

May 28, 1946.

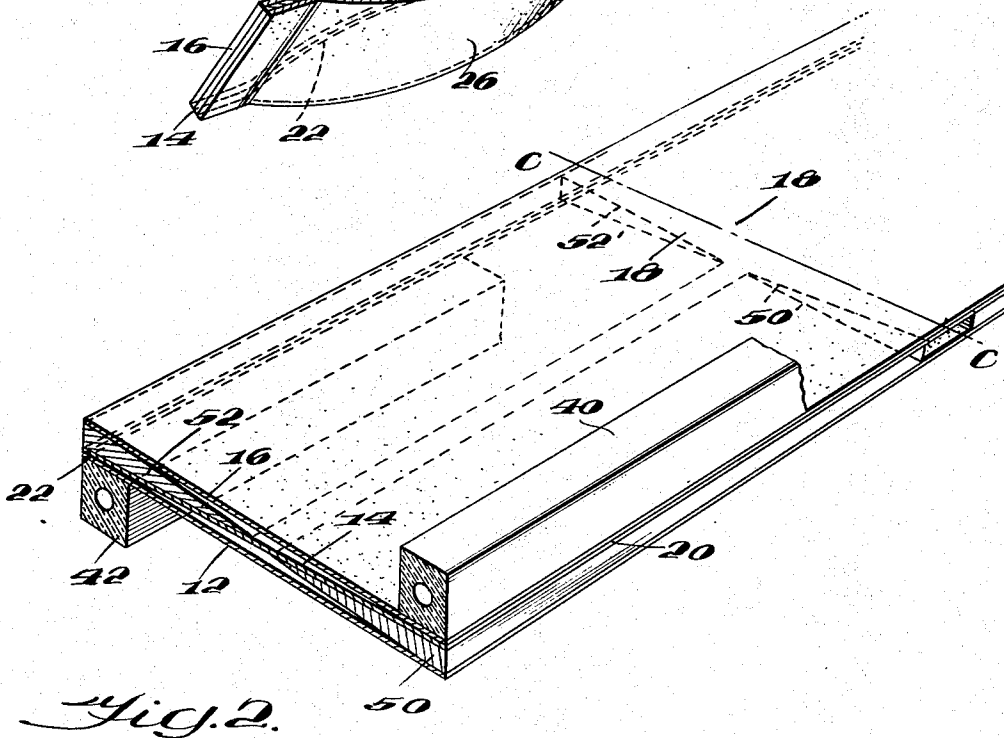
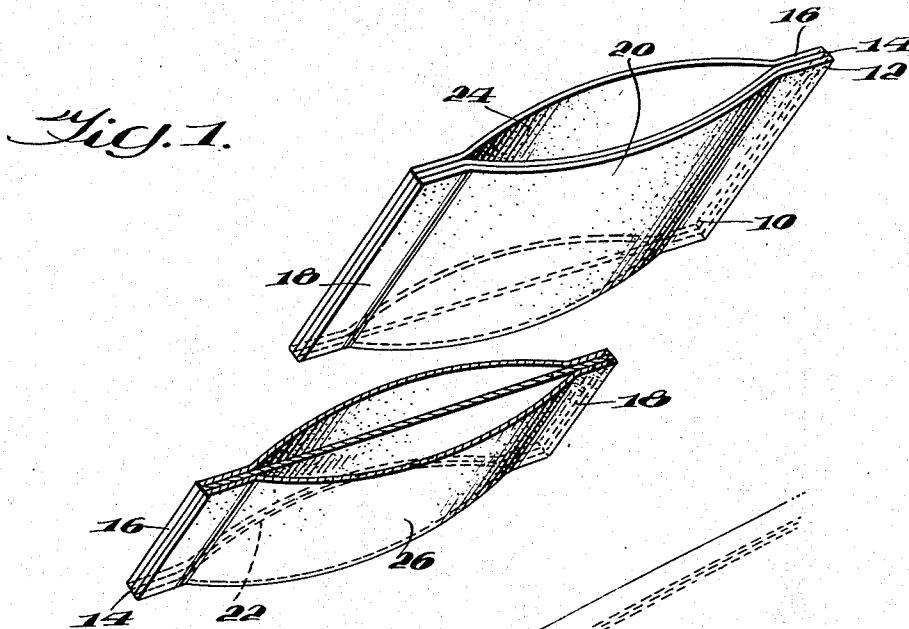
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2,401,110

BAG AND METHOD OF MAKING SAME

Filed Sept. 20, 1943

2 Sheets-Sheet 1



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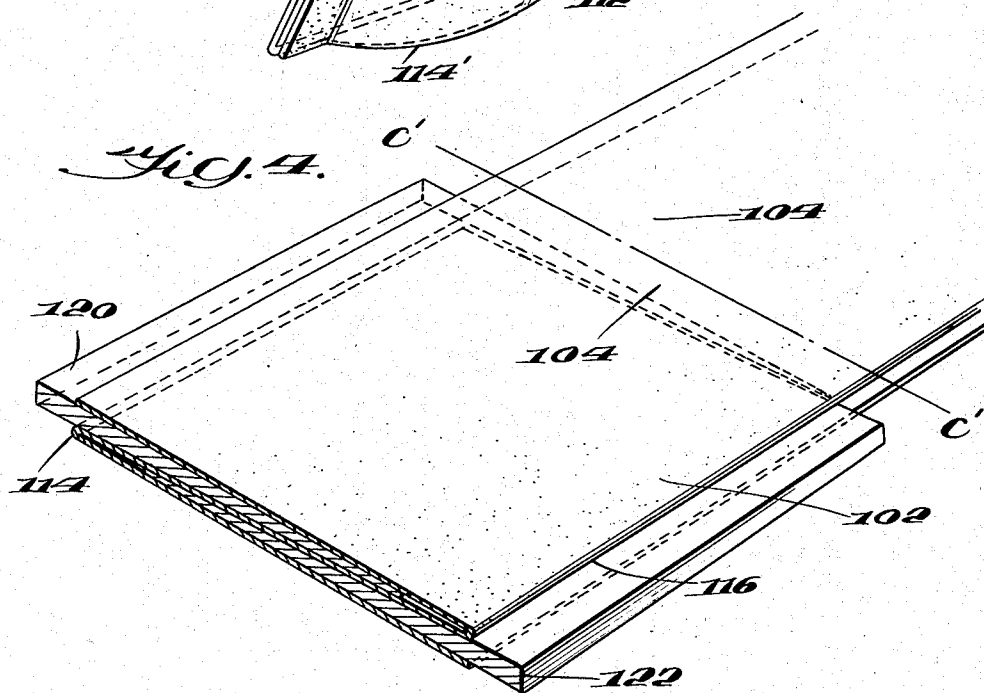
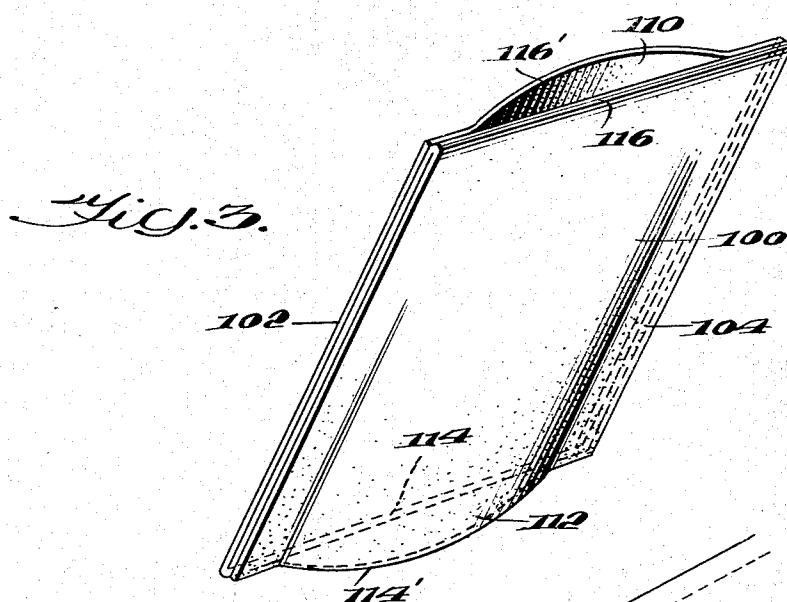
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2 Sheets-Sheet 2



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BAG AND METHOD OF MAKING SAME

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Application September 20, 1943, Serial No. 503,141

11 Claims. (Cl. 229—56)

It is an object of this invention to provide a compartmentalized package particularly adapted to contain, in segregated condition, the ingredients of predetermined mixtures.

It is a further object of this invention to provide a compartmentalized package so arranged that the filling operation on one compartment cannot interfere with or contaminate the filling operation on an adjacent compartment.

It is a further object of this invention to provide a compartmentalized package so arranged that a single opening operation will provide equal access to all compartments.

It is a further object of this invention to provide a compartmentalized package in which the walls of the several compartments may be formed of different materials.

It is a further object of this invention to provide an improved method of making packages as aforesaid.

These and other objects will be made clear from the following detailed description taken in connection with the annexed drawings in which:

Figure 1 is a perspective view partly in section of one form of my improved package;

Fig. 2 is a perspective view illustrating a preferred process for making the package illustrated in Fig. 1;

Fig. 3 is a perspective view of an alternative form of the package; and

Fig. 4 is a perspective view illustrating the method of making the package shown in Fig. 3.

In packaging dehydrated soups, it has been found desirable to segregate certain of the constituents. It is, for example, highly desirable in packaging dehydrated chicken soup, to separate the noodles and seasoning from the fatty ingredients. At the same time, for the convenience of the housewife, it is essential that a single (and preferably simple) opening operation give complete and equal access to all compartments so that all of the ingredients may be placed in the kettle simultaneously. A third requirement arises from the exigencies of the filling and sealing operations. In the retail packaging of dehydrated soups, the individual charges of material are very small; the package itself is very small; and the package must be so arranged as first, to eliminate any possibility of contaminating one set of ingredients with any other set and second to minimize the difficulty of opening the package preparatory to filling.

In Fig. 1, I show a package 10 formed of three plies 12, 14 and 16 of flexible thermoplastic material. These plies are superimposed and opposed

margins are subjected to heat and pressure to form double side seams 18. At one end the double side seams 18 are joined by a heat sealed seam 20 which unites those edges of plies 12 and 14. At the opposite end plies 14 and 16 are united by a heat sealed seam 22. There is thus produced a double side seam package having a compartment 24 bounded by seam 22 and seams 18 and a compartment 26 bounded by the seam 20 and seams 18 and facing in the opposite direction from the compartment 24.

One set of ingredients is placed in the compartment 24 which is then closed by heat sealing ply 16 to ply 14 across the open mouth. The package is then inverted and the remaining ingredients are placed in compartment 26 which is then closed by heat sealing ply 12 to ply 14 across the mouth of compartment 26. It is to be noted that it is only necessary to separate two adjacent plies to open each compartment. If both compartments opened at the same end, there would be first, considerable manual difficulty in securing the opening of one compartment without the other; second, a considerable danger of contaminating one compartment with the ingredients being placed in the adjacent compartment; and third, a great difficulty in sealing one compartment before the other without which step the danger of contamination would be increased.

The two compartments are not only parallel but in their final closed condition they are entirely superimposed so that severance below any of the seams, whether one of the seams 18 or seam 20 or seam 22, will provide complete and equal access to both compartments.

For the sake of simplicity the bag has been illustrated with only two compartments and using only a single ply of material in each wall. It is clear, however, that the package could be made with any number of compartments and that the walls 12, 14 and 16 could be formed of coated or laminated stock thereby forming compartments with mutually different interior surfaces. It is further clear that while the superimposed arrangement of compartments is optimum, the compartments might be side by side in the same plane opening, however, at opposite sides of the bag. This would be less satisfactory because upon opening the final filled and sealed package, there would be no guarantee that all compartments would be equally available. It is, however, an alternative within the scope of this invention.

In Fig. 2, I illustrate the method of forming the bag shown in Fig. 1. The webs 12, 14 and 16 are drawn from supply rolls (not shown) and passed

over tongues 50 and 52. One half of the ply 14 lies above the tongue 50 and the other half lies below the tongue 52. The seals may be effected in any desired manner but will usually be formed by heat and pressure since for most purposes it will be desirable to form the bags from imper-

vious webs having thermoplastic characteristics. The seal 20 is formed between plies 14 and 16 by a heated pressure bar 40 which presses the margins of sheets 14 and 16 against the tongue 50. If desired, additional support may be provided by a similar non-heated member placed below the tongue 50 in which case the tongue 50 is formed of a non-heat-conducting material.

The seam 22 is formed between plies 12 and 14 by a heated pressure member 42 pressing plies 14 and 16 against the tongue 52 which of course may be supported as just described with respect to the tongue 50. The webs pass beyond the ends 50' and 52' of the tongues 50 and 52 respectively and are then subjected to heat and pressure across their entire width to form the seam 18. By this method two seams 18 are formed on two consecutive packages. The operation is completed by severing consecutive packages along the line C—C which bisects the sealed areas 18.

In using certain types of thermoplastic sheets it may be desirable to provide mechanical protection on the exterior of the package in which case webs of paper may be laminated or spot-pasted to the outside of plies 12 and 16 and it is equally clear that printing may be applied as desired.

In Fig. 3, I show a container 100 formed from single web of material 102 which has been folded upon itself to form 3 plies. Double side seams 104 are provided to define compartments 110 and 112. The mouth of compartment 110 is bounded by a fold line 116 of the web 102 and the adjacent free margin 116' of the web, while the other compartment 112 is bounded by a similar fold line 114 and the opposite free edge 114' of the web 102.

It is obvious that in this package, as in the case of Fig. 1, any number of compartments may be provided and the web 102 may be formed of coated or laminated stock.

In Fig. 4, I show a method for making the package of Fig. 3. The web 102 is folded about a tongue 120 to form the fold line 116 and about another tongue 122 to form the fold line 114. When the web leaves the extremities of the tongues 120 and 122 it is subjected to heat and pressure to form a transverse seal and consecutive bags are then severed along the C'—C' line to form the side seams 104. Usually and most conveniently, the seaming operation will be done by heat and pressure since thermoplastic materials will be involved. It is of course perfectly possible to sever bag blanks and to form the side seams by simply folding over the ends and adhering the folded ends to the body of the bag, or sewed seams could be used where large bags intended for relatively heavy contents are produced. This is also true of the bag of Fig. 1.

The essence of this invention lies in producing bags having compartments opening at opposite sides. The precise materials and the precise methods of sealing are not matters of limitation except as expressly set forth in the subjoined claims which are to be broadly construed.

In claiming the method, the exigencies of the language require the recital of the various steps sequentially. The sequence in which these steps appear in the claims is not however a limitation

unless the claims by their terms expressly involve sequence.

It is clear that with either of the types of bags above described, it is entirely possible to form a partial closure at the mouth of each compartment so as to leave a restricted filling opening and to minimize the extent of the seal formed at the time of filling. In packages as small as those normally used for the retailing of dehydrated soup, this will not be desirable but there is no size limitation on this invention and in larger sizes and for certain types of contents such an arrangement may be very convenient. The term "mouth" as used in the claims is not therefore to be limited to a fully opened mouth but is intended to include a restricted opening.

What is claimed is:

1. A container formed of flexible sheet material and having a plurality of contents receiving compartments, each compartment being closed on three sides and having an open mouth, the mouth of each compartment opening in a margin of the container opposite the margin in which the mouth of the adjacent compartment opens, the interior surface of each compartment being formed of a material having characteristics different from those of the material forming the interior surface of the adjacent compartment, each compartment being superimposed upon and in dimensional registry with all other compartments.

2. A method of making bags comprising superimposing a plurality of sheets of flexible material; sealing all of said sheets together along two opposed margins to form side seams; joining said side seams by seals between individual pairs of plies to form compartments, said last mentioned seals being located alternately at opposite ends of said sheets.

3. A method of making bags comprising superimposing a plurality of more than two plies of flexible material; separating and sealing the margins of pairs of said plies alternately on opposite sides; forming spaced transverse seals entirely across said plies thereby joining all of the same together, and severing consecutive bags by cutting through said transverse seals.

4. A method of making bags comprising folding a single web of flexible material to form a plurality of more than two superimposed plies, said plies being fully superimposed and in complete dimensional registry one with the other with consecutive fold lines lying on opposite sides of the final structure and the consecutive folds being oppositely directed; forming spaced transverse seals across the folded web thereby joining all of said plies and severing consecutive bags by cutting through said transverse seals, whereby to form in each bag a plurality of superimposed contents receiving compartments, each having an open mouth opening on a side of the bag opposite the open mouth of the adjacent compartment.

5. A method of making bags comprising folding a single web of flexible material to form a plurality of more than two superimposed plies, said plies being fully superimposed and in complete dimensional registry one with the other with consecutive fold lines lying in opposite sides of the final structure and the consecutive folds being oppositely directed; severing consecutive lengths therefrom and forming double side seams on each length, whereby to form in each bag a plurality of superimposed contents receiving compartments, each having an open mouth opening on a side of the bag opposite the open mouth of the adjacent compartment.

6. A method of making bags comprising folding a sheet of flexible material in zig-zag formation to form a plurality of more than two fully superimposed plies and sealing all of said superimposed plies together along opposed margins thereof at right angles to the lines of fold, while avoiding any joinder of said plies except along said sealed, opposed margins.

7. A multi-ply double side seam bag, each pair of plies being marginally joined to form closure at one end, each such closure connecting the side seams and joining the plies of said pair, the closures of alternate pairs of plies lying in opposite margins of the bag thereby defining between the plies of each pair an open mouthed, contents receiving, compartment, the open mouths of adjacent compartments opening alternately in opposite margins of said bag, the interior surface of each compartment being formed of a material having characteristics different from those of the material forming the interior surface of the adjacent compartment, and each of said compartments being superimposed upon and in dimensional registry with all other compartments.

8. A container formed of flexible sheet material and having a plurality of contents receiving compartments, each compartment being closed on three sides and having an open mouth on the fourth side; the open mouth of each compartment opening in a margin of the container opposite and parallel to the margin in which the open mouth of the adjacent compartment opens, each compartment being superimposed upon and in dimensional registry with all other compartments, the inner surfaces of the walls of each compartment, at least adjacent its open mouth, being heat sealable.

9. A multi-ply double side seam bag, said side seams being heat sealed and joining all of said

plies, each pair of plies being marginally heat sealed to form a closure, each such closure extending into said side seams and connecting the same, said closures and said side seams defining an open mouth contents receiving compartment between the plies of each pair the open mouths of alternate compartments lying in opposite, parallel margins of the bag, each of said compartments being superimposed upon and in dimensional registry with all other compartments, the inner surfaces of each compartment adjacent the open mouth thereof being heat sealable.

10. A bag comprising a sheet of flexible material folded upon itself to produce a multi-ply of structure of not less than three plies and having sealed, parallel seams uniting all of the plies at each end, said seams forming with the fold lines connecting the same, boundaries on three sides of an open-mouthed, contents receiving compartment formed between each pair of plies, the several compartments being mutually superimposed and mutually in dimensional registry, the open mouths of adjacent compartments opening alternately in opposite, parallel margins of the bag, the inner surfaces of the walls of each compartment adjacent its open mouth being heat sealable.

11. A container comprising three identically-shaped sheets of flexible material superimposed in registering relationship and heat sealed to one another along opposite edges thereof to form side seams, the central sheet being additionally sealed at one end thereof to one of the outer sheets to form a compartment having its opening at one end of the container, and being sealed at the other end thereof to the other of the outer sheets to form a second compartment having an opening at the end of the container opposite to the opening of the first compartment.

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