

June 16, 1964

E. C. SLOAN ETAL

3,137,580

PACKAGE AND METHOD AND APPARATUS FOR FORMING SAME

Filed Nov. 27, 1959

3 Sheets-Sheet 1

Fig. 1

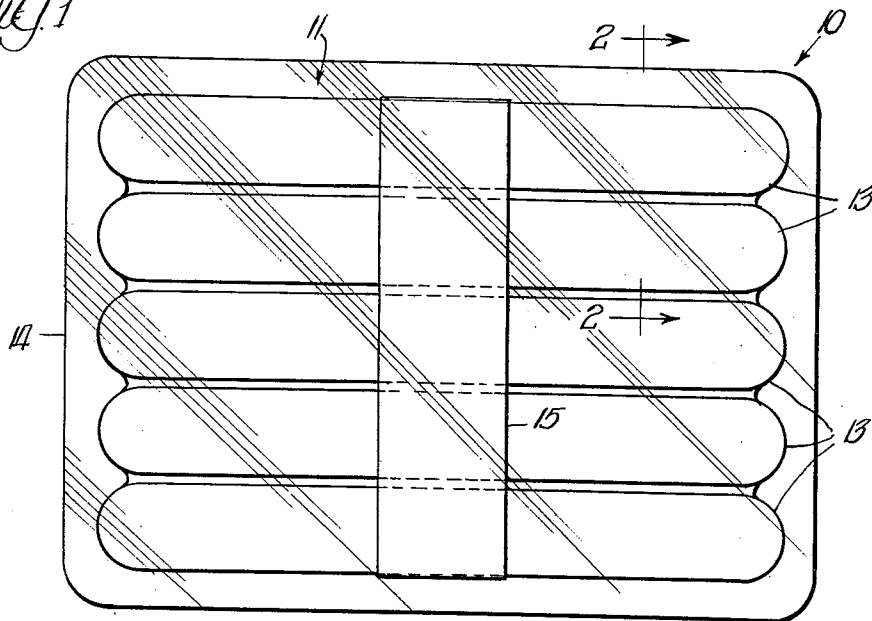


Fig. 2

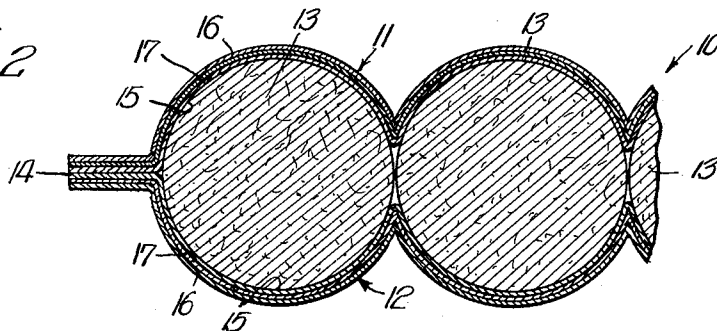
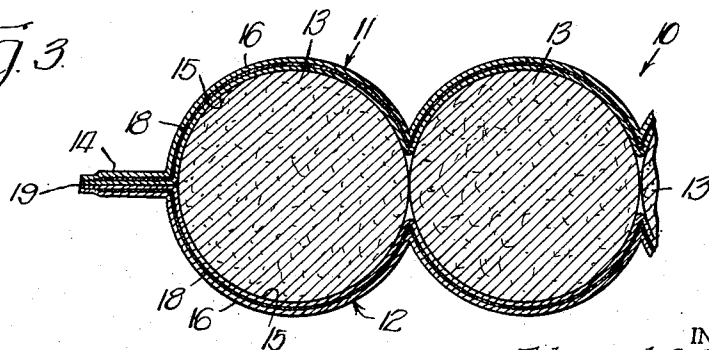


Fig. 3



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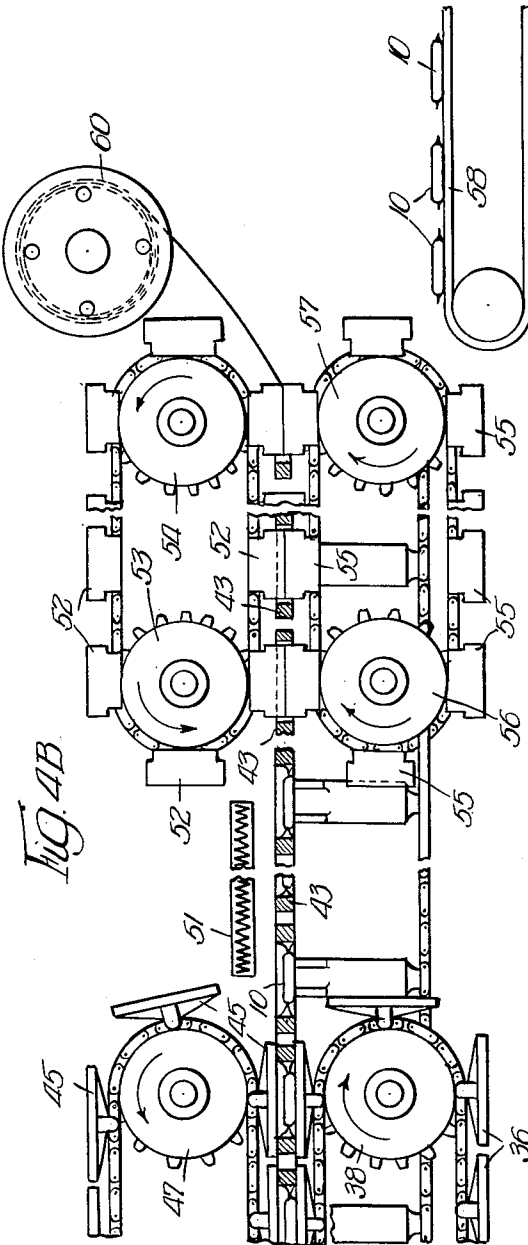
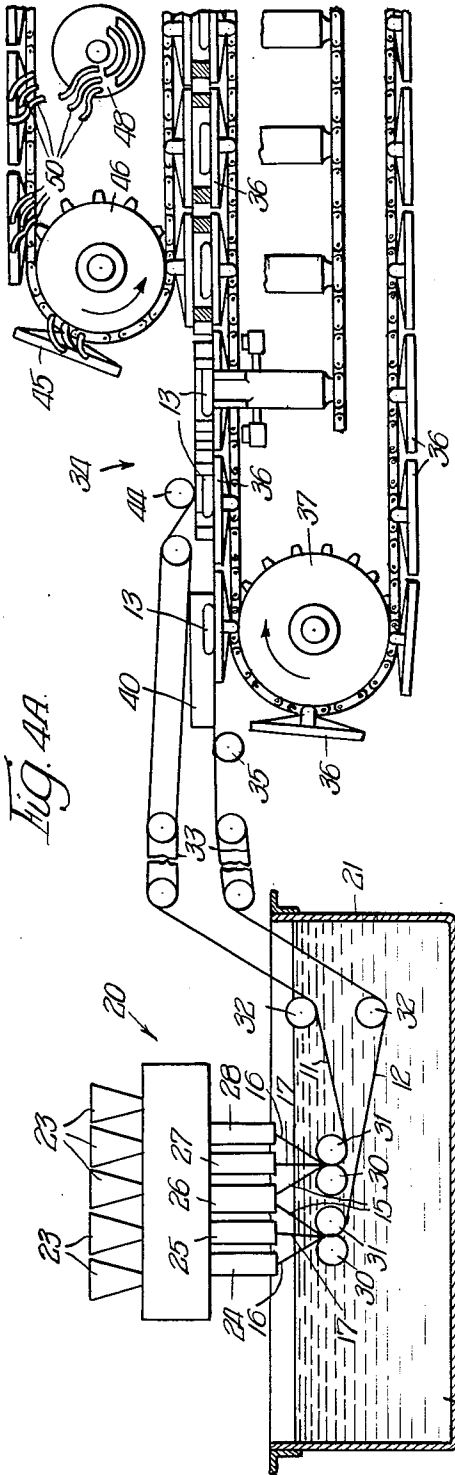
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3 Sheets-Sheet 2



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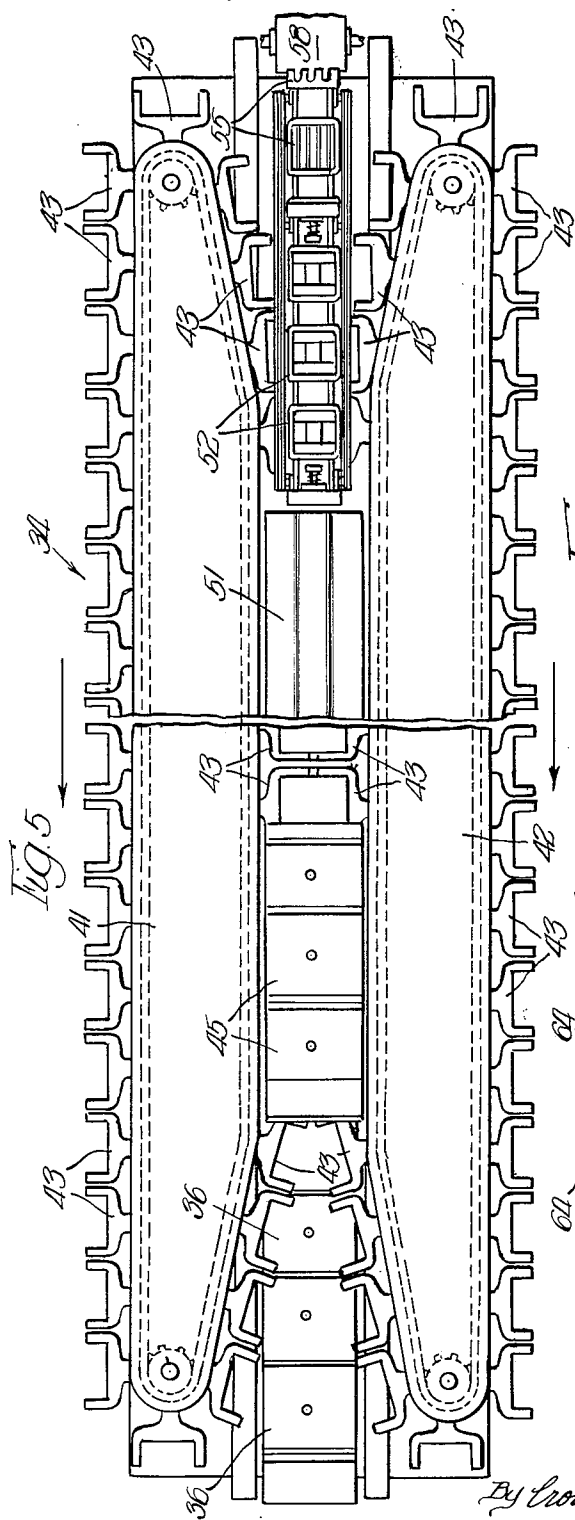
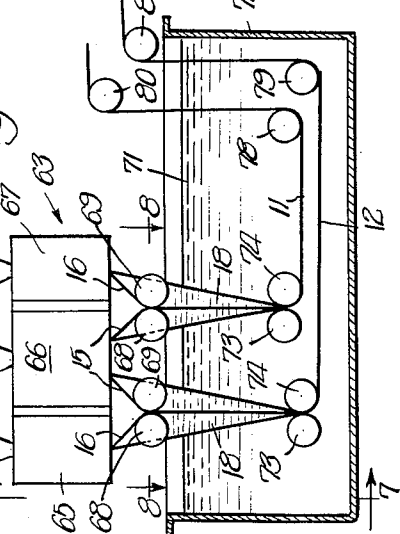
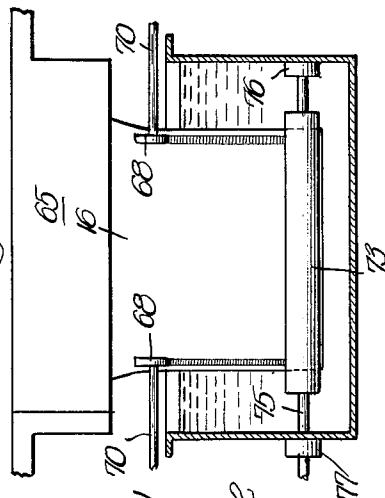
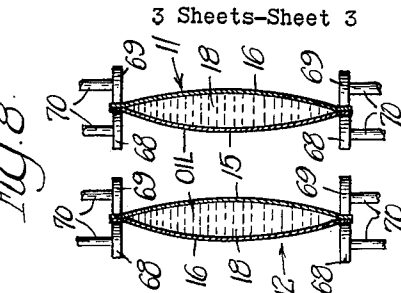


Fig. 5

Fig. 6

Fig. 7

Fig. 8



3 Sheets-Sheet 3

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3,137,580 PACKAGE AND METHOD AND APPARATUS FOR FORMING SAME

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Filed Nov. 27, 1959, Ser. No. 855,784
12 Claims. (Cl. 99—171)

The present invention relates to a new and improved package, the method of forming the package, and apparatus suitable for use in practicing the method. More specifically, the invention is directed to the utilization of supercooled polyvinylidene chloride films in forming product-containing packages in a manner to make full utilization of the advantageous supercooled properties of the films, the packages formed in accordance with the teachings of the present invention exhibiting improved properties including improved flexibility capable of withstanding normal and even severe impact handling.

In the co-pending application Serial No. 711,916, filed January 29, 1958, issued as Patent No. 3,083,106, a special package particularly adapted for merchandising meat products, such as wieners, is disclosed this package being formed from polyvinylidene chloride film in its supercooled state. Such film is formed from vinylidene chloride-vinyl chloride copolymers such as "Saran" manufactured by Dow Chemical Company of Midland, Michigan. This type of film is obtained as a powder, heated to a state of plastic flow and extruded into a continuous film of any desired thickness. This film when immediately supercooled following extrusion (cooled to a temperature adequate to retard crystallization, such as around room temperature) exhibits unique self-sealing coherence as well as uniform stretchability while maintained in an amorphous state. These unique properties have been utilized to advantage in accordance with the teachings of the aforesaid application in forming many different types of packages with the utilization of polyvinylidene chloride films being greatest at the present time in packaging food products, particularly meat products.

The self-sealing aspect of the supercooled film is adequately efficient to merely require the contacting of portions of the film and does not necessitate the application of mechanical pressure thereto or the use of extreme conditions such as high temperature heating or the like. As taught in the application, the self-sealing property of supercooled polyvinylidene chloride film has been efficiently utilized by superimposing portions of the film or films about a product in suitable package forming apparatus with hermetic sealing being accomplished by the mere vacuumizing of the package resulting in the drawing of the superimposed portions of the film together for adequate self-sealing contact therebetween. In this manner, a fused, permanent seal may be obtained which not only establishes hermetic conditions but also maintains the same.

As disclosed in the aforementioned co-pending application, the use of laminates of polyvinylidene chloride film in forming food packages has been considered. Preferably, such laminates include the utilization of two separately formed polyvinylidene chloride films each of which exhibits certain desirable properties, the films being contacted and fused together while in their supercooled state. In this respect, a two-ply packaging film laminate may be formed from an inner ply of highly flexible polyvinylidene chloride film and an outer ply of high oxygen barrier polyvinylidene chloride film, the flexibility of the inner ply being imparted to the laminate with the oxygen barrier ply materially improving the product keeping properties of the package formed from the laminate. Due to the self-fusing properties of the supercooled film, the laminate

in effect becomes a single film. Such laminates are useful in instances where the packages are not subjected to severe impact during handling.

In connection with the use of a laminate of the type described, it has been found that some limitations exist which under certain circumstances should advantageously be overcome. The impact strength of the laminate is no better than that of the oxygen barrier film alone and where the package is subjected to rather severe handling conditions, fracture of the laminate may occur. Where the package formed is of an overall flexible type particularly in the seal-defining area, the handling conditions of this package may be so severe as to cause fracture or failure of the package particularly in the seal-defining area. The package may be handled and subjected to impact forces any number of times subsequent to forming and prior to final merchandising and it is often the case that packages shipped over substantial distances are subjected to rather severe climatic changes. Under such conditions the two fully cohered plies of the film laminate are subject to fracture or failure.

It is an object of the present invention to provide a new and improved package formed from a laminate of polyvinylidene chloride film, the laminate being specially prepared to improve the flexibility and strength thereof while retaining and making full utilization of the unique supercooled properties of polyvinylidene chloride film forming a part thereof.

A further object is to provide a new and improved package utilizing in the forming thereof a laminate of two-ply polyvinylidene chloride film with the plies being maintained separate throughout by the placement therebetween of a separating material which does not interfere with the useful properties of the individual plies and yet still provides a unitary laminate for efficient package forming use.

Another object is to provide a new and improved package formed from one or more laminates of inner and outer polyvinylidene chloride films, these films being maintained in non-bonded condition by a separating material received therebetween, the separating material used being of such a nature as to permit full and efficient utilization of the unique supercooled properties of polyvinylidene chloride film.

Still a further object of the present invention is to provide a new and improved method of forming packages, the method providing for the forming and utilization of a laminate of supercooled polyvinylidene chloride film which includes as a part thereof a separating material cooperating to increase the utilization of the laminate.

A further object is to provide new and improved apparatus for use in carrying out the method of the present invention.

Other objects not specifically set forth will be apparent from the following detailed description of the present invention made in conjunction with the accompanying drawings wherein:

FIG. 1 is a plan view of one form of package formed in accordance with the teachings of the present invention;

FIG. 2 is an enlarged fragmentary section of a portion of the package of FIG. 1 taken generally along line 2—2 therein;

FIG. 3 is a view similar to FIG. 2 illustrating a modification of the type of laminate used in forming the package of FIG. 1;

FIGS. 4A and 4B are partly sectioned, fragmentary and diagrammatic illustrations of a package forming apparatus suitable for use in forming the package of the present invention;

FIG. 5 is a fragmentary top plan view of the package forming portion of the apparatus of FIGS. 4A and 4B;

FIG. 6 is a fragmentary, diagrammatic illustration of

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a modified portion of the apparatus of FIGS. 4A and 4B;

FIG. 7 is a sectional elevation of the apparatus of FIG. 6 taken generally on line 7—7 therein; and

FIG. 8 is a fragmentary plan view of the laminate forming portion of the apparatus of FIG. 6 taken generally along line 8—8 therein.

The polyvinylidene chloride film laminate formed and utilized in package preparation in accordance with the teachings of the present invention includes the utilization of an inner and outer supercooled polyvinylidene chloride film, the combined films being separated at least substantially throughout by the insertion therebetween of a separating material such as a thin layer of oil, oily substance, oil-containing material or a flexible film which is not bondable to the supercooled polyvinylidene chloride films to an extent that the polyvinylidene chloride films are, in effect, fused to one another. A package 10 formed from a pair of laminates of the type described is illustrated in FIGS. 1-3. This package is of the general type disclosed in the aforementioned co-pending application and includes an upper laminate 11 combined with a bottom laminate 12, these laminates taking the shape of a plurality of elongated products 13 received therebetween and arranged in side-by-side relation, the products 13 being wieners or other similar food products. As best illustrated in FIG. 1, the package 10 is generally flexible and is formed by the placing of a number of wieners 13 between the two laminates 11 and 12 while these laminates are in their supercooled state insofar as the polyvinylidene chloride films forming a part thereof are concerned. As fully described in the aforementioned co-pending application, the laminates 11 and 12 are brought together about the products 13 by the use of a vacuum and a continuous, radially outwardly directed, flange-like side margin seal 14 is obtained. The supercooled properties of the polyvinylidene chloride films provide for adequate stretching of the films in response to vacuumization therebetween to result in a drawing together of the films about each of the individual products 13 to fully conform to the shape of adjacent surfaces thereof as best illustrated in FIGS. 2 and 3. The supercooled properties further provide for the forming of a continuous hermetic seal of fused-type throughout the flange-like seal area 14. For ease of handling, the individual wieners 13 are preferably held together in side-by-side relation by a known type of paper band 15 applied thereto prior to packaging thereof.

As illustrated in FIG. 2, the laminates 11 and 12 may each be formed from an inner highly flexible film 15 of polyvinylidene chloride, an outer oxygen barrier film 16 of polyvinylidene chloride and an intermediate separating film 17 of any suitable material which exhibits adequate flexibility and which is not bondable with polyvinylidene chloride film, particularly when the latter is in its supercooled state, to an extent that the polyvinylidene chloride films are, in effect, fixedly bonded to one another. In addition to the foregoing properties, an important requisite of the separating film material 17 is that it must be formable to permit full utilization of the unique stretch properties of supercooled polyvinylidene chloride film. As previously described, the laminates 11 and 12 are stretched during vacuumization of the package to fully conform with and take the shape of the products enclosed thereby. Accordingly, the intermediate separating film material 17 must be capable of stretching to the desired extent so as not to defeat or interfere with the important package shaping property of amorphous polyvinylidene chloride film. Examples of suitable separating film material are polyvinyl chloride film, polyethylene film and polyvinyl alcohol coating-like film.

The provision of a separating film 17 in each of the laminates 11 and 12 materially increases the impact resistance of the laminates and the overall strength and usefulness of the package 10. The separate and distinct properties of the inner and outer polyvinylidene chloride films of each laminate are retained intact and are not

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altered by complete fusing of the films together while the same are in their supercooled state. The inner polyvinylidene chloride film 15 provides to a full degree the flexibility desirable in the package 10 and the outer polyvinylidene chloride film 16 provides to a full degree the oxygen permeability resistance necessary to maintain the product keeping properties of the package 10. As a result, the separating film material permits the two different types of polyvinylidene chloride film to retain their separate properties and act independently of one another while further permitting laminate formation and utilization.

In accordance with the preferred package forming procedure of the present invention, a series of interconnected packages 10 are formed from continuous sheets of the film material as will be more completely described. An efficient hermetic seal along the seal area 14 is obtained by reason of the permanent fusing of the inner plies 15 of polyvinylidene chloride film of the upper and bottom laminate 11 and 12. The supercooled properties of the contacting inner films 15 of the laminates 11 and 12 provide for the forming of a very efficient hermetic seal and while the separating film 17 has been described as being non-bonded to the polyvinylidene chloride film, it will be understood that this condition is of a nature merely adequate to permit retention of the individual properties and functions of the polyvinylidene chloride films 15 and 16. In other words, there is adequate adherence between the films 15 and 17 and 16 and 17 of each of the laminates 11 and 12 to permit forming and handling thereof for package preparation and prevent fraying thereof along the marginal portions of the seal area 14 to an extent that the formed package 10 is not damaged, but the separated polyvinylidene chloride films are not fused together.

FIG. 3 illustrates a package 10 which is modified in connection with the separating material utilized between the polyvinylidene chloride films 15 and 16 of the laminates 11 and 12. The separating material 18 in this instance is an oil or an oily-like substance. By way of example, the separating material 18 may be a thin layer of an oil-containing material such as an emulsion or a mixture of oils, a straight mineral oil, silicone oil, a polyvinyl alcohol film-like coating or a suitable plasticizer. The separating material 18 may be of any suitable type which is capable of forming a very thin film adequate to maintain separation between the polyvinylidene chloride films 15 and 16 of each of the laminates 11 and 12. The substances used prevent fusing of the films 15 and 16 while the same are in their supercooled state and provide for full and separate retention of their individual properties as well as adequate flexibility retention of each of the laminates to withstand severe impact during subsequent handling of the finished package. Here again, an adequate hermetic seal is formed by the fusing of the inner polyvinylidene chloride films 15 of each of the laminates 11 and 12 and the oily separating material is present in such a thin film that there is no appreciable fraying or separation of the outer polyvinylidene chloride films 16 of the laminates 11 and 12 in the seal area 14. However, the apparatus of the present invention makes use of an edge sealing feature as a means of controlling application of the oil between the amorphous polyvinylidene chloride films as will be described. This feature provides a special edge seal 19 along two opposite side edges of each package. The edge seal 19 results in the polyvinylidene chloride film plies of each laminate being fused together as shown in FIG. 3 but the width of the edge seal is maintained at a minimum so as not to detract from the strength of the main seal area 14.

FIGS. 4A and 4B diagrammatically illustrate a preferred form of apparatus used in forming the package 10 of the present invention. FIG. 4A shows apparatus used in forming laminates of the type illustrated in FIG. 2. In FIG. 4A a battery of film extruders 20 is suitably mounted over a tank 21 which holds therein a quantity of cool water 22 constituting the supercooling bath. The ex-

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truder battery 20 includes a plurality of hoppers 23 which supply powdered film forming material thereto for heating to separated plastic masses which are then individually extruded through film forming members or extruder means 24, 25, 26, 27 and 28. The extruder means 24 and 28 each deliver a continuous sheet of oxygen barrier polyvinylidene chloride film used in forming the outer plies 16 of the laminates 11 and 12 previously described. The extruder means 25 and 27 form the separating films 17 of the laminates 11 and 12. The extruder means 26 is in the form of a double slot extruder and supplies two continuous sheets of highly flexible polyvinylidene chloride film which constitute the inner plies 15 of the laminates 11 and 12.

Two separate sets of combining means in the form of paired rollers 30 and 31 receive therebetween the individual films 15, 16 and 17 to combine the same and form the separate laminates 11 and 12. The combining means are submerged in the supercooling bath 22 and the polyvinylidene chloride films 15 and 16 are supercooled immediately following extrusion to maintain the same in their amorphous state.

The laminates 11 and 12 are delivered through the supercooling bath 22 and maintained separate therein by rollers 32 and are moved onto separate conveying means 33 for delivery toward a package forming machine generally designated by the numeral 34 and having the first part thereof shown in FIG. 4A with the final part thereof shown in FIG. 4B. The laminate 12 is continuously delivered as guided by a roller 35 into surface engagement with a series of bottom die forming plates 36 which are suitably attached to a chain drive driven by spaced drive means in the form of paired sprockets 37 and 38. The bottom die forming plates 36 are arranged in an endless series for continuous movement throughout the length of the package forming portion of the apparatus 34 including return of the same in inverted position beneath the apparatus for continuous re-use. The package forming apparatus 34 illustrated in FIGS. 4A, 4B and 5 is of the type described in detail in the aforementioned co-pending application. The salient features of this apparatus will be briefly described, it being understood that any suitable package forming apparatus may be utilized in carrying out the method of the present invention in forming the particular type of package disclosed.

At the forward end of the apparatus 34 where the laminate 12 contacts the bottom plates 36, a product loading unit 40 is located to place the banded wieners 13 on the laminate 12 over each of the individual bottom plates 36. As best illustrated in FIG. 5, to each side of the series of bottom plates 36 are package forming die side wall defining assemblies generally designated by the numerals 41 and 42. These assemblies include basically a plurality of continuously moving fork members 43 which move substantially transversely into and out of die forming relation with the bottom plates 36. The separate series of fork members are arranged for synchronized movement with the continuous series of bottom plates 36 and oppositely positioned forks 43 supplied by the cooperating assemblies 41 and 42 provide converging side wall portions with the bottom plates 36. The forks 43 of each assembly 41 and 42 are suitably driven to move with the plates 36 centrally of the packaging apparatus 34, the forks 43 being continuously returned along each side of the apparatus in the direction of the arrows in FIG. 5.

The mating of the forks 43 and the bottom plates 36 with the laminate 12 therebetween is gradual as best illustrated in FIG. 5 with the forks 43 being moved diagonally in paired relation into superimposed position relative to the bottom plates 36 and on top of the bottom laminate 12. The top laminate 11 as shown in FIG. 4A is delivered from the conveyor means 33 under a roller 44 which directs the laminate 11 down onto and against the top surfaces of the combined forks 43 to cover the interior thereof including the product 13 therein thus de-

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fining an enclosed product receiving area between the laminates 11 and 12 and the forks 43. Following this portion of the functioning of the apparatus 34, a continuously moving, endless series of top die plates 45 chain driven by sprockets 46 and 47 are brought into mating engagement with the combined forks 43 and into registration with the bottom plates 36. The top plates 45 provide covering plates relative to the product containing area of the completed dies with the laminate 11 being engaged between the top plates 45 and the top surfaces of the combined forks 43.

The top plate assembly has associated therewith as schematically shown in FIG. 4A a known type of rotary valve assembly 48 which is connected by separate series of flexible tubes or hoses 50 to each of the top plates 45. The operation of the valve 48 is synchronized with the movement of the top plates 45 and the assembled dies are evacuated, swept with an inert gas, and further evacuated with automatic package formation resulting by use of the rotary valve assembly 48 which has associated therewith conventional vacuum impressing means, an inert gas supply or any other suitable means capable of supplying gas or vacuum for package forming purposes. The impressing of the vacuum within the product containing area of the closed dies results in a drawing together of the areas of the laminates 11 and 12 contained therein to form the individual packages 10 of the type previously described. The initial separation of the laminates during evacuation and sweeping of the package forming cavities is accomplished in the manner disclosed in the aforementioned application and does not constitute a part of the present invention.

Following the package forming operation as illustrated in FIG. 4B, the top plates 45 move out of association with the forks 43 and bottom plates 36. The bottom plates 36 at the same time move out of association with the paired forks 43 thus leaving these paired forks supporting the series of interconnected packages 10. At this stage of the package forming operation the continuous laminates 11 and 12 are unbroken but are subdivided into longitudinally spaced interconnected packages. The supercooled properties of the polyvinylidene chloride films of the laminates 11 and 12 still exist and have been efficiently utilized in forming the individual packages 10. It is now preferred to advance crystallization of the polyvinylidene chloride films adequately to destroy or overcome the supercooled properties thereof and remove any self-coherence tendencies. Crystallization can be furthered by heat alone without it being necessary to stretch the films and heat is preferably used without attendant stretching to prevent distortion of the packages formed. By reason of crystallization occurring without material stretching of the films, the crystals are formed at random without material orientation throughout the polyvinylidene chloride films.

As illustrated in FIGS. 4B and 5, the supported packages move under a heating element 51 which may be of any desired length to heat the package films to the requisite crystallization temperature. A package holding and separation assembly located beyond the heating element 51 is utilized to separate the individual packages 10 from the continuous combined laminates 11 and 12. This assembly includes the use of a plurality of top die elements 52 which are carried by a suitable continuously moving endless belt or chain assembly driven by rollers or paired sprockets 53 and 54. The top die elements 52 move into and out of package separation relationship with the paired forks 43 and include suitable cutting blades which pierce the combined laminates about each package and cut the same to remove the package without destroying the marginal continuity of the combined laminates. In bringing this about, the top die elements 52 have cooperating therewith a synchronized series of bottom die elements 55 which are similarly driven by sprockets 56 and 57. The combined die elements 52 and 55 are received within the paired forks 43 in sur-

rounding relation with the individual packages 10 therein and function to hold each package during fork withdrawal and separate the packages 10 and deposit the same on an endless conveyor 58 which then delivers the individual packages to the inspection and shipping station.

Following package separation from the combined laminates 11 and 12, the waste packaging material is collected on a spool 60 (FIG. 4B) and the separated forks 43 are returned to the front of the package forming apparatus. The packages 10 are formed in a continuous efficient manner by the package forming apparatus 34 described with full utilization being made of the unique properties of supercooled polyvinylidene chloride film.

FIGS. 6-8 illustrate the manner in which the laminates 11 and 12 of the package 10 of FIG. 3 are formed with the oily separating material 18 being utilized. In utilizing the separating material 18, the film supply and laminating portion of the apparatus previously described is modified. FIG. 6 illustrates the utilization of an extruder assembly 63 provided with a plurality of hoppers 64 by which powdered film forming material is delivered into individual extruder means 65, 66 and 67. The extruder means 65 and 67 supply continuous sheets of oxygen barrier polyvinylidene chloride film 16 and the extruder means 66 supplies two separate continuous sheets of highly flexible polyvinylidene chloride film 15. Immediately below the extruder means, separate sets of paired rollers 68 and 69 are positioned to engage marginal edge portions of the extruded films to pair up the separate films 15 and 16 to form the laminates 11 and 12. As particularly shown in FIGS. 7 and 8, the sets of paired rollers 68 and 69 are positioned along opposite edge margins to combine the two sets of films 15 and 16 and fuse the marginal edges thereof together without fusing the films between their marginal edges in connection with ultimate formation of the edge seal 19 referred to above in conjunction with FIG. 3. Each of the rollers 68 and 69 are mounted on the ends of rotatable shafts 70 which are suitably driven by means not shown.

The films 15 and 16 as initially formed are in an amorphous state with temperatures being relatively high and approaching extrusion temperatures. Accordingly, the combining of the edge portions of these films by the sets of paired rollers 68 and 69 results in the fusing of these edge portions and the defining of pockets intermediate the edge portions. To maintain these pockets and prevent self-sealing coherence between the combined films 15 and 16 between their fused edge portions, a quantity of oily separating material 18 is maintained immediately below each of the sets of rollers 68 and 69. The edge portions of the films 15 and 16 are sealed above the top surface of the oily separating material 18 and in this manner the material is retained between the films intermediate their edge margins.

The edge sealed films are immediately delivered downwardly into a supercooling water bath 71 contained in a suitable tank 72 wherein the temperatures of the films are immediately reduced to about room temperature or below adequate to supercool the films and maintain the same in an amorphous state. Within the supercooling bath 71 separate sets of paired film combining rollers 73 and 74 are suitably mounted to receive therebetween the combined films 15 and 16 and the oily separating material 18 trapped therebetween. As illustrated in FIG. 7, the combining rollers 73 and 74 are suitably mounted on rotating shafts 75 each having an end received in a journal 76 mounted in the tank 72 with the remaining driven end extending through the tank wall and supported by a suitable journal 77 and extending therefrom into engagement with a suitable drive means not shown. The combining rollers 73 and 74 define the bottom of the pocket in which the oily separating material 18 is retained. As the films 15 and 16 pass between the pair of rollers 73 and 74, the separating material 18 is forced from be-

tween the films to an extent to leave only a very thin film of separating material therebetween. In this manner the pockets of oil are maintained as illustrated in FIG. 6 and it is necessary merely to replenish the oil supply in these pockets from time to time.

The laminates 11 and 12 are thus formed and move through the supercooling bath 71 as guided by rollers 78 and 79, pass upwardly out of the supercooling bath over rollers 80 and 81 and are then suitably delivered to the package forming apparatus 34 previously described. Package formation occurs in the manner previously described.

While the utilization of two different types of polyvinylidene chloride film has been described in detail in connection with providing a very flexible film and an oxygen barrier film it will be understood that the principles of the present invention are also useful where two plies of the same type of polyvinylidene chloride film are used. By way of example, it may be desirable to utilize two plies of oxygen barrier film in the packaging of a particular food product which is highly susceptible to spoilage, and in order to maintain adequate flexibility and strength in the formed package, the use of separating material is particularly important to prevent fusing of the two plies of polyvinylidene chloride film. Fusing of similar or dissimilar polyvinylidene chloride films may result in a material change in the flexibility, impact strength, tensile strength, etc. of the resulting laminate and it has been found generally preferable to maintain separation of the individual plies and thus maintain properties in the laminate which permits the package to be readily handled without damage under widely variable temperature conditions.

An example of suitable oxygen barrier polyvinylidene chloride film is that which has a composition of approximately 90% vinylidene chloride and 10% vinyl chloride. A composition of approximately 68% vinylidene chloride and 32% vinyl chloride provides a film exhibiting a high degree of flexibility. The thickness of the oxygen barrier film may preferably be about 1 mil and the thickness of the highly flexible film may be about 3 mils. Polyethylene, polyvinyl chloride and polyvinyl alcohol films having thicknesses of about 0.4 to 0.6 mil have been tested as suitable separating material and the packages formed therefrom have been subjected to rather severe impact tests. These tests have been carried out at temperatures of about 32° F. and very few package failures resulted.

As previously set forth, any suitable oily substance may be used as a separating material. Silicone oil having a viscosity of 115 centipoises and commercial grade mineral oil have been tested in the same manner as described above in connection with the use of a separating film material. Any suitable oil emulsion which is capable of providing an adequate separating film may be used. Plasticizers such as 2-ethylhexyl diphenyl phosphate, dibutyl sebacate and acetyl tributyl citrate may be used and have been tested with favorable results. Suitable mixtures of plasticizers and mineral oil may also be used.

The foregoing specific examples of usable separating materials are merely illustrative of many different types of separating materials capable of use in forming the package of the present invention. It will be understood that any separating material capable of preventing fused coherence between the combined plies of polyvinylidene chloride film while not interfering with the requisite flexibility and stretchability thereof may be used. Similarly, any adequately formable separating film material capable of preventing fused coherence between the combined polyvinylidene chloride films may be used.

Obviously certain modifications and variations of the invention as hereinbefore set forth may be made without departing from the spirit and scope thereof, and therefore only such limitations should be imposed as are indicated in the appended claims.

We claim:

1. A package for use in merchandising food products and the like, said package comprising a product receiving area covered and enclosed by cooperating laminates of flexible polyvinylidene chloride films, said films exhibiting substantially random crystallization throughout, the enclosing of said product receiving area being obtained by intersealing of peripheral contacting portions of said laminates between the polyvinylidene chloride films thereof while said polyvinylidene chloride films are in their supercooled amorphous and substantially unstretched state, at least one of said laminates throughout its portion covering the product receiving area comprising inner and outer films of polyvinylidene chloride having received therebetween a separating material which maintains separation of said inner and outer films without reducing the flexibility thereof.
2. The package of claim 1 wherein said separating material is a thin layer of oil-containing material.
3. The package of claim 1 wherein said separating material is a formable film which is non-bondable with supercooled polyvinylidene chloride film.
4. The package of claim 1 wherein said separating material is an oil.
5. The package of claim 1 wherein said separating material is a plasticizer.
6. The package of claim 1 wherein said separating material is a polyvinyl chloride film.
7. The package of claim 1 wherein said separating material is a polyethylene film.
8. The package of claim 1 wherein said separating material is a polyvinyl alcohol film.
9. A package enclosing a plurality of products arranged in contacting side-by-side relation, said package being formed from a pair of laminates each formed from inner highly flexible and outer oxygen barrier films of polyvinylidene chloride having received therebetween a non-bonded formable separating material, said laminates having contacting portions thereof defining a seal along the sides of said package as a result of mutual intersealing of opposed portions of said polyvinylidene chloride films while in their supercooled amorphous and substantially unstretched state, the remainder of said laminates being in intimate contact with adjacent surfaces of said products with portions thereof depressed between said products to conform to the shapes thereof along both the top and bottom surfaces of said package, said polyvinyl-

idene chloride films including the seal defining portions thereof being crystallized throughout with substantially random crystal distribution.

10. In the method of forming product containing packages from laminates of supercooled polyvinylidene chloride film wherein separate highly flexible and oxygen barrier films are continuously formed, immediately supercooled, laminated prior to package forming to provide laminates of highly flexible and oxygen barrier films, the laminates are combined to enclose and seal a product while being maintained in their supercooled state, the polyvinylidene chloride films are subsequently crystallized without substantial attendant stretching to establish random crystallization throughout, and the packages are thereafter separated, the improvement which comprises introducing between the polyvinylidene chloride films of each laminate a formable separating material prior to package forming while said films are in their supercooled state to prevent overall polyvinylidene chloride film fusing in each laminate.

11. The method of claim 10 wherein the separating material is a thin layer of oil which is supplied from a pocket of oil trapped between the polyvinylidene chloride films undergoing lamination.

12. The method of claim 10 wherein the separating material is a formable film which is non-bondable with supercooled polyvinylidene chloride film, the formable film being continuously fed between the polyvinylidene chloride films undergoing lamination.

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