Oct. 8, 1963 H. V. BOLDING 3,106,288

TAPE PACKAGE

Filed Aug. 24, 1961

FIG. 1

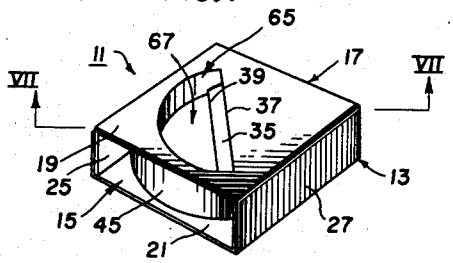


FIG. 4

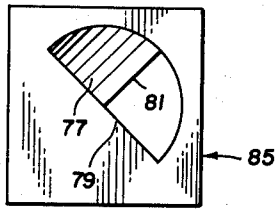


FIG. 2

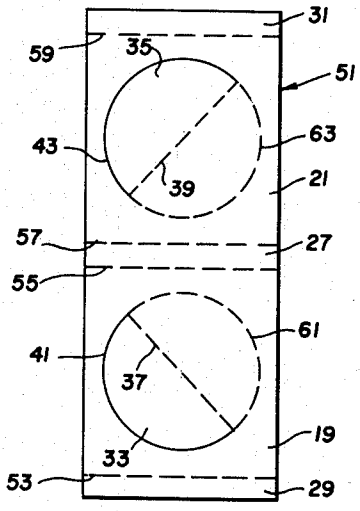


FIG. 5

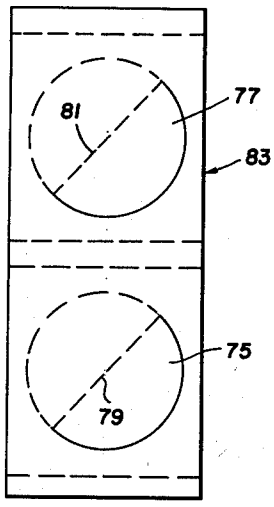


FIG. 3

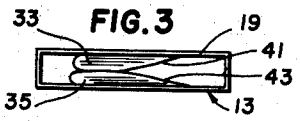


FIG. 6



FIG. 7

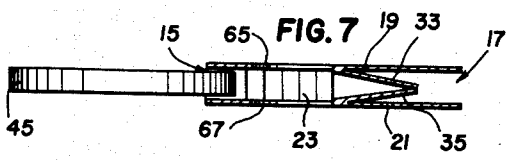


FIG. 8

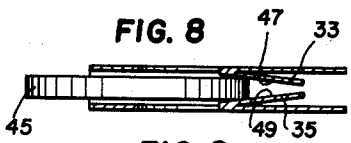


FIG. 9

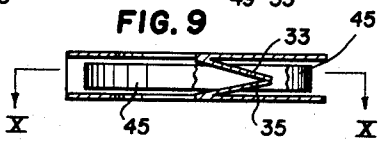


FIG. 10

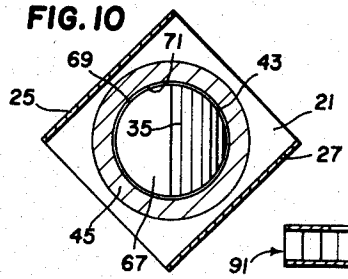
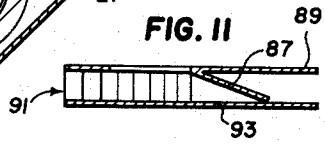


FIG. 11



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TAPE PACKAGE

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11 Claims. (Cl. 206—52)

This invention relates to an improved package of the type adapted for holding and dispensing rolls of tape and the like.

The above mentioned type of package generally consists of a center portion and a sleeve into which the tape is inserted. This center portion extends through the hole in the center of the tape and provides a means for rotatably retaining the tape in the sleeve. Heretofore, this center portion was generally formed by interlocking tabs or the like which had to be manually folded and joined together to form the center portion. At factories where the tape is packaged after it comes off of high speed machinery, it can be seen that much time is lost by the packaging personnel in folding and interlocking the tabs to establish the center portion.

The present invention is directed toward providing an improved package in which there is no lost time in folding and interlocking tabs, etc. when packing the tape into the package.

Thus, one of the objects of the present invention is to provide an improved package so that the tape roll is automatically locked therein in a rotatable use position upon insertion of the roll into the package.

A further object is to provide means for positively locking the tape against accidental removal.

A further object is to provide such a package that reduces considerably the packaging time for tape.

A further object is to provide an efficient tape roll and package combination whereby the tape is easily and conveniently dispensed.

A further object is to provide a package means that is simple in construction and economical to manufacture.

A further object is generally to improve the design and construction of packages.

The means by which the foregoing and other objects of the present invention are accomplished and the manner of their accomplishment will be readily understood from the following specification upon reference to the accompanying drawings, in which:

FIG. 1 is a perspective view of the tape roll and package combination of the present invention.

FIG. 2 is a plan view of a blank from which the package of the present invention is formed.

FIG. 3 is an end view of the package of the present invention.

FIG. 4 is a plan view of a modified form of the package.

FIG. 5 is a plan view of the blank from which the package of FIG. 4 is formed.

FIG. 6 is an end view of the package of FIG. 4.

FIG. 7 is a cross-sectional view of the package taken as on the line VII—VII of FIG. 1 and showing the beginning of the insertion of a roll of tape therein, with the tape being shown in elevation.

FIG. 8 is a view similar to FIG. 7 but showing the tape in a more advanced position during the insertion into the package.

FIG. 9 is a view similar to FIGS. 7 and 8 but showing the tape in a fully loaded position and with portions of the tape being broken away for purposes of illustration.

FIG. 10 is a sectional view taken as on the line X—X of FIG. 9.

FIG. 11 is a view similar to FIG. 7 of another modified form of the present invention.

Referring now to the drawings in which the various parts are indicated by numerals, the package **11** of the present invention comprises in its preferred embodiment, best illustrated in FIGS. 1–3 and 7–10, a rectangular paper or fiber board sleeve **13** which is open at opposite ends as at **15** and **17**. Sleeve **13** includes a pair of opposite main walls **19**, **21** which are spaced apart to provide a space **23** therebetween communicating between open ends **15**, **17**. Walls **19**, **21** are integrally interconnected at the opposite edges thereof by the narrower side walls **25**, **27**. Side wall **25** is preferably composed of a pair of overlapping tabs **29**, **31** which are respectively preferably integrally attached to the edges of main walls **19**, **21** and are secured to each other as by glue or the like.

In addition, package **11** includes a pair of substantially semi-circular flaps **33**, **35** that are respectively attached to main walls **19**, **21** along the respective fold lines **37**, **39**. The respective edges **41**, **43** of flaps **33**, **35** are substantially semi-circular in shape and each extends substantially from one end of its associated fold line to the other. Flaps **33**, **35** extend into space **23** into close adjacency with one another. When the term "close adjacency" is used herein, it is to be understood to mean that the flaps **33**, **35** are either in engagement with one another or are in spaced adjacency, and if in spaced adjacency the spacing is less than the width of a roll of tape **45** with which package **11** is to be used. In other words, flaps **33**, **35** extend into the path of movement of tape **45** into sleeve **13**, as will be more fully understood in the description to follow later of the packing of tape **45**. Additionally, flaps **33**, **35** are each longer than the distance between main walls **19**, **21** and are angled from the main walls toward one another in a direction extending generally away from open end **15** to provide sloping surfaces **47**, **49** on the respective flaps **33**, **35** for the roll of tape **45** to engage when inserted into space **23**.

Package **11** is preferably formed from a single blank **51** such as shown in FIG. 2 where the various portions of sleeve **13** are identified by the same reference numbers. The rectangular blank **51** is provided with suitable folding scores or parallel creases **53**, **55**, **57**, and **59** which integrally interconnect tab **29** and main wall **19**; main wall **19** and side wall **27**; side wall **27** and main wall **21**; and main wall **21** and tab **31**, respectively. Flaps **33**, **35** are preferably formed from blank **51** by making circular cuts in main walls **19**, **21** to establish edges **41**, **43** and then bending the respective flaps along fold lines **37**, **39** toward the respective circular dotted lines **61**, **63**. The circular dotted lines **61**, **63** are on the surface of blank **51** which becomes the interior of sleeve **13** when the sleeve is formed. Actually, the circular dotted lines **61**, **63** need not be actually imprinted on the blank **51**, but are primarily for illustration purposes. At any rate, in forming sleeve **13** from blank **51** the flaps **33**, **35** are bent toward dotted lines **61**, **64** and with the flaps being held adjacent the dotted lines the blank **51** is folded into the form of the sleeve **13**, as shown in FIG. 1, whereupon tabs **29**, **31** are secured together and flaps **33**, **35** are released. Flaps **33**, **35** are resilient and when released will move into close adjacency with one another, as heretofore described. It will be understood that flaps **33**, **35** will move toward one another since they have a tendency to swing back toward their original positions in apertures **65**, **67** from which they were initially bent. The above described cutting and bending of blank **51** into sleeve **13** is preferably, though not necessarily, accomplished by machinery. This assembly of the package **11** is done prior to the delivery of same to the personnel for packing the tape **45** in the package **11**, which will be described hereinafter.

Referring to FIG. 2, it will be seen that if fold lines

37, 39 were extended, they would intersect at substantially a right angle so that when the sleeve is assembled, as shown in FIG. 1, the fold lines are parallel and substantially in alignment. Also, it will be noted in these figures that fold lines 37, 39 lie along the diameter of a circle that is formed by edges 41, 43 and the respective circular dotted lines 61, 63. In addition, it should be noted that when the flaps 33, 35 are bent as heretofore described there remains in the main walls 19, 21 the semi-circular apertures 65, 67 which are in alignment when the sleeve 13 is assembled, as shown in FIG. 1, so that these apertures can be used as hand or finger holes for grasping the package 11. Also, it will be seen that flaps 33, 35 are in alignment with each other but are at a substantially 45 degree angle relative to open end 15.

The packing of tape 45 is done in one quick movement by the packing personnel who are supplied with the completed package and the tape 45. Thus, the tape 45 is inserted into space 23 through open end 15, as shown in FIG. 7. Continued movement of the tape 45 into sleeve 13 will cause engagement of the tape with sloping surfaces 47, 49 and further movement will cause the tape to urge flaps 33, 35 apart, as shown in FIG. 8. As soon as the central hole 69 of the tape 45 comes into alignment with flaps 33, 35, the flaps will snap back into their original position of adjacency, as seen in FIG. 9 and will now be located in central hole 69 to prevent the tape 45 from accidentally being withdrawn from sleeve 13. From the foregoing, it can be seen that the packing personnel can obtain a very high rate of production with the use of the present invention.

It will be understood that the circular edges 41, 43 provide a very efficient means around which tape 45 is adapted to rotate in dispensing the tape, and it will be understood that the arcs of the circles of which edges 41, 43 form a part are slightly smaller than the inside circumference 71 of tape 45 so that tape 45 is kept substantially centered relative to sleeve 13.

In the modified package 73 of the present invention shown in FIG. 4–6, the construction thereof is substantially the same as that heretofore described for package 11 except that flaps 75, 77, rather than being in alignment as flaps 33, 35 are at right angles to one another. In order to accomplish this relationship of the flaps 75, 77 above mentioned, it will be understood that the fold lines 79, 81 of the respective flaps extend parallel to one another when laid flat in the blank 83, shown in FIG. 5, but when assembled into the package 73 the fold lines are perpendicular to each other, as shown in FIG. 4. It will be noted that flaps 75, 77, as was the case in the preferred embodiment, extend in a direction generally away from the open end 85 (which corresponds to open end 15) and through which the tape 45 is adapted to be inserted. The operation of the modified package 73 is substantially the same as that heretofore described for the preferred package 11.

It will be understood that although in the preferred embodiment flaps 33, 35 are shown as semi-circular flaps, substantially in alignment with one another, and in the modified embodiment flaps 75, 77 are shown substantially at right angles to one another; other angular relationships and other shapes of the flaps may be employed without departing from the spirit and scope of the present invention. Also, one of the flaps may be omitted, if desired and the remaining flap arranged to extend into close adjacency with the opposite main wall. Thus, as will be seen in FIG. 11, flap 37 extends angularly from main wall 89 in a direction generally away from opening 91 into close adjacency with main wall 93. The term "close adjacency" when used with the embodiment shown in FIG. 11 is to be understood to mean that flap 87 is either in engagement with main wall 93 or in spaced adjacency. Also, when only one flap is used main wall 93 is preferably, though not necessarily, solid as shown in FIG. 11. The operation of this embodiment is substantially the same as that heretofore described for the preferred package 11.

From the foregoing description it will be understood that a very efficient, simple and convenient package is provided wherein there is no lost time in folding and interlocking tabs, etc. in packing tape in the package. It will be further understood that such a package is provided wherein the tape roll is automatically locked therein in a rotatable use position upon insertion of the roll into the package.

Although the invention has been described in some detail by way of illustration and example for purposes of clarity or understanding, it is to be understood that it is not to be so limited since changes and modifications may be made therein which are within the full intended scope of this invention as hereinafter claimed.

I claim:

1. A package for a roll of tape having an inside circumferential portion defining a central hole extending therethrough, said package comprising a sleeve having at least one opening, said sleeve including a pair of opposite main walls spaced apart to provide a space therebetween communicating with said opening and adapted to receive a roll of tape moved into said space through said opening, at least one co-planar flap attached to one of said main walls and extending into said space in the path of movement of a roll of tape into said space, said flap having an arced co-planar edge, said tape package having a flap contacting portion thereon adapted to be contacted by said flap, said flap being normally angled from said one of said main walls in a direction generally away from said opening and in normal engagement with said flap contacting portion to provide a sloping surface for a roll of tape to engage when inserted into said space through said opening, said edge being normally angled from said one of said walls, said flap being resilient and urged into its normal engagement with said flap contacting portion whereby said flap is adapted to be bent back by a roll of tape out of engagement with said flap contacting portion and then released to its normal engagement with said flap contacting portion and extending in the central hole of the roll of tape with said edge being adapted to engage the inside circumferential portion of a roll of tape to lock the tape in said sleeve and serve as a means about which the tape is adapted to be rotated.

2. A tape package comprising a sleeve having at least one opening, said sleeve including a pair of opposite main walls spaced apart to provide a space therebetween communicating with said opening, a pair of flat flaps respectively having edges, said flaps being respectively attached to said main walls and extending into said space in the path of movement of a roll of tape into said space, said flaps being respectively angled from said main walls in directions extending generally away from said opening to provide sloping surfaces for a roll of tape to engage when inserted into said space through said opening, said flaps being in normal engagement with each other, said flaps being resilient and being urged into normal engagement with each other whereby said flaps are adapted to be spread apart by a roll of tape and then released to their normal engagement with each other and extended in the central hole of the roll of tape to lock the tape in said sleeve and serve as a means about which the tape is adapted to be rotated.

3. The tape package of claim 2 in which each of said edges defines the arc of a circle having a diameter slightly smaller than the diameter of the central hole of a roll of tape adapted to be locked in said sleeve and against which the tape is adapted to be rotated.

4. The tape package of claim 2 in which said flaps are disposed in substantial alignment with one another.

5. The tape package of claim 2 in which said flaps are disposed substantially at right angles to one another.

6. The tape package of claim 2 in which each of said

edges defines at least a semi-circular portion of a circle.

7. A tape package comprising a sleeve having at least one opening, said sleeve including a pair of opposite main walls spaced apart to provide a space therebetween communicating with said opening, a pair of substantially semi-circular flat flaps respectively attached to said main walls and extending into said space into normal engagement with one another, said flaps being respectively angled from said walls towards one another in directions extending generally away from said opening to provide sloping surfaces for a roll of tape to engage when inserted into said space through said opening, said flaps being resilient and being urged into said normal engagement with one another whereby a roll of tape is adapted to be forced therebetween to spread said flaps apart and is adapted to be moved past said flaps until the central hole of the roll of tape is moved into alignment with said flaps whereupon said flaps are adapted to snap back into said normal engagement with one another in the central hole of the roll of tape to lock the tape in said sleeve and serve as a means about which the tape is adapted to be rotated.

8. A tape package comprising a sleeve having at least one opening, siad sleeve including a pair of opposite main walls spaced apart to provide a space therebetween communicating with said opening, a pair of flat flaps respectively attached to said main walls and extending into said space into normal positions of engagement with one another, said flaps being respectively angled from said walls toward one another in directions extending generally away from said opening to provide sloping surfaces for a roll of tape to engage when inserted into said space through said opening, each of said flaps being characterized by a tendency to pivot toward the opposite one of said main walls but being prevented from such pivot by engagement with the other of said flaps and yet being yieldable to pressure from a roll of tape being pushed against said sloping surfaces whereby said flaps are adapted to be spread apart by a roll of tape and then released to their norml positions of engagement with one another in the central hole of the roll of tape to lock the tape in said sleeve.

9. A package for a roll of tape having an inside circumferential portion defining a central hole extending therethrough, said package comprising a sleeve having at least one opening, said sleeve including a pair of opposite main walls spaced apart to provide a space therebetween communicating with said opening and adapted to receive a roll of tape moved into said space through said opening, locking means interposed between said main walls and normally extending across a major portion of the distance therebetween, said locking means including at least one flat flap, said flap being normally angled from said one of said main walls in a direction generally away from said opening to provide a sloping surface for a roll of tape to engage when inserted into said space through said opening, said flap being resilient whereby said flap is adapted to be bent back by a roll of tape and then released to its normal extended position in the central hole of the roll of tape when the central hole of the tape aligns with said flap so that said tape is held in a locked position, said flap having an arced edge contiguous to the inside circumferential portion of the roll of tape when the tape is in said locked position whereby the tape is adapted to be rotated about said edge for the dispensing thereof.

10. A package comprising a roll of tape, said roll of tape having an inside circumferential portion defining a central hole extending therethrough, a sleeve formed from a flat substantially rectangular blank and comprising a pair of oppositely disposed main walls with said pair of main walls including a first main wall and a second main wall, a pair of side walls perpendicularly disposed to and interconnecting opposite edges of said pair of main walls and defining a structure having a substantially rectangular opening extending therethrough, the dimensions of said pair of main walls and said pair of side walls defining said rectangular opening being slightly greater than the diameter and thickness dimensions of said roll of tape, a first semi-circular flap integrally formed from said first main wall with said first semi-circular flap having an arced edge slightly smaller than said inside circumferential portion of said roll of tape, said first semi-circular flap having a first fold line diagonally disposed in said first main wall and said first semi-circular flap being doubled back at said first fold line towards said first main wall and between said pair of main walls, a second semi-circular flap integrally formed from said second main wall with said second semi-circular flap having an arced edge slightly smaller than said inside circumferential portion of said roll of tape, said second semi-circular flap having a second fold line diagonally disposed in said second main wall and said second semi-circular flap being doubled back at said second fold line towards said second main wall and between said pair of main walls, said arced edges of each of said first and second semi-circular flaps being diagonally disposed with and contiguous to said inside circumferential portion of said roll of tape.

11. A package containing a roll of tape, said tape having an inside circumferential portion defining a central hole extending therethrough, a sleeve including a pair of oppositely disposed main walls, a pair of side walls perpendicularly disposed to and interconnecting opposite edges of said pair of main walls and defining a structure having a substantially rectangular opening extending therethrough with the dimensions of said pair of main walls and said pair of side walls defining said rectangular opening being slightly greater than the respective diameter and thickness dimensions of said roll of tape, a semi-circular flap integrally formed from at least one main wall of said pair of main walls with said semi-circular flap having an arced edge slightly smaller than said inside circumferential portion of said roll of tape, said semi-circular flap having a fold line diagonally disposed in said one main wall and with said semi-circular flap being doubled back at said fold line towards said one main wall and between said pair of main walls and with said arced edge of said semi-circular flap diagonally disposed with and contiguous to the inside circumferential portion of said roll of tape.

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