Sept. 17, 1963 T. H. WALL 3,103,774

PACKAGING MEANS

Filed Dec. 22, 1961

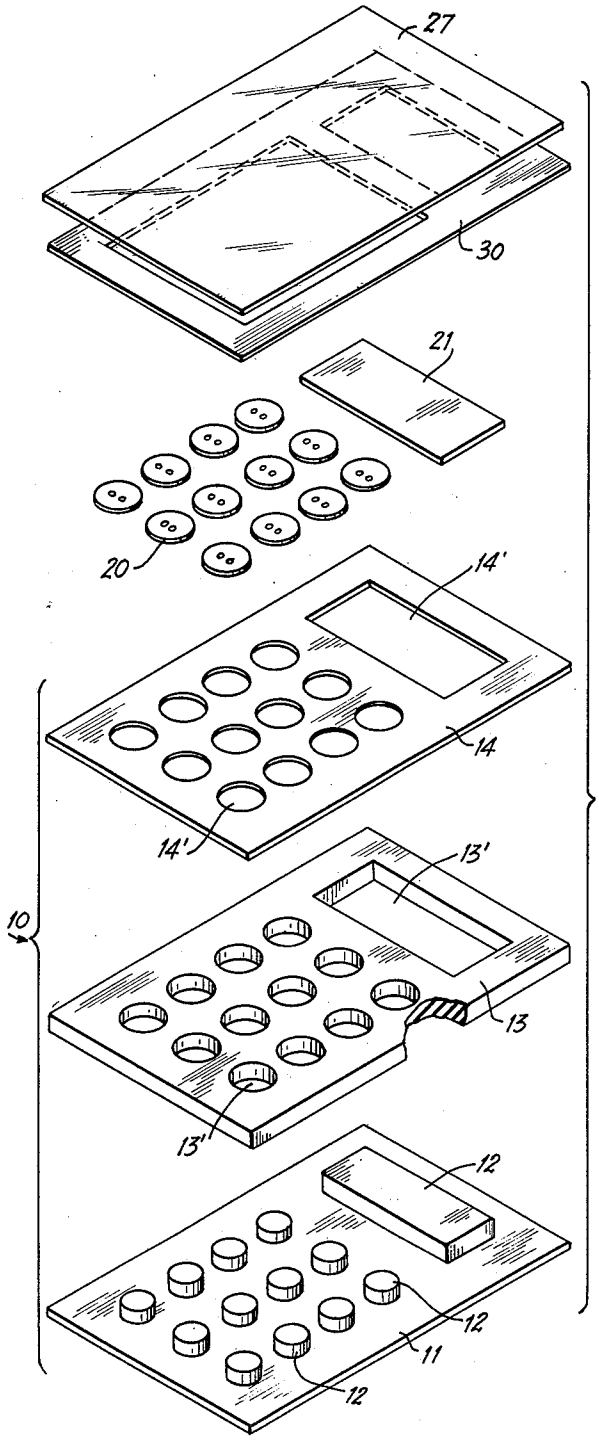


FIG. 1

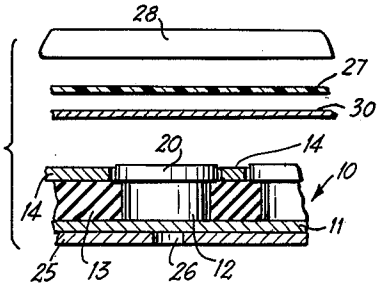
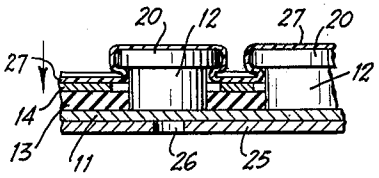


FIG. 2

FIG. 3



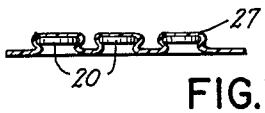


FIG. 5

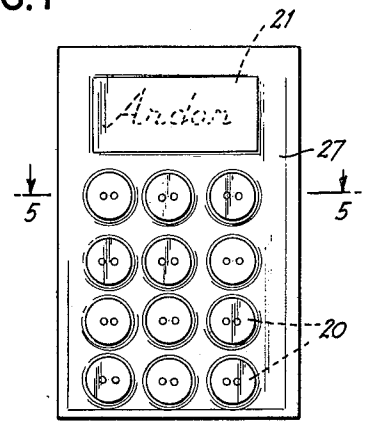


FIG. 4

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PACKAGING MEANS

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This invention relates to a display package and the means for manufacture thereof. More particularly the invention relates to a plastic package adapted to partially encase an article of merchandise, and a novel jig adapted to effect such partial encasement, in a thermo-plastic sheet without the necessity of any additional support or other appurtenances thereto.

The use of a thermo-plastic film to encase an article of merchandise mounted upon a back or support to form a display package is quite well-known. The widespread acceptance and universal appeal of such a package has spurred efforts to devise additional means for its utilization in packaging a greater variety of articles of merchandise. Various improvements in the art have been advanced whereby an article of merchandise is entirely or even partially encased by the thermo-plastic film without the necessity of a back or other mounting. However, in attempts to partially encase articles where no undercut region is available when the article lies on a supporting surface, without a backing member, it has been found that retention of the article within the package was difficult, if not impossible.

It is therefore an object of the present invention to package an article of merchandise in a plastic covering, partially encasing the article so that such article may be retained against unintentional removal therefrom, yet which may be readily detached from its covering when desired.

Another object of the present invention is to provide a package adapted to retain a plurality of articles in an effective display.

A further object of this invention is the provision of means for forming a thermoplastic sheet to partially encase and retain an article of merchandise therein without the necessity of providing a backing support or other appurtenance thereto.

Another object of this invention is to provide a package made of a thermoplastic film in intimate and shape-conforming relationship retaining such relationship with a plurality of articles of merchandise.

In general, achievement of the foregoing objects and advantages of the present invention is secured by the provision of a novel jig, employed in conjunction with a conventional vacuum forming machine. The novel jig, according to the present invention is provided with means for receiving and retaining in a desired position, and in spaced relationship, a plurality of articles of merchandise. Further means are provided to afford a partial clearance between the undersurface of an article and the conventional platen of the aforementioned vacuum forming machines so that an undercut or reentrant zone, yielding a partial clearance of the undersurface of the article and the back plate, allows the thermoplastic sheet to be shaped, conforming to said article.

The above and further objects and advantages of the present invention will be apparent to those versed in the art from the following description of a specific embodiment of the invention as illustrated in the drawings wherein like characters designate like parts in the several views, and in which:

FIG. 1 is a perspective view of the component parts of the jig of the present invention showing the arrangements thereof;

FIG. 2 is a diagrammatic sectional view showing the arrangement of the parts prior to the vacuum forming operation;

FIG. 3 is a similar view showing the arrangement of the parts after the vacuum forming operation;

FIG. 4 is a plan view of a package according to the present invention in which a plurality of articles, as for example, buttons, are packaged; and

FIG. 5 is a view taken on line 5—5 of FIG. 4.

Referring to the drawing, the jig 10 of the present invention comprises a substantially sandwich-like structure having a back plate 11 fabricated of a substantially rigid material, said back plate 11 having thereupon a plurality of rigid platforms 12 in spaced relationship. Such platforms 12 are of a size so that the article placed thereupon is in partial overlapping relationship therewith.

An intermediate yieldable layer 13 of material such as sponge rubber or plastic foam, is provided with a plurality of apertures 13' corresponding in position to platforms 12 and adapted to receive such platforms 12 therein. The thickness of intermediate layer 13 is generally the same as the depth of platform 12.

A template 14, fabricated of a substantially rigid material, is superposed upon the intermediate yieldable layer 13 and forms the uppermost part of the jig 10. Template 14 is provided with a plurality of apertures 14' in alignment with the apertures 13' of the intermediate layer 13. It will be noted that the thickness of the template 14 is such that a depression is formed in apertures 14' so that an article of merchandise as for example, a button 20, may be received therein to rest upon the surface of platform 12 and positioned within the limits of the aperture 14'.

In the use of the jig 10 of the present invention, a plurality of buttons 20 are placed within apertures 14' of template 14. A label 21 may likewise be placed within an aperture provided therefor in template 14. The jig 10 is then placed upon a platen 25 of a conventional vacuum forming machine, having at least one suction outlet 26. A thermoplastic sheet 27 softened by heat supplied by heating means 28 is applied above said thermoplastic sheet 27. A topplate 30 for purposes of supplying a framed effect to the thermoplastic sheet 27 may be placed between said sheet 27 and said jig 10, as desired.

As heat is applied by heating means 28 the thermoplastic sheet 27 is softened and brought into direct contact with the upper surface of jig 10. Suction applied through suction outlet 26 draws the template 14 downwardly as indicated in FIG. 3 depressing intermediate yieldable layer 13, so that the button 20 resting upon platform 12 is in a raised position above the template 14 and layer 13. Since button 20 rests on platform 12 so that it overlaps the entire platform 12 or part thereof, an undercut is created, making possible the covering of the top and sides of the button 20, as well as a partial covering of the undersurface thereof in the area of the undercut, as illustrated in FIG. 5.

Although foam plastic or sponge rubber has been described as suitable for intermediate layer 13, any yieldable, and resilient material may be employed. For example, spring members between the back plate 11 and template 14 may be advantageously employed to effect a response by the template 14 to compression.

It is further to be noted that the configuration assumed by platforms 12 and its corresponding apertures 14' may assume the shape of the article being packaged, and the placement thereof will of course be dependant upon the desired placement of an article of merchandise in a complete package.

While a specific embodiment has herein been described, it is apparent that changes and modifications may be made therein, and as so changed, a modified structure would still fall within the ambit of this invention.

I claim:

1. A jig for forming a package by the partial encasement of an article of merchandise by a thermoplastic sheet of material comprising a substantially flat rigid porous mem-

ber; at least one rigid platform adapted to receive at least one article of merchandise thereupon; said article being in overlapping relationship to the platform upon which it rests; a template substantially congruent with said rigid member having at least one aperture corresponding in position to said platform; and yieldable means intermediate said template and said rigid member responsive to vacuum suction exerted from the underside of said jig, whereby said template is depressed below the top surface of said platform upon the application of said vacuum suction thereupon.

2. A jig according to claim 1 wherein said yieldable means is a layer of resilient material.

3. A jig according to claim 1 wherein said yieldable means is a plurality of spring members.

4. A jig for forming a package by the partial encasement of an article of merchandise by a thermoplastic sheet of material comprising a substantially flat rigid member, at least one rigid platform upon said rigid member; said article being in overlapping relationship to the platform upon which it rests; a template substantially congruent with said flat rigid member having at least one aperture corresponding in position with said platform; a layer of resilient material intermediate said template and said rigid members responsive to vacuum suction exerted from below upon said jig; and a frame member substantially bordering the edges of said template.

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