April 6, 1948. H. F. WATERS 2,438,981

PACKAGING METHOD

Original Filed Oct. 5, 1940 3 Sheets-Sheet 1

Fig. 1.

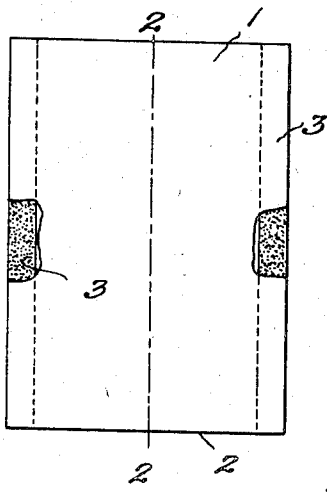


Fig. 2.

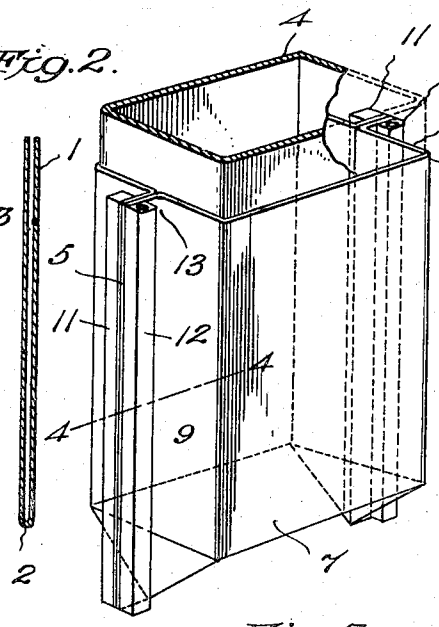


Fig. 4.

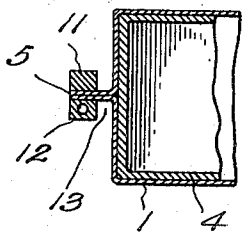


Fig. 3.

Fig. 5.

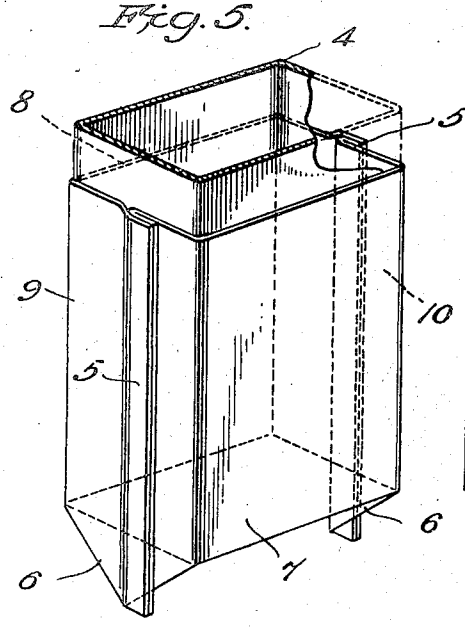
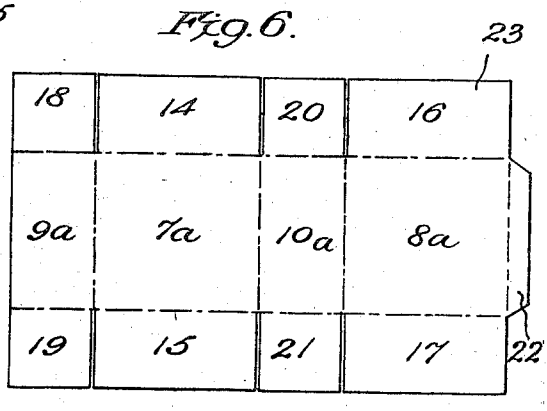


Fig. 6.



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PACKAGING METHOD

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Fig. 7.

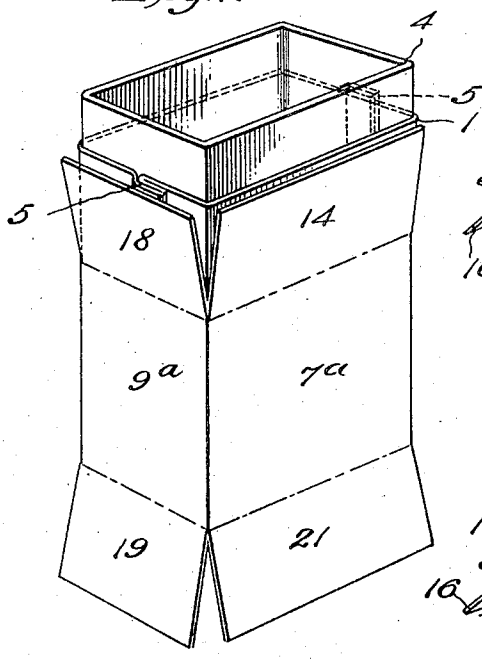


Fig. 9.

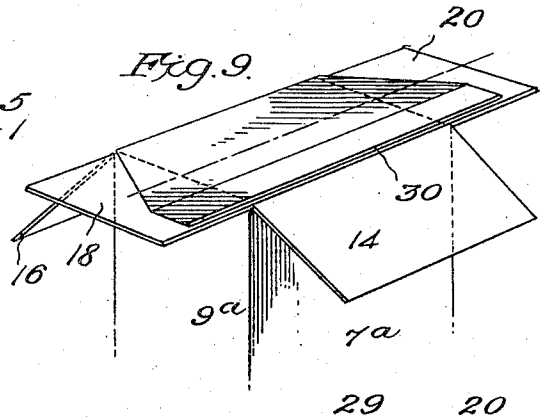


Fig. 10.

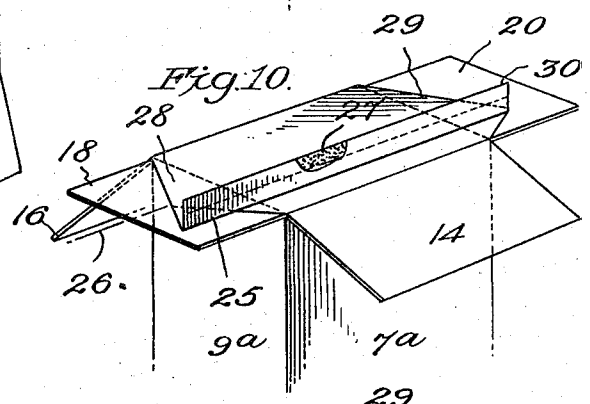


Fig. 8.

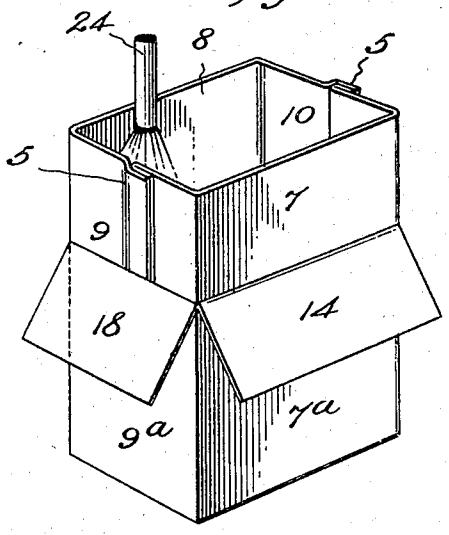
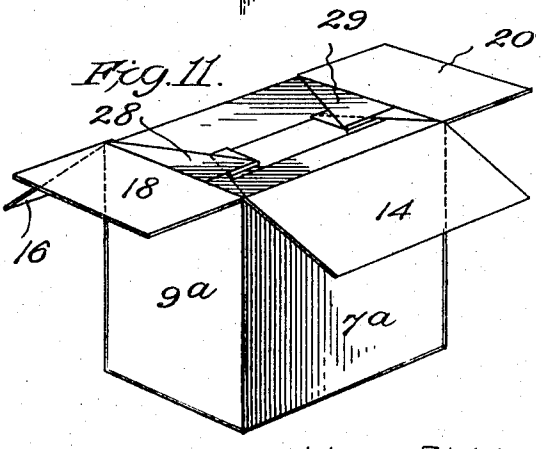


Fig. 11.



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April 6, 1948. H. F. WATERS 2,438,981

PACKAGING METHOD

Original Filed Oct. 5, 1940 3 Sheets-Sheet 3

Fig. 12.

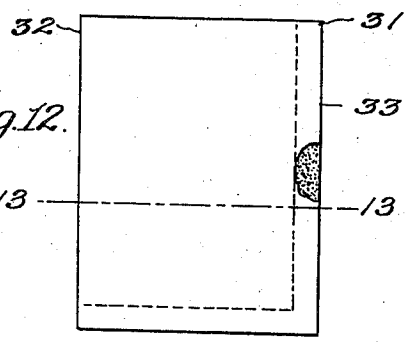


Fig. 13.

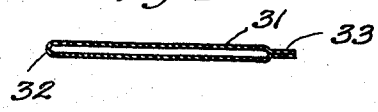


Fig. 14.

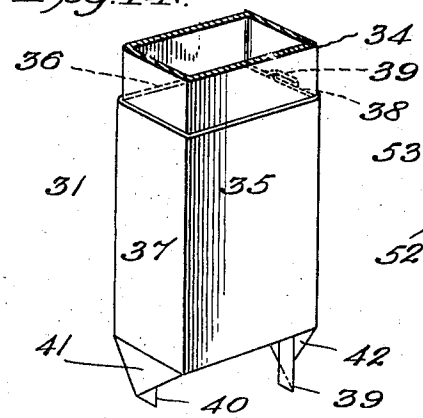


Fig. 15.

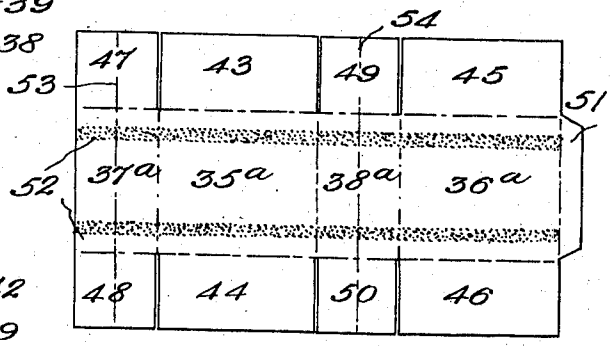


Fig. 16.

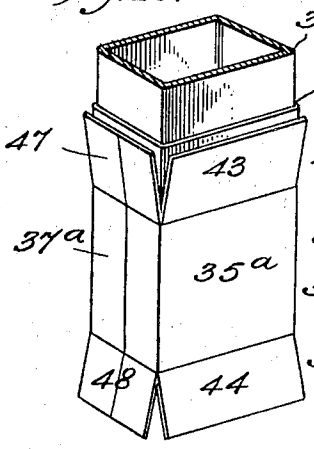


Fig. 17.

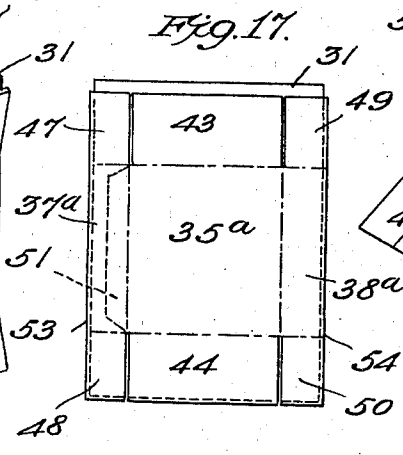
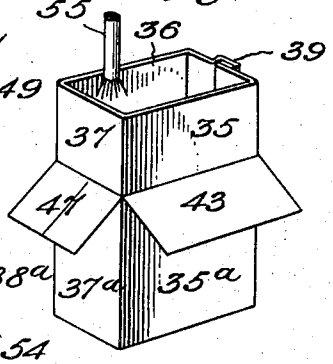


Fig. 18.



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Patented Apr. 6, 1948

2,438,981

UNITED STATES PATENT OFFICE

2,438,981

PACKAGING METHOD

Harry F. Waters, New York, N. Y.

Application August 16, 1941, Serial No. 406,496, which is a division of application Serial No. 359,823, October 5, 1940. Divided and this application October 6, 1945, Serial No. 620,773

4 Claims. (Cl. 93—36.01)

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The present invention relates to the art of packaging, and more particularly, to a novel method of forming fluid-tight containers and of packaging commodities therein.

This application is a division of my application Serial No. 406,496, filed August 16, 1941 (now Patent No. 2,428,440), for Packaging method, which application is a division of application Serial No. 359,823 filed October 5, 1940, now Patent 2,252,106 of August 12, 1941.

The product with which the present invention is primarily concerned is a container of generally moisture-proof and fluid-tight character comprising an outer carton having at least some flexibility and strength and an inner bag or liner fluid-tight and heat fusible at least on the inner face thereof. I have found that in containers of the described character it is desirable to provide a bag which is bigger than the inner space of the carton so that in the filled and sealed condition of the bag it will be supported by the carton throughout the entire surface thereof. In other words, the liner may be of a relatively weak material provided it has good fluid-tight qualities since the stresses occurring during transportation and storage are taken up by the outer carton. Containers of the described character have obtained great importance in the packaging art and are disclosed, for example, in my co-pending application Serial No. 191,860, filed February 23, 1938, which has become abandoned.

Heretofore, fluid-tight containers of the described character have been generally made by separately forming a liner bag of the desired size and attaching such bag in its original flat or collapsed condition to a carton blank. Another method disclosed in my co-pending application Serial No. 329,254 filed April 12, 1940 (now Patent No. 2,228,647), involved attaching a flat liner sheet to the carton blank and simultaneously forming a tubular carton structure and a tubular or envelope-like liner structure within this carton. In both of these instances the container was formed in its flat or collapsed condition and was subsequently erected prior to filling. Various problems were encountered in forming fluid-tight containers by means of these methods particularly when it was desired to use a four-sided carton. As those skilled in the art know, it is difficult, if not impossible, to directly and adhesively secure a collapsed envelope or bag to a collapsed four-sided tubular carton due to the fact that upon erection a container of this type develops substantial stresses in the bottom seam thereof. This can be avoided only by leaving the liner open at both ends which are sealed only after the container has been erected. This, of course, involves performing bag making operations at the filling station and to some extent complicates the use of this type of container.

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It is an object of the present invention to provide a packaging method which completely eliminates these disadvantages and inconveniences of prior procedures.

It is another object of the present invention to provide a continuous method of packaging which starts out from a heat-fusible and fluid-tight liner material and form or erects such material about a mandrel.

It is a further object of the present invention to provide a novel and improved method of forming fluid-tight, duplex containers involving heat sealing a fluid-tight sheet material on a mandrel and thereafter combining such erected and fluid-tight bag with a carton either by pushing the erected bag into an erected carton or by wrapping the carton blank around the erected bag while it is still on the mandrel.

It is also within the contemplation of the invention to provide a method of forming fluid-tight and hermetically sealed packages which operates in a direct and continuous manner starting from the sheet-like liner material and from the flat carton blank and converts such materials into a finished and hermetically sealed fluid-tight package.

Still another object of the present invention is to provide an apparatus for carrying the method of the invention into practice. The invention also contemplates a packaging method which is simple in character and which may be employed on a practical and industrial scale for the quantity production of fluid-tight and hermetically sealed packages.

Other and further objects and advantages of the present invention will become apparent from the following description taken in conjunction with the accompanying drawings in which:

Fig. 1 illustrates a top elevational view of a liner or bag integrally formed from a single sheet of material;

Fig. 2 depicts a longitudinal sectional view taken on line 2—2 of Fig. 1;

Fig. 3 shows a perspective view of a mandrel having a fluid-tight liner material wrapped around it and sealed along its longitudinal edges;

Fig. 4 is a horizontal sectional view, somewhat fragmentary in character, and taken on line 4—4 of Fig. 3;

Fig. 5 illustrates a perspective view, having

parts broken away for reasons of clarity, and showing the longitudinal seams or fins of the liner material flattened into the plane of two panels or walls thereof;

Fig. 6 depicts a plan view of a carton blank on a somewhat reduced scale adapted to be combined with the erected bag appearing in Fig. 5;

Fig. 7 shows a perspective view of the liner supported by a mandrel after it has been combined with a carton;

Fig. 8 is a similar view of the finished and lined carton in its erected condition during the filling operation;

Fig. 9 illustrates a perspective view of the top portions of the filled container with the mouth portions of the bag flattened into the plane defined by the upper hinge lines of the carton;

Fig. 10 is a similar view of the top part of the container in the position in which the collapsed mouth portions of the liner bag are hermetically sealed;

Fig. 11 is a similar view of the finished filled and sealed package, the top flaps of the carton being open for clarity of illustration;

Fig. 12 illustrates a top elevational view of a modified bag adapted to be used in the method of the invention;

Fig. 13 depicts a transverse sectional view taken on line 13—13 of Fig. 12;

Fig. 14 shows the bag illustrated in Figs. 12 and 13 erected on a mandrel;

Fig. 15 is a top elevational view of a six-sided carton blank adapted to be combined with the erected bag;

Fig. 16 is a perspective view of the erected bag combined with the carton;

Fig. 17 represents the carton and bag removed from the mandrel upon which they were formed and in a collapsed condition in which they may be stored and shipped prior to use; and

Fig. 18 is a perspective view of the carton and bag in its erected form during the filling operation.

Generally speaking, the containers contemplated by my invention have to satisfy certain important considerations. First of all, it is of great importance that in the erected and filled condition of the package, the inner fluid-tight bag should be greater than the inner space of the carton so that the relatively weak material of the bag is supported by the carton walls throughout the entire surface thereof that is the inner liner or bag is bigger than the outer carton and after filling and sealing of the package is fully supported by the carton throughout the entire surface thereof. Another important condition of providing a completely fluid-tight and leakage-proof container is that the inner bag should be formed as far as possible exclusively by means of completely flat seams so that in the sealed regions not more than two layers of material are placed in a face to face position. Experience has demonstrated that in the event that reentrant folds, intervening layers of materials and similar regions are present in which there are more than two layers of the liner material included, such regions will be greatly subject to the danger of leakage due to the non-uniform thickness of the liner materials therein.

In accordance with my invention, I first provide a liner or envelope preferably formed of a single sheet of material which is fluid-tight and fusible at least on one face thereof. Preferred examples of these fusible or thermoplastic materials are a sheeted rubber hydrochloride product known by the name Pliofilm, synthetic resinous materials sold under the name Koroseal, Vinylite, and the like. These sheets may be employed in the form of a self-sustaining film or layer or in the form of a layer coated on or laminated to a sheet of flexible material, such as paper. The latter procedure has the advantage that the liner material may be made fusible on one face and is non-fusible on the other so that heat and pressure may be applied to the fusible portion through the unfusible portion whereby adherence of the material to the heat sealing members is prevented. A bag or envelope may be formed in flat form by means of folding a sheet of such laminated material about a medial line and heat sealing the resulting structure at least at two lateral edges thereof whereby an envelope closed at three sides and open at one side is obtained. The result is a liner bag or envelope in flat form having a continuous coating of fluid-tight material throughout the entire inner surface thereof, in which bag or envelope can be squared-up and erected upon a mandrel. This erected bag which is closed at the bottom and is open at the top may now be pushed into an erected tubular carton, or a carton blank of suitable character and of appropriate dimensions may be wrapped around the bag and may be adhesively secured thereto while the bag is still on the mandrel. After the mandrel is withdrawn, a squared-up carton having a squared-up liner therein is provided and may be filled with a commodity in any conventional manner. After filling, the mouth portions of the liner or bag are collapsed and are hermetically sealed preferably by the application of heat and pressure along a transverse strip. Thereafter, the resulting tabs of the liner or bag may be folded into the inner space of the carton and the flaps may be closed thereabout.

Referring now more particularly to the drawings, Figs. 1 and 2 illustrate a bag or envelope of the so-called seamless bottom type employed in the method of the present invention. It will be noted that this bag essentially comprises a sheet or strip 1 of flexible material fusible at least on the inner face thereof. This sheet is folded about a transverse medial line 2 to bring its edges into registering position. The resulting structure may be sealed by the application of heat and pressure to two lateral marginal strips 3 thereof, whereby an envelope closed at the sides and at the bottom is obtained. This bag may now be erected or squared-up on a mandrel 4 whereby the structure illustrated in Fig. 5 is obtained. The heat sealed regions 3 are flattened in the plane of the two side walls of the mandrel and in the same direction whereby they are converted into longitudinal fins 5. Tabs 6 will be provided at the end of the side walls of the erected bag and may be subsequently folded inwards into the plane of the bottom wall of the bag.

It was already suggested to heat seal a suitable sheet or strip on a mandrel or former and thereby to convert it into an erected bag. These prior procedures, however, were incapable of providing a bag which was potentially greater in all of its dimensions than the inner space of the carton into which it was inserted. The reason for this difficulty was obvious. In order to form the sheet of the bag on a mandrel it had to be tightly wrapped around the mandrel and since the di-

mensions of the mandrel had to be necessarily smaller than the dimensions of the carton into which mandrel and bag were subsequently inserted, the bag was necessarily at least slightly smaller than the inner space defined by the erected carton. Thus, after the bag was filled with a flowable or fluid commodity, the inner pressure on the inner walls of the bag was unable to obtain support from the walls of the carton. As a result at least a portion of the inner liner remained unsupported by the outer carton, causing frequent rupturing or tearing of the bag and loss of the contents during transportation and storage. I have now discovered that this difficulty may be eliminated in an extremely simple manner by means of heat sealing the liner material on a mandrel in such a way that the heat sealed region is at a substantial distance from the mandrel surface. I have found that when the resulting seam is flattened into the plane of one of the walls of the erected bag, a structure is obtained which is capable of relative displacement and of an increase in size until the bag is fully supported by the carton walls. This seam structure which operates in the manner of an expansion joint or slip joint will be best understood from the contemplation of Figs. 3 and 4.

As it will be observed in Fig. 3, sheet 1 which is fluid-tight and fusible on at least the inner surface thereof, may be preformed into bag or envelope shape, or it is wrapped about mandrel 4 in such a manner that its longitudinal edges are brought into a face to face position. Thus, liner 1 has been converted into an erected structure having main panels 7 and 8 and end panels 9 and 10. Two fins 5, corresponding to fins 5 in Fig. 5, are obtained, extending along the medial lines of end panels 9 and 10 of the bag. The two layers of liner material in these fins may be permanently secured to each other by applying heat and pressure along a longitudinal marginal strip thereof. This is preferably accomplished by means of heat sealing members 11 and 12 extending in longitudinal direction parallel with the end panels of mandrel 4 and of the bag. Preferably, one of these heat sealing members 12 is heated by means of an electric resistance or heating element (not shown) to a temperature at which the coating or laminating material of the liner is fusible. The other member 11 is preferably constituted of an at least partially resilient material such as rubber. It will be readily noted that sealing members 11 and 12 operate along a strip of the bag material which is remote from the end walls of the erected bag on mandrel 4, the distance being denoted by reference character 13 in Fig. 3. Thus, after the sealing operation is completed, the sealing members are withdrawn, and the resulting fins 5 are flattened into the plane of end panels 9 and 10, there will be an unsealed strip incorporated into the fins corresponding to distance 13 in Figs. 3 and 4. The result will be that the two halves of end walls 9 and 10 of the bag may be displaced to a moderate extent from each other under the effect of internal pressure whereby a slip joint or expansion joint-like effect is obtained. In other words, after the bag is inserted into a carton of appropriate dimensions and is filled with a fluid material, the bag is capable of slight expansion under the pressure of the contents, this expansion not exerting any appreciable pressure on the material but being taken up by the said slip or expansion joint. This expansion continues until the inner filled bag is completely supported by the outer carton throughout the entire surface thereof.

Whether the bag is first formed flat and then erected on a madrel or it is directly made in erected form on a mandrel, the structure illustrated in Fig. 5 is obtained. In order to obtain a completely satisfactory reinforced fluid-tight package, it is necessary to combine the erected bag with a carton. This may be accomplished in various ways. Thus, in the simplest case an erected carton of suitable dimensions may be formed and the bag may be pushed into the carton while it is still on the mandrel. After withdrawal of the mandrel, the package is ready for filling. Another possibility is to provide a carton blank 23 of the type shown in Fig. 6 having main panels 7*a* and 8*a* and end panels 9*a* and 10*a* corresponding in dimensions and arrangement to similar panels 7, 8, 9 and 10 of the erected bag. Main panels 7*a* and 8*a* are provided with top and bottom flaps 14 and 15, 16 and 17, respectively, while similar flaps 18 and 19, 20 and 21 are provided for end panels 9*a* and 10*a*. A conventional glue flap 22 is provided at one end of the carton blank. In carrying this modification of my method into practice, carton blank 23 is wrapped around the erected bag and glue flap 22 is secured to the corresponding portion of end panel 9*a*. If desired, the carton and the bag may be adhesively secured to each other although in most cases this is not necessary. The resulting structure will be best observed in Fig. 7 which clearly shows the tubular carton with its top and bottom flaps extending in opposite directions and mandrel 4 within the bag.

The next step in my novel packaging method involves closing the bottom flaps of the carton around tabs 6 of the bag which are likewise folded into the inner space of the carton. The erected bag may now be filled through a filling device 24 with a predetermined quantity of the commodity to be packaged. Hereafter, the mouth portions of the inner bag extending beyond the main body portion of the carton may be collapsed or brought into a face to face position and may be hermetically sealed by the application of heat and pressure across a transverse strip thereof.

As it has been pointed out in the foregoing, in order to provide a positively fluid-tight and leakage-proof package, it is desirable to have a structure comprising only completely flat seams. The principles governing this type of seams are disclosed in my copending application Serial No. 329,254 referred to in the foregoing. I have found that in a carton and bag structure having lateral fins flattened into the plane of one or more panels of the bag, certain conditions have to be satisfied in order to permit the provision of a completely flat transverse top seam with a minimum of liner material. In order to obtain this result it is necessary to flatten mouth portions 30 of the bag into the plane defined by the hinge lines of the top flaps of the carton and in the direction in which the fins extend. This will be best observed in Fig. 9 in which mouth portions 30 of the bag are shown collapsed against each other and brought into a substantially horizontal position. A flat top seam may be applied to the mouth portions of the inner bag already in this position. In most cases, however, it is preferred to fold collapsed mouth portions 30 vertically upwards about a line 25 at a distance from center line 26 of the package. (Fig. 10.)

In this position the collapsed mouth portions are readily accessible to a heat sealing device of suitable character and a transverse heat seal or seam 27 may be applied thereto hermetically sealing the inner bag. Thereafter, the resulting tabs 26 and 29 may be folded in, as shown in Fig. 11, and top flaps 14, 16, 18 and 20 closed thereabout and secured in such closed position by means of a suitable quick drying adhesive whereby a fluid-tight package is obtained satisfying all of the important considerations set forth in the foregoing.

While in the foregoing a bag of the seamless bottom type has been described, Figs. 12 to 18 illustrate my novel method of packaging applied to a bag having an L-shaped continuous seam incorporated therein. A bag of this type may be made in flat form by providing a sheet 31, fluid-tight and fusible on at least one face thereof, which is folded over about a longitudinal medial line 32 to bring its edges into registering position. L-shaped marginal area 33 extending along one of the longitudinal edges and one of the transverse edges of this folded structure converts the same into a flat bag closed at three sides and open at one side.

The first step in this modified packaging method is to erect the bag on a mandrel 34 whereby the structure illustrated in Fig. 14 is obtained. It will be noted that upon erection the bag will have a pair of main panels 35 and 36 and a pair of end panels 37 and 38. The L-shaped seam 33 will be converted into a longitudinal fin 39 and a transverse bottom fin 40. In addition, vertically depending tabs 41 and 42 are obtained at the places where the end panels merge with the bottom panel of the erected bag. The erected bag on the mandrel may be combined with a carton of suitable dimensions and having at least the same number of panels, or walls, as the erected bag. This may be accomplished, for example, by simply pushing the bag, while it is still on the mandrel, into an erected four-sided carton. Another possibility, which is preferred in some cases, involves wrapping a carton of appropriate shape around the erected bag. This carton may be a four-sided carton of the type shown in Fig. 15 having main panels 35*a* and 36*a*, end panels 37*a* and 38*a* corresponding in dimensions and arrangement to panels 35, 36, 37 and 38 of the bag. Main panels 35*a* and 36*a* are provided with conventional top and bottom flaps 43 and 44, 45 and 46, respectively, while end panels 37*a* and 38*a* are provided with similar top and bottom flaps 47 and 48, 49 and 50, respectively. A conventional glue flap 51 is connected to main panel 36*a* and is adapted to cooperate with the corresponding portion of end panel 37*a* to convert the carton into a tubular structure. Adhesive lines 52 are provided on the main and end panels and have the object to secure the bag to the carton. In the event that after combining the carton with the bag the resulting structure is immediately filled and sealed, these adhesive lines may be omitted. On the other hand, if it is proposed to remove the container comprising the carton and the inner bag and to ship it in collapsed form to a filling station, one can provide medial score lines 53 and 54 in end panels 37*a* and 38*a* respectively, to obtain a six-sided structure. In this case the duplex container may be collapsed on these medial score lines 53 and 54 and may be shipped and stored in such collapsed form whereby the space requirements are greatly reduced. The carton and inner bag may also be collapsed on corner fold lines.

The structure obtained after combining the carton with the bag is shown in Fig. 16 illustrating the carton and bag while they are still on mandrel 34. Upon withdrawal of the mandrel, the container may be either collapsed on medial fold lines 53 and 54, as this is shown in Fig. 17, or the bottom flaps of the carton may be closed and the inner bag may be filled with a commodity through a conventional filling device 55. After filling, the mouth portions of the inner bag are collapsed into a face to face position and are hermetically sealed by applying heat and pressure to a transverse marginal strip thereof.

In forming this top closure or seal for the inner bag the same conditions have to be considered as were explained in connection with the previous embodiment of my invention. In other words, in view of the presence of a longitudinal fin 39 in one of the end panels of the bag, the closed top portions of the bag must be first folded into the plane defined by the top hinge lines of the carton and in the direction determined by the fin. Hereafter, heat and pressure may be applied to the mouth portions of the bag across a transverse strip thereof or these flattened mouth portions may be first folded vertically upwards in which postion they are more accessible to a heat sealing device. After the top closure has been made, the resulting tabs of the bag are folded into the carton and the top flaps of the carton are closed thereabout. The procedure followed in making this top closure is practically identical with the manipulations illustrated in Figs. 9 to 11, the only difference being that while in Figs. 9, 10 and 11, tabs 28 and 29 are of equal length due to the presence of a lateral fin in both end panels, the tabs resulting in the closure of the bag shown in Fig. 18 are of unequal length since there is only one lateral fin 39 present. Due to the extreme similarity of these procedures, no detailed description of forming a closure for the structure of Fig. 18 is believed necessary.

In the foregoing, I have explained the various steps of my novel packaging method by means of which a preformed flat bag having an L-shaped seam may be converted into a finished and hermetically sealed package.

It will be noted that my novel packaging method provides important advantages for packaging commodities of various character and is especially advantageous for packaging fluids which have to be hermetically sealed, and commodities desired to be sealed in a vacuous atmosphere such as coffee. The principal advantage of my novel method resides in that the packaging materials such as liner sheets and carton blanks may be converted into a finished and hermetically sealed package in a simple, direct and continuous manner.

It is also to be observed that while the various steps of my method have been explained for the sake of simplicity as hand manipulations, obviously, all of the steps are preferably carried out by means of machinery. In fact, practically all of the steps involved in my method may be carried out by some of the conventional packaging machines without requiring any complicated or expensive changes.

Furthermore, the packaging method of my invention provides a finished package which employs all of the important structural elements which I have found indispensable for the provision of a practical and commercial hermetically

sealed fluid-tight package. In the packages prepared in accordance with my method, the inner liner is bigger than the outer carton throughout the entire surface thereof. Moreover, all of the sealed regions have only two layers of liner material incorporated therein and reentrant folds, intervening layers and similar danger points of leakage are completely avoided. All of the seams, including the seam in the top closure, are flat and if in a package made in accordance with my method the completely sealed bag would be withdrawn and the fluid contents removed therefrom, for example through a small hole, the bag could be completely collapsed into a flat envelope sealed by means of flat seams at three edges and closed by a fold line at the fourth edge. In this manner, a heretofore unobtainable packaging structure and a closure of a completely and permanently hermetic character are obtained.

In addition, the packaging method of my invention is extremely simple and inexpensive to use so that it is readily adaptable to packaging relatively low-priced commodities on a practical and commercial scale.

Although the present invention has been described in connection with a few preferred embodiments thereof, variations and modifications may be resorted to by those skilled in the art without departing from the principles of my invention. Thus, while in the foregoing it was disclosed that the filling operation is performed after the bag has been combined with the erected carton, it is also possible to fill the erected bag with the commodity to be packaged and thereafter to insert the filled bag into an erected carton, with equal or similar results. I consider all of these variations and modifications as within the true spirit and scope of the present invention as disclosed in the foregoing description and defined by the appended claims.

I claim:

1. The method of producing fluid-tight containers which comprises providing a collapsed envelope fluid-tight and fusible on at least the inner surface thereof and including the same number of layers throughout, erecting said envelope on a mandrel, combining said erected envelope with a carton having two pairs of opposed panels and medial score lines in one pair of said panels, withdrawing the resulting lined container structure from said mandrel, and then collapsing said structure on said medial score lines of said carton whereby a fluid-tight container in knocked-down form is obtained adapted to be erected to form a lined packaging medium.

2. The method of producing collapsed erectable fluid-tight containers which comprises providing a flat bag fluid-tight and fusible at least on the inner surface thereof and having at least one heat-sealed longitudinal marginal area, erecting said bag on a rectangular mandrel to convert it into a rectangular bag having two pairs of opposed panels and a medial fin in at least one of its panels, adhesively combining said erected bag with a carton blank having panels corresponding to those of said bag and medial score lines in a pair of opposed panels, withdrawing the resulting lined container structure from said mandrel, and then collapsing said structure on said medial score lines of said carton whereby a fluid-tight container in knocked-down form is obtained adapted to be erected to form a lined packaging medium.

3. The method of producing fluid-tight containers which comprises providing a flat bag integrally formed of a sheet presenting a continuous fluid-tight and fusible inner surface and having an L-shaped heat sealed region extending along two adjacent marginal areas thereof, erecting said bag on a mandrel, flattening said sealed region into unidirectionally extending longitudinal and transverse fins, slipping said erected bag into a carton having two pairs of opposed panels and medial score lines in one pair of said panels, withdrawing the resulting lined container structure from said mandrel, and then collapsing said structure on said medial score lines of said carton whereby a fluid-tight container in knocked-down form is obtained adapted to be erected to form a lined packaging medium.

4. The method of producing fluid-tight containers which comprises providing a flat bag having a continuous fluid-tight and fusible inner surface and parallel sealed regions in two longitudinal marginal portions thereof, erecting said bag on a rectangular mandrel to convert it into a bag having four panels, wrapping around and adhesively securing to said erected bag a carton blank having four panels corresponding to those of said bag and having medial score lines in a pair of opposed panels thereby flattening said sealed marginal portions into a pair of longitudinal fins extending in the same direction, withdrawing the resulting lined container structure from said mandrel, and then collapsing said structure on said medial score lines of the carton whereby a fluid-tight container in knocked-down form is obtained adapted to be erected to form a lined packaging medium.

HARRY F. WATERS.

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