manual sewing operation.

Still a further object of the present invention is to provide an improved method for efficiently and economically manufacturing a protective housing for a spool of thread.

Other objects, advantages and salient features of the present invention will become apparent from the following detailed description, which, taken in connection with the annexed drawings, discloses a preferred embodiment thereof.

The foregoing objects are attained by providing a container, preferably formed of a flexible and transparent material, designed to accommodate a particular spool of thread. The container has a generally upstanding side wall which defines therewithin, an internal cavity or chamber into which the spool of thread may be introduced. At the bottom end of the container, a small inwardly projecting flange or series of projections is provided to act as a support for the base of the spool of thread. As is conventional, the spool of thread is provided with a body portion upon which the thread is coiled and with a pair of flanged or radially enlarged ends. The body walls of the container are provided, adjacent the bottom thereof, with an enlarged portion, the radial dimensions of which exceed the radial dimensions of the lower flanged end of the spool. In this manner, when the spool is introduced into the container, its lower end is free from contact with the side walls of the container due to its being disposed within this enlarged container portion. At the upper end of the container, the body walls are dimensioned to frictionally engage the upper flanged end of the spool. The length of the body walls is essentially equal to the length of the spool, whereby, when the spool is introduced into the container and the lower end of the spool rests upon the bottom wall of the container, the upper edge of the spool is essentially flush with the upper edge of the container.

An opening is provided in the base or bottom portion of the container to permit insertion of a user's finger, or

4

alternatively, to permit insertion of a raised portion on a sewing machine surrounding such a sewing machine spindle. It will, of course, be understood that when the spool is fully housed within the container, the frictional engagement between the upper end of the container and the upper end of the spool, prevent the thread from unwinding or from being dispensed. When it is desired to commence a thread dispensing operation, a finger may be inserted through the bottom of the container to exert an upward pressure which serves to push the spool upward, thus lifting the upper flanged end of the spool out of the container and thus out of frictional engagement therewith. Even if the user's finger is then removed to release the spool, such a spool will not fully re-enter the container without a positive downward pressure being applied to the spool to force the top of the spool back into its frictional engagement with the container. Thus, before such downward pressure is applied, the thread can be dispensed merely by pulling the free end thereof. Since the upper end of the spool is out of frictional engagement with the container, and the lower end of the spool is still disposed within its free zone and thus is also out of frictional engagement with the container, the spool can rotate freely while the thread is being dispensed to thus aid in the dispensing operation. When a dispensing operation has been completed, application of downward pressure will push the spool fully back into the container and the top edge of such a spool will again be in frictional engagement with the top end of the container. At this point, the thread will extend out of the container between the top end of the spool and the frictionally engaging wall of the container. If an excess length of thread is present, such thread may be severed merely by holding the container and pulling on the thread. Such pulling will cause the thread to break at the top of the spool, but a very small free end of the thread will still project above the spool. Thus, when it is desired to repeat a dispensing operation, a free end of the thread will be readily accessible as soon as upward pressure is applied to the spool.

Referring to the drawings:

FIGURE 1 is a sectional view of a container and spool assembly in accordance with the principles of the present invention;

FIGURE 2 is a bottom plan view of the assembly of FIGURE 1;

FIGURE 3 is a sectional view, similar to FIGURE 1, but showing the spool being moved out of engagement with its surrounding container;

FIGURE 4 is a sectional view, similar to FIGURE 1, but showing the spool after it has been released from its movement out of the container, and before it has been positively inserted back into the container;

FIGURE 5 is a perspective view of a modified form of container;

FIGURE 6 is a sectional view showing a manner of manufacturing the container illustrated in FIGURE 1; and

FIGURE 7 is a perspective view of the apparatus of FIGURE 6.

In general, and in accordance with the principles of the present invention, there is provided an assembly or combination of a tubular container generally designated 10 and a spool of thread generally designated 12.

The spool of thread 12 includes a spool member having a generally cylindrical side or body wall 14 which terminates in respective upper and lower ends 16 and 18. The ends 16 and 18 are also generally circular or cylindrical in configuration, but are radially enlarged to thus have a greater radial dimension than does the body wall 14. Such ends may also be referred to as flanged ends since they, in effect, serve as flanges at opposite ends of the spool which project beyond the body of the spool itself. As is conventional, the spool 12 is provided with a central axial bore which extends completely through the spool. Such a bore is identified by the reference numeral 20 and can be seen in FIGURES 2 and 5.

5

An elongated length of thread 22 is wound about the body wall 14 of the spool in a conventional manner. Such thread is coiled in a generally convolute manner upon the spool between its ends 16 and 18, and multiple layers of such thread, one wound upon the other, are provided to thus assure that the maximum amount of thread may be coiled upon a single spool.

The container or housing 10 is formed of a tubular cylindrical container. As such, it is provided with an upstanding body wall 24 which circumscribes and defines a chamber or cavity into which the spool 12 may be placed. At the lower end of the container 10, a bottom or base wall means projects radially inwardly from the side wall 24, and this bottom or base wall means serves as a support surface for the lower end 18 of the spool. As illustrated, the bottom or base wall means includes a series of spaced projections 26 which extend inwardly, as can best be seen in FIGURE 2. It will, however, be understood that as an alternative construction, the base wall may be formed as a continuous circular flange. Insofar as providing a suitable support surface, it does not matter whether the base or bottom wall is formed in a continuous or discontinuous manner, but it is believed that the discontinuous form of bottom wall, as illustrated, is more satisfactory from a production viewpoint since it utilizes less material and lends itself more readily to mass production techniques.

The bottom wall means 26, whether continuous or discontinuous, serves to circumscribe and define a bottom opening 28 which is suitably large enough to enable insertion of a user's finger, in a manner to presently be described.

The body wall 24 of the container 10 is formed in a stepped manner, as shown, to thus provide two separate and distinct, though interconnected, portions within the container. Although it is not critical, it is preferred that the exterior surface of the body wall 24 be smooth and continuous to thus provide a streamlined and attractive appearance. For ease of illustration, the exterior of the body wall is identified in the drawings by the reference numeral 30. By providing such a smooth exterior surface, the stepped portion of the container is thus provided on the interior of the body wall 24. At the upper end of the container 10, the interior of the body wall is identified by the reference numeral 32. This inner wall 32 is radially dimensioned to be no larger than, and possibly very slightly smaller than, the radial dimensions of the upper end 16 of the spool. This dimensioning is a critical aspect of the present invention, since it assures that the container wall 32 will be in frictional engagement with the enlarged upper end 16 on the spool, when the spool is inserted within the container.

At a location beneath the interior wall 32 of the container body wall, there is a radially outwardly stepped or enlarged portion formed by an inner wall 34. This wall 34 circumscribes and defines a portion within the container which has a radial dimension exceeding that of the bottom end 18 on the spool. This also is a critical aspect of the invention, since it assures that, when the spool is inserted within the container in the manner shown in FIGURE 1, the bottom end 18 of the spool is free from frictional engagement with the wall 34 on the container.

Since the inner wall portions 32 and 34 are stepped from one another, due to their differing radial dimensions, there is a resulting small interconnecting wall portion 36 which connects the bottom of the inner wall 32 with the top of the inner wall 34. This interconnecting wall 36 is preferably formed as an upwardly extending bevel or angled wall to thus facilitate removal of the spool 12 from the container 10, when the same is desired. Such a construction is preferred for ease of manipulation of the parts, but it should be appreciated that the bevel of the wall portion 36 is not critical, and, if necessary or desirable, the wall portion 36 may be merely a radially extending wall or shoulder.

6

It is preferable that the container 10 be fabricated from a synthetic resinous material, as, for instance, a polyolefin. Such a material would not only be chemically inert, but would have a certain amount of flexibility and resiliency which would aid in insertion and removal of the spool 12 and would further assure a positive frictional engagement between the wall portion 32 and the spool end 16. It is also preferable that the material from which the container 10 is fabricated be transparent in order to permit visual observation of the character and color of the thread once the spool has been inserted into the container. One material which meets all the foregoing requirements and which is relatively inexpensive as well, is polyethylene. A suitable type and grade of polyethylene may be selected for fabricating the container 10, with the particular type and grade selected being determined by the fabrication and manufacturing method and technique employed.

Once the container 10 has been suitably manufactured, and takes the form shown in the accompanying drawings, a spool 12 may be assembled with such a container by being inserted thereto. Such an assembly is accomplished by downward pressure applied to the end 16 of the spool, and such a pressure is applied until the spool is fully disposed within the container 10. At this point, the bottom end 18 of the spool will rest upon and abut against the bottom or base wall 26 of the container 10. The height of the container body wall 24 is essentially equivalent to the height of the spool 12, and thus the upper edge of the container is essentially flush with the upper surface of the spool. When the spool and container have been assembled in such a manner, it will be noted from an observation of FIGURE 1 that the lower end 18 of the spool is free from contact with the container body walls. This freedom from contact is due to the fact that, as aforesaid, the radial dimensions of the body wall portion 34 are in excess of those of the spool lower end 18. It will also be observed by reference to FIGURE 1 that the upper end 16 of the spool is in contiguous frictional engagement with the body wall portion 32 of the container. Such frictional engagement assures that the spool 12 cannot inadvertently fall from the container, even if the same is inverted, and it further assures that the thread 22 cannot be readily dispensed from the spool 12. When the container and spool are assembled in this manner, they provide a neat and compact package which is suitable for use in commercial displays, vending machines, or other similar environments. It will, of course, be appreciated that when the spool 12 is so coupled with the container 10, the thread 22 on the spool is protected from dust, dirt, soilage due to handling, or any other form of deterioration. If the container 10 is fabricated of a transparent material, as is preferred, a prospective purchaser can determine the color of the thread of the spool and can even, if desired, pick up and handle the package without causing any damage to the thread itself.

When it is desired to dispense thread from the spool, as is required once the package has been purchased by the ultimate consumer, the spool 12 is partially disengaged from the container 10 in the manner shown in FIGURE 3. This partial disassembly can be accomplished in numerous ways, but the most obvious way, and that way illustrated in FIGURE 3, is by insertion of the user's finger through the opening 28 in the bottom of the container. In FIGURE 3, the user's finger is shown in dashed lines and is identified as 38, and it will be seen that such a finger is pushing upwardly on the bottom end 18 of the spool 12, to thus push the upper end 16 out of frictional engagement with the body wall portion 32. Such a manual separation can, of course, be conveniently accomplished if the thread is being manually utilized. If, however, it is desired to use the thread on a sewing machine, the entire package may be placed over an upstanding spindle on the machine with such a spindle

projecting through the central bore 20 in the spool. If the package is so disposed on a sewing machine, it is not necessary to remove the same merely to accomplish the separation shown in FIGURE 3, instead, such separation can be accomplished by downward pressure on the container 10. Since on the conventional sewing machine, there is a small raised portion surrounding the base of the spindle, such a small raised portion would enter through the bottom opening 28 as the container 10 was pushed downwardly, and would serve to accomplish the same form of separation shown being accomplished manually in FIGURE 3.

It is not necessary for the user to keep the finger 38 pressing against the bottom of the spool 12 once the separation of FIGURE 3 has been accomplished. Instead, the finger can be completely removed and the spool will then assume the position shown in FIGURE 4. It will be noted that at such position, the top end 16 on the spool has not re-entered the container 10, but is instead, resting freely upon the upper edge thereof. At the same time, it will be noted that the lower end 18 of the container is still disposed within the free zone at the bottom of the container and is still free from frictional contact with the body walls of the container. Thus, when the spool is at this position, it is entirely free to rotation without frictional drag from the container 10. At such a position, the thread 22 can be dispensed from the spool merely by grasping the free end of such thread and by pulling thereon, either manually or by automatic operation of a sewing machine. As such thread is pulled, the spool will rotate freely to thus aid in the feeding or dispensing of the thread off the spool body wall 14.

Once a sufficient length of thread has been dispensed from the spool and it is desired to sever such thread from the remainder of the thread coiled on the spool, the spool is pushed downward to re-enter the container as shown in FIGURE 1. Such a downward push causes the upper end 16 on the spool to re-enter into frictional engagement with the wall portion 32 of the container. Naturally, when the spool is so pushed downwardly, the unwound length of thread will be trapped between the edge of the spool end 16 and the container body wall 32. To prevent a free tail of thread from hanging or dangling outside the package, the free end of the thread may be severed merely by manually pulling on the same. Such manual pulling will cause the thread to break immediately above the interface between the spool end 16 and the container body wall portion 32, and such a breaking will leave a very small tail or end of thread extending outside the package, in the manner shown in FIGURE 1. Thus, when it is desired to again commence a dispensing operation, and the spool is pushed upward as shown in FIGURE 3, this small free end or tail of thread will be available for the user's grasp.

It is also possible using an assembly of this type to rewind an excess length of dispensed thread back onto the spool, in order to save such thread and reduce the amount of scrap thread which must be thrown away. Such rewinding can be accomplished while the spool and container are assembled in the relationship shown in FIGURE 4; that is, before the spool has been fully nested back into the container. Since, in the position of FIGURE 4, the spool is free to rotate, the excess dispensed thread can be rewound back onto the body wall 14 of the spool merely by grasping the container 10 and rotating the spool relatively thereto. Such relative rotation effects a winding of the thread. Then, before the thread is completely rewound back onto the spool, the spool is pushed fully back into the container to leave a small end extending above the container in the manner previously described. The purpose for not completely rewinding the thread back onto the spool and for leaving a small end of thread trapped between the container body wall portion 32 and the spool end 16, is to prevent accidental unwinding of the thread between dispensing operations.

With the free end of the thread being trapped between the frictionally engaging spool and container surfaces, it is impossible for any of the thread on the body wall 14 of the spool to unwind, and hence the thread is always maintained in a neat, wound condition.

If reference is now made to FIGURE 5, a slightly modified form of container shown in FIGURE 5, a slit 40 is provided, with such a slit terminating in a small transverse hole 42. The provision of the slit 40 is helpful in some instances, since spools in general, and particularly the conventional wooden spools, do not necessarily maintain uniform dimensional tolerances. For example, in any particular spool, the radial dimensions of the bottom end 18 and the top end 16 may be slightly different. Due to these differing dimensional tolerances, there is sometimes a problem in inserting and removing the spool from the container, particularly if the container is fabricated of a rigid, non-flexible material, as, for example, a polystyrene. The slit can be very narrow and the walls of the slit can be maintained normally in close abutting relationship to one another; however, when the spool 12 is inserted into the container 10, the walls of the slit may enlarge, if necessary, to permit such insertion. For example, the slit can expand slightly in order to permit entry of the bottom end 18 on the spool and will remain expanded until such bottom end enters its free zone within the body wall 34 of the container. At this time, the walls of the slit can again close to thus assure the requisite frictional fit between the container wall 32 and the top end 16 on the spool.

It is, of course, important to assure that the thread 22 will not catch in the slit 40 as such thread is being dispensed from the spool, and to assure that this will not occur, the slit 40 is angularly formed in the container body wall 24. That is, as shown in FIGURE 5, instead of the slit being cut radially through the container body wall 24, such a slit is cut angularly therethrough. Thus, when the spool is inserted into the container in an orientation so that thread will dispense from the spool in the direction shown by the arrow in FIGURE 5, there is no chance whatsoever for such thread to catch with the edges of the slit 40. A small transverse hole 42 is provided at the bottom end of the slit 40 to allow the requisite expansion of the slit, when necessary, and also to serve as an outlet for dispensing the thread, if desired. To feed the thread into the slit, the thread can be fed opposite to its unwinding direction or alternatively, the side of the container may be squeezed to open the slit. When the squeezing pressure is released, the slit will close to maintain the thread within the hole 42.

Attention can now be directed to one suitable method for fabricating a container 10 of the type previously described. If attention is directed to FIGURE 6, there is shown therein a portion of a conventional injecting molding apparatus wherein the container may be molded. Such a molding apparatus includes a plunger 44 having an external configuration corresponding to the internal configuration of the container 10. As such, the plunger 44 has a wall portion 32a which corresponds to the container wall portion 32, a wall portion 34a which corresponds to the container wall portion 34, and so on, respectively. The plunger 44 is mounted upon the end of an elongated rod 46 which can be actuated by any suitable means to reciprocate the plunger in a manner to be presently described. The plunger 44 is designed to fit within a mold 48 having an internal wall configuration 30a corresponding to the external wall configuration of the container 10. When the plunger is reciprocated to its extended condition, as shown in FIGURE 6, the end of the plunger abuts against the end of the mold, and in the space between the exterior of the plunger and the interior wall of the mold 48, a cavity is formed, with the shape of such a cavity corresponding identically to the shape of the container 10.

A manifold inlet means 50 is attached to the forward end of the mold 48 to inject, at a proper time in a molding sequence, the molten plastic material from which the container 10 is to be fabricated. Such molten plastic material is injected under pressure to fill the cavity between the plunger 44 and the mold 48 and thus to form the container 10. After such a container has been formed, it is necessary to strip the container from the plunger 44 in order to permit another forming operation to commence. An improved method of accomplishing such a stripping operation is provided by the present invention.

As will be noted from FIGURES 6 and 7, a ring member 52 is spaced rearwardly from the mold 48, and such a ring member is provided with a central aperture 54 through which the plunger rod 46 can operate. A series of forwardly extending ejection pins 54 are mounted on the front face of the member 52 in a properly spaced disposition. It will be recalled from the discussion hereinabove, that the preferred form of bottom wall means 26 includes a series of inwardly extending projections. Such projections tend to temporarily lock the mold container onto the plunger 44, and the ejection pins 56 serve to accomplish the desired unlocking to strip the container from the plunger.

As shown in FIGURE 7, the rear end of the plunger is provided with a series of openings or apertures 58, circularly disposed about the plunger, and designed to coincide with the bottom end of the container body wall 24. As the plunger 44 is retracted due to rearward movement of the rod 46, it moves toward the ring member 52 which is mounted in a stationary manner. As such rearward plunger movement continues, the pins 56 will enter the apertures 58 which are specifically designed to align with such pins. Further rearward movement of the plunger will cause the pins to engage the bottom of the container side wall 24 between alternate projections 26. Thus, further rearward movement of the container 10 will be prevented by the presence of the ejection pins 56, and as the plunger 44 continues its rearward movement, the relative movement between the plunger and the container serves to strip the latter from the former. During such a stripping operation, the projections 26 are forced out of their forming cavities in the plunger, but due to the inherent resiliency of the material of the container 10, such projections will immediately resume their proper position.

It should be appreciated from the foregoing material that the present invention provides a unique concept in the packaging of thread. Such a concept provides a protective container which houses the thread, yet the thread can be dispensed without fully removing the spool from the container itself. The assembly of the spool and the container may be formed at the factory, and the entire assembly may be shipped, displayed, sold and utilized without ever fully removing the spool from the container. Such an assembly thus assures that the thread wound upon the spool will always be protected and will thus not be subject to deterioration or spoilage from dirt, dust, or repeated handling. As a further point, it will be noted that there is a unique and novel co-action between the container and the spool itself. Such co-action prevents the thread from unwinding from the spool, except when a thread dispensing operation is specifically desired. Similarly, the spool cannot inadvertently be separated from the container, even during rough handling or accidental dropping. Finally, the unique cooperation between the spool and the container enables an excess amount of thread to be accurately severed from the thread remaining upon the spool.

As a final point it will be appreciated that the container of the present invention may be suitably adhered or otherwise attached to a backing strip formed of a suitable material such as paper, plastic or the like. Such a backing strip may be provided with a suitable hanging means

to enable the container and thread assembly to be suitably hung in an advertising display, and is particularly adapted for merchandising in a chain store or variety store counter display. When an assembly is purchased by an ultimate consumer, the thread may be dispensed from the container while the container remains attached to the backing strip, and such dispensed thread may be used in a hand sewing operation. When a sufficient quantity of thread has been dispensed, it may be severed from the remaining thread through the use of a cutter suitably attached to the backing strip itself. The remaining thread in the assembly can be rewound and can be stored with the backing strip to thus provide a neat and orderly sewing kit package. If it is desired to use the thread on a sewing machine, the entire spool of thread may be removed from its container, or alternatively, the entire container and thread assembly can be removed from the backing strip for use on the sewing machine in the manner previously described.

It will thus be seen that the present invention provides a container and spool assembly which smartly displays and uniquely merchandises the thread to be used. In addition, such an assembly serves to protect the thread, to satisfactorily contain and store the thread and to protect, dispense, sever and rewind the thread.

After reading the foregoing detailed description, it should be apparent that the objects set forth at the outset of the specification have been successfully achieved. Accordingly, what is claimed is:

1. A thread dispensing package comprising, in combination; a spool with thread coiled thereon; and, a protective housing surrounding said spool; said spool having radially enlarged upper and lower end portions; said housing having a top margin and a bottom margin; said bottom margin including at least a partially radially inwardly extending portion which serves as a support upon which the lower end of said spool rests; said housing having a radially enlarged portion adjacent said bottom margin with the radial dimension of said portion exceeding that of said spool lower end portion whereby said spool lower end portion is disposed freely within said radially enlarged housing portion; said housing having a portion adjacent said top margin in frictional engagement with said spool enlarged upper end portion.
2. A thread dispensing package as defined in claim 1 wherein said housing radially inwardly extending portion defines an opening which permits digital insertion to push said spool upwardly to raise said enlarged upper end portion out of frictional engagement with said housing.
3. In combination: a spool having flanged ends and a body wall connecting such ends; and a tubular container within which said spool is disposed; said tubular container having a stepped sidewall to provide a first portion which freely accommodates one end of said spool and a second portion which frictionally engages the opposite end of said spool; said spool having a length of thread coiled upon its body wall for selective dispensing past said container second portion; said spool being adapted to have its opposite end moved out of frictional engagement with said container second portion to thus permit free rotation of said spool for dispensing of said thread; said spool further being adapted to have its opposite end moved back into frictional engagement with said container second portion whereby a free end of thread is trapped between said opposite end and said second portion.

11

4. An assembly of a spool of thread and a protective container, said assembly comprising:
 a spool having a body wall with upper and lower radially enlarged ends;
 an elongated length of thread coiled upon said spool 5
 body wall between said ends;
 a container having an upstanding continuous side wall and an inwardly projecting bottom wall means;
 said bottom wall means having an opening therein sized to accommodate insertion of a user's finger; 10
 said side wall defining a central cavity within said container;
 said spool with said thread coiled thereon, being fully disposed within said central cavity with said spool lower end normally resting in abutting relation upon 15
 said bottom wall means;
 said container side wall having an upper portion which frictionally engages said spool upper end when said spool is fully disposed within said central cavity;
 said container side wall also having a lower portion, 20
 between said upper portion and said bottom wall means, with said lower portion having radial dimensions in excess of the radial dimensions of said spool lower end whereby, when said spool is fully disposed within said central cavity and said lower end is thus 25
 disposed within said lower portion, said lower end will be free from frictional engagement with said lower portion;
 said spool being movable axially through upward pressure applied through said opening to said spool 30
 lower end, with such axial movement forcing said spool to a freely rotatable position whereat said spool upper end is out of frictional engagement with said container upper portion while said spool lower end remains free from frictional engagement within said 35
 lower portion;
 said thread being capable of being readily dispensed from said spool when said spool is moved to its freely rotatable position;
 said spool further being axially movable by pressure 40
 applied to said spool upper end to a position whereat it is again fully disposed within said central cavity;
 said thread being trapped between said container upper 45
 portion and said spool upper end when said spool is axially moved back into said central cavity thereby any excess thread may be severed by manual pulling on the end thereof projecting beyond said assembly.

12

5. An assembly as defined in claim 4 wherein said container is fabricated of a synthetic resinous material.
 6. An assembly as defined in claim 5 wherein said material is transparent.
 7. An assembly as defined in claim 4 wherein said container upper and lower portions are joined together by a connecting wall portion angled upwardly from said bottom wall means.
 8. An assembly as defined in claim 4 wherein said container includes a slit extending downwardly from the upper end thereof and at least partially through said upper portion.
 9. An assembly as defined in claim 8 wherein said slit is formed angularly within said container side wall.
 10. For use in combination with a spool of thread having flanged top and bottom ends, a protective container comprising:
 a cylindrical body formed by a continuous side wall; a bottom wall means extending inwardly from the lower end of said body;
 said body including a first portion on the interior of said side wall dimensioned to frictionally engage said spool flanged top;
 said body further including a second portion on the interior of said side wall, between said first portion and said bottom wall means, dimensioned in excess of the dimensions of said spool bottom end to thus freely surround said spool bottom end when said spool is inserted in said container;
 said bottom wall means including an opening therein whereby, when said spool is inserted in said container, upward pressure can be applied through said opening to facilitate removal of said spool.
 11. A protective container as defined in claim 10 wherein said bottom wall means includes a series of spaced projections.
 12. A protective container as defined in claim 10 wherein the exterior of said side wall is a smooth continuous surface.

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FRANK J. COHEN, *Primary Examiner*.LEONARD D. CHRISTIAN, *Examiner*.