COILED MATERIAL DISPENSER

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ABSTRACT

A dispenser for coiled material stored in a roll and in which the dispenser is adapted for support by a holder. The dispenser comprises a support and a spool fixed to the support. The spool includes a pair of relatively movable sides joined together both by the support and by a hub which has a pair of separable hub sections capable of being locked together to carry the material roll between the sides. Either or both of the sides may be alternatively coupled to the support by an integral flexible plastic hinge or a wedge key and slot. The dispenser is loaded by disengaging the hub sections and separating the sides relative to one another without necessarily removing the dispenser from the holder. An optional dispensing control spring carrying a friction pad gently restrains the unwinding of the coiled material.

12 Claims, 10 Drawing Figures
COILED MATERIAL DISPENSER

BACKGROUND OF THE INVENTION

1. Field of the Invention
This invention relates to dispensers which are particularly adapted for use in groups on a common holder to store different types of coiled ribbon or tape rolls.

2. Description of the Prior Art
The prior art is prolific in its showing of dispensers in reel, spool and drum form; many of these dispensers employ split or separable hubs which enable facile placement of a material roll in the dispensers. However, none of these dispensers employs a fixed spool which can be securely associated in groups on a single holder so that selected dispensers when empty, or if the material roll is to be changed, may be easily removed without disturbing the other dispensers.

Examples of prior art structures are shown in U.S. Pat., No. 864,063, No. 1,183,131, No. 1,548,661, No. 2,144,508, No. 3,021,093, No. 3,110,454 and No. 3,432,113.

SUMMARY OF THE INVENTION

The dispenser of this invention is described in the Abstract. This structure offers several commercial advantages. For example, in many florist shops many types and colors of ribbons are used in floral displays and wrappings. In many instances these ribbons are stored on individual rolls on a common shaft. In the event a centrally disposed roll is to be refilled or replaced, the shaft must be removed from a holder, and several rolls must be removed to obtain access to the central roll. In the process, the ribbon on the removed rolls may unwind and become tangled; thus, making the working on a simple central roll a relatively burdensome task.

The dispenser herein described eliminates the foregoing problems. While a group of these dispensers containing ribbon, for example, may be associated on a simple holder, each dispenser is separately removable without disturbing the other dispenser. Accordingly, any single dispenser, without regard to its location on the holder, may be removed for a ribbon roll refill or change without the necessity of disturbing the other dispensers.

As an additional feature, each dispenser features a control spring which carries a friction pad. The pad engages the outer coil of a ribbon roll stored in the dispenser so as to place a restraint on the ribbon during unwinding. Thus, unsightly and undesired lengthy and loose ribbon ends are eliminated.

DETAILED DESCRIPTION OF THE DRAWINGS

In order that all of the structural features for attaining the objects of this invention may be readily understood, reference is herein made to the accompanying drawings wherein:

FIG. 1 is a perspective view of a first embodiment of the dispenser of this invention associated with a dispenser holder having support grooves for receiving a plurality of dispensers;

FIG. 2 is a perspective view of the dispenser of FIG. 1 associated with a dispenser holder having support screws for receiving a plurality of dispensers;

FIG. 3 is an exploded view of the dispenser of FIGS. 1 and 2 and a stored tape or ribbon roll;

FIG. 4 is an end view of the dispenser spool support;

FIG. 5 is a perspective view of the cylindrical male hub section which is part of the separable hub which fixes the dispenser sides relative one another;

FIG. 6 is a section view of the hub with the hub sections locked together;

FIG. 7 is an exploded view of portions of the dispenser showing the details of the dispenser spool support and the dispensing control spring;

FIG. 8 is a perspective view of a second embodiment of the dispenser of this invention in an opened position ready to receive a tape or ribbon roll;

FIG. 9 is a section view taken along line 9—9 of FIG. 8 showing the engagement of hub sections used in the dispenser of FIG. 8; and

FIG. 10 is a section view taken along line 10—10 of FIG. 9 showing the engagement of the dispenser control spring and the dispenser spool support.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the first embodiment of the dispenser of this invention shown in FIGS. 1—7, the dispenser 11 comprises a dispenser spool 12 which is fixed to spool support 13. As is shown in FIG. 1, spool support 13 is adapted to be retained within a selected tapered groove 14 of holder 15.

Alternatively, dispenser 11 may be retained by any one of a plurality of screws 16 affixed to holder 17 (see FIG. 2).

Tape or ribbon roll 18 is stored on spool 12 of the dispenser. Spool support 13 carries a dispensing control spring 19. The projecting end of spring 19 makes friction contact with tape 20 so as to regulate the feed of this tape during an unwinding operation.

Throughout this specification, the term "tape" is used generically to refer to any coil stock, including ribbon, which may be contained upon a storage mechanism received by dispenser 12.

As will be appreciated after a further detailed description of the dispenser of this invention, a principal advantage of this dispenser over prior art structures is the ease with which tape roll 18 may be inserted within the dispenser to replace an exhausted roll. For example, in many florist shops a plurality of ribbon rolls are stored upon a common support shaft or rod. If, for example, a central roll is exhausted, the only access to this roll involves removing the shaft and all ribbon rolls to one side of the exhausted roll so that access may be had to the exhausted roll. This is, of course, a time consuming procedure which in many instances results in unwinding of the other rolls which contain ribbon.

Referring now to FIGS. 1 and 3 in particular, dispenser spool 12 comprises a pair of sides 21 and 22 which are joined together by hub 23. Side 21 is a permanent side in that it is fixed to spool support 13 by a side flange 24 (see FIG. 7). Side flange 24 is formed with a pair of holes 25 which receive a pair of plastic rivet pins 26. These rivet pins are heated in a manner well known in the plastic art to fix rigidly side flange 24 to spool support 13.

Side 22 of dispenser spool 12 is detachable from the remaining portion of the spool. In particular, as is best shown in FIG. 7, side flange 27 is formed with a tapered key slot 28. When dispenser spool 12 is assembled in the manner shown in FIGS. 1 and 2, tapered key slot 28
receives wedged key 29 so that side 22 is fixed to spool support 13. Slot 28 and key wedge 29 are formed with mating tapers to assure firm locking engagement. In view of the fact that all of the dispenser components with the exception of spring 19 are preferably fabricated of a semi-pliable organic plastic, side 22 may be detached manually from key wedge 29.

In addition to being held together at the area of the side flanges 24 and 27, the spool sides 21 and 22 are also held together by separable hub 30 (see FIGS. 3, 5 and 6). Hub 30 includes a cylindrical female hub section 31 which is fixed to spool side 21 and a cylindrical male hub section 32 which is fixed to spool side 22. As is best shown in FIG. 5, the left end hub section 32 is formed with a plurality of semi-flexible locking fingers 33.

Hub sections 31 and 32 are engaged to fix the spool sides 21 and 22 relative to one another by means of locking cylinder 34 (see FIG. 6). In particular, hub section 32 is located within hub section 31 and thereafter locking cylinder 34 is inserted within the bore of hub section 32 to outwardly force fingers 33 into locking engagement with the tapered cylindrical bore section 35 of hub section 31.

Accordingly, in order to insert a tape roll 18 within dispenser 11, it is necessary at the outset to remove detachable side 22 from the remaining portions of the dispenser spool. This requires the application of a manual separation force which will disengage hub sections 31 and 32 from one another and also disengage key slot 28 from wedge key 29. After detachable side 22 has been removed, tape roll 18 is inserted over hub section 31 and the detachable side is again engaged to the remaining spool portion by hub 30 and also at key slot 28.

Spool support 13 comprises two principal sections, namely, flange connector 36 and support tongue 37 (see FIG. 7). The body of flange connector 36 is formed with two recesses 38 and 39. A pair of plastic rivet pins 40 project from recess 38. These rivet pins are received by a pair of holes 41 formed in control spring 19. The rivet pins are heated in a manner well known in the plastic art to fixedly retain the base section of spring 19 within recess 38.

The opposite recess 39 of spool support 13 receives a base portion 42 of support tongue 37. A suitable plastic adhesive is applied to the contact areas between flange connector 36 and base 42 so that support tongue 37 is fixedly retained within recess 39 and becomes a fixed part of spool support 13.

Base 42 of support tongue 37 carries a tapered holder key 43. Holder key 43 is formed with a double taper. As is shown in FIG. 7, the key is tapered outwardly from front to rear and becomes more narrow from top to bottom. The back or rear of holder key 43 is formed with a small concavity 44 so that when the holder key is inserted within a support groove 14 (see FIG. 1), a friction lock is established which is nonetheless readily disengageable manually.

Support groove 14 of dispenser holder 15 is likewise formed with a double taper so that the tapered surfaces of the groove correspond and mate with the tapered surfaces presented by support tongue 44.

As is shown in FIGS. 4 and 7, support tongue 37 is formed with a key hole 43 which is so sized that dispenser 11 may be alternately supported on a holder 17 which carries a plurality of screws 16.

When a holder of the type shown in FIG. 2 is employed, screw head 16 is inserted within the enlarged part of hole 45 (see FIG. 4) and the dispenser is permitted to slip down over the screw head until the narrow portion of the screw hole engages screw 16.

As is shown in FIGS. 1, 2, 3 and 7, the terminal end of dispensing control spring 19 adjacent ribbon roll 18 carries a friction pad 46. Pad 46 may be adhesively applied to control spring 19. The pad is preferably fabricated from a soft material, such as felt, so that the spring exerted force will enable the pad to exert a friction braking force upon tape 20 so as to enable the tape to be easily unwound manually but at the same time to enable the spring through the pad to apply a restraining force against the roll which will prevent the roll from unwinding.

A second preferred embodiment of the dispenser of this invention is shown in FIGS. 8 through 10. In these figures, dispenser 50 comprises a spool 51 which the spool sides 52 and 53 are attached to spool support 54 by means of flexible plastic hinges 55 and 56.

Hinges 55 and 56 are formed integrally and continuously with sides 52 and 53 and also spool support 54. These hinges and the associated components are preferably fabricated with the organic plastic, polypropylene, which has an inherent ability to flex in a manner well known in the art without deleteriously effecting the mechanical integrity of the plastic. Accordingly, sides 52 and 53 may be flexed relative support 54 in such a manner that the sides may be separated to receive tape roll 57 over spool hub 58.

As is shown in FIG. 9, spool hub 58 is formed with two sections 59 and 60 which are integral with sides 52 and 53, respectively.

The right end of hub section 59 is formed with the circular and curved connector tongue 61 which is engaged by curved hub section 63. In view of the fact that hub section 59 and 60 are fabricated from an organic plastic which is pliable and flexible, elements 60 and 61 may be forcibly engaged to provide a fixed hub connection. Accordingly, sides 52 and 53 are also relatively fixed with respect to one another.

As is shown in FIG. 8, spool support 54 is generally identical in construction with spool support 13 described with reference to the first embodiment of FIGS. 1 through 7. In addition to the difference previously noted, namely, that flexible plastic hinges 55 and 56 are integrally affixed to support 54, the spool support is modified to provide a three-side slot 62 defined by a three-side projecting rim 63.

In the embodiment of FIGS. 8 through 10, dispensing control spring 64 is an optional accessory which may or may not be used as is required.

If the use of the spring is desired, the vertical spring portion 65 is inserted within slot 62 as is shown in FIG. 10 until lock bump 66 engages the lower surface of shoulder 67 of support 54.

If it is desired to remove spring 64, a vertical lifting force will cause bump 66 to disengage from shoulder 67 so that vertical spring portion 65 may be freely slipped out of slot 62.

As is shown in FIG. 10, dispenser 50 is typically supported by a screw 68 which corresponds to any of the screws 16 of holder 17 shown in FIG. 2.
It should be understood that the above described structural features are merely illustrative of the application of the principles of this invention. Changes may be made in the foregoing structures without departing from the scope of the invention as defined in the following claims.

What is claimed is:
1. In a dispenser for material stored in a roll and in which the dispenser is adapted for support by a holder, the improvement comprising a dispenser spool including a hub and a pair of relatively movable sides joined together generally centrally by the hub which has a pair of separable hub sections capable of being locked together to carry the material roll between the sides, and side coupling means having a support fixedly and permanently attached to at least one of the sides and adapted to be carried by the holder for joining together adjacent peripheral portions of the sides with at least one of the sides being movable relative the other side by disengaging the hub sections to then receive the material roll.

2. The dispenser of claim 1 in which said means includes an integral hinge for one or both of said sides which joins an associated side to the support.

3. The dispenser of claim 3 in which each hinge is fabricated of a flexible organic plastic.

4. The dispenser of claim 1 in which said means includes an integral flange projecting from each side and joined to the support.

5. The dispenser of claim 4 in which said means further includes an engageable lock.

6. The combination of the dispenser of claim 1 and a holder for supporting the dispenser in which the support includes a tapered tongue to be received in a tapered groove located in the holder.

7. The combination of claim 6 in which the tapered groove is formed with a screw hole to receive a holder pin or screw.

8. The dispenser of claim 1 in which a dispensing control spring provides an unwind braking force for the material roll.

9. The dispenser of claim 8 in which a friction pad is fixed to one end of the control spring to contact the material roll and the other end is carried by the support.

10. The dispenser of claim 8 in which the control spring is removably engaged within a slot formed in the support.

11. In a dispenser for material stored in a roll and in which the dispenser is adapted for support by a holder, the improvement comprising a dispenser spool including a pair of spaced and relatively movable sides and a hub section projecting from each side toward the other side with both hub sections being in alignment with one another to carry the material roll between the sides, and a spool support adapted to be carried by a holder and with the support having resilient and flexible coupling means joined to adjacent edge portions of each movable side to enable each side to flex relative the support to separate thereby the sides to receive a roll on the hub sections.

12. The dispenser of claim 11 including a control spring formed from a curved, elongated, relatively flat, resilient strip with one end portion of the strip fixed to the support and with the other end portion cantilevered between planes defined by both spool sides to contact resiliently a roll stored on the dispenser to control the unwinding thereof.

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