May 9, 1939. G. R. WEBBER ET AL 2,157,194

PACKAGING

Filed April 13, 1935 2 Sheets-Sheet 1

Fig. 1

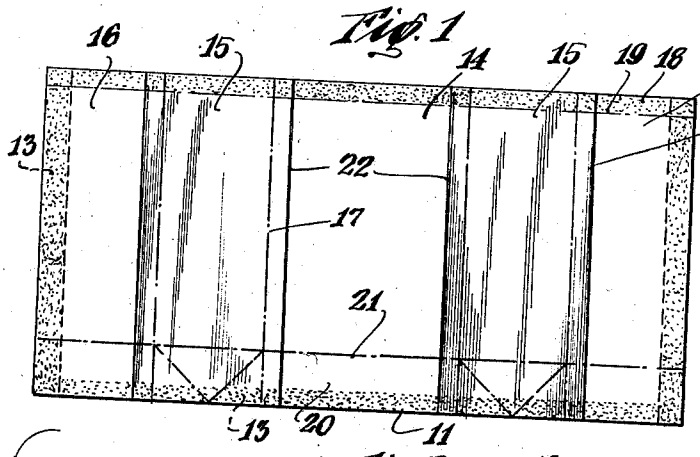


Fig. 3

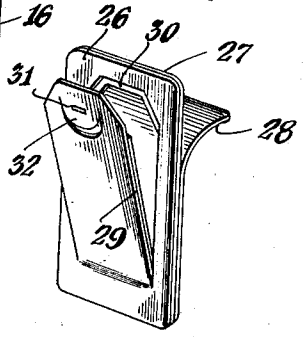


Fig. 2

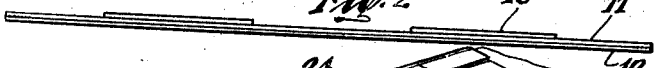


Fig. 4

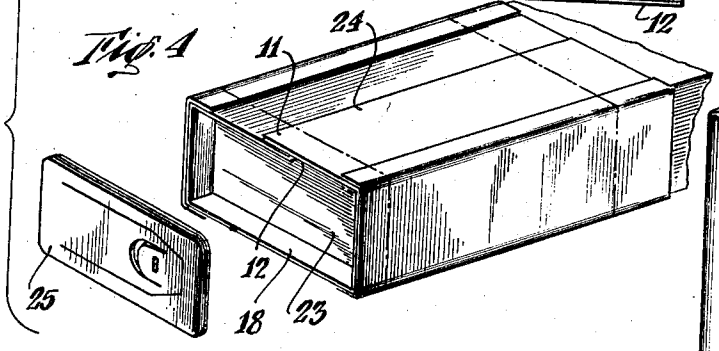


Fig. 6

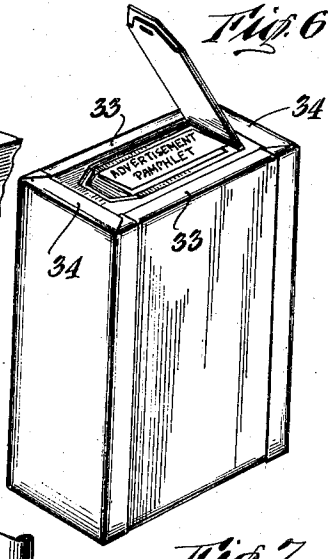


Fig. 5

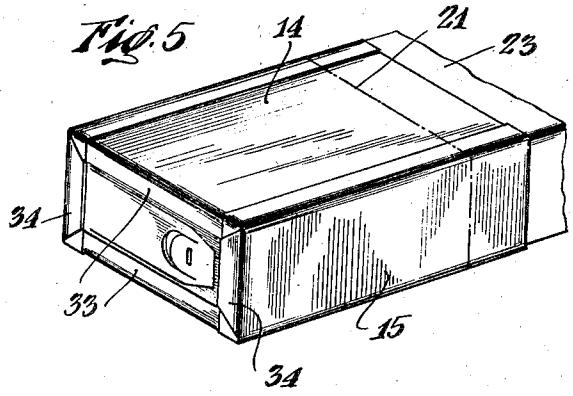
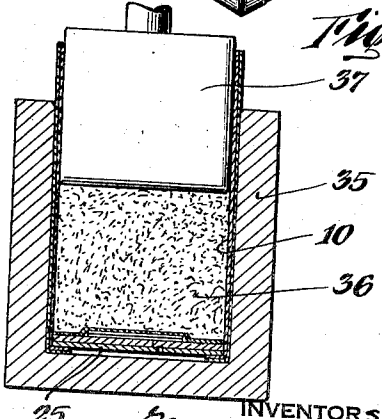


Fig. 7



INVENTORS
George R. Webber,
Paul W. Fleischer,
BY George Wiegand Hoffa
Watson, Bristol, Johnson & Leavenworth
ATTORNEYS

May 9, 1939. G. R. WEBBER ET AL 2,157,194

PACKAGING

Filed April 13, 1935 2 Sheets-Sheet 2

Fig. 8

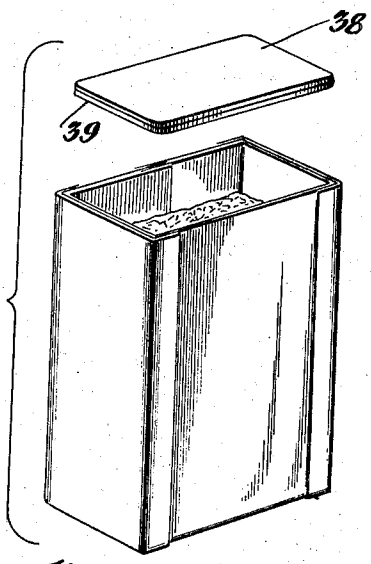


Fig. 13

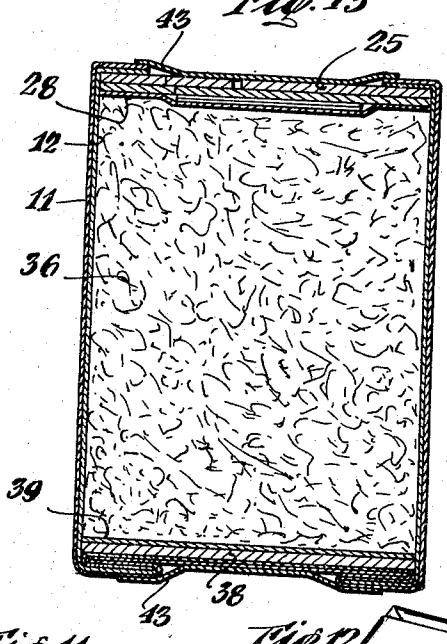


Fig. 9

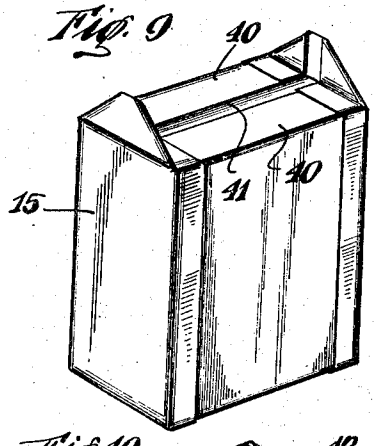


Fig. 11

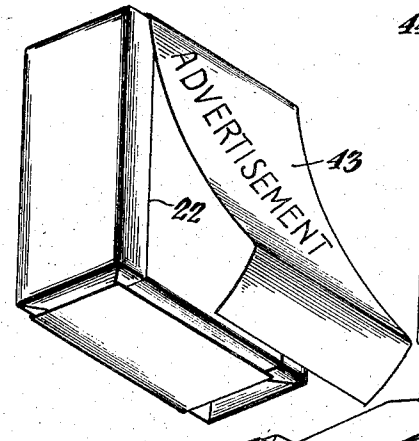


Fig. 12

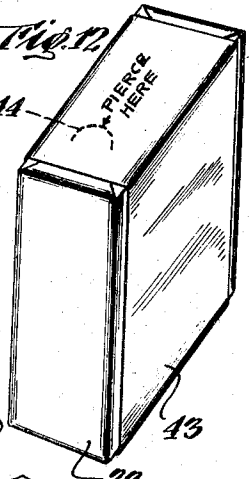


Fig. 10

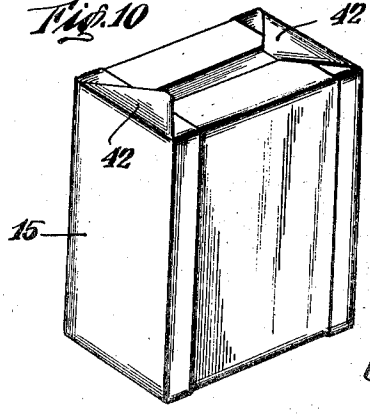
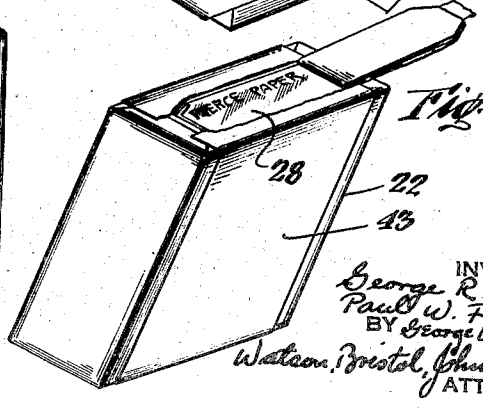


Fig. 14



INVENTORS
George R. Webber,
Paul W. Fleischer,
BY George W. von Hoffe
Watson, Bristol, Johnson & Leeuwaard
ATTORNEYS

Patented May 9, 1939 2,157,194

UNITED STATES PATENT OFFICE

2,157,194

PACKAGING

George R. Webber, Palisades, Paul W. Fleischer, Weehawken, and George W. von Hofe, Bound Brook, N. J., assignors to Standard Brands Incorporated, New York, N. Y., a corporation of Delaware

Application April 13, 1935, Serial No. 16,163

5 Claims. (Cl. 206—46)

This invention relates to packages and to a method of packaging.

A general object of the invention is to provide a package having improved characteristics as to function and appearance.

More particularly, objects of the invention are to provide a package which has a markedly attractive appearance, in which economical materials are effectively utilized, and which is easy to assemble and fill.

Further objects of the invention are to provide a package for contents of the class hereinafter described, which has a definite form comprising non-yielding side-walls bounded by well defined corners, and which has the hardness and general tactility of a rigidly constructed container, but which is made up largely from paper or similar inexpensive flexible material.

Another object of the invention is to provide a package having side-walls covered with a limited quantity of metallic foil, which has substantially the visual aspect of a package having its side-walls entirely foil covered.

A more specific object of the invention is to provide a package constructed with flexible side-walls covered with a limited quantity of metallic foil, yet which has substantially the visual and tactual aspects of a container formed entirely of metal.

A further object of the invention is to provide a package possessing some or all of the other advantages herein described which is well adapted to be produced in quantity by means of automatic machinery, and in which the desired characteristics are obtained through use of a minimum quantity of inexpensive materials.

A still further object of the invention is to provide a package for contents of the class herein described which is substantially air tight and sift proof, and in which the contents are readily accessible for use.

Another object of the invention is to provide an improved method of packaging contents of the class herein contemplated.

Yet another object of the invention is the provision of suitable steps for forming a package having one or more of the advantageous characteristics mentioned above, including the steps of so compacting and confining the contents that they serve rigidly to support the package side-walls.

Another object of this invention is to improve the package and method of packaging shown in the co-pending application of George R. Webber et al., Serial No. 16,162.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the several steps and the relation of one or more of such steps with respect to each of the others, and the article possessing the features, properties, and the relation of elements, which are exemplified in the following detailed disclosure, and the scope of the application of which will be indicated in the claims.

For a fuller understanding of the nature and objects of the invention reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

Fig. 1 is a plan view of a blank used in forming the side-walls of a package embodying the principles of the present invention;

Fig. 2 is an edge elevation of the blank shown in Fig. 1;

Fig. 3 is a perspective view of a rigid top end wall;

Fig. 4 is a perspective view showing the method of folding the side-walls and applying the top end-wall;

Fig. 5 is a perspective view of the package showing an intermediate stage of its assembly;

Fig. 6 is a perspective view of the package as shown in Fig. 5, and further illustrating features of its dispensing closure structure;

Fig. 7 is a vertical sectional view showing the operation of loading the package of Fig. 5 in a mold;

Fig. 8 is a perspective view showing the application of a rigid bottom end-wall;

Fig. 9 is a perspective view showing a further step in closing the bottom of the package;

Fig. 10 is a perspective view showing the completed bottom closure of the package;

Fig. 11 is a perspective view showing a further stage in the package assembly;

Fig. 12 is a perspective view showing a completed package;

Fig. 13 is a vertical sectional view, on an enlarged scale, of the completed package shown in Fig. 12; and

Fig. 14 is a perspective view showing the method of opening the package to remove its contents.

The class of contents intended for packaging in accordance with the present invention comprises substances which are sufficiently loose or plastic to be moldable, and which are substantial enough to be compacted or shaped into a substantially unyielding body. Such contents in-

clude, for example, granular substances such as coffee, cereals, salt, sugar and the like; pulverulent or powdery substances such as flour; leafy substances such as tea and tobacco; and plastic substances such as dried fruits and the like. These last substances, namely dried fruits, have heretofore been put up in packages having a definite form through compression or molding of the contents. This has been feasible in this particular instance where the adherent properties and relative immobility of the contents are such that they may be molded into a compact body which is self-sustaining regardless of the package structure used to cover it. The present invention, however, goes beyond this in that it provides a package made largely of flexible materials which is so assembled, loaded and constructed, that relatively dry, non-tacky, mobile substances may be packaged and retained in a compact, definitely formed, substantially unyielding body. In addition, certain benefits of the present invention may be obtained even in the case of self-sustaining bodies such as dried fruits.

Referring more particularly to the drawings, there is shown in Fig. 1 a blank generally designated 10 which is used in forming the side-walls of the package. This blank comprises a sheet of flexible material 11, such as strong bond paper, which has a coextensive ply of flexible lining material 12, such as glassine, moisture-proof regenerated cellulose, or the like, attached to its inner face by means of marginally applied adhesive 13. The blank 10 comprises a front wall section 14, edge wall sections 15, and back wall sections 16, defined by vertical fold lines 17, which last are formed during the assembly of the package as hereinafter described. The blank also comprises a narrow top edge allowance 18, which is subsequently defined from the side-walls proper by a fold line 19, and a bottom end allowance 20 which likewise is subsequently defined from the side-wall proper by a fold line 21. The edge wall areas 15 are completely covered with metallic foil 22 which extends from top to bottom of the blank and is of sufficient lateral extent partially to overlie adjacent portions of the front and back walls.

In assembling the package the side-wall blank 10 is folded around a rectangularly sectioned mandrel 23 (Fig. 4) and the back-wall sections 16 are overlapped and pasted together along a seam 24. A rigid end-wall 25 is next placed against the end of the mandrel 23, within the projecting end allowance 18, in order that the latter may be pasted down thereover. This first applied end-wall is adapted ultimately to form the top of the package. The details of its structure are best shown in Fig. 3. It comprises two plies 26 and 27 of rigid or substantially unbending material such as heavy cardboard or fiber board. A coextensive inner liner 28 of glassine is marginally pasted to the ply 27. A dispensing closure is formed by scoring the plies 26 and 27 as at 29 to provide a hinged closure. The scoring of the inner ply 27 is offset with respect to that of the outer ply 26 as shown at 30 so as to provide a supporting ledge which prevents inward movement of that portion of the hinged closure member formed from the material of ply 26. A staple 31, or other suitable fastening means, holds the two plies of the hinged closure together for movement in unison, and a tab 32 is cut in the outer ply 26 as illustrated, in order that it may be lifted by the user's thumb nail. The glassine liner 28 is not adhesively attached to the movable end closure portion of the end-wall, so that the latter may be lifted without disrupting the seal afforded by such liner.

This entire rigid end-wall, as explained above, is placed against the end of the mandrel 23 and top end allowance 18 is folded down thereover, the allowance portions forming extensions of the front and back walls being first turned in as shown at 33 (Fig. 5), and then the allowance portions forming extensions of the side-walls 15 as shown at 34. The inturned allowances 33 and 34 are all pasted against the margin of the outside face of the end-wall, the side-wall liner 12 being in actual contact therewith. The pasted down allowances extend only slightly over the rigid end-wall, and leave the hinged closure free for operation, at the same time limiting the quantity of side-wall materials used in producing the package. This last factor effects an appreciable saving in the mass production of packages of this kind. The freedom of movement of the hinged closure is indicated, for example, in Fig. 6, although such closure is not ordinarily bent up as shown in that illustration at this stage in the package assembly. In Fig. 6, there is also shown an advertising pamphlet which may be inserted in the space between the dispensing closure and the glassine liner 28. This pamphlet ordinarily will be placed in this position during the assembly of the end-wall per se, being placed against the scored closure flap prior to the pasting of the liner 28 to the end-wall.

After the package reaches the stage shown in Figs. 5 and 6, it is removed from the mandrel and placed in a mold 35 which has a rectangular cross section substantially corresponding to that of the end-wall 25 and which has well defined, though slightly rounded, corners corresponding to similar slightly rounded corners on such end-wall. Contents of the class described above are now inserted in the open end of the package. These are subjected to compacting processes which cause them completely to fill the interior of the package. In the case of coffee, for example, the desired compacting is suitably obtained by partially filling the container, say to about three-fourths of its intended capacity, and then vibrating and ramming the coffee into the package. Vibration may be imparted in any manner familiarly known in the packing of coffee and similar granular substances. As shown in Fig. 7, the package has thus been three-fourths filled with coffee 36 which has been vibrated into place. In addition to such vibration, the coffee is subjected to considerable compacting pressure by a ram 37 which fits snugly within the package side-walls. The ram is then withdrawn and the remainder of the contents are inserted. These, too, are subjected to compacting either by vibration and ramming or by ramming alone, as desired. With certain machinery, it is also quite feasible to fill the container with the entire quantity of coffee that it is to hold, say one pound. When this is done, the container is vibrated at the time the contents are measured and poured therein, and these contents subsequently are rammed while the container is in the mold.

The package contents are compacted and molded to an extent sufficient to compel them to assume the definite shape imposed by the mold 35, and they are compressed within the interior of the package to an extent considerable

enough to form them into a substantially unyielding body which enables them rigidly to support the side-walls. By "rigidly supported side-walls", it is meant that after the contents are confined in a manner such as that hereinafter described in connection with the remaining steps needed to complete the package, the compacted contents so support the flexible side-walls that these walls are not subject to surface indentations, and the package when grasped is hard and unyielding, having the tactility of a rigidly formed container, such as one formed of tin or the like. Perhaps a closer description of the rigidity of the side-walls of the package is that, when grasped, it feels as though it contains an unyielding object such as a block of wood. In any event, the paper walled package has striking tactual characteristics, and its flexible side-walls are rigidly supported in the sense that they can be indented or displaced only with the utmost difficulty, and with great abuse. They are well adapted to maintain their definite shape and pronounced corners throughout the ordinary handling of the package attendant upon shipping and merchandising it.

When the package has thus been filled and its contents compacted another end-wall **38** is applied to the open bottom end of the package as shown in Fig. 8. This end-wall is of solid unscored construction and is formed of rigid material, such as heavy cardboard or fiber board which may be of ply structure or not, as desired. It has an inner lining **39** of glassine which is coextensive therewith and may be adhesively attached to the entire surface thereof. Such end-wall is held down tightly against the contents of the package, and while so held, the bottom end allowance **20** of the side-wall is folded inwardly and adhesively attached to the outside face thereof. In doing this the end allowance forming extensions of the front and back walls is first folded in and pasted against the end-wall **38** as indicated at **40**. It will be noted that these inturned allowances do not quite meet, leaving a space **41** therebetween which may be utilized to keep the end-wall **38** firmly pressed against the compacted package contents by means of a suitable tool, and this whole operation may be performed while the package is still supported within the mold **35**, if desired. After the allowances **40** are placed against the end-wall with their inner lining **12** in direct adhesive contact therewith, then the allowances forming extensions of the side-walls **15** are turned in and pasted against the outside end of the package as indicated at **42** (Fig. 10).

Referring now to Fig. 13, it will be seen that the contents, which are substantially non-compressible, occupy all the available space within the package so that there is no room for them to shift. Also, there is little or no room for free air within the package, the only air contained therein being the minimum quantity left between the closely packed granules. This, in the case of foodstuff such as coffee, is highly desirable to avoid deterioration of the contents. Also, the lining material **12** for the side-walls extends up over and is pasted tightly against the end-walls **28** and the interior faces of these latter have lining material **28** adhesively attached thereto at least around the margins thereof so that the package is practically air and moisture proof.

It will be noted that the side-walls, being lapped over and pasted down tightly against the rigid end-walls which in turn are held tightly against the compacted package contents, serve to prevent mutual separation of such end-walls and thus a structure is provided which has rigid end-walls and rigidly supported flexible side-walls within which the package contents have no room to shift. Consequently the flexible side-walls are substantially immune from surface indentations, being supported in smooth unwrinkled planes which are bounded by definite and substantially permanent corners.

After the package has both ends closed, as shown in Fig. 10, it is finished by placing thereabout a band **43** of flexible material, such as a paper label. This band preferably passes entirely around the front, back, top and bottom walls, being overlapped at the bottom wall and being adhesively attached to all of such named walls. The band also extends laterally to a sufficient extent to overlap and conceal the edges of foil strips **22**, but it preferably does not extend entirely to the lateral corners of the package, so that that marginal portion of such foil strips which overlies the front and back walls is exposed to the eye. This gives the package the visual appearance of being entirely foil covered, and greatly enhances its attractiveness while avoiding the expense of actually providing such a complete covering of relatively expensive metallic foil. Instead of using a continuous band **43**, separate labels may be applied to the various walls, if desired, or such band, instead of passing entirely around the package, may cover three walls thereof, say the front, back and top walls. The continuous form of band shown in Fig. 11 is preferred at the present time, however. It will be noted that such band overlies the end closure and its lifting tab **32** and the location of the latter is therefore indicated by suitable printing **44** in order that it may be readily found and lifted by the thumb. Access to the contents may readily be obtained by inserting the thumb nail beneath the tab **32**, tearing the label **43** in so doing, and then lifting the hinged dispensing closure, further tearing the label **43** as shown in Fig. 14. This still leaves the seal **28** intact and if the contents are to be removed, this seal is broken and the granular material within the package is either poured out or removed with a spoon. It has been found that coffee, even when compacted to the herein contemplated extent so as rigidly to support the side-walls, is nevertheless readily amenable to pouring through the dispensing opening after the package has been opened. Of course, after part of the contents is removed, the package no longer retains it previous hard tactual characteristics, but it does retain these characteristics throughout its shipping and merchandising period.

It will be seen that there has been provided a package which is formed of relatively inexpensive materials and which has the visual and tactual aspects of a package formed entirely of rigid materials. The package of the present invention is neither a bag nor a rigid box or can, but it possesses the economy of materials of the former and the attractive visual and tactual characteristics of the latter.

Since certain changes in carrying out the above method, and certain modifications in the article which embody the invention may be made without departing from its scope, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following

claims are intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

Having described our invention, what we claim as new and desire to secure by Letters Patent is:

1. A package of a relatively dry, non-tacky, mobile mass of divided substance, having rigid relatively unbendable end-walls, and side-walls formed of flexible material tensionally stressed from end-wall to end-wall, the tops and bottoms of each of the side-walls being folded over and respectively fastened to the outside surfaces of said end-walls to prevent mutual separation thereof, said package having its confined contents solidly compacted into a substantially unyielding block or mass in compressive engagement between and against the end-walls occupying all of the available space therein so that they fully engage all of the package walls and tension the side-walls between the end-walls.

2. A package of a relatively dry, non-tacky, mobile mass of divided substance, having the visual and tactual aspects of a container made entirely of rigid material, said package comprising relatively unbendable rigid end-walls each having a covering of lining material coextensive with and attached to its inner face, and side-walls of flexible materials comprising coextensive superposed sheets of adhesively attached lining material and paper joining said end-walls and tensionally stressed from end-wall to end-wall and having their top and bottom edges respectively partially overlapping and fastened to the outer faces of said end-walls, said package having its confined contents solidly compacted into a substantially unyielding block or mass in compressive engagement between and against the end-walls occupying all of the available space therein so that they fully engage all of the package walls and tension the side-walls between the end-walls.

3. A package of a relatively dry, non-tacky, mobile mass of divided substance, comprising rigid relatively unbendable rectangular end-walls, side-walls formed of flexible material joining said end-walls and tensionally stressed from end-wall to end-wall, metallic foil covering two opposite side-walls and having marginal portions extending partially over the adjacent margins of the remaining side-walls and end-walls, and a band of sheet material covering the central portions of such remaining side-walls and at least one end-wall, the edges of said band overlapping and concealing the edges of said foil, said package having its confined contents solidly compacted into a substantially unyielding block or mass in compressive engagement between and against the end-walls occupying all of the available space therein so that they fully engage all of the package walls and tension the side-walls between the end-walls.

4. A package of a relatively dry, non-tacky, mobile mass of divided substance, having the visual and tactual aspects of a metal container, comprising rigid relatively unbendable rectangular end-walls each having a covering of lining material attached to its inner face, side-walls formed of flexible materials comprising adhesively attached sheets of lining material and paper joining said end-walls and tensionally stressed from end-wall to end-wall and having their top and bottom edges respectively overlapping and fastened to the outer faces of said end-walls, metallic foil covering two opposite side-walls and having marginal portions extending partially over the adjacent margins of the remaining side-walls and end-walls, and a band of sheet material covering the central portions of such remaining side-walls and at least one end-wall with its edges overlapping and concealing the edges of said foil, said package having its confined contents solidly compacted into a substantially unyielding block or mass in compressive engagement between and against the end-walls occupying all of the available space therein so that they fully engage all of the package walls and tension the side-walls between the end-walls.

5. A package of a relatively dry, non-tacky, mobile mass of divided substance, comprising rigid relatively unbendable top and bottom walls, a lining coextensive with said bottom-wall and adhesively attached to the inner face thereof, a lining coextensive with said top-wall and adhesively attached to the inner face thereof only about its margin, said top-wall being incised within said adhesively fastened margin to provide a movable closure free from attachment to said lining, side-walls comprising a layer of paper and an interior layer of flexible lining material adhesively attached thereto, said side-walls having their top and bottom edges respectively overlapping and adhesively fastened to the outer faces of said top and bottom walls and being tensionally stressed from top-wall to bottom-wall, the overlapped top edges being extended only over the marginal portion of said top-wall and stopping short of said incised closure, said package having its confined contents solidly compacted into a substantially unyielding block or mass in compressive engagement between and against the top and bottom walls occupying all of the available space therein so that they fully engage all of the package walls and tension the side-walls between the top and bottom walls.

GEORGE R. WEBBER.
PAUL W. FLEISCHER.
GEORGE W. VON HOFE.