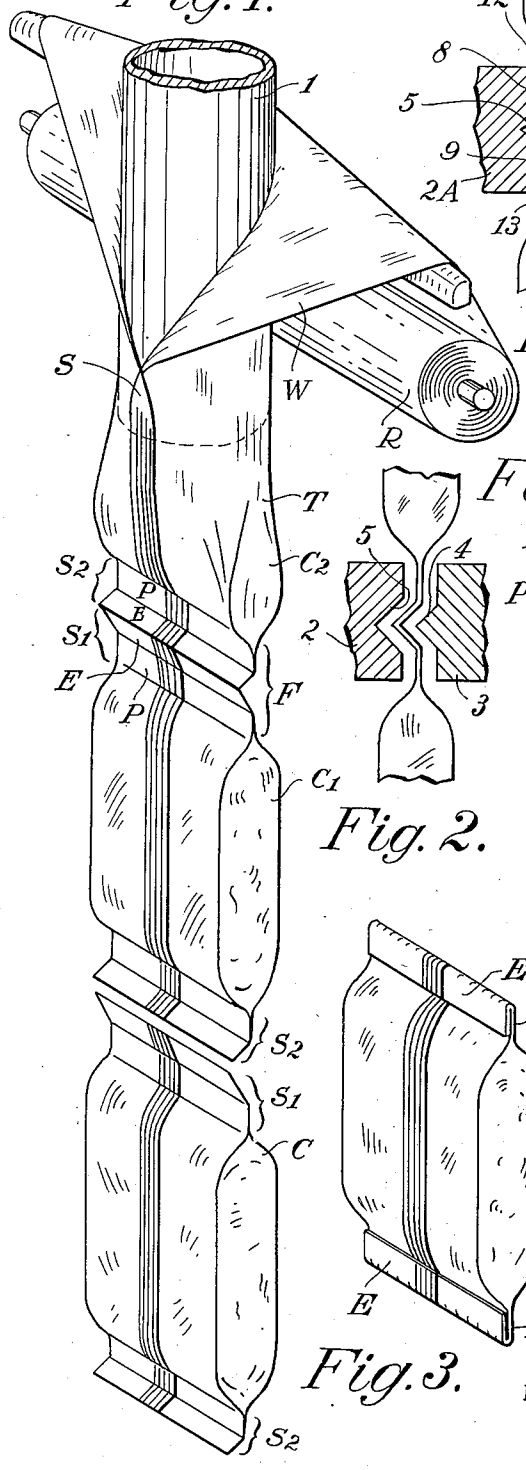
Feb. 14, 1939. D. E. MAXFIELD 2,146,831

METHOD OF MAKING CONTAINERS

Filed Jan. 5, 1938 2 Sheets-Sheet 1

Fig. 1.



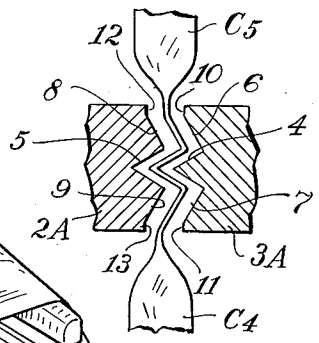


Fig. 5.

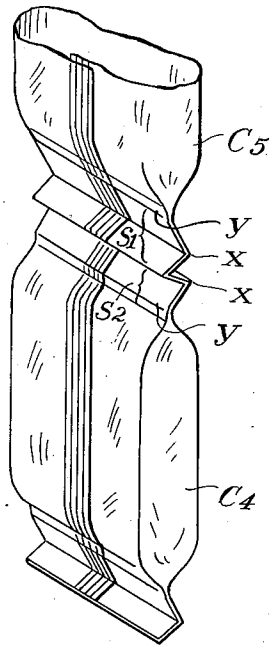


Fig. 4.

Fig. 9.

Fig. 2.

Fig. 3.

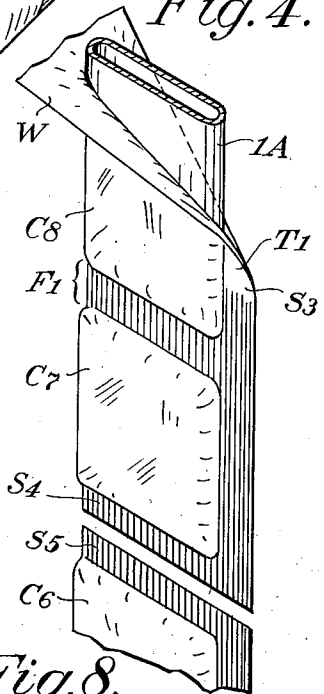


Fig. 8.

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METHOD OF MAKING CONTAINERS

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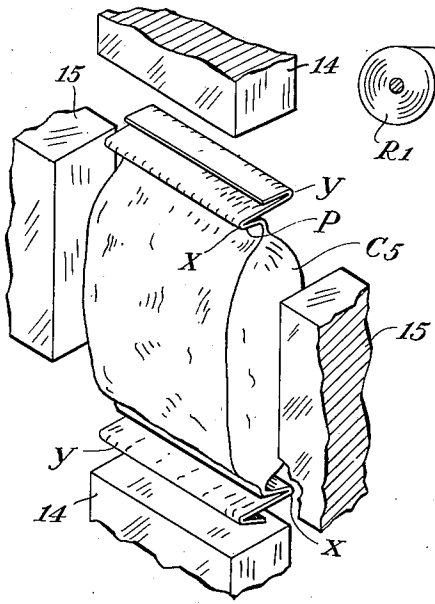


Fig. 6.

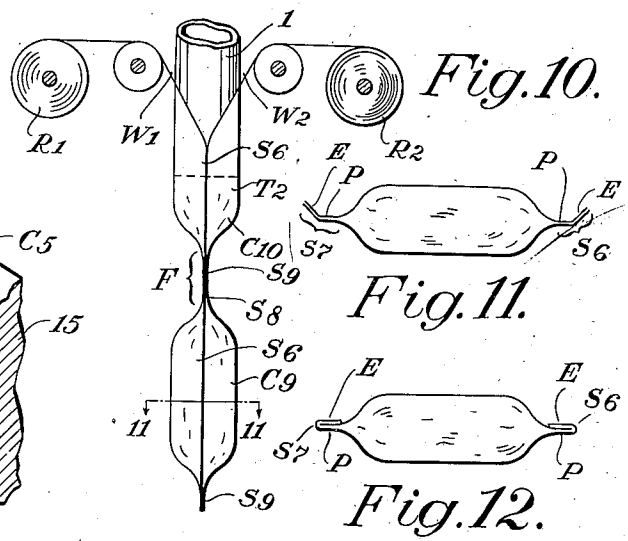


Fig. 10.

Fig. 11.

Fig. 12.

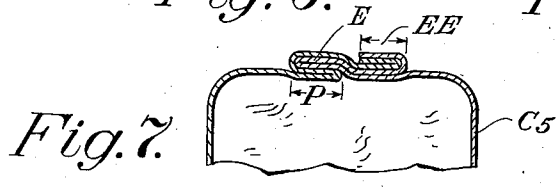


Fig. 7.

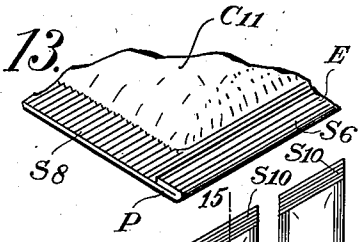


Fig. 13.

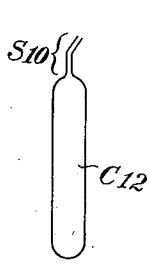


Fig. 15

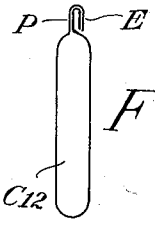


Fig. 16.

Fig. 14.

Fig. 17.

Fig. 18.

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2,146,831

UNITED STATES PATENT OFFICE

2,146,831

METHOD OF MAKING CONTAINERS

Daniel E. Maxfield, Philadelphia, Pa., assignor to Stokes and Smith Company, Summerdale, Philadelphia, Pa., a corporation of Pennsylvania

Application January 5, 1938, Serial No. 183,427

33 Claims. (Cl. 93—3)

My invention relates to methods of making, filling and sealing flexible containers or packages, and particularly to methods of operating upon one or more webs of flexible material to form containers which are filled and sealed, and thereafter detached from the web.

In accordance with my invention, one or more webs of flexible material preferably comprising webs, coated with, or impregnated with, a thermoplastic substance, is or are brought into tube-forming relation; by application of pressure, or heat and pressure, to the web margins and to longitudinally spaced transverse portions of the tube, there is formed a series of sealed containers each detached from the tube or web after filling and complete closure thereof; from each of the containers so formed and sealed there project two or more seals, the number of projecting seals depending upon the type of web-margin seal or seals, and at least one of these projecting seals or specially defined portion thereof is turned or folded into attachment with itself, as by application of heat and pressure, to form a secondary seal minimizing the possibility of accidental rupture of the primary seal.

Preferably, in accordance with my invention, during formation of a primary seal, it is partially folded or bent to facilitate formation therefrom of the secondary seal.

In accordance with another aspect of my invention, the package is shaped, or squared, when the nature of its contents permits, concurrently with the secondary sealing operation; in which case the seal formed by the sealing operation serves the additional purpose of holding the package in such form or shape as may have been imposed thereon.

For an understanding of my invention, reference is to be had to the accompanying drawings, in which:

Fig. 1, in perspective, illustrates the progressive formation of sealed filled packages from web material;

Fig. 2 is a detail view illustrating the formation of the primary seal and of the secondary seal elements;

Fig. 3, in perspective, illustrates the completed package produced by a method including the steps shown in Figs. 1 and 2;

Fig. 4 illustrates a modification of Fig. 1 in which the primary seal is of slightly different form;

Fig. 5 is a detail view illustrating a modified form of primary sealing tools;

Fig. 6, in perspective, illustrates the squaring up of a package concurrently with the formation of the secondary seal;

Fig. 7 is a fragmentary cross-section on enlarged scale of the seal resulting from the operations of Fig. 6;

Fig. 8, in perspective, illustrates another form of producing sealed packages from a web;

Fig. 9, in perspective, illustrates one of the individual packages produced by the method of Fig. 8;

Fig. 10 illustrates another method in which the containers are made from two webs of sheet material;

Fig. 11 is a sectional view taken on line 11—11 of Fig. 10;

Fig. 12 is an end sectional view of the completed package;

Fig. 13, in perspective, and on enlarged scale, illustrates a corner of the package of Fig. 12;

Fig. 14, in perspective, illustrates another method of filling and sealing packages made from a continuous web;

Fig. 15 is a sectional view taken on line 15—15 of Fig. 14;

Fig. 16 is a sectional view taken on line 16—16 of Fig. 18;

Fig. 17, in perspective, shows the package of Fig. 14 completed except for the secondary seal; and

Fig. 18 illustrates the package in final form.

Referring to Fig. 1, the web W, of a suitable flexible material, as paper, metal foil, "Cellophane" or the like, preferably made of, coated with, or impregnated with, a substance suited to become plastic or adhesive upon application of pressure, or heat and pressure, is drawn from roll R or other supply source over a rigid forming tube 1, of circular or other suitable shape, to assume the form of a hollow tube T of corresponding shape. The margins of the web W are brought into overlapping or overlying relation and are pressed against tube 1, as by a suitable heated tool, into adherent relation with each other, to form a continuous seal S extending longitudinally of the tube of web material T. The web W is fed, preferably intermittently, from the roll R progressively to form the tube T which is flattened beyond the forming tube 1 at recurrent intervals F to divide it into a series of containers such as C, C1, C2, etc. The feeding and flattening of the tube may be performed by suitable tools, such as the heated clamps 2, 3, Fig. 2; the tools 2, 3, or equivalent, flatten the tube T at suitable distance below the open end of the former 1 to close one container, such as C1, which

previously has been filled, and concurrently to define and close the bottom of another container, C2, whose upper end is still open to receive the intended package contents which are discharged thereinto through a duct or opening in the forming tube 1.

During downward movement of tools 2, 3 to draw the web material around forming tube 1, the interior faces of the flattened section of the tube T are adhesively joined as by softening of the thermo-plastic substance of which the web is comprised or with which it is impregnated or coated. For convenience, this step of the method is termed the primary sealing operation.

The portions F of the tube, flattened by the clamping tools 2, 3, between contiguous or adjacent containers C1, C2, may be considered as divided into two adjacent sealing sections S1, S2, one of which seals the lower end of container C2, and the other of which seals the upper end of container C1. As each pair of successively formed containers assumes the position of containers C and C1 of Fig. 1, the lowermost flattened portion F of the tube T is transversely severed, as by a suitable knife structure, to separate or detach the lowermost filled and sealed container C.

From one end of each container extends the sealing section S1 and from the other end thereof extends the sealing section S2; each sealing section is preferably substantially equal to one-half of the width of the flattened portions F.

Each of the sealing sections S1 and S2 for each container comprises what may, for convenience, be termed a primary sealing element P and a secondary sealing element E. Preferably, as shown in Figs. 1 and 2, the clamping tools 2 and 3 are constructed not only to flatten the tube to form adjacent sealing sections S1, S2, but also, because of their cooperating ridges and recessions 4, 5, concurrently to provide definite lines of fold between the primary and secondary seal elements P, E of each sealing section.

Because of the stiffness of the sealing sections arising from the several layers of material and their adhesive attachment, the primary and secondary sealing elements tend to remain set in the angular or partially folded relation imparted thereto by the clamping tools.

After each container in turn is cut from the web W or tube T, the secondary seal elements E are further folded and pressed throughout their length and width, specifically during application of heat, into adhesive engagement with the associated primary seal elements P, P, the final package C3 having the appearance shown in Fig. 3.

It is not essential that both secondary sealing operations, upon opposite ends of a container, be performed after severance of that container from the web; as apparent from Fig. 1, the secondary sealing operation upon the lower end of the endmost container C1 may be performed before severance of that container from the web.

Whether either or both of the secondary sealing operations upon the opposite ends of the container be performed after detachment of the container from the web, the secondary sealing operation is facilitated by the aforesaid preliminary or partial bending of the sections S1, S2 concurrently with the primary sealing operation, as previously described.

With the lines of fold between the primary and secondary sealing elements predetermined, it is a simple matter to bend each of the sealing sections S1, S2 into engagement with itself and apply heat and pressure thereto with assurance the containers will be effectively sealed, present a uniform appearance, and be of the same overall length.

Particularly when the web material is of a type comprising, coated with, or impregnated with a thermo-plastic substance, the application of heat and pressure to form a secondary seal actually resets, without first destroying, the primary seal. In the completed seal at each end of the package C3, Fig. 3, there are three adhesive welds or bonds each supplementing the other to minimize possibility of accidental rupture of the seal; one weld joins the inner faces of the two portions of web material comprising the primary seal element P; another weld joins the interior faces of the two portions of the web material comprising the secondary seal element E, and a third weld joins the engaging faces of the primary and secondary seal elements. Also, the turning over of the secondary seal tends to strengthen the seal of the package, all aside from the third weld just mentioned.

To facilitate formation of more complex seals, the faces of the tools which flatten the tube T may be provided with a larger number of projections and recesses, or otherwise suitably complementarily shaped; for example, as shown in Fig. 5, the clamping tool 3A may be provided with a ridge 4 for reception by recess 5 of tool 2A, with two recesses 6, 7 for receiving ridges 8, 9 of tool 2A and with two flats 10, 11 for coacting with the flats 12, 13 of tool 2A. As appears from Fig. 4, when the primary sealing tools are of this construction, there are produced during the flattening of the tube T, two lines of fold x, y in each of the sealing sections S1, S2.

Each of the sections S1, S2 may be folded once, as in Fig. 3, to form a secondary seal, and the resulting seal structure again folded to bring the exposed face of the seal element E, or of the seal element P, into adhesive attachment with the end of the package, Fig. 7, or preferably both of these folding operations and application of heat and pressure may be performed as one secondary sealing operation, generally as indicated in Fig. 6.

The feasibility of flattening the seals against the package depends upon the ability of the package contents to withstand the pressure and temperature incidental to the sealing operation.

Also as indicated in Fig. 6, the secondary sealing operation may be accompanied by a shaping operation; specifically, while the tools 14, 14 are applying heat and pressure to the ends of the package, the shaping tools 15, 15 are brought into engagement with the sides of the package, specifically to square it up; preferably, tools 15, 15 are also heated with the result the package, after withdrawal of the pressing tools, will tend to retain its shape because of setting of the thermo-plastic nature of the container material.

Each of the end seals in Figs. 6 and 7 comprises a primary element P whose width is approximately one-fourth of the total width of the sealing section S1 or S2 and whose lower face, Fig. 7, after the secondary sealing operation, is adhesively attached to the corresponding end of the package; the upper face of the primary element P is adhesively attached to the secondary sealing element E whose width is approximately twice that of the primary sealing element, so that, as appears in Fig. 7, the lower face of the right-hand end of the sealing element E is ad-

hesively attached to the top of the container; the upper face of the right-hand end of the sealing element E is adhesively attached to the secondary sealing element EE. Each of the sealing elements is double-ply, because made from the flattened section of the tube of web material, and these two plies are adhesively joined during the primary sealing operation and remain joined before and after the secondary sealing operation. During the secondary sealing operation, all of these sealing elements are, in effect, welded into an integral whole.

For making thin packages suited for seeds, medicinal powders and the like, the web W, Fig. 8, is drawn over a narrow forming tube 1A, with the margins or edges of the web projecting outwardly beyond an edge of the forming tube where they are pressed into adhesive attachment with each other, as by a suitable heated tool or tools when the web is one of the aforesaid thermoplastic types, to form seal S3. As in the modification of Fig. 1, the resulting tube T1 is flattened at intervals F1 to divide it into a continuous series of containers C6, C7, C8, etc. Specifically, referring to Fig. 8, the sealing operation which closes the upper end of container C7 concurrently effects closure of the bottom of container C8 whose upper end is in communication with the filling tube 1A. As will be understood from the prior description of Fig. 1, after container C8 is filled, the web is pulled downwardly and the tube T1 flattened to close the top of container C8 and to form the bottom of the next container. Each flattening operation effected upon the tube T1 produces sealing sections S4, S5 closing, respectively, the bottom of one container and the top of the previously formed container. These sealing sections S4, S5 may, as indicated in Fig. 1, comprise primary and secondary sealing elements or, as specifically shown in Figs. 8 and 9, the sealing sections S4, S5 of each package may comprise only primary sealing elements; i. e., they are not folded. Whether the sealing sections S4, S5 are folded or not, the seal S3 which, in this modification, also projects outwardly from the containers, may be folded upon itself, as indicated in Fig. 9, to effect adhesive attachment to each other of the primary and secondary sealing elements P, E. This secondary sealing operation may be effected after the heated containers are severed from the web, or before their severance but preferably after the flattening operation effected by tools 2, 3 or their equivalent.

As indicated in Fig. 10, the containers may be formed from two webs of flexible material; specifically, the webs W1, W2, drawn from the rolls R1, R2, are brought into tube-forming relation about the former tube 1, with the margins of the webs projecting outwardly or away from the former tube 1.

The adjacent overlying margins are adhesively attached, as by heated presser rolls when the web is of thermo-plastic type, to form seals S6, S7, extending longitudinally of the tube T2 of container material. The tube T2 is progressively formed and advanced as by heated clamping tools which flatten the tube to bring opposite interior faces into adhesive attachment at recurrent sections F, generally as in the modifications previously described.

Each container, after its severance from the web, has four seals projecting outwardly therefrom; the seals S8, S9 at two opposite ends are formed by two successive primary sealing operations, and the seals S6, S7 projecting from the other pair of opposite sides were produced, as previously described, during formation of closed tube T2 about the former tube 1. The sealing sections S8, S9 may, as in Fig. 1, each comprise a primary sealing element P and secondary sealing element E which are brought into adhesive attachment, or these elements may be simply primary seals.

Whether the sealing sections S8, S9 be plain or folded, the sealing sections S6, S7 may be folded, as indicated in Fig. 13, to bring the primary and secondary sealing elements P, E into adhesive attachment, and to facilitate this secondary sealing operation, each of the seals S6, S7 is preferably bent or partially folded, as indicated in Fig. 11, concurrently with joinder of the margins of the webs W1, W2, or at least before the package is severed from the tube T2.

In each of the foregoing modifications, the web is folded into a tube closed by a longitudinal seam before introduction of its contents and before the flattening of the tube to bring the interior faces of its opposite sides into adhesive attachment; in accordance with the method illustrated by Fig. 14, the web W3 is brought into tube-forming position but the tube T3 is maintained open longitudinally until after formation and filling of containers, as by a spacer structure 16, which may terminate in, near, or at a filling tube or hopper 17. The web, in advance of the filling station, is flattened at intervals, as by heated clamping tools, to form a series of containers or pockets C17, C16, etc., whose upper ends are open to receive their contents as each container, in turn, passes or momentarily pauses below the filling hopper 17 or equivalent. The feeding of the web and the production of the flattened sealing sections F may be performed by heating clamping tools generally of the type shown in preceding modifications; each flattened section provides seals S11, S12 for adjacent ends of contiguous containers.

As the tube T3 is fed beyond the hopper, it is closed, as by heated pressing tools which force the margins of the web into adhesive attachment with each other, so that the final folded sealed packages are the same as shown in Fig. 8. Each of the folded sealed containers, C18, Figs. 14, 17 and 18, after its detachment from the web by any suitable mechanism, has three projecting seals any one or all of which may be folded to provide a secondary seal. Specifically, the last formed seal S10 of each package is folded upon itself to bring the primary and secondary sealing elements PE into adhesive attachment with each other. This secondary sealing operation may be performed upon the packages after their severance from the strip, or may be performed before their detachment.

Specifically, however, and preferably, as indicated by Figs. 15–18, the sealing section S10 is formed by pressing the margins together and concurrently partially bending them, Figs. 15 and 17, and thereafter, and specifically after severance of the container from the web, the secondary sealing section E is further bent, Fig. 16, and then pressed, during application of heat, into adhesive attachment with the primary seal element P, Fig. 18, to effect the secondary sealing operation, affording a container similar to that shown in Fig. 9.

While I have illustrated and described preferred modifications, it is to be understood my invention is not limited thereto but is coextensive in scope with the appended claims.

What I claim is:

1. The method of making, filling and sealing containers which comprises bringing flexible web material into tube-forming relation, joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals outwardly projecting therefrom, transversely severing the tube across the flattened sections thereof to detach the sealed containers, filling the containers before their detachment, and folding into adhesive attachment with itself at least one of said projecting seals of each container to provide a secondary seal.

2. The method of making, filling and sealing containers which comprises bringing thermo-plastic web material into tube-forming relation, during application of heat thereto pressing the web margins together and flattening the tube transversely at intervals to form sealed containers each having seals outwardly projecting therefrom and comprising overlying areas of said web material joined by a thermo-plastic film, transversely severing the tube across the flattened sections thereof to detach the sealed containers, filling the containers before their detachment, and during application of heat, folding into attachment with itself at least one of said projecting seals of each container to provide a secondary seal.

3. The method of making, filling and sealing containers which comprises joining the margins of flexible web material to form a tube, flattening the tube transversely at intervals to define containers and to provide therefor primary seals each of which closes adjacent ends of contiguous containers, filling the containers between successive tube-flattening operations, transversely severing the tube across the flattened portions thereof to detach the filled and sealed containers, and folding into adhesive attachment with itself at least one primary seal of each container to provide a secondary seal.

4. The method of making, filling and sealing containers which comprises pressing together, during application of heat thereto, the margins of thermo-plastic web material to form a tube, flattening the tube transversely at intervals to define containers and concurrently applying heat to the flattened tube sections to provide primary seals respectively closing adjacent ends of contiguous containers, filling the containers between successive tube-flattening operations, transversely severing the tube through the flattened sections to detach the filled and sealed containers, and folding into attachment with itself, during application of heat thereto, a primary seal of each container to provide a secondary seal.

5. The method of making, filling and sealing containers which comprises joining the margins of flexible web material to form a tube, flattening the tube transversely at intervals to define containers, to provide primary seals for the adjacent ends of contiguous containers and to define secondary seal elements, filling each of the containers in turn between successive tube-flattening operations, transversely severing the tube across the flattened portions thereof to detach the filled and sealed containers, and pressing the secondary seal elements of each container into adhering engagement therewith.

6. The method of making, filling and sealing containers which comprises bringing flexible web material into tube-forming relation, joining the web margins and flattening the tube transversely at intervals to form sealed containers all of the seals of each of which project outwardly therefrom transversely severing the tube across the flattened sections thereof to detach the sealed containers, filling the containers before their detachment, and folding into adhesive attachment with itself at least one of the projecting seals of each container to provide a secondary seal.

7. The method of making, filling and sealing containers which comprises bringing thermo-plastic web material into tube-forming relation, during application of heat thereto joining the web margins and flattening the tube transversely at intervals to form sealed containers all of the seals of each of which project outwardly therefrom and comprise overlying areas of said web-material joined by a thermo-plastic film, transversely severing the tube across the flattened sections to detach the sealed containers, filling the containers before their detachment, and during application of heat, folding into attachment with itself at least one of the projecting seals of each container to provide a secondary seal.

8. The method of making, filling and sealing containers which comprises bringing flexible web material into tube-forming relation, joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals projecting away from opposite sides of the sealed interior thereof, transversely severing the tube across the flattened sections to detach the sealed containers, filling the containers before their detachment, and applying pressure to each container to shape it and concurrently to fold each of said seals into adhesive attachment with itself to form a secondary seal.

9. The method of making, filling and sealing containers which comprises bringing thermo-plastic web material into tube-forming relation, during application of heat thereto joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals projecting away from opposite sides of the sealed interior thereof and comprising overlying areas of said web material joined by a thermo-plastic film, during their formation bending said seals intermediate their ends, transversely severing the tube across the flattened portions to detach the sealed containers, filling the containers before their detachment, applying pressures to sides of each container to shape it and further to bend said seals, and concurrently with said application of pressure, applying heat to unite the bent portions of each of the seals to provide a secondary seal.

10. The method of making, filling and sealing containers which comprises bringing flexible web material into tube-forming relation, joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals outwardly projecting therefrom, concurrently with flattening of a section of the tube bending it along several substantially parallel lines spaced longitudinally of the tube to define primary and secondary sealing elements for adjacent containers, transversely severing the tube between secondary seal elements of each flattened section to detach the sealed containers, and pressing each of the secondary seal elements into adhesive attachment with the associated primary seal element.

11. The method of making, filling and sealing containers which comprises bringing flexible web material into tube-forming relation, pressing marginal sections of the web material into ad-

hesive attachment to provide a seal, at intervals pressing transverse sections of the interior faces of the tube wall into adhesive attachment with each other to form a seal, concurrently with one of said pressing operations bending the seal produced thereby to define primary and secondary seal elements, transversely severing the tube across said transverse sections to detach sealed filled containers, and pressing the secondary seal elements into adhesive engagement with the associated primary seal elements.

12. The method of making, filling and sealing containers which comprises forming a tube from a web of flexible sheet material whose width is suitably greater than the perimeter of the tube, joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals outwardly projecting therefrom, transversely severing the tube across the flattened sections thereof to detach the sealed containers, filling the containers before their detachment, and folding into adhesive attachment with itself at least one of said projecting seals of each container to provide a secondary seal.

13. The method of making, filling and sealing containers which comprises forming a tube from a plurality of webs of flexible sheet material whose combined width is suitably greater than the perimeter of the tube, joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals outwardly projecting therefrom, transversely severing the tube across the flattened sections thereof to detach the sealed containers, filling the containers before their detachment, and folding into adhesive attachment with itself at least one of said projecting seals of each container to provide a secondary seal.

14. The method of making, filling and sealing containers which comprises forming a tube from a web of thermo-plastic sheet material whose width is suitably greater than the perimeter of the tube, during application of heat thereto pressing the web margins together and flattening the tube transversely at intervals to form sealed containers each having seals outwardly projecting therefrom and comprising overlying areas of said web material joined by a thermo-plastic film, transversely severing the tube across the flattened sections thereof to detach the sealed containers, filling the containers before their detachment, and during application of heat, folding into attachment with itself at least one of said projecting seals of each container to provide a secondary seal.

15. The method of making, filling and sealing containers which comprises forming a tube from a plurality of webs of thermo-plastic sheet material whose combined width is suitably greater than the perimeter of the tube, during application of heat thereto pressing the web margins together and flattening the tube transversely at intervals to form sealed containers each having seals outwardly projecting therefrom and comprising overlying areas of said web material joined by a thermo-plastic film, transversely severing the tube across the flattened sections thereof to detach the sealed containers, filling the containers before their detachment, and during application of heat, folding into attachment with itself at least one of said projecting seals of each container to provide a secondary seal.

16. The method of making, filling and sealing containers which comprises joining the margins of a web of flexible material to form a tube, flattening the tube transversely at intervals to define containers and to provide therefor primary seals each of which closes adjacent ends of contiguous containers, filling the containers between successive tube-flattening operations, transversely severing the tube across the flattened portions thereof to detach the filled and sealed containers, and folding into adhesive attachment with itself at least one primary seal of each container to provide a secondary seal.

17. The method of making, filling and sealing containers which comprises joining the adjacent margins of a plurality of webs of flexible material to form a tube whose perimeter is greater than the width of any one of said webs, flattening the tube transversely at intervals to define containers and to provide therefor primary seals each of which closes adjacent ends of contiguous containers, filling the containers between successive tube-flattening operations, transversely severing the tube across the flattened portions thereof to detach the filled and sealed containers, and folding into adhesive attachment with itself at least one primary seal of each container to provide a secondary seal.

18. The method of making, filling and sealing containers which comprises pressing together, during application of heat thereto, the margins of a web of thermo-plastic material to form a tube, flattening the tube transversely at intervals to define containers and concurrently applying heat to the flattened tube sections to provide primary seals respectively closing adjacent ends of contiguous containers, filling the containers between successive tube-flattening operations, transversely severing the tube through the flattened sections to detach the filled and sealed containers, and folding into attachment with itself, during application of heat thereto, a primary seal of each containers to provide a secondary seal.

19. The method of making, filling and sealing containers which comprises pressing together, during application of heat thereto, the adjacent margins of a plurality of webs of thermo-plastic material to form a tube whose perimeter is greater than the width of any one of said webs, flattening the tube transversely at intervals to define containers and concurrently applying heat to the flattened tube sections to provide primary seals respectively closing adjacent ends of contiguous containers, filling the containers between successive tube-flattening operations, transversely severing the tube through the flattened sections to detach the filled and sealed containers, and folding into attachment with itself, during application of heat thereto, a primary seal of each container to provide a secondary seal.

20. The method of making, filling and sealing containers which comprises joining the margins of a web of flexible material to form a tube, flattening the tube transversely at intervals to define containers, to provide primary seals for the adjacent ends of contiguous containers and to define secondary seal elements, filling each of the containers in turn between successive tube-flattening operations, transversely severing the tube across the flattened portions thereof to detach the filled and sealed containers, and pressing the secondary seal elements of each container into adhering engagement therewith.

21. The method of making, filling and sealing containers which comprises joining the adjacent margins of a plurality of webs to form a tube whose perimeter is greater than the width of any

one of said webs, flattening the tube transversely at intervals to define containers, to provide primary seals for the adjacent ends of contiguous containers and to define secondary seal elements, filling each of the containers in turn between successive tube-flattening operations, transversely severing the tube across the flattened portions thereof to detach the filled and sealed containers, and pressing the secondary seal elements of each container into adhering engagement therewith.

22. The method of making, filling and sealing containers which comprises shaping a web of flexible material in the form of a tube, joining the web margins and flattening the tube transversely at intervals to form sealed containers all of the seals of each of which project outwardly therefrom, transversely severing the tube across the flattened sections thereof to detach the sealed containers, filling the containers before their detachment, and folding into adhesive attachment with itself at least one of the projecting seals of each containers to provide a secondary seal.

23. The method of making, filling and sealing containers which comprises forming from a plurality of webs a tube whose perimeter is greater than the width of any one of the webs, joining the web margins and flattening the tube transversely at intervals to form sealed containers all of the seals of which project outwardly therefrom, transversely severing the tube across the flattened sections thereof to detach the sealed containers, filling the containers before their detachment, and folding into adhesive attachment with itself at least one of the projecting seals of each container to provide a secondary seal.

24. The method of making, filling and sealing containers which comprises shaping a web of flexible thermo-plastic material into the form of a tube, during application of heat thereto joining the web margins and flattening the tube transversely at intervals to form sealed containers all of the seals of each of which project outwardly therefrom and comprises overlying areas of said web-material joined by a thermo-plastic film, transversely severing the tube across the flattened sections to detach the sealed containers, filling the containers before their detachment, and during application of heat, folding into attachment with itself at least one of the projecting seals of each container to provide a secondary seal.

25. The method of making, filling and sealing containers which comprises forming from a plurality of webs of flexible thermo-plastic material a tube whose perimeter is greater than the width of any one of the webs, during application of heat thereto joining the web margins and flattening the tube transversely at intervals to form sealed containers all of the seals of each of which project outwardly therefrom and comprise overlying areas of said web-material joined by a thermo-plastic film, transversely severing the tube across the flattened sections to detach the sealed containers, filling the containers before their detachment, and during application of heat, folding into attachment with itself at least one of the projecting seals of each container to provide a secondary seal.

26. The method of making, filling and sealing containers which comprises forming a tube from a web of flexible material, joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals projecting away from opposite sides of the sealed interior thereof, transversely severing the tube across the flattened sections to detach the sealed containers, filling the containers before their detachment, and applying pressure to each container to shape it and concurrently to fold each of said seals into adhesive attachment with itself to form a secondary seal.

27. The method of making, filling and sealing containers which comprises forming from a plurality of webs of flexible material a tube whose perimeter is greater than the width of any one of said webs, joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals projecting away from opposite sides of the sealed interior thereof, transversely severing the tube across the flattened sections to detach the sealed containers, filling the containers before their detachment, and applying pressure to each container to shape it and concurrently to fold each of said seals into adhesive attachment with itself to form a secondary seal.

28. The method of making, filling and sealing containers which comprises forming a tube from a web of flexible thermo-plastic material, during application of heat thereto joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals projecting away from opposite sides of the sealed interior thereof and comprising overlying areas of said web material joined by a thermo-plastic film, during their formation bending said seals intermediate their ends, transversely severing the tube across the flattened portions to detach the sealed containers, filling the containers before their detachment, applying pressure to sides of each container to shape it and further to bend said seals, and concurrently with said application of pressure, applying heat to unite the bent portions of each of the seals to provide a secondary seal.

29. The method of making, filling and sealing containers which comprises forming from a plurality of webs of thermo-plastic material a tube whose perimeter is greater than the width of any one of said webs, during application of heat thereto joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals projecting away from opposite sides of the sealed interior thereof and comprising overlying areas of said web material joined by a thermo-plastic film, during their formation bending said seals intermediate their ends, transversely severing the tube across the flattened portions to detach the sealed containers, filling the containers before their detachment, applying pressure to sides of each container to shape it and further to bend said seals, and concurrently with said application of pressure, applying heat to unite the bent portions of each of the seals to provide a secondary seal.

30. The method of making, filling and sealing containers which comprises forming a tube from a web of flexible material, joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals outwardly projecting therefrom, concurrently with flattening of a section of the tube bending it along several substantially parallel lines spaced longitudinally of the tube to define primary and secondary sealing elements for adjacent containers, transversely severing the tube between secondary seal elements of each flattened section to detach the sealed containers, and pressing each of the secondary seal elements into adhesive at-

tachment with the associated primary seal element.

31. The method of making, filling and sealing containers which comprises forming from a plurality of webs of flexible material a tube whose perimeter is greater than the width of any one of said webs, joining the web margins and flattening the tube transversely at intervals to form sealed containers each having seals outwardly projecting therefrom, concurrently with flattening of a section of the tube bending it along several substantially parallel lines spaced longitudinally of the tube to define primary and secondary sealing elements for adjacent containers, transversely severing the tube between secondary seal elements of each flattened section to detach the sealed containers, and pressing each of the secondary seal elements into adhesive attachment with the associated primary seal element.

32. The method of making, filling and sealing containers which comprises forming a tube from a web of flexible material, pressing marginal sections of the web material into adhesive attachment to provide a seal, at intervals pressing transverse sections of the interior faces of the tube wall into adhesive attachment with each other to form a seal, concurrently with one of said pressing operations bending the seal produced thereby to define primary and secondary seal elements, transversely severing the tube across said transverse sections to detach sealed filled containers, and pressing the secondary seal elements into adhesive engagement with the associated primary seal elements.

33. The method of making, filling and sealing containers which comprises forming from a plurality of webs of flexible material a tube whose perimeter is greater than the width of any of the webs, pressing marginal sections of the web material into adhesive attachment to provide a seal, at intervals pressing transverse sections of the interior faces of the tube wall into adhesive attachment with each other to form a seal, concurrently with one of said pressing operations bending the seal produced thereby to define primary and secondary seal elements, transversely severing the tube across said transverse sections to detach sealed filled containers, and pressing the secondary seal elements into adhesive engagement with the associated primary seal elements.

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