March 21, 1967 W. W. KNOX 3,310,167

RIBBON DISPENSER

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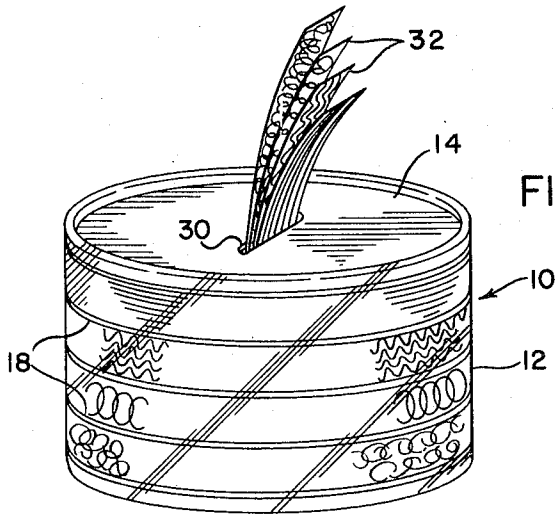


FIG. 1

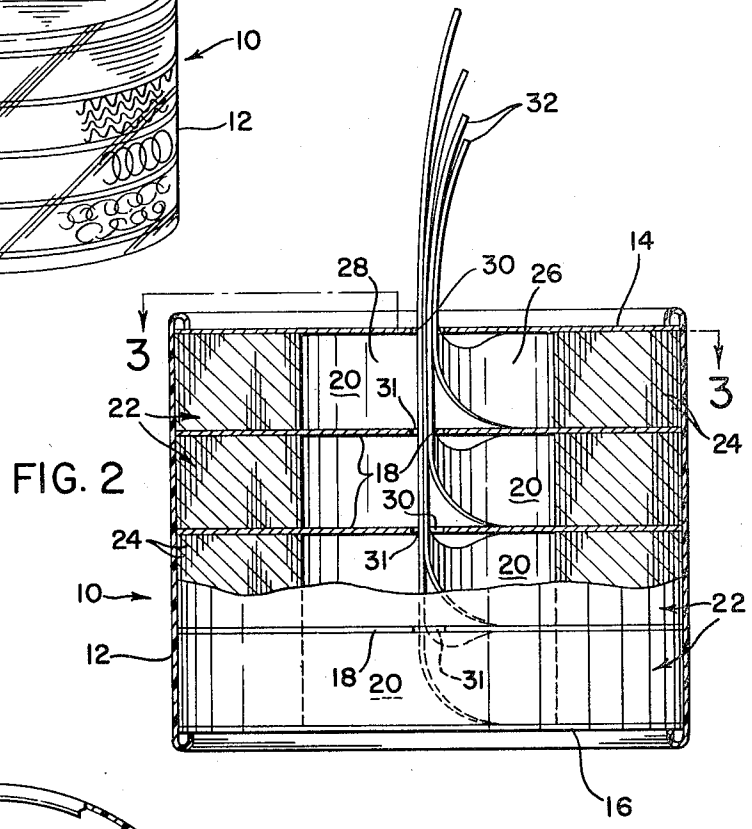


FIG. 2

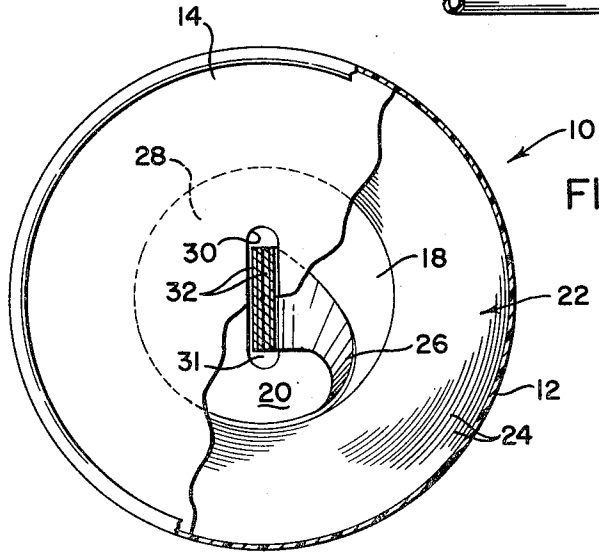


FIG. 3

INVENTOR.
WILLIAM W. KNOX

BY Tilberry & Body

ATTORNEYS

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FIG. 4

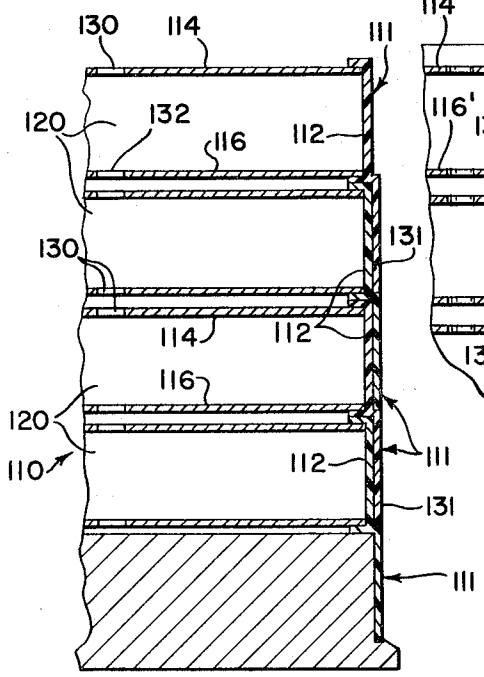


FIG. 5

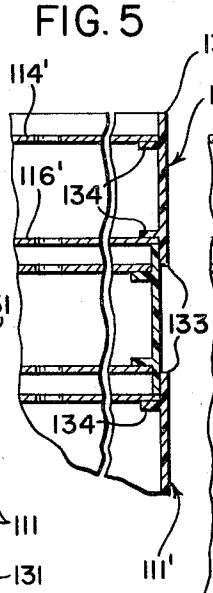


FIG. 6

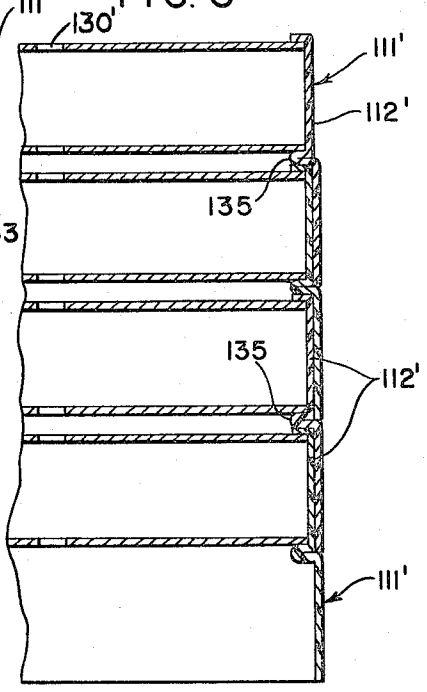
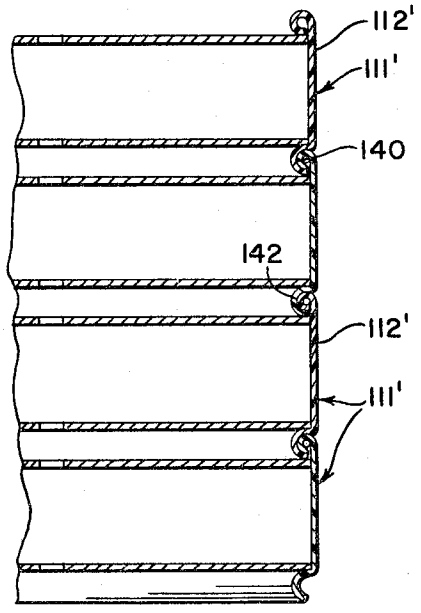


FIG. 7



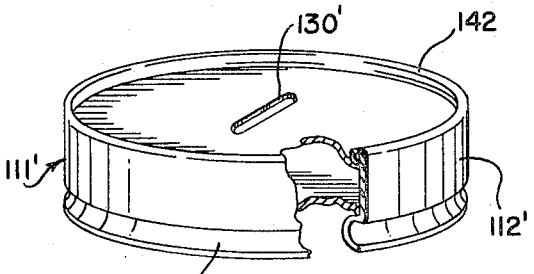


FIG. 8

INVENTOR
WILLIAM W. KNOX

BY Tilberry & Body

ATTORNEYS

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RIBBON DISPENSER

William W. Knox, Mentor-on-the-Lake, Ohio, assignor to Mag-Nif, Inc., Painesville, Ohio, a corporation of Ohio

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7 Claims. (Cl. 206—52)

This invention relates to the dispensing art and more particularly to a dispenser for ribbon material.

The invention will be described with reference to a dispenser for decorative ribbon material of the type commonly used for package wrapping and display purposes, however, it has much broader applications and may be used for dispensing any flat, ribbon-like material.

Decorative ribbon is commonly wound on paper spools and marketed in an assortment of different colors. One problem in handling decorative ribbon is its natural tendency to unwind from the spool. To correct this the free end is taped down, but this is generally unsatisfactory since the tape will not hold thus permitting the ribbon to unwind and become soiled.

Another problem is storage and dispensing. Ribbon of many different colors are required when wrapping several packages, consequently it is taken from one spool and then another according to the color desired. Storing the different spools of ribbon separately to avoid tangling is often an inconvenience and dispensing the ribbon in an orderly manner is virtually impossible.

In the prior art, a form of make-shift dispenser was devised wherein the spools of ribbon are mounted on a common rod. The ribbon is paid out as the spools rotate on the rod. However, this arrangement is wholly unsatisfactory since the ribbon uncoils from the spool due to its own resilient quality thus wrapping itself around the rod and the adjacent spools. After a short time in use the make-shift dispenser becomes so entangled with ribbons that they must be straightened out before further use can be made of the device.

All of these disadvantages and others are overcome with the present invention which provides a dispenser for feeding ribbon as needed from one or more ribbon coils while maintaining an orderly relationship between the ribbon and its coil and between a plurality of ribbon coils.

In accordance with the invention a ribbon dispenser is provided comprising a container, having cylindrical sidewalls, within which a continuous strand of flat ribbon material is coiled from its outermost periphery inwardly having convolutions of decreasing diameter formed by the running end of the ribbon material. The coil of ribbon is formed with a hollow core of sufficient diameter to permit initial limited uncoiling from the coil interior. Guide means are provided on the container to define a substantially slot shaped aperture for guiding and straightening the free end of the ribbon as it is withdrawn from the container whereby the uncoiled ribbon is stress relieved of its tendency to recoil.

Further in accordance with the invention and particularly where a plurality of ribbon coils are to be dispensed, the container extends for a substantial vertical height and a plurality of circular partitions are provided dividing it into equal compartments; the guide means being formed in each partition is of identical size and configuration so that each slot shaped aperture is aligned and the free end of the ribbon material in each compartment is fed upwardly through each successive guide means.

Further in accordance with the invention an articulated dispenser is provided comprising a plurality of containers having cylindrical side and flat top and bottom walls, the cylindrical sidewalls having connecting portions forming a nesting joint to enable two or more containers to be coupled together in vertical array.

A principal object of the invention is to provide a ribbon dispenser which will store and dispense ribbon material to prevent soiling and in a condition free from tangling or twisting.

Another object of the invention is to provide a compact dispenser for a plurality of different colored ribbon coils which may be paid out individually or in unison from a common dispenser opening.

Still another object of the invention is to provide an articulated dispenser formed from a plurality of individual ribbon containers which are stackable permitting the existing assembly to be added to or rearranged in any desirable order with a minimum of effort.

These and other objects will become more apparent by reference to the following description and drawings wherein:

FIGURE 1 is a perspective view showing a four compartment ribbon dispenser constructed in accordance with the invention;

FIGURE 2 is a vertical cross-sectional view taken through the center of the dispenser shown in FIGURE 1;

FIGURE 3 is a partial plan view taken along line 3—3 of FIGURE 2;

FIGURES 4, 5, 6 and 7 are fragmentary vertical sectional views of an articulated dispenser constructed in accordance with the invention showing in particular illustrative joint arrangements between individual containers; and,

FIGURE 8 is a perspective view showing an exemplary container adapted for use in the dispenser assembly illustrated in FIGURE 7.

Referring now to the drawings wherein the showing is for the purpose of illustrating a preferred embodiment of the invention and not for the purpose of limiting same, FIGURES 1–3 show a dispenser **10** having a cylindrical sidewall **12** closed at opposite ends by top and bottom walls **14** and **16**. A plurality of axially spaced partitions **18** divide the container **10** into equal compartments **20**. Each compartment **20** contains a coil **22** of continuous ribbon material **24** and in accordance with the invention each coil is wound beginning adjacent the cylindrical sidewall **12** and continuing toward the center so that the free end **26** forms the innermost convolution leaving a limited open space **28** or hollow core adjacent the axis of the dispenser **10**. A slot-like aperture **30** is formed in the top wall **14** and in each partition **18** with each slot being coextensive with the one below to form a connecting passageway **31** between compartments **20**. The free end **26** of each coil **22** is guided upwardly through the passageway **31** so that each passes through the uppermost aperture **30** in the top wall **14** leaving exposed the working ends **32** of each ribbon.

As will be explained, the dispenser **10** is particularly suited for dispensing decorative ribbon material which is characterized in that it is commonly formed of a plurality of closely spaced parallel threads having a lacquered or acetate backing which serves as a binder and which also tends to impart a resilient or springy quality to the ribbon material.

As depicted in FIGURE 1, the cylindrical sidewall **12** of the dispenser **10** is formed of a transparent plastic material and the end walls **14**, **16** and the partitions **18** are formed of paper discs. However, it should be understood that the constructions shown are not necessarily critical. For example, instead of paper discs in vertical array with slots for controlling the running ends of the ribbon, individual ribbon coils may be placed in disconnected plastic containers of almost any configuration having square or circular apertures for controlling ribbon unwinding. Also as shown, the ribbon material **24** in each compartment is of the same width but of a different color however it is conceivable that ribbon of different

widths could be accommodated by modifying the dispenser such as by making the necessary changes in the dimensions of the slot-like apertures **30** and varying the spacing of the partitions **18**.

In using the dispenser **10** to form a decorative ribbon bow for example, the user merely grasps one or more ribbons and draws out the required length for the bow without disturbing the other ribbons. It is important to note that the working end **32** of each ribbon is not tangled. This is due to the fact that the ribbon loses its coiled configuration once the free end **26** passes through an aperture **30**. In addition, any tendency for the ribbon convolutions remaining in the compartments **20** to unwind excessively is restricted. This is due to the limited open area **28** in the center and also to the tendency for the resilient ribbon coils to spring away from the inside of the coiled mass **22** and partially fill the area **28** which increases in size as the ribbon is used. These coils thus maintain the other coils tightly wound temporarily while the dispenser is not in use. This tendency to unwind comes from the fact that the ribbon material tends to uncoil by itself due to its own resilient or springy quality. This presented unusual problems heretofore recognized but unsolved by prior art dispensers. The present invention has overcome these problems.

While the preferred embodiment of the invention shows four compartments **20**, it should be understood that any number of compartments may be arranged in a similar fashion, it only being necessary to change the width of the apertures **30** to accommodate the increased thickness of ribbon material so as to allow free sliding movement of one ribbon with respect to the next.

Referring now to FIGURES 4–8, four modifications of an articulated dispenser are shown each of which embody the inventive concept previously described with respect to the preferred embodiment of the invention shown in FIGURES 1–3. Referring now to the modification shown in FIGURE 4, a dispenser **110** is formed of a plurality of individual containers **111** each having cylindrical side-walls **112** and top and bottom walls **114**, **116** defining a compartment **120**. The walls **114**, **116** each have coextensive slot-like apertures **130**. Each container **111** also has a cylindrical, axially extending flange **131** which removably fits over the cylindrical wall **112** of the adjacent container. When the containers **111** are nested vertically with the slot-like apertures **130** aligned with those in the container immediately below, a central passageway **132** is formed through the center of the dispenser **110** in a manner similar to the preferred embodiment of the invention as shown in FIGURES 1–3.

Referring now to FIGURE 5, a modification of the articulated dispenser **110** is shown in which the individual containers **111'** have cylindrical flanges **133** extending axially from the opposite ends thereof. Small radial shoulders **134** extend inwardly and are spaced axially apart to accommodate the thickness of the ribbon coil. The upper and lower walls **114'**, **116'** are formed by circular discs which fit tightly within the cylindrical flanges **133** and abut against the radial shoulders **134**. When assembled the containers **111'** stack with each other as in the embodiment shown in FIGURE 4 with the flanges **133** fitting in nested fashion.

In FIGURE 6 another modification of articulated dispenser is shown in which the joint between containers **111'** is formed similar to the embodiment shown in FIGURE 5, but the cylindrical sidewalls **112'** are provided with a tuck **135** for maintaining the spacing between individual containers **111'**.

Still another modification of articulated dispenser is shown in FIGURES 7 and 8 wherein the containers **111'** have an annular groove **140** formed at one end thereof which is adapted to receive a mating annular snap ring **142** on the opposite adjacent end of another container. In this embodiment the cylindrical sidewalls **112'** may be formed of a resilient plastic material which will permit inward deflection of groove **140** and outward deflection of ring **142** to provide a snap-lock arrangement between the individual containers.

These modifications of the invention provide a more flexible ribbon dispenser permitting the user to select different colors of ribbon and arrange them in any desired order. In addition, new containers may be added to the existing assembly without disturbing the arrangement. Also in the case of an empty container where the ribbon material has been fully dispensed, the articulated dispenser facilitates the replacement of a new container with a minimum of effort.

Having now described the preferred embodiment of the invention along with certain modifications thereof it will be apparent to those having skill in the art that certain other changes may be made without departing from the spirit of the invention as defined in the appended claims except insofar as limited by the prior art.

Having thus described my invention, I claim:

1. A ribbon dispenser comprising in combination
   - a continuous strand of ribbon wound in a coiled configuration beginning with a standing end thereof on the outside and continuing toward the center with ever decreasing overlapping convolutions ending with a running end adjacent the coiling axis,
   - a container having end and sidewalls defining a cylindrical ribbon compartment open through the coiling axis and containing a coil of ribbon and
   - an end slot in one end wall of the container slightly wider than the thickness of said ribbon strand so as to guide it out from the open center of the ribbon coil while dispensing and insure that the running end loses its coiled configuration once it passes through the slot.

2. A ribbon dispenser as set forth in claim **1** wherein said container is vertically subdivided into a plurality of cylindrical ribbon compartments each mutually opening along a common coiling axis and containing a coil of ribbon, each compartment being arranged with an end wall in conjunction with the next containing a slot aligned and coextensive with the one below feeding said end slot and the running end of each ribbon strand in each compartment being withdrawn individually or together through each successive slot and ultimately through said end slot during dispensing.

3. An articulated ribbon dispenser comprising
   - a plurality of containers each having cylindrical side and top and bottom walls
   - nesting means on the sidewall of each container comprising a joint when two or more containers are fitted together so as to form a vertical container assembly,
   - a continuous strand of flat ribbon material wound within each compartment beginning with a standing end thereof adjacent the sidewall and continuing inwardly toward the center with ever decreasing overlapping convolutions, the innermost convolution being formed by the running end of the ribbon material and spaced sufficiently from the center of each compartment so as to permit free uncoiling from the inside and,
   - a slot in said top and bottom walls comprising substantially vertically aligned openings each of which has a width slightly greater than the total thickness of ribbon adapted to pass through the assembly, each container being assembled with the next so that each opening is aligned and coextensive with the one below and the running end of ribbon material in each container being withdrawn through each successive opening of the assembly whereby it loses it coiled configuration upon passing through the adjacent opening.

4. An articulated ribbon dispenser as set forth in claim **3** wherein said nesting means comprises an axially extending annular flange on the sidewall of each container nestably fitting with the cylindrical sidewall of the immediately adjacent container.

5. An articulated ribbon dispenser as set forth in claim 4 wherein the nesting means comprises radially extending means on the inside wall thereof to uniformly space the respective containers.

6. An articulated ribbon dispenser as set forth in claim 3 wherein said nesting means comprises an annular groove on one end of a container which is engageable with a snap ring on the opposite adjacent end of another container.

7. An articulated ribbon dispenser as set forth in claim 3 wherein one of said top or bottom walls is removable in each container permitting access to the ribbon on the inside.

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THERON E. CONDON, *Primary Examiner.*

LOUIS G. MANCENE, *Examiner.*

W. T. DIXSON, *Assistant Examiner.*