Jan. 20, 1959 C. W. VOGT 2,870,023

ENWRAPMENTS FOR PLASTIC AND LIKE SUBSTANCES

Filed July 5, 1951 3 Sheets-Sheet 1

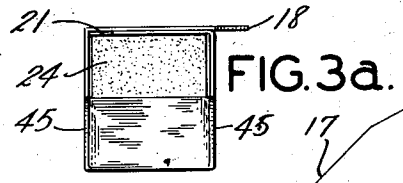


FIG. 3a.

FIG. 1.

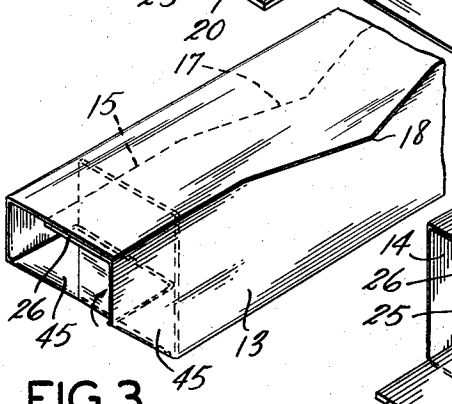


FIG. 3.

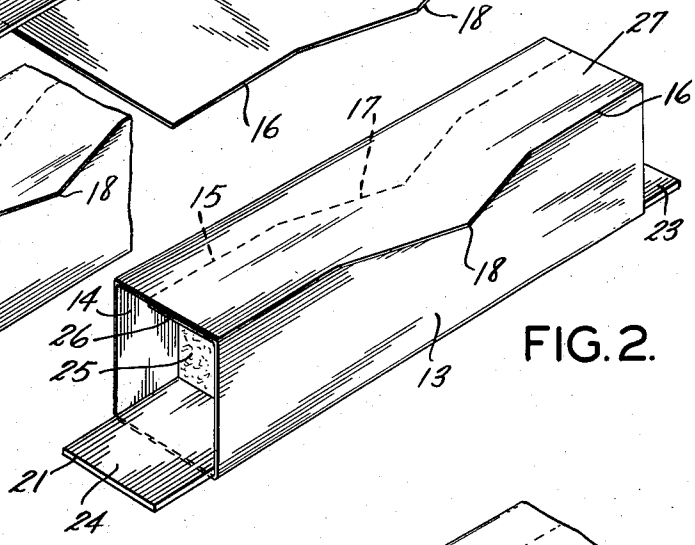


FIG. 2.

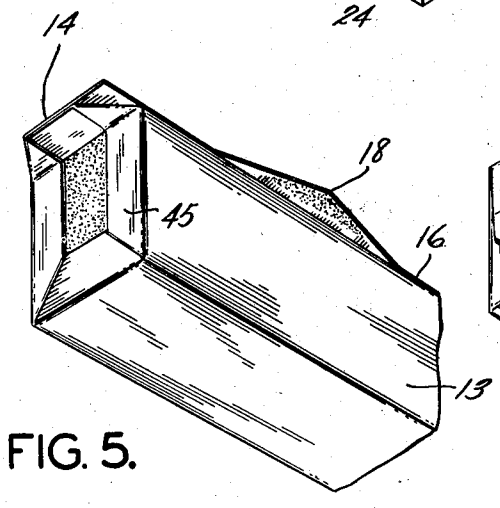


FIG. 5.

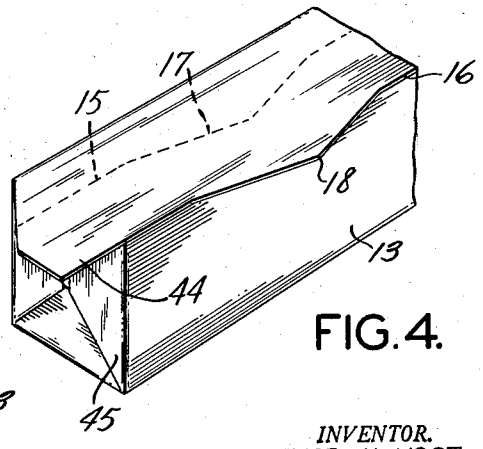


FIG. 4.

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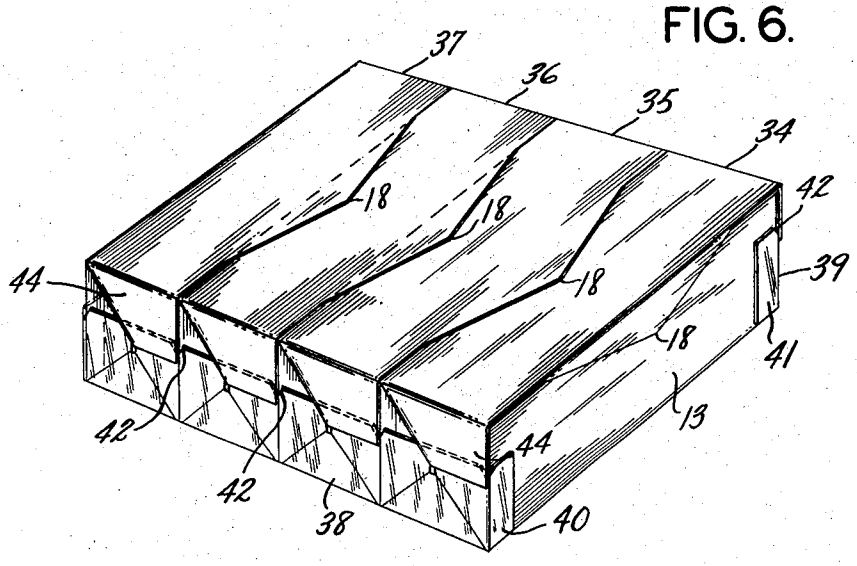
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ENWRAPMENTS FOR PLASTIC AND LIKE SUBSTANCES

Filed July 5, 1951 3 Sheets-Sheet 2

FIG. 6.



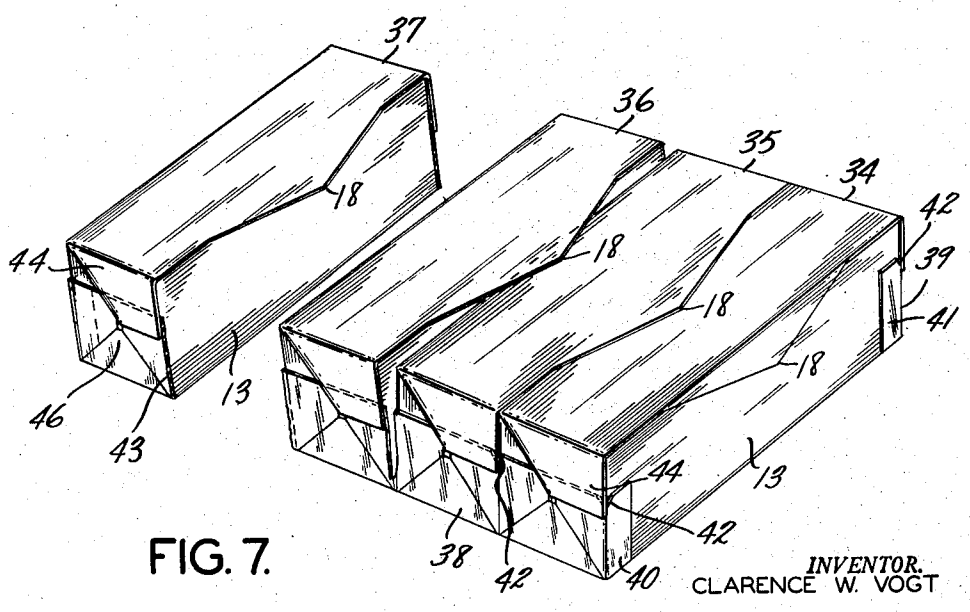


FIG. 7.

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Jan. 20, 1959 C. W. VOGT 2,870,023

ENWRAPMENTS FOR PLASTIC AND LIKE SUBSTANCES

Filed July 5, 1951 3 Sheets-Sheet 3

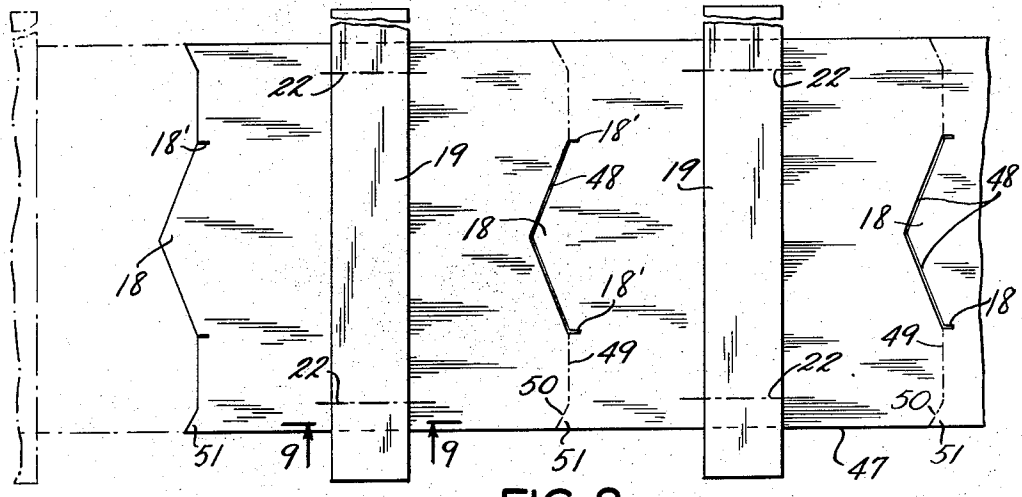


FIG. 8.

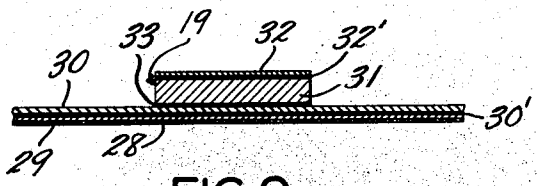


FIG. 9.

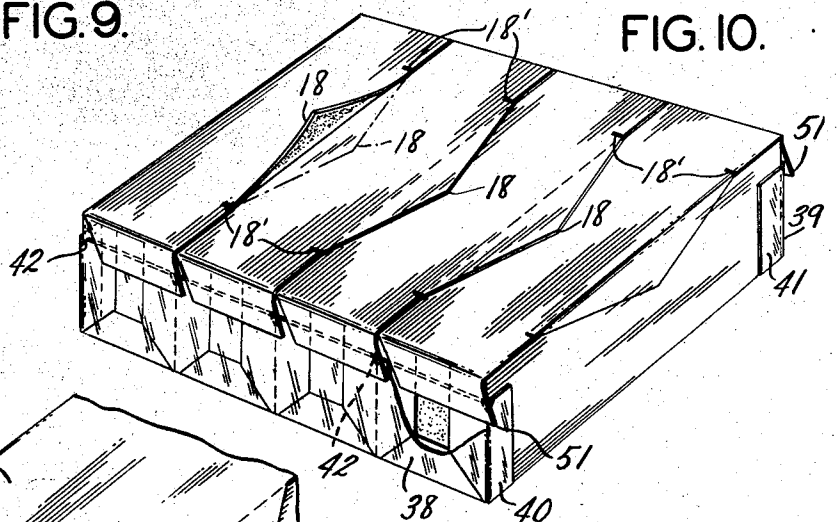


FIG. 10.

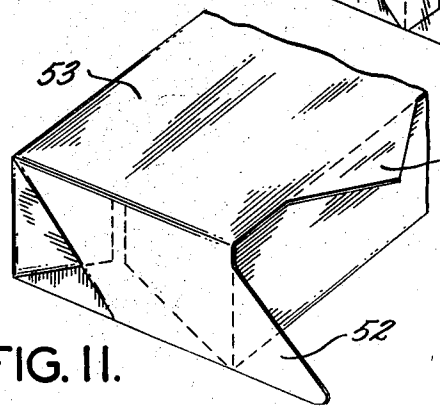


FIG. 11.

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ENWRAPMENTS FOR PLASTIC AND LIKE SUBSTANCES

Clarence W. Vogt, Norwalk, Conn.

Application July 5, 1951, Serial No. 235,209

7 Claims. (Cl. 99—179)

The present invention relates to enwrapments for commodities, particularly plastic substances, and embodies, more specifically, an improved form of enwrapment for products such as butter, margarine, lard, and the like.

It is an object of the present invention to provide an improved enwrapment for products of the above character by means of which such products may be effectively enclosed or wrapped with a minimum amount of wrapping material and, in such condition, not only effectively enclosed in such fashion as to retard loss by evaporation, etc., from the product, but also to support the product with a reasonable amount of protection against external stresses that might cause the wrapped product to be deformed.

Another object of the invention is to provide, in combination with an enwrapment of the character above referred to, means by which a plurality of unit products, each wrapped as aforesaid, may be assembled into a unitary package or combined unit from which the several unit products may be readily removed, when desired, but wherein such assembled units are nevertheless maintained effectively in assembled position and against stresses that might tend to cause separation of the units from the assembled package.

Yet another object of the invention is to provide wrapping material, in the form of specially formed blanks or serially in strips, by means of which the wrapping of products of the above character may be facilitated.

All patentable disclosure which this application has in common with that of my copending application, Serial No. 454,378, filed September 7, 1954, is claimed in the latter.

Other and further objects of the invention will be apparent as it is described in further detail in connection with the accompanying drawings, wherein

Figure 1 is a perspective view of an enwrapment for plastic substances constructed in accordance with the present invention;

Figure 2 is a view of the enwrapment of Figure 1 in an intermediate wrapping stage according to one wrapping operation and wherein the enwrapment is caused to enclose a product to be wrapped around one perimeter thereof;

Figure 3 is a fragmentary view similar to Figure 2, showing the wrapping operation following that illustrated in Figure 2, and leading toward a complete enclosure of the product;

Figure 3A is a view in end elevation showing the partially formed package of Figure 3;

Figure 4 is a view similar to Figure 3, illustrating the further operation by means of which the side flaps are folded over, leaving the top end flaps extending outwardly and ready to be folded down;

Figure 5 is a perspective view, taken from below and to one side, and showing a modified form of the invention wherein the structure is such as to facilitate the securing of the end flaps in the final folded position thereof;

Figure 6 is a perspective view illustrating the manner in which a plurality of individual products are assembled and secured together to form a single package of a plurality of units in assembled relationship;

Figure 7 is a view similar to Figure 6, illustrating the manner in which one or more units are removed from the composite package illustrated in Figure 6;

Figure 8 is a plan view of a portion of a web showing the manner in which a modified form of enwrapment may be formed therefrom;

Figure 9 is a partial enlarged view in cross-section, taken on the line 9—9 of Figure 8, and looking in the direction of the arrows;

Figure 10 is a perspective view similar to Figure 6, showing the modified form of the invention; and

Figure 11 is a view similar to Figure 5, showing a modified form of the invention.

Referring to the above drawings and particularly to Figure 1, an enwrapment is illustrated generally at **12** as being formed with sides **13** and **14** and ends **15** and **16**. One of the ends (for example, end **16**) is formed with a triangularly shaped tab **18**, while the other end **15** may have a complementary recess formed in the next adjacent blank, if the blank **12** is formed from a continuous web of material.

Properly positioned within the blank **12** is a reinforcement, preferably a unitary reinforce strip **19**, the ends **20** and **21** of which preferably extend beyond the adjacent sides **13** and **14** of the enwrapment **12**. The reinforcement or tray member **19** is preferably adhered to the blank **12** in such position that the end **16** is contiguous with one of the upper corners of the package, as illustrated in Figures 2, 3, 4, and 5. The blank **19** is formed with creases or scorings **22** that are so positioned with respect to the enwrapment that they coincide with the ends of the package ultimately to be formed and, in this respect, end portions **23** and **24** are formed out of the material of the reinforcement **19** so that, when the enwrapment is in assembled and wrapped position, the end pieces **23** and **24** overlie substantially the entire area of the end portions of the parallelepipedal-shaped product that is wrapped. By making the reinforcement or tray member **19** of relatively stiff material, a desired rigidity is imparted to the package, and the contents thereof are thus reinforced and strengthened against external stresses that might tend to disfigure or destroy the appearance of the package ultimately formed.

Although the enwrapment may be applied to the product to be enclosed therein in any desired fashion, as illustrated in Figures 2, 3, 4, and 5, the enwrapment **12** receives a suitable substance **25** to be enclosed by the enwrapment, this substance being placed upon the tray member **19** to lie between the scored portions **22** thereof. The sides of the enwrapment between the ends **15** and **16** and the reinforcement **19** are then folded upwardly, and the end portion **15** folded down upon the product to provide an inner top portion **26**. The other end portion is then folded into position, as illustrated in Figure 2, to provide an outer top portion **27**, the end **16** lying along and contiguous with the upper right-hand corner of the package, as illustrated in Figure 2. This causes the triangular flap **18** to extend outwardly beyond the side of the package.

The ends **23** and **24** are then folded upwardly as illustrated in Figure 3, and the sides are folded inwardly as illustrated in Figure 4, following which the top outwardly extending portions are folded downwardly into the completed position illustrated in Figures 6 and 7.

In commercial operations it may be found preferable first to fold up the bottom flap and end pieces **23** and **24** into the position illustrated in Figure 3. Following this, the side flaps are folded over to form the shape illus-

trated in Figure 4. The folding of the top flap downwardly may then be completed, this fold being accomplished after first applying end tapes (if these tapes are to be used) as hereinafter described.

The sealing of the enwrapment, including the elements thereof, may be accomplished, for example, by applying a coating of a heat sealing lacquer to the outer (under, as viewed in Figure 1) surface 28 of the enwrapment. Also, the reinforcing element 19 may be provided with a heat activated adhesive.

On the other hand, the preferred embodiment of the invention contemplates the structure of Figure 5 wherein the outer surfaces only of the ends 23 and 24 of the reinforcement 19 are provided with a heat activated adhesive. Here the reinforcement is secured to the enwrapment at the locations where the sides of the latter lie under the ends 23 and 24 and the side and top flaps formed by the end folds of the enwrapment likewise overlap the adhesive on the ends 23 and 24 to be adhered thereto.

Where the end tapes are used, as illustrated in Figure 10, they terminate sufficiently short of the top edge to provide an adhesive contact between the top flap and the adhesive on the ends 23 and 24. By forming the dimensions properly, the top flaps protrude beyond the upper edges of the end tapes and afford a convenient element to be gripped when the enwrapment is opened. In this form of enwrapment the tabs 18, or the surfaces therebeneath, are provided with a spot application of an adhesive (preferably of a relatively low shear strength).

There are numerous polyamide suspensoid resin emulsions available that become tacky and adhesive upon application of heat, and it has been found that these emulsions are eminently well suited for use in connection with the present enwrapment. In any event, the application of the adhesive to the underside of the reinforcement 19 insures that the adhesive will not come in contact with the contents of the container and facilitates the application of the reinforcement to the enwrapment, as illustrated in Figure 1.

If desired, the enwrapment 12 may be formed, as illustrated in Figure 9, with an outer layer of a suitable foil 29 and an inner layer of parchment 30. The outer coating on the foil is illustrated again at 28 in Figure 9, and the parchment and foil may be laminated together in accordance with well known practice, the laminant being indicated at 30'. If desired, the reinforcement 19 may be formed of a relatively heavy kraft paper stock 31 to which has been applied a parchment liner 32 by a suitable laminant 32'. The adhesive that secures the reinforcement to the parchment liner 30 is illustrated at 33 and, as above mentioned, may be a heat activated type of adhesive. By applying the adhesive coating to the outer side of the foil 29, it does not, at any time, come in contact with the contents of the package, and thus always provides a surface that may be heat activated to seal the adhesive surfaces of the enwrapment after they have been moved into a wrapping position. It is to be observed that the relatively heavy material of the liner 19 insulates the contents of the package from heat that is applied to the end portions to accomplish the sealing of the latter.

Referring to Figures 6 and 7, there is illustrated the manner in which a plurality of unit packages may be assembled to form a composite unitary package. In these figures, four unit packages 34, 35, 36, and 37 are assembled in contiguous relationship with the flaps 18 thereof overlying the next most adjacent package to the right thereof. In this position the flaps are adhered to the underlying top portions of the adjacent packages and, in order to afford rigidity to the packages thus assembled, longitudinal strips of tape 38 and 39 are caused to be adhered to the ends of the assembled units, before folding down the end flaps. The ends of the tapes 38 and 39 extend beyond the assembled ends and are turned back and adhered to the sides of the end units, as illustrated at 40 and 41. The material of the tapes 38 and 39 is of any suitable plastic substance (either transparent or opaque), such as cellulosic materials, for example, cellophane, and may be adhered to the units of the package, as illustrated in Figure 6. The tapes 38 and 39, in the drawings, are shown as being transparent. In order to facilitate separation of the units of the composite package, the tapes 38 and 39 are weakened or nicked at points 42, thus enabling the tapes to be torn in any of the planes corresponding to the juxtaposed and contacting faces between the units of the package after the flap 18 has been loosened. The lower edge of the tapes is continuous and unweakened in order to give rigidity to the composite package.

Figure 7 illustrates the manner in which the units of the package may be separated. As illustrated, if the unit 37 is to be detached, force is applied to it tending to swing it downwardly and away from the adjacent unit 36. The adhesive of the tab 18 of all of the units is such as to yield under shear and, upon such force being applied, the tab pulls away from the upper surface of the units 36, and the nicked portions of the tapes 38 and 39 cause them to be torn along the edges indicated at 43. In Figure 7 the unit 37 has been illustrated as having been removed from the remaining composite package, and the unit 36 is shown in the process of being removed.

It is to be observed that in the structure shown in Figures 1 to 7, the shape and size of the enwrapment 12 is such that when the end folds are completed, there is no substantial bulk formed at these ends. For example, the final end fold forms a flap 44 which is folded down after the tapes 38 and 39 (if these are used) have been applied. The length of the flap 44 terminates at such a point that there remains a zone 46 at which there is no common overlap by all of the end folded flaps. The end walls 23 and 24 serve to complete the enclosure of the contents and thus avoid the necessity of a substantial overlap existing as between all of the end folded flaps.

With reference to Figures 8 and 10, a modified form of enwrapment is illustrated. A continuous web, indicated at 47, has cut therein the angularly related cuts 48 which terminate inside the margins of the web in parallel cuts 18' and thus form the tabs 18. The reinforcements 19 are applied to the web in spaced relation and in the manner as hereinabove described and, in due course, the web with the above described preformed elements is utilized in connection with the packaging of the desired commodity. After preforming the web as above mentioned, it may be rolled into rolls and sold as an article of commerce for use in packaging machines, or the enwrapments may be cut therefrom at any desired point in the wrapping operation. In any event, the completed enwrapment is formed by severing each enwrapment from the web along the lines 49 and 50. The line 50 is formed at an angle to the line of the transverse cut 49 and thus forms a tab 51 which, as illustrated in Figure 10, serves as a convenient means for opening the end folds of the wrapper. The tabs 51 also, when adhered to the underlying end folds of the adjacent unit of the composite package, strengthen the unitary package and tend to prevent endwise movement of one unit with respect to another.

In this connection the form of commodity illustrated in Figure 11 utilizes end tabs 52 that are formed in a similar fashion to the tabs 51, but provide a substantially greater amount of overlap and thus enable a plurality of units 53 to be assembled in a composite package and maintained in such condition merely by the adhesion afforded by the tabs 18 and 52. In the form of the package shown in Figure 11, the cross-section is rectangular rather than substantially square, as illustrated in Figure 10.

While the invention has been described with specific reference to the accompanying drawings, it is not to be limited save as defined in the appended claims.

I claim:

1. A wrapper for plastic and like substances comprising a sheet of material having ends and side edges, one of said ends having a substantially V-shaped extension thereon and the other end having a recess substantially complemental to said extension, a reinforcing strip of stiffer material than said sheet secured to said sheet about midway of its length and extending transversely of said sheet, said strip being of greater length than the width of the sheet and having end portions extending outwardly beyond the edges of said sheet, said reinforcing strip having score lines therein substantially parallel with and inwardly of the side edges of said sheet, the portion of said strip between said score lines being secured to said sheet.

2. The wrapper set forth in claim 1, in which a plurality of said sheets are connected in end to end relation with the V-shaped extension of one wrapper disposed in the V-shaped recess of another wrapper.

3. The wrapper set forth in claim 1, comprising a heat-sensitive coating of adhesive material on the opposite side of said sheet from said strip.

4. A composite package formed of a plurality of juxtaposed, unitary parallelepipedal packages, each of which contains a product and is formed of a relatively flexible enwrapment comprising portions forming sides, bottoms, ends and top, the portion forming the top comprising inner and outer layers, the edge of the outer layer having a flap formed therealong and projecting beyond the side of the unitary package, said flaps being adhered to the outer layer of the top portion of the next contiguous enwrapment, a length of plastic tape extending across the combined width of the juxtaposed unitary packages and adhesively bonded thereto, of width extending upward from the lower edges of said packages but spaced from the upper edges thereof, the enwrapment of each individual package having an end fold extending from its top downward covering and bonded to the end of the package above the upper edge of the end tape therebelow, each of the enwrapments having adhered thereto a reinforcement formed of relatively stiff material forming a bottom and ends on the inside of each enwrapment, the width of each enwrapment in the direction of the reinforcement being such as to prevent overlapping of the end folded portions of the top and bottom portions.

5. The combination recited in claim 4, in which the end tape is nicked at its upper edge at each junction between juxtaposed package ends.

6. The combination recited in claim 4, in which the end tape is nicked at its upper edge at each junction between juxtaposed package ends, and in which each said end flap has a lateral tab for convenience in opening the end folds of the wrapper.

7. A composite package formed of a plurality of juxtaposed, unitary parallelepipedal packages, each of which contains a product and is formed of a relatively flexible enwrapment comprising portions forming sides, bottom, ends and top, the portion forming the top comprising inner and outer layers, the edge of the outer layer having a flap formed therealong and projecting beyond the side of the unitary package, said flaps being adhered to the outer layer of the top portion of the next contiguous enwrapment, end folds on the enwrapment, the outermost of which extends downward from the top and has a unitary lateral extension tab substantially the height thereof adhesively bonded to the end portion of the contiguous individual package, each of the packages having adhered thereto a reinforcement formed of relatively stiff material forming a bottom and ends on the inside of each enwrapment, the width of each enwrapment in the direction of the reinforcement being such as to prevent overlapping of the end folded portions of the top and bottom portions.

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