PACKAGES FOR PRODUCTS WOUND ON BOBBINS

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The present invention relates to a package for products wound on a bobbin housed therein, such as bands or ribbons, threads and the like, and more particularly to a package for adhesive zinc plaster.

Packages of this kind hitherto have been difficult to handle when withdrawing the products housed therein. This relates particularly to packages for zinc plaster, where, when a person, who has cut a cut, wound or the like in his hands, wants to withdraw a piece of plaster to put on the wound.

An object of the present invention therefore is to provide a package which is easy to open and close, particularly with one and the same hand with which the package is held.

Another object of the invention is to provide a package which gives a good protection to the products housed therein and which further is inexpensive to manufacture and apt for mass-production.

Features of the invention refer to the provision of a pair of elastic dish members, one on each side of a bobbin, said dish members being capable of snapping over from a first condition of shape, in which their outer sides are concave and the package is open, to a second condition of shape, in which their outer sides are convex and the package is closed.

Further objects and features of the invention will appear from the following specification when read in conjunction with the accompanying drawings, in which a preferred embodiment is illustrated by way of example and in which:

FIG. 1 is a side view of a package according to the invention;
FIG. 2 is a central cross-section of the package of FIG. 1 taken along the line II—II and showing the package in its closed position; and
FIG. 3 is a cross-section similar to FIG. 2 but showing the package in its open position.

Referring now in detail to the drawings and particularly to FIG. 3, a pair of dish members 1, 2 provided with a substantially axial and preferably integral flange 1a, 2a at their circumference, are mounted in spaced relationship with facing flanges on a common axis, one on each side of a bobbin 3 carrying the product, e.g. adhesive zinc plaster. The dish members 1, 2 are made of elastic material, e.g. sheet metal, a suitable plastic material such as high pressure polyethylene, or the like.

For illustrative purposes the flanges 1a, 2a can be provided with a radial external rim 1b, 2b, respectively, at their free edge.

For interconnecting the dish members 1, 2 a coupling means extends through the center of the bobbin 3, said coupling means consisting of a pin and socket joint comprising the socket 4, extending inwardly from the center of one of the dish members and at its free end formed with an internal annular rib 8, leaving an opening for accommodating a pin 5 extending inwardly from a central boss 7 on the other dish member and having an external collar 6 at its free end. In assembled condition of the package, the pin 5 is introduced with its collar 6 into the socket 4, and the co-operation between said collar 6 and the internal rib 8 of the socket 4 admits a mutual axial movement between the center portions of the pair of dish members without allowing an unintentional separation of the same. Preferably the various parts of the coupling means are integral with the respective dish member.

The dish members 1, 2 are manufactured with such a form, that in their position of rest, i.e. when the package is open, they are in a first stable condition of shape, in which their outer sides are concave and the edges of the flanges 1a, 2a are sufficiently spaced for easy withdrawal of the product housed therein. FIG. 3 shows the dish members as manufactured. Formed in this way, the dish members 1, 2 are capable, when under opposed axial pressures applied circumferentially, to snap over from said first stable condition of shape to a second stable condition, in which at least the center portion of the outer sides of the dish members are convex and the flanges 1a, 2a about each other at their edges so as to close the package. The package is opened by applying opposed axial pressures centrally on the dish members 1, 2 to snap same back to their first stable condition of shape.

The bobbin 3 carrying the product is made of cardboard, plastic, wood, metal or the like and has a preferably integral hub 9 for rotatably and axially slidably mounting the bobbin 3 on the socket 4 and pin boss 7 when in assembled condition. In order to obtain the snap-action of the dish members 1, 2, said members are spaced by concentric spacing means with an axial extent so as to constitute suitable support means for the dish members when they are submitted to axially applied opposed pressures. Although said spacing means may be formed as individual spacing arms or the like, in a preferred embodiment they consist of a cylinder and preferably integral rim 3a on each side of the bobbin 3 so as to form an axial extension of the peripheral surface of said bobbin, on which the product is wound. The axial width of the bobbin hub 9 is smaller than the axial width of the bobbin 3 as measured over the rims 3a, so that the center portions of the dish members 1, 2 may be pressed inwardly of the plane of the edge of the rim in order to assure the proper snap-action of said members 1, 2.

It will be understood that the proper snap-action of the dish members 1, 2 depends on the elasticity of the material, the diameter and the wall thickness of the dish members as well as the radial location of the spacing means and the axial width of the flanges 1a, 2a. For illustrative purposes only and without limiting the invention, it might be mentioned that in a practical embodiment following dimensions are used, viz. a dish member diameter of $2\frac{1}{4}$ inch, a dish member wall thickness of .040 inch, a dish member flange thickness of .060 inch and an axial flange width of .295 inch. The diameter of the peripheral surface of the bobbin on which the product is wound, is approximately $\frac{13}{16}$ inch as well as the diameter of the supporting rims of the bobbin, the axial width of the bobbin as measured over the supporting rims is $\frac{1}{2}$ inch and the axial width of the bobbin hub is $\frac{3}{8}$ inch. The width of the product wound on the bobbin also is $\frac{3}{8}$ inch and the axial spacing between the edges of the dish member flanges is at least $\frac{3}{16}$ inch, when the package is open. It is understood, however, that owing to the elasticity of the dish members and the axial movement between said members allowed by the cooperating means, the flanges can be spread apart further after the package is opened so as to facilitate the withdrawal of the product.

In order to assure a slight pressure between the abutting flanges 1a, 2a for preventing dust or the like to enter, when the package is closed, it is suitable to dimension the length of the pin 5 so as not to allow the dish members to occupy their second stable condition of shape completely. Preferably the abutting edges of the flanges 1a, 2a also are provided with a co-operating ridge and groove
1c, 2c, respectively, to improve the sealing of the closed package.

When assembling the package, the bobbin 3 with the product wound thereon is mounted with its hub 9 on the socket 4 of one of the dish members, being in its first stable condition of shape. The other dish member, also being in its first stable condition of shape, then is connected with the first dish member by forcing the pin 5 with its collar 6 through the annular rib 8 and into the socket 4. The dish members 1, 2 are finally brought to their second stable condition of shape by applying opposed axial pressures circumferentially on said members, thus closing the package as shown in FIG. 2.

When opening the package for withdrawal of the product housed therein, opposed axial pressures are applied centrally on the dish members 1, 2, preferably with the thumb and forefinger of the same hand with which the package is held. Thereby the pin 5 is pressed into the socket 4 and the center portions of said dish members are brought inwardly of the plane of the edge of the supporting rims 3e so as to snap over the dish members to their first stable condition of shape, as shown in FIG. 3, giving access to the product wound on the bobbin. After withdrawal of a suitable length of the product, the package is again closed by applying opposed axial pressures circumferentially on the dish members.

Although I have described my invention with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as hereinafter claimed.

I claim:

1. A package for products wound on a bobbin housed therein, comprising a pair of dish members of elastic material having a substantially axial flange at their circumference and mounted with facing flanges on each side of said dish member on a common axis, said dish members being in a first stable condition of shape, in which their outer sides are concave and the package is open, opposing axial pressures applied centrally said dish members being capable of snapping back from said first stable condition of shape to said second stable condition of shape, said spacing means consisting of an axial rim integral with the bobbin at each side of the same and having a diameter and an axial extent so as to constitute support means for said pair of dish members to provide a mutual axial movement of the center portions of said pair of dish members during their snap-action.

2. A package for products wound on a bobbin housed therein, comprising a pair of dish members of elastic material having a substantially axial flange at their circumference and mounted with facing flanges on each side of said dish member on a common axis, said dish members being in a first stable condition of shape, in which their outer sides are concave and the package is open, coupling means extending through the center of said bobbin and interconnecting said pair of dish members, and concentric spacing means for holding said dish members with their flanges spaced when the package is open, so as to allow the product to be withdrawn from the bobbin between said dish members, said pair of dish members under opposed axial pressures applied circumferentially being capable of snapping back from said first stable condition of shape to a second stable condition of shape, in which their outer sides are convex at least at the center portion thereof and the flanges abut each other at their edges so as to close the package, while under opposed axial pressures applied centrally said dish members being capable of snapping back from said second stable condition of shape to said first stable condition of shape, said spacing means consisting of an axial rim integral with the bobbin at each side of the same and having a diameter and an axial extent so as to constitute support means for said pair of dish members to provide said snap-action of the same, and said coupling means allowing a mutual axial movement of the center portions of said pair of dish members during their snap-action.

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