Oct. 11, 1966 J. W. KEARNS, JR 3,278,017

TAPE PACKAGE

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Fig. 1.

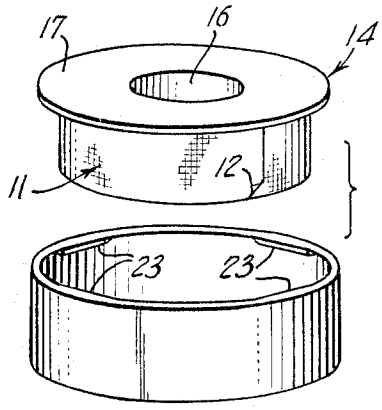


Fig. 2.

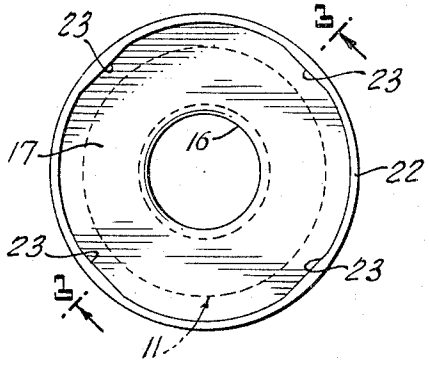


Fig. 3.

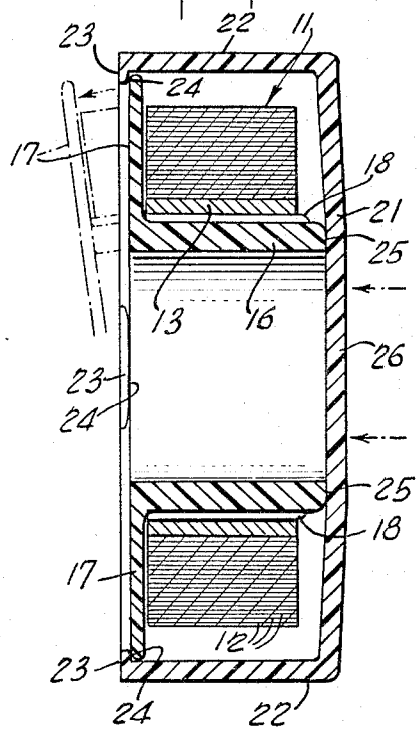
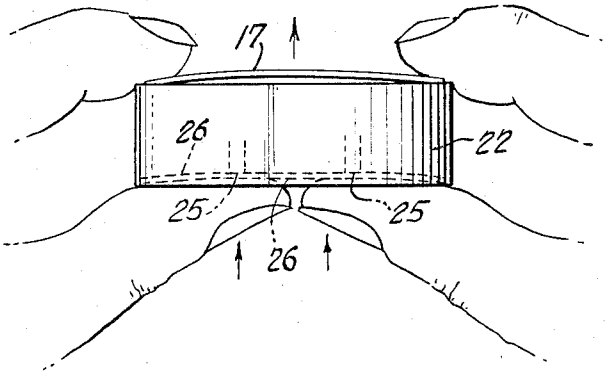


Fig. 4.



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TAPE PACKAGE

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The present invention relates to packages for tape wound upon itself about a hollow core, more particularly to such packages which are adapted to be opened and closed a number of times as the desired lengths of tape are dispensed according to need.

Heretofore, rolls of plain or pressure-sensitive tape have been packaged in flat telescoping cans or similar containers when desired to protect the tape against moisture and other foreign matter both before sale and between uses. This type of package has several disadvantages; it is difficult to open if made tight enough to protect the tape, and the tape roll must be completely removed from the package and held loose for dispensing purposes.

According to the present invention, a tape package and dispenser is provided which may be opened and closed any number of times merely by snapping the cover off and on a mounting portion of the package holding the tape roll, and which allows the tape to be dispensed easily from the mounting portion without removing the roll therefrom.

The closure portion of the package is formed from two halves which may be inexpensively molded from materials which are readily available. The first half is a mounting member formed from a relatively rigid material, such as polystyrene, and comprises a cylindrical hub inserted through the core of the tape roll and an annular disc integral with the hub and extending beyond the periphery of the roll at one end of the hub. The second half is a snap-on cover formed from a relatively flexible and resilient material, such as low density polyethylene, and comprises an end wall having a more or less circular perimeter and a cylindrical peripheral wall integral therewith and extending axially from the end wall over the tape roll. The leading end of the hub extends through the core axially beyond the tape roll and into contact with a central portion of the inner surface of the end wall of the cover, and the peripheral wall of the cover presents shallow flange portions extending inwardly beyond the periphery of the annular disc. Thus, when the cover is in position over the tape roll and the mounting member, the flange portions snap over the periphery of the annular disc of the mounting member. The axial dimensions of the mounting member and the cover are such that, when the cover is in position on the package, the end wall of the cover is flexed outwardly by the core but continues to press inwardly against the hub to hold the mounting member firmly between the end wall and the flange portions of the cover. Since the end wall and the peripheral wall of the cover both are flexible and resilient, the cover may be separated easily from the mounting member merely by pressing the central portion of the end wall of the cover inwardly against the hub while holding the peripheral wall of the cover. Thus, the cover may be snapped off and onto the mounting member easily as is necessary to dispense the tape from the roll.

Once the cover is removed from the core the tape may be dispensed from the roll merely by holding the mounting member and drawing out the free end of the tape. It is not necessary to remove the tape roll from the mounting member for dispensing purposes and as soon as the desired length is separated from the roll the cover may be snapped over the mounting member to again enclose the tape roll.

In the preferred embodiment of this invention, the leading end of the hub remains pressed against the center

of the inner surface of the cover all around the periphery of the hub, and the disc continues to press radially outwardly against the peripheral wall of the cover; thereby preventing foreign matter from entering the package between the mounting member and the cover. It also is important that the peripheral wall of the cover is sufficiently flexible to allow its inwardly extending flange portions to be spread outwardly for snapping over the disc of the mounting member.

Other and further advantages of this invention will appear to one skilled in the art from the following description and claims taken together with the drawings wherein:

FIG. 1 is a view in perspective showing the two halves of a package according to a preferred embodiment of this invention just prior to assembly.

FIG. 2 is an end elevational view of the package of FIG. 1 after assembly.

FIG. 3 is a somewhat enlarged view partly in section and partly in elevation taken along the line 3—3 of FIG. 2.

FIG. 4 is a top plan view of the package as it is being opened by snapping the cover off the mounting member.

Referring to the drawings, there is shown a tape package according to a preferred embodiment of this invention which comprises a roll **11** of tape **12** wound upon itself about a hollow core **13**, a mounting member **14** supporting the tape, and a snap-on cover **15**. The tape, itself, may be of a single layer of material such as unsintered polytetrafluoroethylene ribbon, or it may be in the form of a laminate, not shown, which comprises a backing sheet and an inner layer of a pressure-sensitive adhesive. The core **13** may be a cardboard cylinder of the type which conventionally is used for this purpose.

The mounting member **14** is molded from a relatively rigid plastic material, such as high impact polystyrene, and comprises a hollow cylindrical hub **16** inserted through the core **13** of the tape roll and an annular disc **17** integral with the hub **16** and extending radially beyond the periphery of the tape roll **11** at one end of the hub. A series of four axially extending mounting ribs **18** are presented on the outer surface of the hub **16**. These ribs **18** are spaced angularly about the hub axis approximately 90° from one another, and are intended to grip the core **13** of the tape roll since the overall diametric distance across opposite ribs **18** is slightly greater than the inner diameter of the core **13**.

The snap-on cover **15** is molded from a relatively flexible and resilient material, such as low density polyethylene, and comprises an end wall **21** having a circular perimeter, and a cylindrical peripheral wall **22** integral therewith and extending axially from the end wall **21** over the tape roll **11**. The peripheral wall **21** presents shallow flange portions **23** extending radially inwardly from one edge of the peripheral wall beyond the periphery of the annular disc **17** of the mounting member. These flange portions **23** are in the form of a set of four shallow lips spaced angularly about the axis of the tape roll **11** approximately 90° from one another. The flange portions, or lips, **23** have inner edges **24** in contact with the outer surface of the disc **17** and the peripheral edge of the disc **17** normally is in contact with the inner surface of the peripheral wall of the cover axially inwardly and immediately adjacent the lips **23**. In fact, the inner diameter of the peripheral wall **22** of the cover at this point normally is slightly less than the outer diameter of the disc **17** of the mounting member so that there is a press fit between the peripheral wall **22** and the disc **17** when the cover **15** is assembled over the mounting member **14**, as shown in FIG. 3. The peripheral wall **22** of the cover is sufficiently flexible and resilient to allow it to be flexed radially outwardly so that the flange portions **23** will snap over the periphery of the disc **17** and the peripheral wall **22** just inwardly and immediately adjacent the flange

portions **23** will continue to press inwardly against the peripheral edge of the disc **17** all around the disc to prevent foreign matter from entering the package between the disc and the peripheral wall.

The leading end **25** of the hub **16** on the mounting member **14** extends axially through the core **13** beyond the tape roll **11** and into contact with a central portion **26** of the inner surface of the end wall **21** of the cover. The axial distance between the leading end **25** of the hub and the outer surface of the annular disc **17** at the periphery of the disc is slightly greater than the normal axial distance between the inner edges **24** of the flange portions, or lips, **23** (on the peripheral wall of the cover) and the inner surface of the central portion **26** of the end wall **21**. Thus, when the package is assembled, the central portion **26** of the end wall of the cover is flexed axially outwardly by the leading end **25** of the hub **16**, as the cover is snapped into position, as shown in FIG. 3. The end wall **21** of the cover is sufficiently resilient to assure that it continues to press resiliently inwardly against the hub, as illustrated by the arrows in FIG. 3, to hold the mounting member **14** and the tape roll **11** firmly in position between the end wall **21** and the flange portions **23** of the cover **15**. As long as the parts are in this position, the leading end **25** of the hub remains pressed against the inner surface of the central portion **26** of the end wall of the cover all around the periphery of the edge of the leading end **25** of the hub to prevent foreign matter from entering the package between the hub **16** and the end wall **21**. This is quite important in this embodiment of the invention wherein the hub **16** is hollow for dispensing purposes and to save material, but would otherwise provide access to the interior of the package.

The package is adapted to be opened easily merely by pressing the central portion **26** of the end wall of the cover inwardly against the hub **16** while holding the peripheral wall **22** of the cover, as illustrated in FIG. 4. When this is done, the hub **16** is moved axially and the disc **17** of the mounting member tends to pivot about one of the lips **23** and snap free from the lip at the opposite side of the cover, as illustrated in FIGS. 3 and 4. FIG. 4 is viewed from the top of FIG. 3, in the sense that the disc **17** is shown in phantom snapping free from the lip at the top of FIG. 3 and FIG. 4 views this separation between the disc **17** and the cover **22** from the top. Once the cover **15** is removed in this manner, the tape **12** may be dispensed freely from the roll **11** without removing the roll from the mounting member. In fact, dispensing is facilitated by holding the mounting member either by the disc **17** or through the hub **16**, and rotating the roll as necessary, either alone or with the mounting member. When the desired length is dispensed, the cover **15** may be snapped back easily over the mounting member **14** to enclose the roll **11**. This procedure may be repeated any number of times to open and close the package for dispensing purposes and protect the tape from contamination by foreign matter.

Having now described the invention in specific detail and exemplified the manner in which it may be carried into practice, it will be readily apparent to those skilled in the art that innumerable variations, applications, modifications, and extensions of the basic principles involved may be made without departing from its spirit or scope.

What is claimed is:

1. A tape package comprising a roll of tape wound upon itself about a hollow core, a relatively rigid molded mounting member for said roll which comprises a cylindrical hub inserted through said core and an annular disc integral with said hub and extending beyond the periphery of said roll at one end of the hub, and a relatively flexible and resilient molded snap-on cover which comprises an end wall and a cylindrical peripheral wall integral therewith and extending axially from said end wall over the tape roll, the leading end of said hub extending through said core axially beyond the tape roll and into contact with a central portion of the inner surface of said end wall, the peripheral wall of said cover presenting shallow flange portions extending radially inwardly from said peripheral wall beyond the periphery of said annular disc and having inner edges in contact with the outer surface of said disc, the axial distance between the leading end of said hub and the outer surface of the annular disc at its periphery being slightly greater than the normal axial distance between the inner edges of said flange portions and the central inner surface portion of said end wall, whereby the central portion of the end wall of the cover is flexed axially outwardly by the leading end of said hub but continues to press resiliently inwardly against said hub when the flange portions of the cover are snapped over the periphery of the annular disc of said mounting member and said package is adapted to be opened merely by pressing the central portion of the end wall of the cover inwardly against said hub while holding the peripheral wall of the cover.

2. A tape package according to claim **1**, wherein the hub is in the form of a hollow cylinder and the leading end of the hub remains pressed against the central inner surface portion of the end wall of said cover all around the periphery of the leading end edge of said hub to prevent foreign matter from entering said package between said hub and said end wall.

3. A tape package according to claim **1**, wherein the outer diameter of the annular disc of said mounting member is slightly greater than the normal inner diameter of the peripheral wall of said cover axially inwardly and immediately adjacent said flange portions, and said peripheral wall is adapted to be flexed radially outwardly to allow said flange portions to snap over said disc, said peripheral wall continuing to press radially inwardly against the periphery of said disc all around the disc to prevent foreign matter from entering said package between said disc and said peripheral wall.

4. A tape package according to claim **1**, wherein the flange portions of said cover are in the form of a plurality of shallow lips spaced angularly around said peripheral wall.

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