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[45] Patented Aug. 10, 1971
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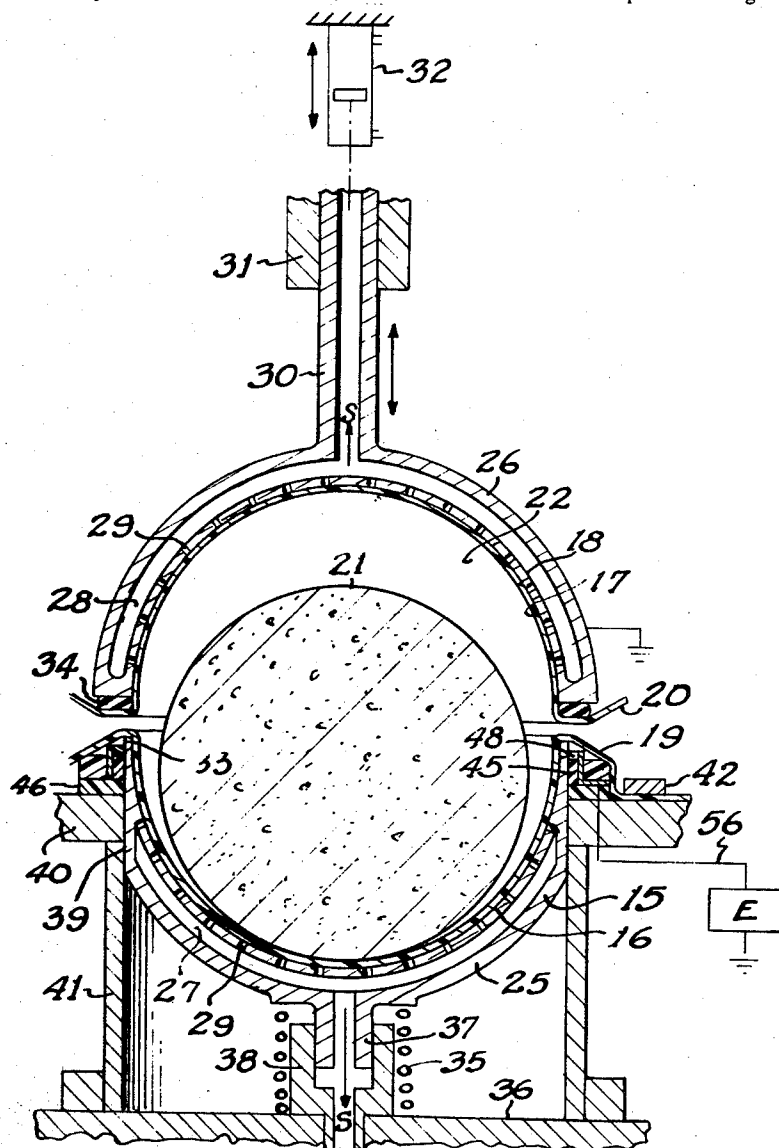
[54] **METHOD AND APPARATUS FOR ENCAPSULATING FLUID AND OTHER MATERIAL IN SEALED CONTAINERS**
3 Claims, 17 Drawing Figs.

[52] U.S. Cl. 53/184, 53/112 A
[51] Int. Cl. B65b 3/02
[50] Field of Search 53/22 A, 30, 86, 112 A, 184

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ABSTRACT: This invention provides a means and method whereby materials, either liquid, plastic or solid, (e.g. foods) are encapsulated between vertically opposed sheets of plastic film such as polyvinyl chloride, by vacuum-drawing one or both of the sheets into pocket form of oversize dimensions with relation to the dimensions of a container capsule which is subsequently formed from the opposed sheets after depositing the content material into the pocket formed in the lower sheet. After deposition of the content material the sheets are brought together at the pocket margin and sealed to one another around the margin to develop a sealed capsule containing the content material. The plastic film material around the sealed margin is then severed from the capsule, preferably by heat-cutting performed as an incident to heat sealing of the margin, the suction that has been applied to form the pocket or pockets, is released, and the encapsulating film is permitted to shrink by plastic memory, into clinging contact with the enclosed contents of the capsule. In many applications, air is evacuated from the capsule during the encapsulating process, and for some foods a preservative gas is substituted.



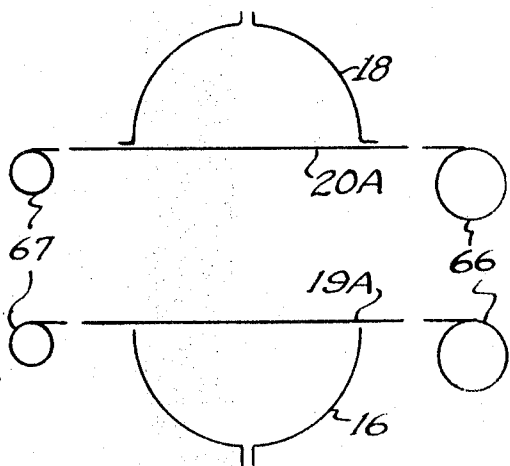


Fig. 1

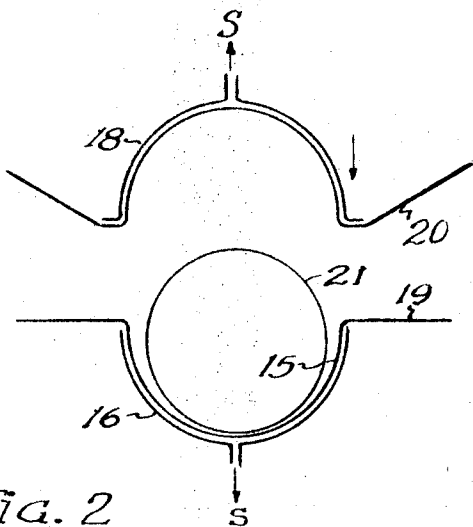


Fig. 2

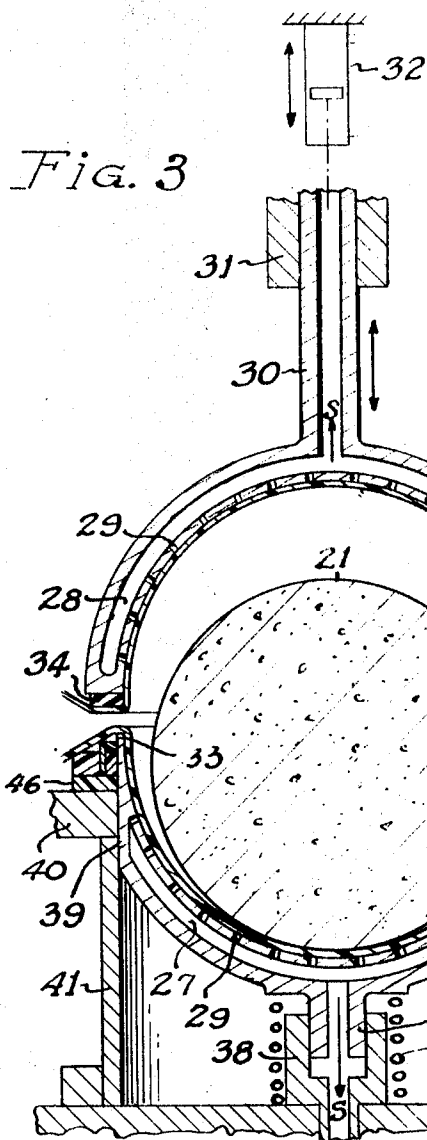


Fig. 3

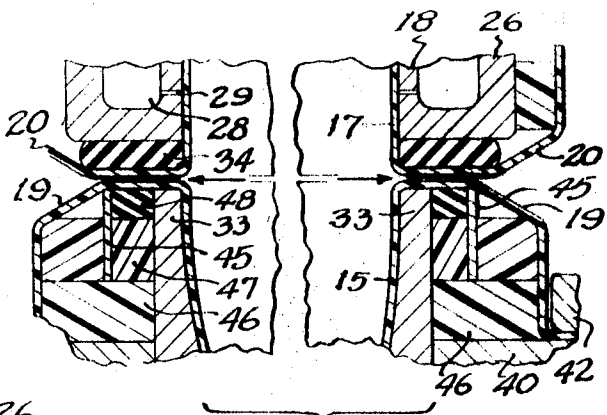


Fig. 4

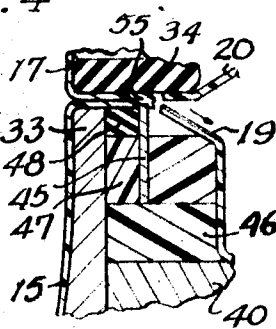


Fig. 5

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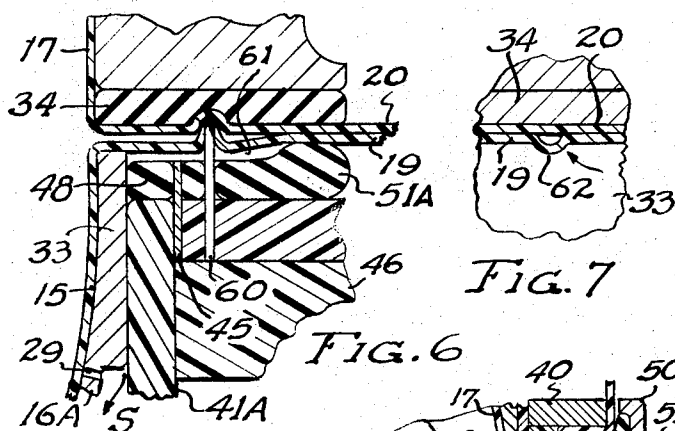
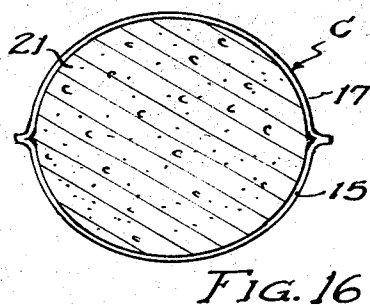
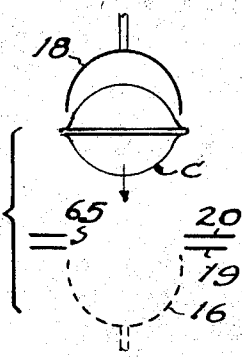
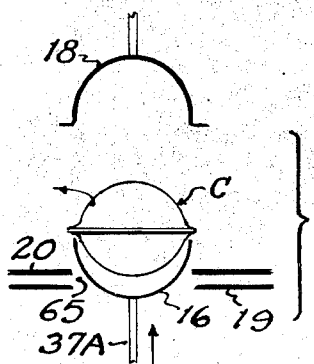
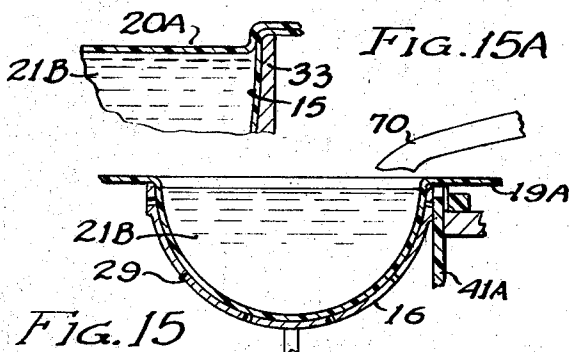
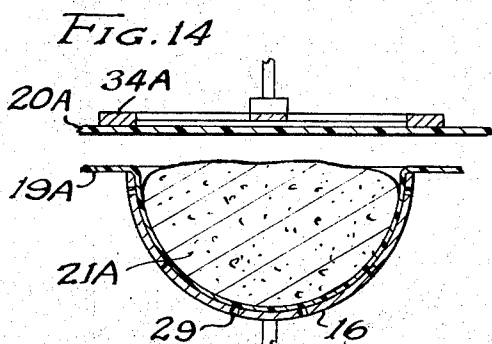


FIG. 7

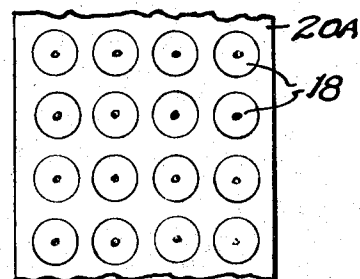
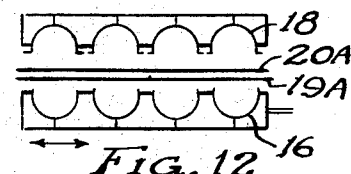
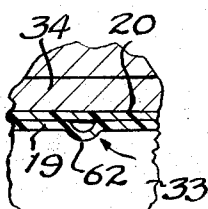


FIG. 13

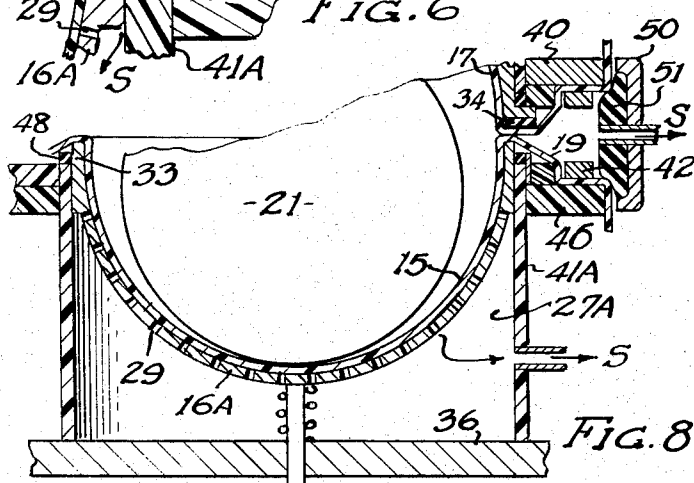


FIG. 8

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METHOD AND APPARATUS FOR ENCAPSULATING FLUID AND OTHER MATERIAL IN SEALED CONTAINERS

THE PRIOR ART

The packaging of foods of various kinds in plastic film bags and the like has become quite common in the food industry, and is being constantly extended to additional foods as rapidly as feasible methods of doing so can be developed. The common method is to deposit the food content material into a preformed bag, open at its upper end, and to then seal such open end by engaging it between heat-sealing jaws. The use of preformed bags is expensive and the essentially flat shape of the bag imposes a limitation on the shape of the contents to be contained therein. If the content body is a relatively solid article and form-retaining, the plastic bag is not a satisfactory container therefore unless the form of the food article is within the limited range of shapes to which the plastic bag can be conformed. For example, it would be desirable to enclose Mozzarella cheese balls in inexpensive plastic containers such as bags, but the ovoid shape of such a cheese ball precludes satisfactory use of a conventional plastic bag.

Methods and machines have been developed whereby plastic bags can be formed from plastic film stock (e.g., tubing or strip film) as an initial step in a packaging operation in which each bag is filled as soon as it is formed, and is then sealed and severed from the film stock. But such methods retain many of the disadvantages of the methods using preformed bags, and are slow and therefore expensive.

SUMMARY OF INVENTION

Objects of the invention are to provide a method and apparatus, whereby articles and materials of either solid, liquid or other consistency, can be encapsulated:

1. In sealed casings directly formed from opposed sheets of plastic film;
2. Rapidly and at minimum expense;
3. With complete formfitting of the enclosing casing to the content body;
4. By first vacuum-drawing a receptacle pocket in a sheet of heat-sealable film material;
 - a. Then placing a content body, either solid, liquid or semifluid, into the pocket
 - b. Then placing over the pocket a cover sheet of film material that is heat-sealable to the receptacle sheet to provide an encapsulating chamber; and
 - c. Subsequently heat-sealing the cover sheet to the pocket margin after evacuating air from the encapsulating chamber, and allowing the pocket to shrink around the content body.
5. With the evacuation of air from the casing being attained either
 - a. By utilizing the shrinking of the casing to force the air therefrom between the substantially contacting opposed surfaces of pocket and cover sheets or through small bleed passages between the sheets, just prior to sealing; or
 - b. Where the contents are liquid, by allowing the cover sheet to sink by gravity into contact with the liquid surface, and then to be drawn into contact with the periphery of the pocket by capillary adhesion.
6. With automatic shaping of the capsule by action of the casing, to a symmetrical, eye-appealing form when the contents are of liquid, semifluid or loose granular consistency;
7. With a lack of excess casing material projecting from any side of the casing.

These and other objects will become apparent in the ensuing description and appended drawing, wherein:

FIG. 1 is a schematic diagram illustrating an initial stage of the process of my invention;

FIG. 2 is a schematic diagram illustrating an intermediate stage of the process;

FIG. 3 is a sectional view of a unit of encapsulating apparatus, shown partially in axial section and partially in schematic form, in an intermediate stage of the process following that of FIG. 2, wherein the encapsulating film pockets are brought together to develop an encapsulating chamber around a content body;

FIG. 4 is a fragmentary sectional view of the apparatus, shown on a larger scale, in a stage of the process subsequent to that of FIG. 3, wherein the developing capsule is evacuated;

FIG. 5 is a fragmentary sectional view of the apparatus, in a stage of operation subsequent to that of FIG. 4, wherein the capsule is sealed;

FIG. 6 is a fragmentary sectional view illustrating evacuation of the encapsulating chamber by one method;

FIG. 7 is a fragmentary sectional view illustrating a modified form of the evacuating method;

FIG. 8 is a sectional view of a modified form of suction chamber for developing suction in the lower suction cup, and showing another modified form of the evacuating method;

FIG. 9 is a schematic diagram illustrating a method of discharging a finished capsule;

FIG. 10 is a schematic diagram of another method of discharging a capsule;

FIG. 11 is a schematic plan diagram of a row group of encapsulating units;

FIG. 12 is a schematic cross-sectional diagram of the same, illustrating the shifting of the lower group of cups between encapsulating and loading stations;

FIG. 13 is a schematic plan diagram of a block group of encapsulating units;

FIG. 14 is a sectional view of a modified encapsulating unit for semifluid material;

FIG. 15 is a sectional view of a receptacle cup for encapsulating a liquid body;

FIG. 15A is a fragmentary sectional view of the same with a cover film applied; and

FIG. 16 is a cross-sectional view of a finished capsule.

DESCRIPTION OF INVENTION

Referring now to the drawings in detail, and in particular to FIGS. 1—5, I have shown therein, as an example of one form in which the invention may be embodied, a method and apparatus wherein a receptacle, (in most instances larger in diameter than the capsule to be produced as the end product) is temporarily formed by expanding, by suction, a bubble 15 of plastic film material into a suction cup 16 of the proper shape and dimensions to shape the film into a receptacle pocket; wherein a cover 17 of plastic film material is similarly expanded by suction into bubble form within an upper suction cup 18 to provide a cover pocket, the two pockets being formed from respective sheets of the film material which have marginal portions 19 and 20 extending outwardly between the opposed rims of cups 16 and 18; wherein a body 21 of content material (e.g., a preformed ball of processed cheese such as Mozzarella) is deposited into the receptacle pocket 15; wherein the cover cup 18 and cover pocket 17 are then lowered over the content body 21; wherein the cups 16 and 18 are brought together so as to establish closing contact between the marginal portions 19 and 20 of the film sheets; thus establishing a nearly sealed encapsulating chamber 22 between the two pockets 15 and 17, with the content body enclosed therein; wherein air is withdrawn from the chamber 22 so as to vacuum-seal the contents (or a small quantity of inert or preservative gas is introduced into the evacuated chamber so as to provide a preservative atmosphere around the contents); wherein the vacuum in cups 16 and 18 is then released so as to allow the pockets 15 and 17 to contract around the content body by plastic memory action; wherein the cups 16 and 18 are closed further to engage the marginal film portions 19, 20 between one of the cups and a heat-sealing ring electrode carried by the other cup at its rim; wherein the electrode is momentarily subjected to an electric current to heat it to a temperature such as to heat-seal the marginal film portions 19,

20 to one another around the equator of chamber 22, thus forming a sealed capsule; wherein the marginal film portions 19, 20 are severed from the seam formed by the heat-sealing operation, e.g., by establishing tension in the marginal areas of portions 19, 20 immediately surrounding the seam and utilizing such tension to pull the marginal portions away from the seam when the plastic material reaches a sufficiently softened condition at the seam as it is being formed by heat-bonding; wherein the seam is then allowed to harden by cooling; and wherein the resulting capsule C (FIGS. 9, 10) is then released from between the cups 16, 18.

I find that the process can be carried out quite satisfactorily by cold-drawing the films, and the invention contemplates the use of cold-drawing for most applications; although it is also possible to perform the process with a heating step in which the temperature of the films is raised above room temperature to a level at which the film material is appreciably softened without objectionably weakening it, and the addition of such a heat-softening step may be desirable for certain applications, as where an unusually thick casing wall may be required.

Merely by way of example of specific structure that may be utilized, the suction cups 16 and 18 may be provided with jackets 25 and 26 respectively, in spaced relation thereto so as to define therewith suction chambers 27 and 28 respectively. Cups 16, 18 may each have a plurality of fine suction apertures 29 distributed over their respective areas so as to withdraw air or other gas from between the respective suction cups 16, 18 and the film sheets when chambers 27, 28 are evacuated.

Before applying suction to the films, they are clamped to the respective cups (or to a mounting panel—e.g. 40—for a bank of cups) so as to prevent entry of air around the margins of the cups, (or around the margins of opposed banks of cups) during application of suction to the films. For illustration, a clamping ring 42 is shown in FIGS. 3, 4, and 8, for clamping the lower film to mounting panel 40 in encircling relation to an insulator ring 46, hereinafter described. A similar clamping means (not shown) is utilized for closing the upper film against the mouth or mouths of its cup or bank of cups 18 preparatory to drawing the film into the cup or cups by suction. This prevents the films from being drawn over the rims of the cups and into the cups during the bubble-forming operation, and establishes tension in the marginal portions 19, 20 of the films during such operation, whereby to effect separation of the films from the respective capsule casing sections in the heat-seaming operation.

Means are provided for bringing cups 16, 18 together after content material 21 has been placed in the receptacle pocket 15, thus arranging the pockets 15, 17 in position to encapsulate the content material. Various means may be utilized for this purpose. For example, the upper suction cup 18 may be mounted for vertical sliding of a tubular suction stem 30 in a bearing 31. Any suitable means for raising and lowering one of the cups (e.g., the upper cup 18) relative to the other may be utilized, such as a two-way cylinder actuator 32 acting upon the stem 30.

The other suction cup (e.g., lower cup 16) is mounted for limited yielding in response to pressure exerted against it by the movable cup, as the encapsulating pockets 15, 17 are brought together around a content body 21 as indicated in FIG. 3. Such yielding accommodates a succession of intermediate steps including (a) closing the marginal film portions 19, 20 against one another under yielding pressure between the rims of cups 16, 18; thus establishing an encapsulating chamber; (b) subjecting such chamber to vacuum to withdraw the air therefrom; or (c) alternatively, injecting an inert or preservative gas into the encapsulating chamber as the air is withdrawn therefrom; (d) then shifting the abutting suction cups sufficiently to engage the marginal film portions 19, 20 between one of the cup margins and a heat-sealing ring electrode immediately encircling the other cup so as to effect a heat-sealed seam attaching the two sections of capsule casing together to provide a sealed casing.

By way of illustration, FIGS. 3—5 show the lower vacuum cup 16 mounted for downward yielding movement in response to pressure applied to its rim 33 by a compressible annular pressure pad 34 on the rim of upper suction cup 18, the marginal film portions 19, 20 being clamped between the rims under pressure determined by the yielding resistance of a spring 35 which supports the lower cup 16, being engaged under compression between the suction jacket 25 and a suitable base panel 36. A sliding coupling between suction chamber 27 and a suitable vacuum pump (not shown) is shown as being provided by a nipple 37 on jacket 25, slidably coupled in a mating socket 38 carried by base panel 36. As a means for guiding the cup 16 in its yielding movement and for retaining it in accurately coaxial relation to cup 18, the cup 16 is shown as having a cylindrical periphery 39 joining its rim to jacket 25 and slidably received in a cylindrical guide which can include a bore in a bench panel 40. Panel 40 can be supported from base panel 36 by suitable support means, e.g., a cylindrical sleeve 41 which can constitute a portion of the guide for slidable positioning of cup rim 39, or can be the sole guide means, as sleeve 41A of FIGS. 6, 8.

A heat-sealing electrode 45, closely encircling lower cup rim 33, is fixedly mounted on an insulator 46 which can be a cover facing of bench panel 40 or can be flat ring mounted thereon in encircling relation to rim 33, as indicated. Electrode 45, in the example shown, is in the form of a thin cylindrical metal collar, with a cylindrical spacer and insulator collar 47 and a compressible cushion and gripping ring 48, interposed between electrode 45 and cup rim 33. In the normal, upper limit position of lower cup 16, its rim 33 projects above the level of the upper edge of electrode 45 and cushion ring 48, which rests on insulator collar 47, is substantially level with the electrode edge. Collar 47 may be of a hard, rigid material (e.g., phenolic) providing an internal bearing surface for cup periphery 39. Sleeve 41A of FIGS. 6, 8 may provide the means for positioning the electrode 45 in coaxial relation to rim 33, and is therefore shown as being of insulating material (e.g., phenolic).

As the marginal film portions 19, 20 are pressed downwardly against the cushion ring 48, the latter will be compressed slightly so as to yield below the edge of electrode 45 (FIG. 5) thus permitting the electrode 45 to establish concentrated pressure against the film portions 19, 20 on a narrow circular line, such as to produce an effective seam 55 when momentarily heated to a temperature suitable for bonding the film portions 19, 20 to one another. At the same time, the compressed ring 48 will apply yielding clamping pressure and frictional holding engagement against the lower film portion 19, supplementing the clamping action of the cup rims 33 and 34 in order to effectively hold the seamed margins of the capsule casing to one another while the surrounding film portions 19, 20 are severed from the seamed periphery of the casing. This area of the film portions 19, 20, outside the electrode 45, is stretched under tension transmitted from the distended bubbles 15, 17, and when the seam is formed, the heat-softened material at the outer margin of the seam immediately outside the edge of electrode 45 will part (FIG. 5) under the pull of the tensioned area of film portions 19, 20 outwardly of the electrode while the seam 55 and the film portions inwardly thereof remain clamped between the annular jaw parts consisting of the cup rims 33, 34 and the compressed gripping ring 48, until the seam 55 has cooled and hardened sufficiently to secure the casing sections to one another when the cup 18 is retracted from cup 16.

Electrode 45 is connected at 56, to a suitable electrical unit E for accumulating a charge and discharging it to electrode 45 for instantaneous heating of the electrode during a very short time interval, to bond the seam 55.

For evacuating the capsule chamber 22 just prior to heat-sealing, various methods and means may be employed. As an example of one such means, there is shown in FIG. 8 a suction frame 50 connected to a suitable source of suction at S, into which the suction cups 16 and 18 may be projected as they are

brought together in a closing operation, with the marginal film portions spread apart so that suction can be applied between them. Frame 50 may be lined with a compressible gasket 51 which may function to hermetically seal the frame 50 to the mounting panels 40 of the respective cups 16, 18.

Frame 50 may encompass opposed panels mounting any selected number of pairs of opposed suction cups, and may apply common suction to all of the cups simultaneously. Gasket 51 is operable to seal the film portions 19, 20 to one another sufficiently so that air will be withdrawn from chamber 22 between the lightly contacting or slightly spaced areas of marginal portions 19, 20 (FIG. 4) just prior to closing of the portions 19, 20 against one another between the cup rims.

Instead of leaving the cup rims slightly spaced apart for evacuation, as in FIG. 4, they may be closed against the marginal film portions 19, 20 leaving one or more small passages defined by sagging of film 19 into one or more notches 62 in lower cup rim 33 (FIG. 7).

As an alternative method and means for effecting the step of evacuating the encapsulating chamber 22, as shown in FIGS. 6 and 7, the suction of lower cup chamber 27 can be applied to chamber 22 by utilizing one or more small lances 60 to pierce the marginal film portions 19, 20 in the annular area thereof outside lower cup rim 33 so as to establish communication between the space between the film sheets and an annular space 61 surrounding the rim 33. The annular space 61 is peripherally closed by a compressible closing collar 51A having an annular gripping jaw spaced outwardly from electrode 45. Annular space 61 communicates with the interfaces between the periphery of cup 16 and the inner surface of sleeve 41A. Thus air will be drawn as indicated by arrows, from chamber 22 into annular space 61 and thence between cup 16 and sleeve 41A into suction chamber 27, the annular space 61 being sealed from external atmosphere by closing collar 51. In order to leave the finished capsule C in a fully hermetically sealed condition, the lance or lances 61 are disposed radially outwardly of the electrode 45.

The apparatus may further include means for intermittently feeding a pair of plastic film strips 19, 20 between the suction cups 16, 18, with the capsule C being ejected from the openings 65 (FIG. 9) left in the film strips, preparatory to shifting the film strips to a new position for another encapsulating operation. The film strips can be fed from rolls 66 (FIG. 1) and the perforated waste webs can be accumulated on wind-up rolls 67.

The ejection of capsules C can be provided for by utilizing an elongated stem 37A for elevating the lower suction cup 25 above the webs 19, 20 as in FIG. 9, and then removing the capsule by suitable means; a preferred method is to maintain suction to the upper cup 18 throughout the encapsulating process, to utilize the cup 18 to lift the capsule C free from the perforated film strips, and then to release the suction so as to drop the capsule C on a suitable receiving means (e.g., water bath or conveyor belt) disposed beneath the cup 18, as indicated in FIG. 10, at 68.

This operation is utilized in connection with an arrangement for moving a lower cup or bank of cups 16 horizontally between an encapsulating station beneath the corresponding upper cup or cups 18 (e.g., as shown in FIG. 12) and a loading station removed from the encapsulating station so as to be displaced from beneath the film strips 19A, 20A to facilitate loading or filling the lower cups 16 with content bodies or materials. In such an arrangement, the receiving bath or conveyor can be disposed beneath the film strips and the capsules C are dropped through the openings 65 of the used areas of the film strips, while the bank of lower cups 16 is out of the way so as to leave the space below the encapsulating station free of obstruction to the downward discharge of the capsules into the bath or onto the conveyor.

Instead of the integral suction jacket 25 of FIG. 3 the sleeve 41A may be utilized to define a suction chamber 27A communicating with the underside of cup 16A, as shown schematically in FIG. 8.

THE PROCESS

My improved process has been largely explained in the foregoing description. It can be performed on a single cavity apparatus embodying one pair of opposed suction cups 16, 18, or on a multiple-cavity apparatus having a plurality of pairs of opposed suction cups arranged in a row transverse to the longitudinal axis (of feeding movement) of film strips 19A, 20A as shown schematically in FIGS. 11 and 12; or a group of pairs of cups can be arranged in block formation in transverse and longitudinal rows, as illustrated schematically in FIG. 13. Instead of continuous film strips, separate sheets can be inserted between the blocks of opposed cups.

The invention can be utilized for encapsulating a body of solid relatively rigid material, as indicated at 21 in FIG. 3; or a body of relatively soft plastic (food or other) material 21A (FIG. 14) suitably delivered into the receptacle pocket 15 and having a tendency to slump therein; or a body of liquid 21B (FIG. 15) poured from a spout 70 into the receptacle pocket 15 to a level which is maintained somewhat below the rim of cup 16 so as to avoid the possibility of its creeping over the rim during the encapsulating process and spoiling the seaming step. Where liquid is thus encapsulated, the upper suction cup may be dispensed with and the cover film 20A is disposed over the filled receptacle 15 and sealed thereto while in a flat condition. Subsequent to sealing, the contraction of pocket 15 to shallower form will displace the liquid contents against the cover film 20A, causing it to bulge so as to develop casting sections of substantially symmetrical curvature in the completed capsule, corresponding to the capsule shape as seen in FIG. 16. I have found that liquids can be successfully encapsulated in this manner.

Displacement of air from a capsule being formed around a body of liquid in lower pocket 15 can be effected by allowing the cover film to sag into contact with the liquid body 21B, and by capillary adhesion the liquid will creep along the under surface of the cover film, will draw it into the cup 16 until the film is fitted into the annular corner inside the cup rim 33, and will then creep upwardly between the offset portions of the films 15 and 17 in such annular corner, until all air is excluded from the encapsulating chamber. Thus, when the marginal film portions 19, 20 are sealed to one another an hermetically sealed capsule will be produced.

The invention can also be utilized for encapsulating loose or granular materials (e.g., salt, sugar, breakfast cereals) which may be handled in a manner generally similar to the handling of liquid materials.

Referring now to FIGS. 1-5 as illustrating one of the processes, the succession of steps therein are as follows:

1. A film strip or sheet 19A is drawn or placed over suction cup 16 as in FIG. 1, in contact with the rim of cup 16;
2. The film 19A is then clamped to the cup or cups 16, as by clamping means 42.
3. Suction is then applied to cup 16 as indicated at S in FIG. 2, expanding the film 19A into a receptacle pocket 15.
4. A body 21 or measured quantity of content material is then placed in receptacle pocket 15.
5. A film strip 20A or sheet of film is drawn or placed beneath the rim of suction cup 18.
6. Suction is applied to upper cup 18 as indicated at S, thus developing the cover pocket 17 in the cover film.

Steps 6 and 5 can be performed before or after the development of receptacle pocket 15 and the placing of content material 21 therein.

As an alternative to steps 5 and 6, where the content material is of a soft, slumping nature, or of loose granular form or a liquid, the covering step may be simply the drawing or placing of a cover film 20A over the receptacle 15 after injection of content material therein, and the subsequent clamping of such cover film against the marginal portion 19 of the receptacle film, using the rim 34 of upper cup 18 without applying suction thereto, or using a pressure ring 34A as shown in FIG. 14, in lieu of the step next described.

7. Upper cup 18 (or pressure ring 34A) is then lowered as in FIG. 3, until marginal film portions 19, 20 are clamped between upper rim 34 (or ring 34A) and compressible closing collar 51 so as to seal the portions 19, 20 to one another outwardly of electrode 45, sealing the encapsulating chamber 22.

8. Air is then evacuated from chamber 22, using one of the methods described above, and preferably a preservative gas is injected into chamber 22 to maintain the pockets 15, 17 distended, avoiding premature collapse thereof.

9. Closing movement of cup 18 against cup 16 is then extended so as to engage the film portions 19, 20 between electrode 45 and upper cup rim 34 (or ring 34A), and a momentary electric current sufficient to heat electrode 45 to bonding temperature, is then fed to the electrode. This forms the seam 55 and simultaneously softens the film material immediately surrounding electrode 45 so as to cause the surplus marginal materials 19, 20 to separate from the seam under tension developed therein during the distention of the films to form the pockets 15, 17.

10. The seam is held clamped between upper cup rim 34 (or ring 34A) and compressed ring 48 and rim 33, until the seam has cooled and hardened, thus forming a capsule casing.

11. Suction is released in cups 16, 18 clamping pressure against seam 55 relieved, and the distended sections of the capsule casing will then shrink by plastic memory into skintight enclosing contact with contents 21. If the latter is liquid or loose or semifluid, it will be shaped into the bubble form of capsule C (FIGS. 9, 10) by the shrinking action of the casing.

12. Cups 16, 18 are separated, releasing the finished capsule C which is then removed from the apparatus for subsequent handling.

In the discharge method of FIG. 10, suction is maintained or reestablished in upper cup 18 while suction is released in lower cup 16, whereby the capsule C is pressed upwardly into cup 18 by the contraction of lower pocket 15, sufficiently to establish a suction cup grip on capsule C by cup 18, while the lower cup 16 is removed. Suction in upper cup 18 is then released, in order to discharge the capsule therefrom.

Where the invention is utilized for encapsulating liquids or semifluid (flowable) materials, the receptacle pocket 15 is kept distended by suction in its cup 16 throughout the process until the capsule has been sealed, in order to avoid overflowing the pocket 15 caused by its contraction in response to suction release.

I claim:

1. Encapsulating apparatus comprising:

A suction cup having a rim defining its mouth;

Means resiliently mounting said suction cup;

An annular heat-sealing electrode encircling said rim adjacent thereto;

Means for holding a heat-sealable plastic film across said rim;

Means for applying suction within said cup so as to draw said film into the cup in bubble form to provide a receptacle pocket for content material, with a marginal portion of said film extended over said rim;

Means for pressing a cover film simultaneously against the entire said marginal portion of the receptacle film outside said pocket, said cover film pressing means being a suction cup disposed above said receptacle-forming cup in opposed aligned relation thereto, and operable to form a cover pocket in said cover film to receive the upper portion of said content material;

And means for heating said electrode so as to heat-seal said films to one another simultaneously around said rim, whereby to produce a sealed casing enclosing said content material.

2. Encapsulating apparatus as defined in claim 1, wherein said pressing means comprises:

An upper suction cup having means for suction drawing said cover film into a cover pocket in opposed relation to said receptacle pocket.

3. Encapsulating apparatus comprising:

A suction cup having a rim defining its mouth;

An annular heat-sealing electrode encircling said rim adjacent thereto;

Means for holding a heat-sealable plastic film across said rim;

Means for applying suction within said cup so as to draw said film into the cup in bubble form to provide a receptacle pocket for content material; with a marginal portion of said film extended over said rim;

Means for pressing a cover film against said marginal portion of the receptacle film outside said pocket;

Said cover film pressing means comprising:

An upper suction cup disposed above said receptacle-forming cup in opposed relation thereto, and operable to form a cover pocket in said cover film to receive the upper portion of said content material, and said upper suction cup having means for suction drawing said cover film into a cover pocket in opposed relation to said receptacle pocket;

Means for heating said electrode so as to heat-seal said films to one another around said rim, whereby to produce a sealed casing enclosing said content material;

And a vacuum frame into which said suction cups are insertable, said frame having means for applying suction between said films to evacuate air from said casing just prior to sealing the same.

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