Sept. 17, 1940. R. GUYER 2,214,997

METHOD OF PACKAGING

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Fig. 1

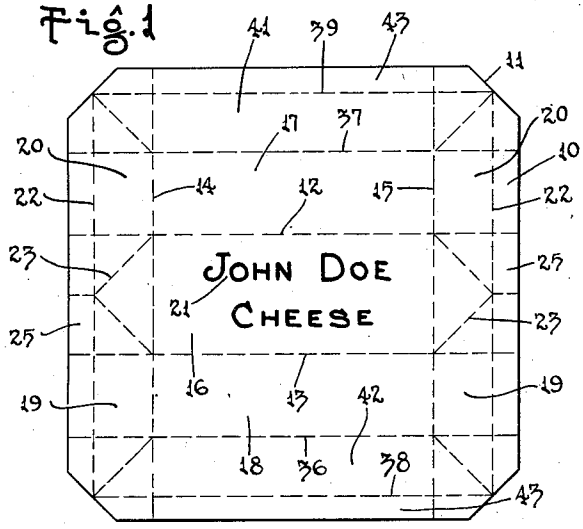


Fig. 3

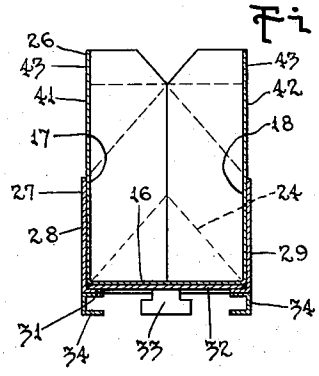


Fig. 2

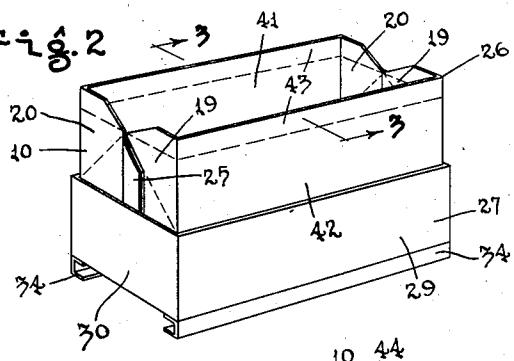


Fig. 4

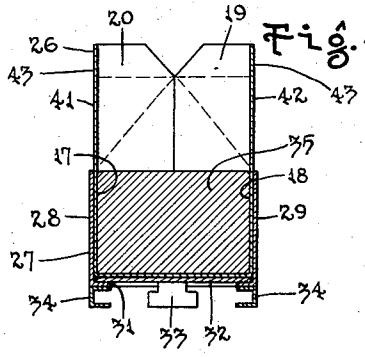


Fig. 5

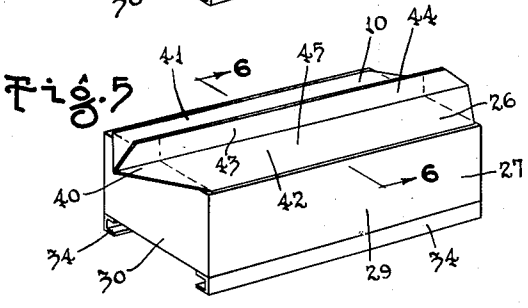


Fig. 6

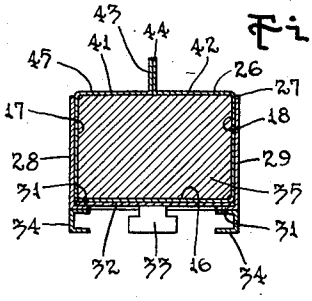
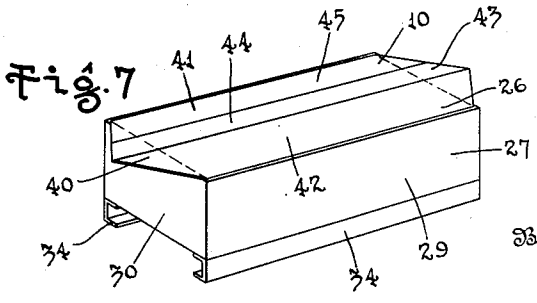


Fig. 7



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METHOD OF PACKAGING

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Fig. 8

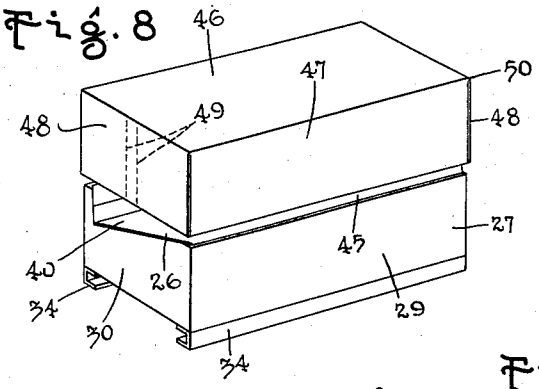


Fig. 10

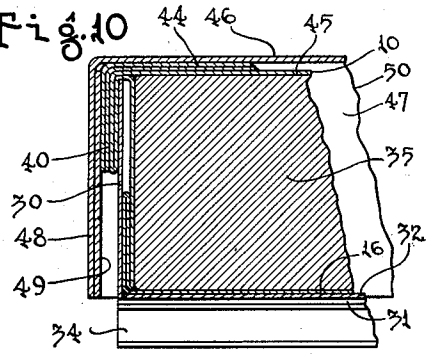


Fig. 9

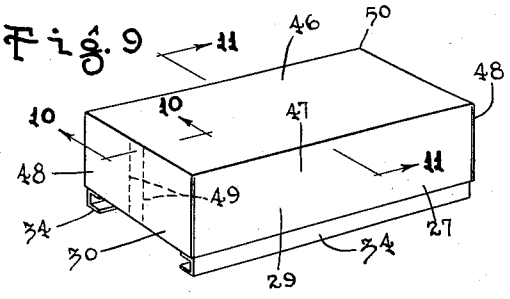


Fig. 11

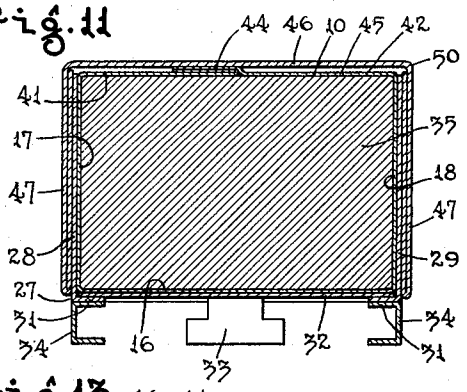


Fig. 12

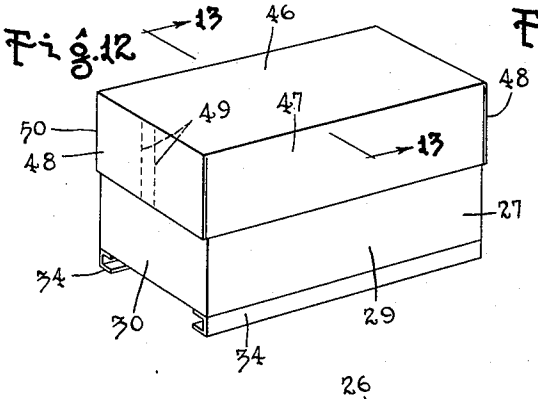


Fig. 13

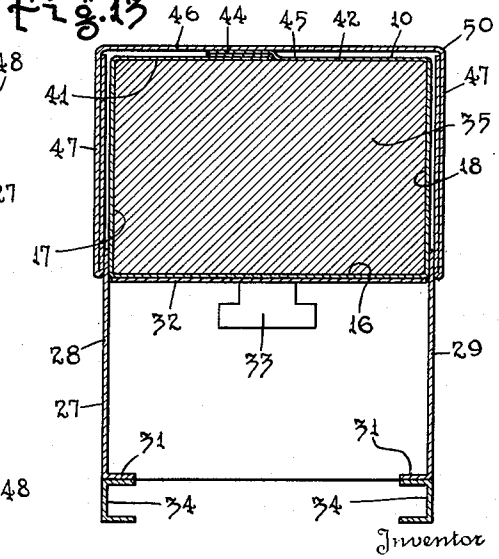
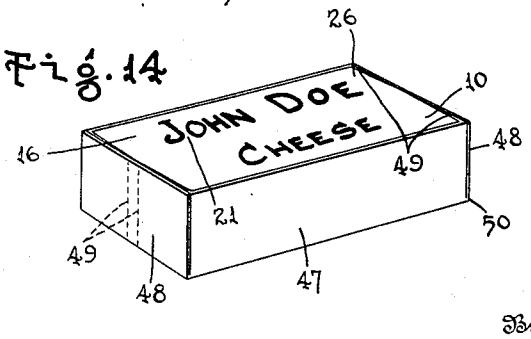


Fig. 14



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METHOD OF PACKAGING

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Fig. 18

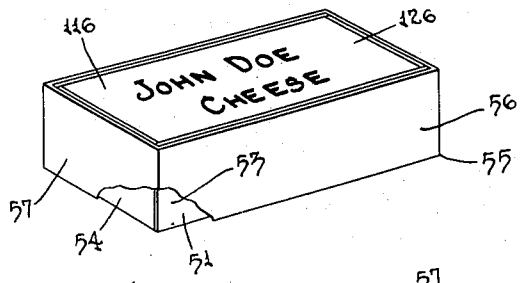


Fig. 16

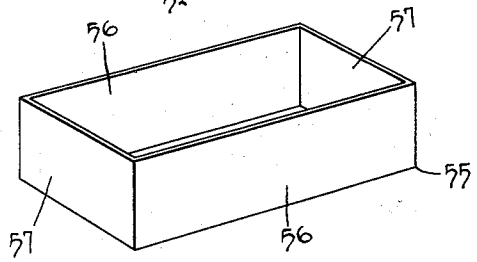


Fig. 15

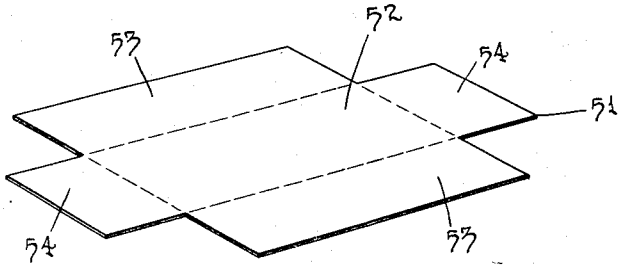
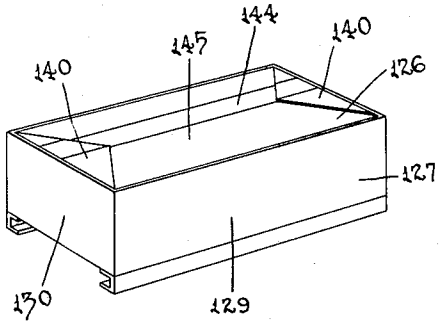


Fig. 17



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Patented Sept. 17, 1940 2,214,997

UNITED STATES PATENT OFFICE

2,214,997

METHOD OF PACKAGING

Reynolds Guyer, St. Paul, Minn., assignor to Waldorf Paper Products Company, St. Paul, Minn., a corporation of Minnesota

Application December 18, 1939, Serial No. 309,747

7 Claims. (Cl. 93—3)

My invention relates to the method of packaging substances such as cheese and similar products which are wrapped in a paper or similar wrapper constructed from a sheet of material having printing thereon and disposed in a tray open at the top.

An object of the invention resides in providing a method whereby the substance may be placed within the wrapper while the wrapper is supported, the wrapper being subsequently folded into closing position.

Another object of the invention resides in providing a method in which the substance after being placed into the wrapper is inserted into the tray.

An object of the invention resides in the method of packaging which consists in assembling the tray about the form after the substance has been placed in the wrapper.

Another object of the invention resides in providing a method in which the closed wrapper and contents are disposed within the tray so that the seam formed in closing the wrapper is concealed within the tray and the surface of the wrapper containing the printing will be exposed through the open portion of the tray.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawings:

Fig. 1 is a developed view of a wrapper used with my invention.

Fig. 2 is a perspective view of a form showing the formed wrapper disposed therein.

Fig. 3 is a cross sectional view taken on line 3—3 of Fig. 1.

Fig. 4 is a view similar to Fig. 3 showing the wrapper filled with the substance to be packaged.

Fig. 5 is a perspective view similar to Fig. 2 showing the wrapper partially closed.

Fig. 6 is a cross sectional view taken on line 6—6 of Fig. 5.

Fig. 7 is a view similar to Fig. 5 showing the wrapper fully closed.

Fig. 8 is a view similar to Fig. 7 showing a formed tray in position to be applied to the package contained within the form.

Fig. 9 is a perspective view similar to Fig. 8 showing the tray applied to the package and form.

Fig. 10 is a fragmentary elevational sectional view taken on line 10—10 of Fig. 9 and drawn to a larger scale.

Fig. 11 is a cross sectional elevational view taken on line 11—11 of Fig. 9 and drawn to the same scale as Fig. 10.

Fig. 12 is a perspective view similar to Fig. 9 showing the package ejected from the form.

Fig. 13 is a cross sectional view taken on line 13—13 of Fig. 12.

Fig. 14 is a perspective view of the completed package removed from the form.

Fig. 15 is a perspective view of a modified form of tray blank.

Fig. 16 is a perspective view of a hoop used in conjunction with the tray blank shown in Fig. 15.

Fig. 17 is a perspective view similar to Fig. 7 showing the wrapped product ready to receive the tray blank shown in Fig. 15 and the hoop shown in Fig. 16.

Fig. 18 is a perspective view of the completed package formed from the tray shown in Fig. 15 and removed from the form.

In the packaging of cheese and similar products the customary practice has been to place a wrapper within a carton or tray, to insert the tray in a form and to pour the cheese or other substance to be packaged in molten form into the wrapper while contained within the form. Upon filling of the proper amount of the substance into the wrapper the wrapper has been closed and the package thus completed. By so packaging the substance the seam formed in closing the wraper appears at the open end of the tray and detracts from the appearance of the package and at the same time obscures the printing or prevents the exposed surface from containing all of the printed matter desired. The present invention overcomes this difficulty by providing a method by means of which the seam may be disposed within the tray and one of the walls of the wrapper containing suitable printing and free from seams exposed through the open end of the tray.

For the purpose of illustrating my invention I have shown a blank 10 in Fig. 1 from which the wrapper used with my invention is formed which wrapper may be constructed of paper or any similar flexible sheet material capable of being folded into the desired form. This sheet is of the shape shown in Fig. 1, and has the corners 11 cut away, as indicated, to facilitate the subsequent folding of the sheet into a wrapper for the reception of the substance to be packaged. The sheet is folded along a number of longitudinally extending lines 12 and 13 and along two transverse lines 14 and 15 to form a bottom 16, sides 17 and 18 and end wall sections 19 and 20. The blank 10 has printing 21 thereon

which is disposed on the bottom 16. When the blank is folded the same is first folded along the lines 12 and 13, then along the lines 14 and 15. This brings the sections 19 and 20 opposite one another which are then seamed by folding along a line 22. The blank at the same time is folded along the diagonal lines 23 and a flap 24 formed from the folded structure at each end of the wrapper, which structure is bent upwardly and follows along the corresponding end wall of the wrapper. Also the seams formed by the marginal portions of the blank, which are indicated at 25 in Figs. 1 and 2, are laid back upon the end wall of the wrapper. When the blank is so folded the same provides a wrapper in the form of a receptacle indicated in its entirety by the reference numeral 26 in Fig. 2. The folding of the blank 10 may be accomplished by apparatus now well known for the purpose which apparatus not forming any particular feature of this invention has not been shown or described.

In conjunction with the wrapper 26 a form 27 is employed which is best shown in Figs. 2 and 3. This form is constructed from sheet metal and has two sides 28 and 29 and two ends 30 connected thereto. These parts may be soldered together and provide a form open at the top and bottom. Extending inwardly from the lowermost edges of the walls 28, 29 and 30 are flanges 31 which form a support for a raisable bottom 32. The bottom 32, when in its lowermost position, rests upon the flanges 31. The bottom 32 has attached to it a T-shaped member 33, while the flanges 31 have attached to them channel-shaped members 34. These members are adapted to be engaged by suitable apparatus whereby the form 27 may be held from movement and the bottom 32 raised and lowered.

In my improved method the wrapper 26, formed from the blank 10, is inserted into the form 27 with the walls 17 and 18 engaging the walls 28 and 29 of the form and with the end walls of the wrapper formed by the sections 19 and 20 engaging the end walls 30 of the form and with the bottom 16 of the wrapper resting upon the bottom 32 of the form. It will be noted that the walls 28, 29 and 30 of the form are of a height equal to the height of the finished package so that the upper marginal portions of the wrapper 26 project upwardly above the edges of the form, as shown in Fig. 2. The wrapper 26 may be formed and inserted into the form 27 in one operation or the same may be first formed and subsequently placed in the said form.

After the wrapper 26 is properly disposed within the form 27, as shown in Figs. 2 and 3, a measured quantity of the substance to be packaged is placed into the same, which substance is indicated by the reference numeral 35 in Fig. 4. If the substance packaged is molten cheese, the same may first be allowed to cool or while the same is still molten the wrapper 26 is folded along four longitudinal lines 36, 37, 38 and 39 to form closure sections 41 and 42 and marginal portions 43. The marginal portions meet one another, as shown in Fig. 5, and form a seam 44. By means of this construction a closure 45 is provided for the wrapper 26. The arrangement of the parts after the wrapper is closed is shown in Fig. 5. Upon closing of the wrapper the seam 44 is turned down upon the upper surface of the closure 45 as shown in Fig. 7, so that the upper surface of the package is smooth. It will be noted that the closure 45 has triangular-shaped flaps 40 formed thereon which project outwardly beyond the end walls 30 of the form 27. The disposition of these flaps after closing of the wrapper is best illustrated in Fig. 7, and is indicated by the reference numeral 50.

The tray of the invention is shown in Fig. 8 and is indicated by the reference numeral 50. This tray comprises a bottom 46 which has connected to it side walls 47 and end walls 48. Issuing from the ends of the side walls 47 are flaps 49 which are glued or otherwise secured to the end walls 48. The tray 50 is of suitable dimensions so that the same may be slid over the form 27. The position of the tray prior to application to the form is shown in Fig. 8. After the wrapper 26 has been closed, the tray 50 is forced downwardly along the walls of the form 27. During such movement the ends 48 of the tray bend the flaps 40 over the upper edges of the end walls 30 of the form. The arrangement of parts is then as shown in Fig. 10 with the flaps 40 situated between the ends 48 of the tray 50 and the end walls 30 of the form 27. The form 27 is next held in place by engagement with the members 34. The bottom 32 is then raised by means of the member 33 which forces the receptacle and contents upwardly. The closure 45, of the said receptacle, engages the bottom 46 of tray 50 and the entire structure is moved upwardly. As such movement occurs the form 27 is withdrawn from between the receptacle 26 and the tray 50. The arrangement of parts, when removal is substantially complete, is shown in Figs. 12 and 13. When the tray and contents reach the top of the form 27 the same may be removed. This may be accomplished by shifting the package laterally of the form. Thereafter the package is inverted. The finished package will then appear as shown in Fig. 14. It will be noted that the printed portion 16 of the wrapper 26 appears at the top of the tray as visible through the open end thereof, while the seam 44 is disposed within the interior of the tray. In this manner an extremely pleasing and attractive package is produced in which full benefit of the exposed portion of the wrapper may be had for advertising purposes.

While the tray 50 has been described as being preformed, the blank from which the tray is constructed may be placed over the form before gluing and the flaps of the same folded over and glued together while the tray is on the form.

In Figs. 15 to 18 a different type of tray has been illustrated which is indicated by the reference numeral 51. The tray shown in this form of the invention is illustrated in Fig. 15 and comprises a bottom 52 having side walls 53 and end walls 54 connected therewith. In this form of tray the corner flaps are missing and the lateral walls of the tray are not connected together by flaps as in the other form of the invention. Instead of flaps a hoop 55, shown in Fig. 16, is employed which has side portions 56 and end portions 57, all connected together. This hoop is adapted to be placed around the lateral walls of the tray and hold the same in place.

In carrying out the method with the tray shown in Figs. 15 and 16 a form 127, similar to the form 27, is provided with a wrapper 126 which is filled and closed, as previously described. The flaps 140 of the receptacle 126 may be permitted to project outwardly, as shown in Fig. 7, or the same may be folded inwardly, as shown in Fig. 17. In either case the procedure in completing the package is the same. After the receptacle has been filled, as shown in Fig. 17, the tray illus-

trated in Fig. 15 is placed over the form 127 and the side walls and end walls bent down to overlie the side walls 129 and end walls 130 of the form 127. Hoop 55 is next applied over the lateral walls of the tray 51 until the edges of said hoop register with the edges of said walls. The form 127 is next removed from the assembled structure, as previously described. The completed package, when free from the form, is as shown in Fig. 18 with the printing on the bottom 116 of the receptacle 126 visible through the open end of the tray 51. The closure 145 of wrapper 126 is now disposed within the interior of the tray and the seam 144 thereof completely concealed by the tray.

The advantages of my improved method are manifest. By my method the seams and flaps formed in wrapping the product in the wrapper are concealed within the tray and protected so that unintentional opening thereof is prevented and air prevented from entering the package and spoiling the contents. With my invention the bottom of the wrapper is exposed through the open end of the tray so that a smooth and unobstructed surface is presented. Suitable printing may be placed on the exposed surface of the wrapper which is readily visible and may be used for advertising purposes. With my invention an extremely neat package is produced. The method is simple and may be carried out by inexpensive equipment.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. The method of packaging a substance in a wrapper open at the top and having a foldable marginal portion by the use of a form open at the top and constructed with thin lateral walls and a movable bottom within the same, said method consisting in placing the wrapper within the form so that the wrapper contacts the walls and bottom of the form upon the interior of the form so that the marginal portion of the wrapper projects outwardly beyond the ends of the lateral walls at the open end of the form, in placing the substance into the wrapper while contained within the form, in folding over the marginal portion of the wrapper to provide a closure for the wrapper, in inverting and placing over the form a tray having a bottom and lateral walls so that the bottom of the tray overlies the closure of the wrapper and the lateral walls of the tray contact the lateral walls of the form upon the exterior of the form, and in withdrawing the lateral walls of the form from between the wrapper and tray by procuring relative movement between the bottom of the form and the lateral walls thereof to bring the bottom to the open end of the form.

2. The method of packaging a substance in a wrapper having printing on one of the walls thereof and foldable lateral walls connected therewith by use of a form open at the top and constructed with thin lateral walls and a movable bottom within the same, said method consisting in placing the wrapper within the form so that the printed wall contacts the bottom of the form and the lateral walls contact the lateral walls of the form upon the interior thereof and project outwardy beyond the ends of the lateral walls of the form at the open end thereof, in placing the substance into the wrapper while contained within the form, in folding over the outwardly projecting portions of the walls of the wrapper to provide a closure for the wrapper, in inverting and placing over the form a tray having a bottom and lateral walls so that the bottom of the tray overlies the closure of the wrapper and the lateral walls of the tray contact the lateral walls of the form upon the exterior of the form, and in withdrawing the lateral walls of the form from between the wrapper and tray by procuring relative movement between the bottom of the form and the lateral walls thereof to bring the bottom to the open end of the form to leave the printed wall of the wrapper exposed.

3. The method of packaging a fluid substance in a wrapper constructed from a sheet of foldable material having printing upon the same at the center thereof by use of a form open at the top and constructed with thin lateral walls and a movable bottom within the same, said method consisting of forming from the foldable sheet and inserting into the form a wrapper conforming to the form and having a wall on which the printing occurs contacting the bottom of the form and having lateral walls contacting the lateral walls of the form upon the interior of the form and projecting outwardly beyond the ends of the lateral walls of the form at the open end thereof, in placing the substance into the wrapper while contained within the form, in folding over the outwardly projecting portions of the walls of the wrapper to provide a closure for the wrapper, in inverting and placing over the form a tray having a bottom and lateral walls so that the bottom of the tray overlies the closure of the wrapper and the lateral walls of the tray contact the lateral walls of the form upon the exterior of the form, and in withdrawing the lateral walls of the form from between the wrapper and tray by procuring relative movement between the bottom of the form and the lateral walls thereof to bring the bottom to the open end of the form to leave the printed wall of the wrapper exposed.

4. The method of packaging a substance in a wrapper constructed from a sheet of foldable material having printing upon the same at the center thereof by use of a form open at the top and constructed with thin lateral walls and a movable bottom within the same, said method consisting of forming from the foldable sheet and inserting into the form a wrapper conforming to the form and having a wall on which the printing occurs contacting the bottom of the form and having lateral walls contacting the lateral walls of the form upon the interior of the form and projecting outwardly beyond the ends of the lateral walls of the form at the open end thereof, in placing the substance into the wrapper while the wrapper is contained within the form, in bringing together and securing to one another opposite parts of the outwardly projecting portions of the wrapper to form a closure for the wrapper and end flaps connected therewith, in inverting and placing over the form a tray having a bottom and lateral walls so that the ends of the tray engage the flaps and fold the same along the lateral walls of the form and so that the bottom of the tray overlies the closure of the wrapper and so that the lateral walls of the tray contact the lateral walls of the form upon the exterior of the form, and in withdrawing the lateral walls of the form from between the wrapper and tray by procuring relative movement between the bottom of the form and the

lateral walls thereof to bring the bottom to the open end of the form to leave the printed wall of the wrapper exposed.

5. The method of packaging a substance in a wrapper open at the top and having a foldable marginal portion by the use of a form open at the top and constructed with thin lateral walls and a movable bottom within the same, said method consisting in placing the wrapper within the form so that the wrapper contacts the walls and bottom of the form upon the interior of the form and so that the marginal portion of the wrapper projects outwardly beyond the ends of the lateral walls at the open end of the form, in placing the substance into the wrapper while contained within the form, in folding over the marginal portion of the wrapper to provide a closure for the wrapper, in placing upon the closure of the wrapper and over the upper end of the form a tray blank, in folding the walls of the tray blank into overlying position with reference to the walls of the form and securing said walls together, and in withdrawing the lateral walls of the form from between the wrapper and tray by procuring relative movement between the bottom of the form and the lateral walls thereof to bring the bottom to the open end of the form.

6. The method of packaging a substance in a wrapper within a form having a movable bottom which consists in placing the wrapper within the form, in filling the wrapper, in closing the wrapper, in assembling a tray around the walls of the form and in removing the side walls of the form from between the wrapper and tray while the wrapper is being supported by the bottom to free the filled tray from the form.

7. The method of packaging a substance in a wrapper within a form having a movable bottom which consists in placing the wrapper within the form, in filling the wrapper, in closing the wrapper, in assembling a tray around the walls of the form and in removing the side walls of the form between the wrapper and tray while the wrapper is being supported by the bottom to free the filled tray from the form in sliding the package laterally of the form and in inverting the package.

REYNOLDS GUYER.

CERTIFICATE OF CORRECTION.

Patent No. 2,214,997. September 17, 1940.

REYNOLDS GUYER.

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction as follows: Page 4, second column, line 18, claim 7, after the word "form" second occurrence, insert --from--; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 12th day of November, A. D. 1940.

Henry Van Arsdale,
Acting Commissioner of Patents.

(Seal)