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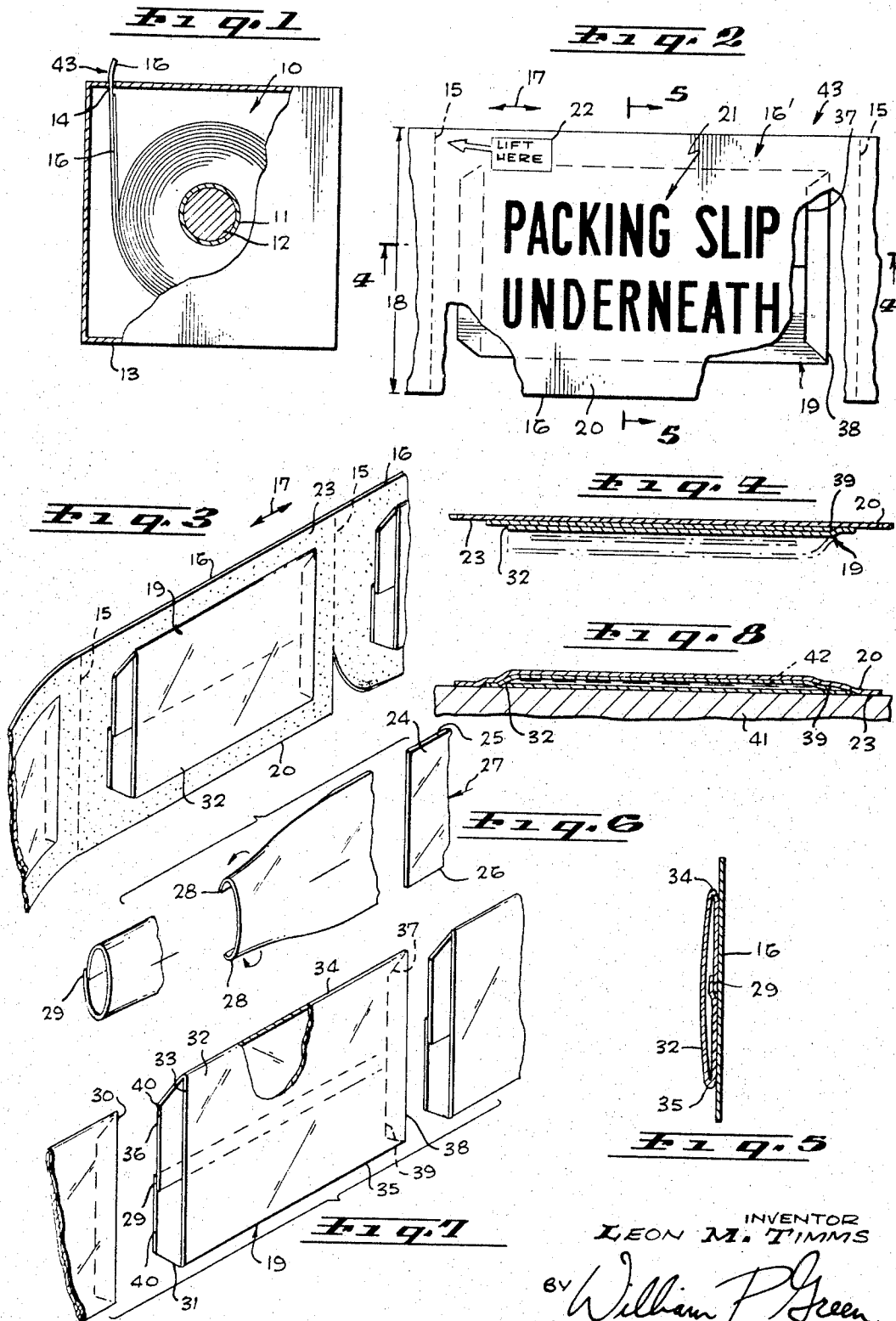
L. M. TIMMS

3,413,899

METHOD OF FORMING PACKING UNIT

Original Filed Aug. 16, 1965

2 Sheets-Sheet 1



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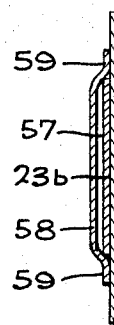
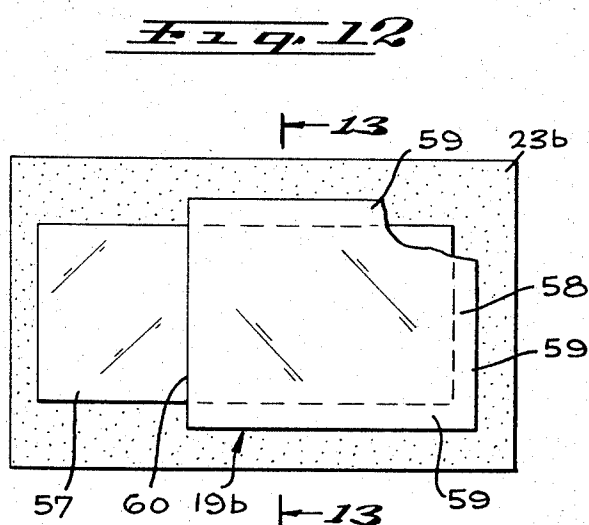
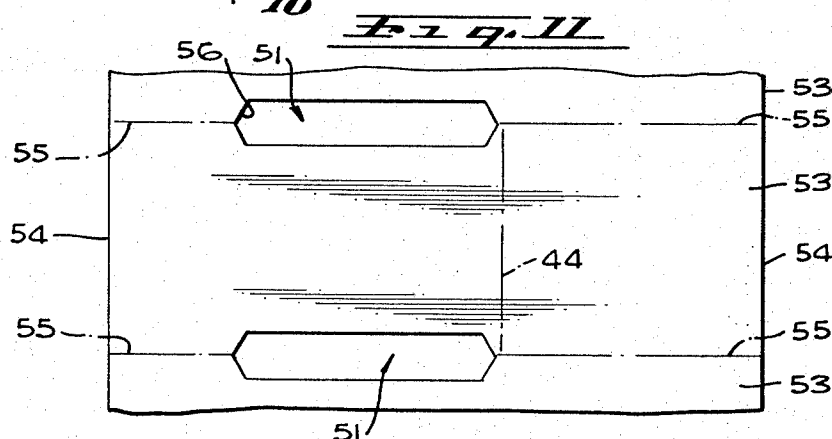
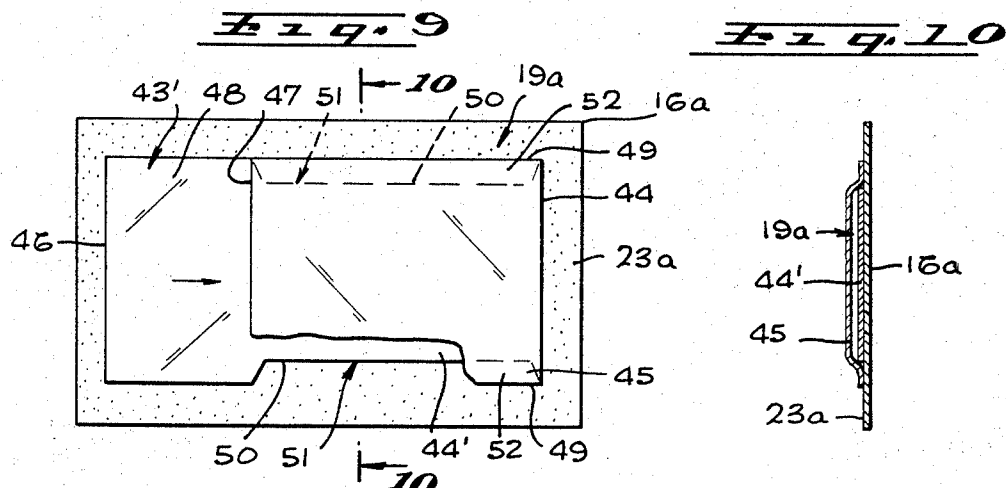
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2 Sheets-Sheet 2



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METHOD OF FORMING PACKING UNIT

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Original application Aug. 16, 1965, Ser. No. 479,735, now
Patent No. 3,330,470, dated July 11, 1967. Divided and
this application May 15, 1967, Ser. No. 638,378
9 Claims. (Cl. 93—61)

ABSTRACT OF THE DISCLOSURE

A method of forming a preassembled shipping unit including an adhesive carrier sheet to be adhered to an item being shipped and carrying a thin pocket for receiving a packing slip or the like. The method includes securing in relatively fixed positions two adjacent edges of the sheet material of the pocket by contact of both edges with the adhesive of the carrier sheet.

Cross references to related applications

This application is a division of my co-pending application Ser. No. 479,735, filed Aug. 16, 1965, on "Packing Unit," now Patent No. 3,330,470, issued July 11, 1967. Also, certain features of the packing unit whose method of formation is covered by the present application have been disclosed and claimed in my Patent No. 3,250,385, issued May 10, 1966, on "Roll of Shipping Units for Holding Packing Slip or the Like." Other related applications are my application Ser. No. 479,977, filed Aug. 16, 1965, now Patent No. 3,330,471, issued July 11, 1967, on "Packing Unit With Viewing Window," showing a unit which may be made by the present method, and another application Ser. No. 574,776, filed Aug. 24, 1966, on "Manufacture of Adhesive Shipping Units," by myself and John C. McKusick, this latter application disclosing certain improvements on the present methods, as well as apparatus for performing the methods.

Background of the invention

This invention relates to preassembled adhesive units for use in preparing an item for shipment, and adapted for attachment to a shipping container, or directly to an article to be shipped, for the purpose of attaching a packing slip or other item to the product.

In the above identified Patent No. 3,250,385, I have shown a packing unit which includes a carrier sheet of paper or the like, having an adhesive coating on its inner surface, and also carrying on that inner surface a thin pocket formed of sheet material. This pocket is adapted to receive a packing slip or other item which is to accompany the product being shipped. The adhesive on the carrier sheet is exposed at locations outwardly beyond the pocket, and preferably completely encircling the pocket, to adhere to a container or other article about the pocket in a manner holding the contents of the pocket to the article in protected relation during shipment. In accordance with the invention of my prior application, a series of adhesive packing units of this type are preferably provided in roll form, with the adhesive desirably being a waterproof pressure sensitive adhesive capable of protecting the contents of the pocket against moisture in transit, and adapted for ease and versatility of application.

Until the development of the inventions covered by the present application, and my above identified Patent No. 3,330,470, it had been my experience that the cost of my packing units could be reduced by forming the inner pockets as essentially conventional paper bags. However, one difficulty encountered in the use of such bags resulted from the manner in which they are closed at their lower ends, by folding their lower end portions to a doubled

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and thickened condition and then gluing them in that condition. This thickened end portion of the bag undesirably increases the thickness of the overall packing unit at that location, with the result that when a long series of the preassembled units are wound in roll form, the many thickened portions of the individual bags may increase the difficulty of attaining a proper overall roll configuration. Also, the thickened portions of the bags render the bags more difficult to properly feed to the adhesive carrying sheets during manufacture of the pre-assembled packing units, and are in various other respects undesirable.

Summary of the invention

A major object of the present invention is to provide a method of forming a packing unit of the discussed general type, but in which the inner pocket has an improved method of formation and mounting which enable the pocket to be formed from very inexpensive sheet material, such as paper, and which completely eliminate the necessity for closing the lower end of the bag or pocket with a locally thickened doubled end portion as is present in conventional paper bags. The invention further has the highly desirable advantage of considerably reducing the cost of the inner pocket structure, to an amount even less than that entailed in using ordinary paper bags.

To attain both of these results, I so form the present packing units as to eliminate the necessity for completing the manufacture of the pocket or bag prior to its application to the adhesive carrying sheet. More specifically, the bag is so formed and applied that movement of the pocket forming material into contact with the adhesive on the back of the main carrier sheet serves not only to retain the pocket on the sheet, but also to accomplish the added purpose of actually completing formation and partial closure of the pocket itself. Until such application of the pocket to the adhesive of the carrier sheet, the pocket may be incomplete in its manufacture, with edge portions of the sheet material which forms the pocket being still free for relative shifting movement, but being adapted to be automatically retained in fixed relative position by the adhesive of the carrier sheet. In one form of the invention, which is the presently preferred form, the adhesive acts to form the final closure of a paper bag type pocket at the location at which the lower end of the bag is normally doubled over to the above discussed thickened condition, but does so without such doubling and without an increase in thickness at that point. For this purpose, the pocket may be formed of two superimposed layers of sheet material, with one of those layers projecting beyond the other in a manner such that its edge portion will contact the adhesive and be retained by the adhesive in a position closing that edge of the pocket. In other forms of the invention, two opposite side edges of the pocket may be closed by contact with the adhesive in this manner, or three edges of the pocket may be similarly closed.

A series of the discussed pockets may be formed in extremely simple manner by a method in which an elongated strip of paper or other sheet material has its edges progressively turned laterally inwardly toward one another, to a doubled condition in which the sheet forms essentially a tube. Short portions of this tube may then be cut off to form individual pockets, and be applied to carrier sheets in a manner such that the inturned edges are retained in fixed positions by the adhesive of the carrier sheet, and also one end edge of the pocket is held closed by that adhesive, so that no adhesive is required other than that of the carrier sheet itself.

Brief description of the drawings

The above and other features and objects of the in-

vention will be better understood from the following detailed description of the typical embodiments illustrated in the accompanying drawings, in which:

FIG. 1 is a somewhat diagrammatic view representing a roll of packing units constructed by the method of the present invention;

FIG. 2 is an enlarged representation, partially broken away, of the outer side of one of the packing slip units of FIG. 1;

FIG. 3 shows fragmentarily the reverse or inner side of a series of the packing slip units;

FIGS. 4 and 5 are sections taken on lines 4—4 and 5—5 respectively of FIG. 2;

FIG. 6 is a diagrammatic view illustrating the manner in which a tube of paper or the like may be formed for use in manufacturing the inner pockets of the unit of FIGS. 2 through 5;

FIG. 7 shows the manner in which the tube of FIG. 6 is cut off to form a series of such pockets;

FIG. 8 is a view similar to FIG. 4, but showing the packing unit, made by the present invention, as it appears when applied to a carton to be shipped;

FIG. 9 is a view showing the back or adhesive side of another form of packing unit made by the method of the invention, and having a changed type of inner pocket;

FIG. 10 is a section taken on line 10—10 of FIG. 9;

FIG. 11 shows a strip of paper from which a series of the pockets of FIG. 9 may be formed;

FIG. 12 is a view similar to FIG. 9, but showing still another form of packing unit made by the method of the invention; and

FIG. 13 is a section taken on line 13—13 of FIG. 12.

Description of the preferred embodiments

Referring first to FIG. 1, I have shown at 10 a roll of packing slip units made by the method of the invention, and wound about a cylindrical cardboard core 11, which may typically be mounted rotatably on a shaft 12 carried by and within a dispensing container 13. The individual packing slip units are adapted to be pulled successively from container 13 through a dispensing slot 14 in one of its walls, and to be successively torn from the remainder of the roll along perforated areas 15 (FIGS. 2 and 3), for individual application to articles to be shipped.

The roll 10 includes an elongated strip of sheet material 16, which is elongated to an extended length in the direction indicated at 17 in FIGS. 2 and 3, and is wound longitudinally in that direction about core 11, to form many superimposed layers of this strip 16 on the roll 10. The width 18 of strips 16, transversely of its length 17, may be uniform along the entire length of the strip. Perforation lines or tear lines 15 may be formed on strip 16 transversely of its length, and at uniformly spaced locations along the entire length of the strip, so that the strip may be torn apart to form a series of rectangular individual carrier sheets 16' for application to individual articles or cartons to be shipped. Strip 16 and its carrier sheet portions 16' may be formed of any appropriate flexible sheet material, waterproof kraft type paper being the presently preferred material for this use.

Each carrier sheet 16' carries at its inner side (the side visible in FIG. 3) an individual pocket 19 for receiving a packing slip or the like. At its opposite or outer side 20 (the side visible in FIG. 2), each carrier sheet 16' is desirably provided with markings 21 for indicating to a recipient of the article to which the packing unit is attached the contents of pocket 19. In those instances in which a packing slip is to be positioned within pocket 19, the markings 21 may constitute printed words indicating the presence of the packing slip, such as the phrase "Packing Slip Underneath." There may also be printed on outer surface 20 of the carrier sheet 16' markings at 22 indicating that sheet 16' may be pulled at least

partially off of the article by stripping the sheet at a particular corner or other location.

The inner surface of strip 16 and its carrier sheet portions 16' may be coated continuously over their entire area, and along the entire length of the strip 16, with an adhesive substance 23 (FIG. 3), capable of adhering to cardboard, wood, or any other material from which a carton or article to be shipped may be formed. In the rolled form of FIG. 1 the adhesive 23 may be located on the radially inner surface of each layer of strip 16, with the exposed portions of that adhesive which are located about pocket 19 being in contact with the outer surface 20 of an adjacent layer of strip 16, to releasably hold each layer in its rolled condition. Surface 20 is treated to give it the characteristics of a release surface, to which adhesive 23 will adhere sufficiently to retain the assembly in the FIG. 1 roll form, but from which the adhesive is easily unwound without damage to surface 23, and without separation of the adhesive from the inner surface of strip 16 to which that adhesive has been initially applied. For this purpose, the outer printed surface 20 of strip 16 may be coated, continuously across its entire area, with a silicone or other known release agent.

For best results and maximum facility in handling the present packing slip units, it is preferred that adhesive 23 be a waterproof pressure sensitive type of adhesive, which without the use of a solvent is permanently tacky and adapted to adhere to release surface 20 and to an article or carton being shipped upon contact therewith, or upon the application of light finger pressure against sheet 16'. As an example, a suitable latex base waterproof pressure sensitive adhesive may be employed, preferably consisting of crude natural rubber and/or synthetic rubber combined with suitable resins for increasing the natural tackiness of the elastomer, and typically also including other additives such as plasticizers, fillers and the like in proportions giving to the ultimate combination the desired permanently and aggressively tacky characteristics.

Pocket 19 is formed of any appropriate sheet material, which for the purpose of minimizing cost may be an appropriate kraft paper such as that conventionally used in making paper bags. In the form of the invention shown in FIGS. 1 through 7, this pocket is formed in the manner brought out in FIGS. 6 and 7. As seen in the right-hand portion of FIG. 6, a series of pockets 19 may be made from an initially flat sheet of paper 24, having parallel opposite side edges 25 and 26, which sheet may during manufacture of the pockets progressively advance in the leftward direction indicated by arrow 27 in FIG. 6, parallel to edges 25 and 26. As strip 24 advances to the left, the edges 25 and 26 are progressively folded inwardly toward one another, as indicated at 28, and ultimately to the slightly overlapping condition represented at 29, so that the sheet of paper assumes the form essentially of an elongated tube of paper. This tube is flattened out and then cut at longitudinally spaced locations 30 (FIG. 7), to divide the tube into a series of individual pockets 19 applicable to the various carrier sheet portions 16' of strip 16 of FIG. 2.

To discuss in greater detail the manner in which the tube is cut into the individual pockets, it is noted in FIG. 7 that, at a leading end 31 of each pocket, the outer layer 32 of that pocket is cut off transversely to form an edge 33 which is perpendicular to the parallel side folds 34 and 35 of the pocket. The intumed portions of the paper sheet, whose edges overlap at 29, are cut off in a different manner, to project longitudinally beyond edge 33, and form together a typically trapezoidal projecting tab 36. The formation of this tab 36 at one end of each of the pockets 19 acts to simultaneously form at the opposite end of the next successive pocket a correspondingly shaped and typically trapezoidal cutaway 37 in the two intumed overlapping portions

of the sheet material which form pocket 19. The transverse edge 28 which is formed on the outer layer of the pocket at the second end, by the same cut which forms edge 33 of the next successive pocket, extends transversely of edges 34 and 35, and projects substantially beyond the transverse edge 39 of cutaway 37.

After each of the pockets 19 has been formed to the condition illustrated in FIG. 7, and without gluing the edges at 29 or any other portions of the pocket 19 together, the pocket is placed into contact with the adhesive coating 23 of an associated one of the carrier sheet portions 16' of strip 16, with the two turned overlapping portions 40 of the pocket contacting the adhesive. These portions adhere to the adhesive, and are held permanently in fixed positions by the adhesive, in a manner forming an effective closure at the location of the overlapping edges 29. Thus, any necessity for pre-gluing edges 29 together, as is required in conventional bag forming processes, has been eliminated. Similarly, one end of the pocket is effectively closed by engagement of the exposed end portion of outer layer 32 of the pocket forming material with adhesive 23. More particularly, this layer contacts the adhesive between the edges 38 and 39 of FIG. 7, and over the entire area of cutaway 37, to close that end of the pocket. The other end of the pocket remains open for reception of a packing slip or other item during its insertion into the pocket.

As will be apparent from the figures, pocket 19 is essentially rectangular in shape, and of a size to occupy the major portion of the adhesive surface 23, but leaving a portion of the adhesive exposed for contact with an article to be shipped, this exposed portion of the adhesive extending about the periphery of pocket 19, and preferably completely and continuously encircling that pocket to form a waterproof seal thereabout.

In using the packing slip units of FIGS. 1 through 8, assume that a carton 41 has been packed (FIG. 8), and that a packing slip 42 is to be attached to the carton to indicate its contents. The first step is to pull strip 16 of FIG. 1 outwardly through opening 14 of the dispenser container 13 far enough to expose the next successive perforation line 15, following which the end one of the packing units 43, including one of the carrier sheets 16' and its attached pocket 19, is torn off at the perforated line. Next, the packing slip 42 is inserted into pocket 19 of that unit, with tab 36 serving as a non-adhesive surface along which the packing slip may be slid into the pocket. The entire unit is then placed against the outer surface of carton 41, so that the adhesive 23 contacts the carton entirely about the periphery of the pocket. The adhesive then forms a waterproof protective layer at the outer side of and about the packing slip, protecting it against water damage in transit. When the carton reaches its destination, the recipient may strip carrier sheet 16' off of the carton, at least partially, to expose the open end of pocket 19 for removal of the packing slip.

FIGS. 9 and 10 illustrate another form of pocket 19a, which may be substituted for pocket 19 of FIGS. 1 through 8. This pocket 19a may be formed of a single piece of paper or other sheet material 43', forming a first layer 44' of the pocket adjacent and contacting adhesive material 23a, and with the sheet material 43 being doubled or folded back at 44 to form also a second or upper layer 45 of the pocket superimposed on the first layer. The first layer may extend from fold line 44 to a parallel edge 46, while the outer layer 45 may extend from fold line 44 only to a transverse edge 47, to provide at 48 a tab similar to and serving the purpose of tab 36 of FIG. 7. Outer layer or sheet 45 may have two parallel opposite side edges 49, which project beyond the adjacent edges 50 of bottom layer 44. To allow for this relation of the edge portions of the two layers, the bottom layer 44' may be cut away at 51. In assembling the unit, layer 44' is placed in direct contact with and

continuously adheres to the central portion of the adhesive coating 23a, while outer layer 45 of the pocket contacts and adheres to the adhesive only along two narrow areas 52, extending along the opposite sides of layer 44', and defined by the areas of the two typically trapezoidal cutaways 51 in the lower layer. Thus, a pocket is provided which is closed at three sides, and open only at the location of edge 47.

FIG. 11 shows the manner in which the blanks 53 for forming pockets 19a of FIG. 9 may be cut easily and with little waste from an elongated strip of paper, whose length extends in an up and down direction as viewed in FIG. 11. This strip of paper may have two opposite side edges 54, and may be cut transversely of these edges along lines represented at 55, with cutaways being formed at 56, to provide a series of the blanks whose fold lines 44 are located as illustrated in FIG. 11.

The carrier sheet 16a may be formed the same as sheet 16' of FIG. 1, and the unit of FIGS. 9 and 10 may in other respects be the same as that described in FIGS. 1 through 8, and be utilized in the same manner for shipping purposes.

FIGS. 12 and 13 show still another form of shipping unit made by a method embodying some of the features of the present invention, which additional form may be identical with that of FIG. 1 except as to the formation of pocket 19b from two separate rectangular pieces of paper or other sheet material 57 and 58. The lower sheet 57 contacts adhesive 23b, while the upper layer or sheet 58 overlies a portion of sheet 57, but has three edge portions 59 projecting beyond three edges of sheet 57, to contact and be retained by the adhesive. In this way, the overlapping edges 59 of sheet 58 are held in positions maintaining those three edges of the pocket closed, while the interior of the pocket is accessible through the fourth edge 60 of sheet 58. The use of this form of the invention is the same as has been discussed in connection with the other form.

I claim:

1. The method of forming a preassembled packing unit, comprising providing a carrier sheet having an inner surface coated with adhesive, forming a thin pocket of sheet material having two superimposed layers of said material and having two edges of said pocket forming material which are to be received adjacent one another but are not fastened in fixed relative positions, adhering said pocket to said adhesive with some of the adhesive remaining exposed outwardly beyond the pocket for contact with an article to be shipped, and during application of the pocket to the adhesive adhering both of said two edges of said sheet material forming the pocket to the adhesive and thus preventing relative movement thereof and retaining the pocket closed at said edges.

2. The method as recited in claim 1, in which said pocket is formed from a single piece of sheet material having said two edges initially extending along opposite sides thereof, said pocket being formed by turning said edges inwardly toward one another to form an essentially tubular pocket in which said edges form portions of a first of said layers and are retained in said inturned positions by contact with said adhesive.

3. The method of forming a preassembled packing unit, comprising providing a carrier sheet having an inner surface coated with adhesive, forming a thin pocket of sheet material having a first layer of said material and a second layer superimposed thereon, said second layer having an edge at the periphery of the pocket projecting beyond a corresponding edge of said first layer but not directly attached thereto, adhering said first layer to said adhesive, adhering said edge of the second layer to the adhesive to close the periphery of the pocket at said edges of said layers, and leaving some of said adhesive exposed beyond the periphery of the pocket for contact with an article to be shipped.

4. The method as recited in claim 3, including adher-

ing said second layer to said adhesive along two additional peripheral edges of said pocket.

5. The method of forming a preassembled packing unit, comprising providing a carrier sheet having an inner surface coated with adhesive, forming a thin essentially tubular pocket of sheet material by turning lateral edges of a single sheet of said material inwardly to form two layers of said material, forming an end of said tubular pocket so that one of said layers has an end edge projecting beyond the other layer, adhering said other layer to the adhesive with said one layer superimposed on said other layer, adhering said end edge of said one layer to said adhesive to close the pocket at that end, and leaving some of said adhesive exposed outwardly beyond said pocket.

6. The method as recited in claim 5, including contacting both of said inturned lateral edges with said adhesive without prior attachment of said inturned edges directly together, and thereby retaining said inturned edges in fixed relative positions only by said adhesive.

7. The method as recited in claim 5, including forming an elongated essentially tubular strip of material from a strip of sheet material, and dividing said elongated tubular strip into a series of said essentially tubular pockets for a plurality of said packing units, and with a tab formed on one end of each pocket and taken out of the opposite end of a next successive pocket so that said end edge of said one layer will project beyond said end edge of said other layer.

8. The method as recited in claim 5, including progressively forming a series of said tubular pockets by advancing an elongated strip of said sheet material along a path, progressively deflecting opposite side edges of

said elongated strip inwardly toward one another as said strip advances to shape the latter into an essentially tubular strip of material, and successively dividing said advancing tubular strip at spaced locations along its length into a series of said essentially tubular pockets for a plurality of said packing units, and with a tab formed on one end of each pocket and taken out of the opposite end of a next successive pocket so that said end edge of said one layer will project beyond said end edge of said other layer, said method including securing said pockets at spaced locations to an elongated strip of adhesive carrying material forming a series of said carrier sheets connected together, and in a relation forming an interconnected series of said packing units.

9. The method of forming a preassembled packing unit, comprising providing a carrier sheet having an inner surface coated with adhesive, doubling a single sheet of material to form a thin pocket having two layers of said material integrally connected at one end of the pocket, adhering a first of said layers to said adhesive with the second layer superimposed on the first, adhering two opposite side edges of said second layer to said adhesive laterally beyond said first layer, and leaving some of said adhesive exposed for contact with an article to be shipped outwardly beyond said pocket.

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BERNARD STICKNEY, *Primary Examiner.*