

May 9, 1939.

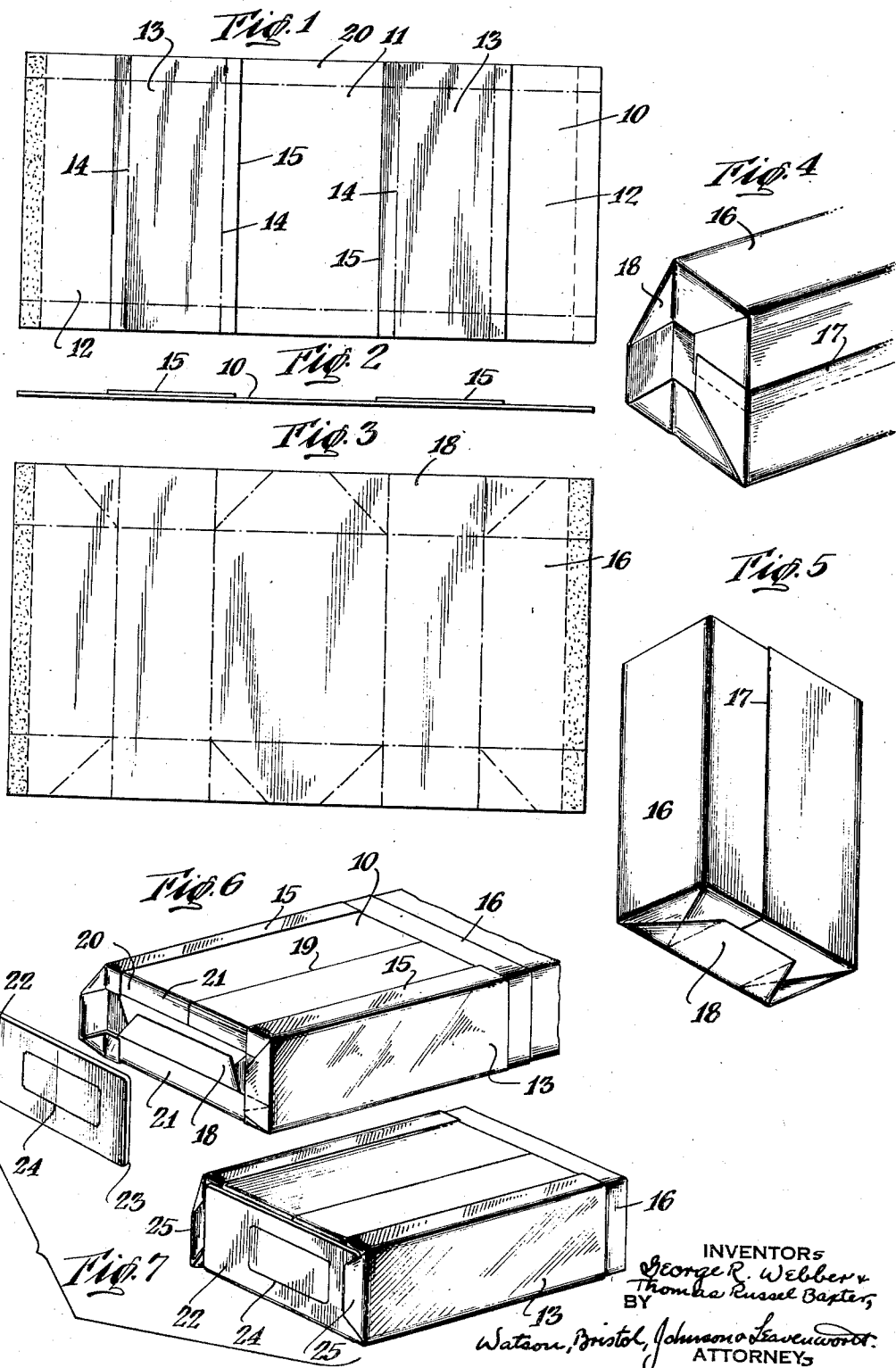
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2,157,193

PACKAGING

Filed April 13, 1935

2 Sheets-Sheet 1



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Fig. 8

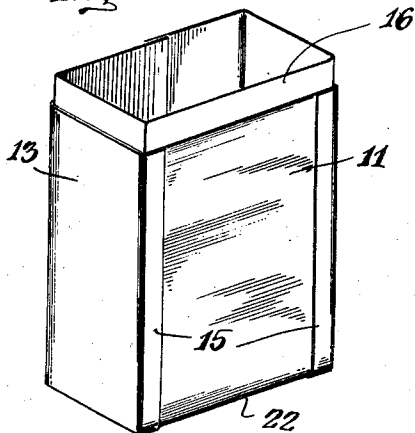


Fig. 9

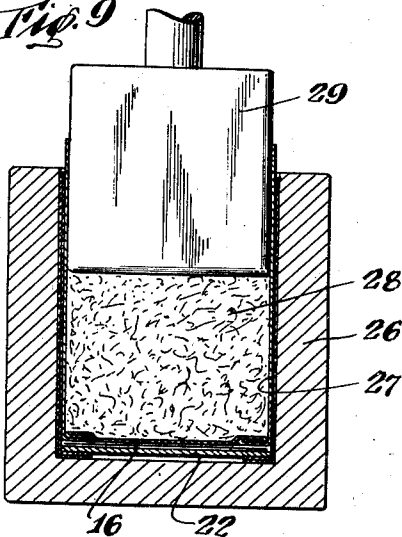


Fig. 10

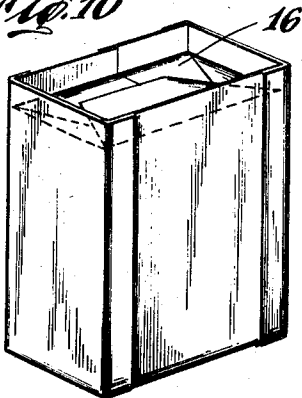


Fig. 11

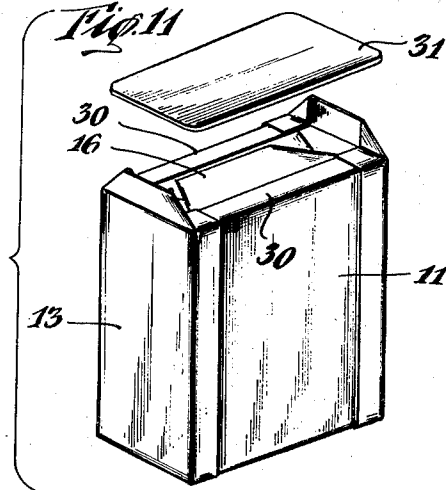


Fig. 12

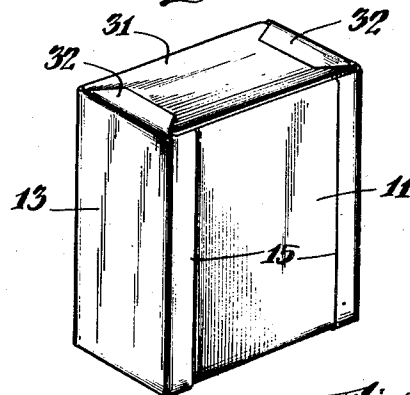
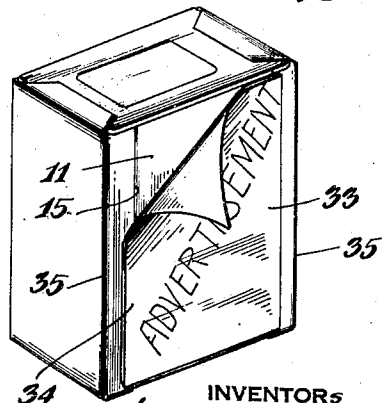


Fig. 13



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PACKAGING

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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.

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.

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 form-

ing the side-walls of a package embodying principles of the present invention;

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

Fig. 3 is a plan view of a blank used in forming a liner for the package;

Fig. 4 is a fragmentary perspective view showing the manner of folding one end of the liner;

Fig. 5 is a perspective view showing the liner at the completion of the step shown in Fig. 4;

Fig. 6 is a perspective view showing the application of the side-walls and an end-wall to the liner shown in Fig. 5;

Fig. 7 is a perspective view showing a further stage in the application of the end-wall;

Fig. 8 is a perspective view showing the package at the completion of the operation shown in Fig. 7;

Fig. 9 is a transverse vertical sectional view showing the operation of loading the package of Fig. 8 in a mold;

Fig. 10 is a perspective view showing a further stage in the assembly of the package involving a folding down of the liner over its contents;

Fig. 11 is a perspective view showing the folding of the side-walls and the application of an end-wall;

Fig. 12 is a perspective view showing the package of Fig. 11 with its end-wall affixed in position; and

Fig. 13 is a perspective view of a completed package, a portion of the covering or label thereof being turned back better to show the structure.

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 substantially enough to be compacted or shaped into a substantially unyielding body. Such contents include, 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 ma-

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 10 which is used in forming the side-walls of the package and which is made of flexible material, preferably thin but strong bond paper. The illustrated blank shown in Fig. 1 is adapted to be used in the construction of a rectangularly sectioned package and to this end includes a front-wall area 11, back-wall areas 12 and edge-wall areas 13, the several areas being separated by fold-lines such as 14, which are adapted to be formed during the assembly of the package, as will be hereinafter explained. Two spaced side-wall sections, such as the edge sections 13, which are located on opposite sides of the ultimately formed package, have strips of metallic foil 15 overlying and adhesively fastened to them. These strips extend from top to bottom of the blank 10 and are of sufficient width so as completely to overlie the edge-wall areas 13 and further to extend into and overlap portions of the adjacent front and back wall areas, as illustrated.

In the presently illustrated form of the invention the side-wall blank described above is adapted to be used in conjunction with a liner 16 which is formed of flexible and, where food-stuffs and the like are to be packaged, preferably moisture-proof material, such as glassine, moisture-proof regenerated cellulose or the like. As indicated in Fig. 4, the liner 16 is folded about a rectangularly shaped mandrel so as to form front, edge and back walls, the last of which are overlapped and adhesively fastened to each other along a seam 17. The liner 16 is positioned on the mandrel with an overhanging end allowance 18 which is folded over in the manner indicated in Fig. 4 and adhesively fixed in place as shown in Fig. 5 to provide a closure at one end of the liner.

As shown in Fig. 6, while the liner is still on the mandrel, the blank 10 is positioned thereover and is also folded around the mandrel so as to define the respective front, edge and back walls, the last being adhesively fastened along an overlapped seam 19. The blank 10 is placed over the mandrel with a projecting end allowance 20 and the portions thereof comprising extensions of the front and back walls are folded down over the end of the mandrel as indicated at 21. These folded over portions approach, but do not reach, each other, being spaced as shown in Fig. 6.

At this stage an end-wall 22 is placed against the infolded allowance portions 21 and against the closed end of the liner at 18, and its marginal portions are preferably adhesively affixed to the allowance at 21. This end wall is rigid, being formed of heavy cardboard, fiber board, or similar substantially unbending material. As illustrated, it is rectangular and preferably has slightly rounded though well defined corners as shown at 23. This first applied end-wall 22 is adapted to form the top of the completed package, and has a scored portion 24 defining a movable closure which is adapted to overly the liner 16 between the spaced allowance edges 21 of the outer side-walls. After the end-wall has been positioned against the inturned allowance portions 21, the allowance portions forming exten-

sions of the side-walls 13 are folded down over the outside face of the end-wall 22 as indicated at 25 in Fig. 7. These overlaps 25 are adhesively secured to the end-wall. At this stage the assembly is removed from the mandrel. It has the appearance shown in Fig. 8, comprising an open ended container having flexible side-walls and one rigid end-wall.

The package is now ready for filling. To this end it is placed in a mold 26 having a rectangularly sectioned interior cavity 27 which has well defined corners and corresponds approximately in sectional shape and extent with the rigid end-wall 22. 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. 9, the package has thus been three-fourths filled with coffee 28 which has been vibrated into place. In addition to such vibration, the coffee is subjected to considerable compacting pressure by a ram 29 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.

The package contents are compacted and molded to an extent sufficient to compel them to assume the definite shape imposed by the mold 26, 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 they 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.

After the package has been completely filled, and its contents compacted to the desired extent, the liner 16 is folded down closely over the top of the enclosed contents as shown in Fig. 10. If desired, this folded closure may be held in place with adhesive.

Next, as shown in Fig. 11, the upwardly projecting end allowances, comprising extensions of the front and back walls, are folded down over the closed end of the liner, as indicated at 30. These allowance sections 30 are pulled very tightly and snugly against the package contents.

A rigid end-wall 31 is then placed against the inturned end allowances 30. This end-wall has substantially the characteristics of the other end-wall 22, except that it is not scored to provide a dispensing orifice. Preferably the end wall 31 is adhesively held in place against the inturned side-wall allowance 30. The upwardly projecting end allowances comprising extensions of the edge walls 13 are now pulled tightly over and fastened down against the outside face of end-wall 31 as indicated at 32.

In thus closing the open end of the package so as to form a bottom therefor, care is taken to see that the rigid end-wall is held tightly against the compacted package contents, and the two end-walls 22 and 31 are respectively held against any separation or extension by the overlapped end allowances 25 and 32. The package contents thus occupy every bit of available space within the package, and there is no room for them to shift about or to yield in any manner. The rigid end-walls, which are held together by the rigidly supported flexible side-walls, serve to maintain the package in its definitely acquired shape so that there is no tendency for the side-walls to wrinkle or sag, and, further than this, such side-walls are maintained in absolutely smooth condition and are supported in fixed planes bounded by well defined corners.

The complete filling of the package possesses the further advantage of providing no space for air therewithin, and this minimizing of the amount of air that can possibly be contained within the package is of considerable benefit in preserving goods such as coffee.

After the package has been filled and both end-walls attached thereto, it has the appearance shown in Fig. 12. Here, it will be noted that the side-walls 13 are covered with foil 15 which partially overlaps the front and back walls. In order to complete the package, a flexible covering in the form of a paper label 33 or the like is applied. This covering may comprise separate labels respectively applied to the front-wall 11 and the back-wall 12. These labels extend laterally sufficiently to overlap the edges of foil 15 as shown at 34, but preferably they do not extend entirely over to the corners 35 (Fig. 13). This partial exposure of the foil on the front and back walls, coupled with the concealment of its edges, makes the package appear as though it were entirely foil wrapped, and this, coupled with its hardness and unyielding wall structure, provides a package having very attractive visual and tactual aspects. Considerable economy is effected in obtaining this attractive appearance through limiting the quantity of the relatively expensive metallic foil in the manner described while still providing a package which appears to be entirely foil covered, and which, when provided with rigidly supported side-walls, even, resembles a metallic container.

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 anchored to each other against mutual separation by flexible side-walls attached to and extending under tensional stress from the margins of one end-wall to those of the other, said package having its confined contents solidly compacted under pressure 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 are substantially non-shiftable and 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, comprising rigid relatively unbendable end-walls, side-walls of flexible sheet material anchored to said end-walls tensionally stressed from end-wall to end-wall so as to prevent mutual separation thereof, the contents in said package being compacted under pressure into the entire available space therein and in compressive engagement between and against the end-walls so that they are substantially non-shiftable by the walls of said package and act to tension the side-walls between the end-walls and rigidly to support the side-walls of flexible material.

3. A package of a relatively dry, non-tacky, mobile mass of divided substance, characterized by the visual and tactual aspects of a metallic container, said package having rigid relatively unbendable end-walls anchored to each other against mutual separation by flexible front, back and edge walls tensionally stressed from end-wall to end-wall, metallic foil covering some of said flexible walls, and flexible sheet material overlying the remaining flexible walls and concealing the edges of said foil, said package having its confined contents solidly compacted under pressure 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 are substantially non-shiftable and fully engage all of the package walls and tension the front, back and edge walls between the end-walls.

4. A package of a relatively dry, non-tacky, mobile mass of divided substance characterized by the visual and tactual aspects of a container formed entirely of rigid material, said package having polygonal rigid relatively unbendable end-walls anchored to each other against mutual separation by side-walls of flexible material tensionally stressed from end-wall to end-wall, and having its confined contents solidly compacted under pressure into a substantially unyielding block or mass in compressive engagement between and against the end-walls occupying all of the available space within the package rigidly supporting its flexible walls and tensioning them between the end-walls in substantially non-yielding planes bounded by definite corners.

5. A package of a relatively dry, non-tacky, mobile mass of divided substance having the tactility of a container made entirely of rigid material, said package comprising rigid relatively unbendable end-walls, and paper side-walls tensionally stressed from end-wall to end-wall at least some of which are folded over and fastened

to the outside of said end-walls to prevent mutual separation thereof, said package having its confined contents solidly compacted under pressure 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 are substantially non-shiftable and fully engage all of the package walls and tension the paper side-walls between the end-walls.

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