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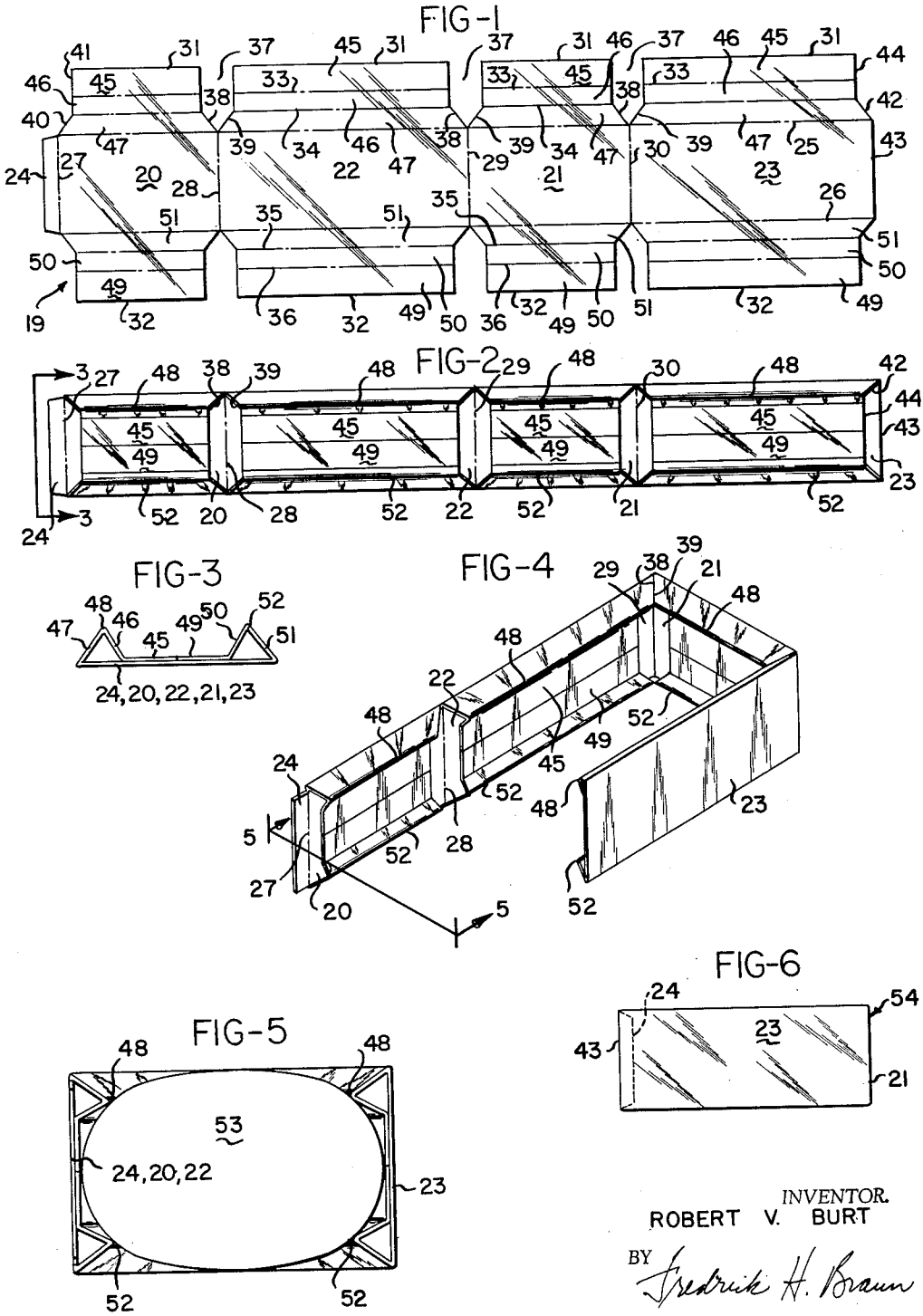
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3,159,274

RIGID PACKAGE STRUCTURE

Filed Dec. 6, 1962

2 Sheets-Sheet 1



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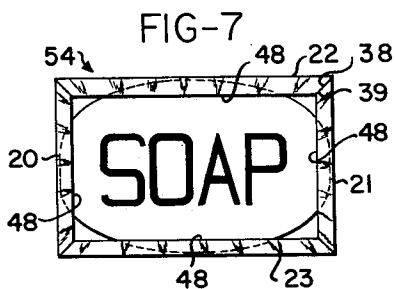
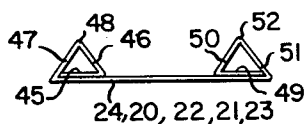
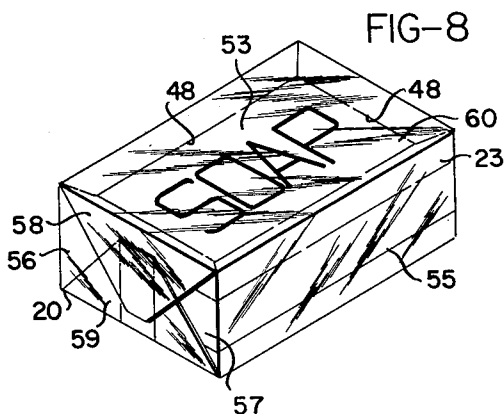
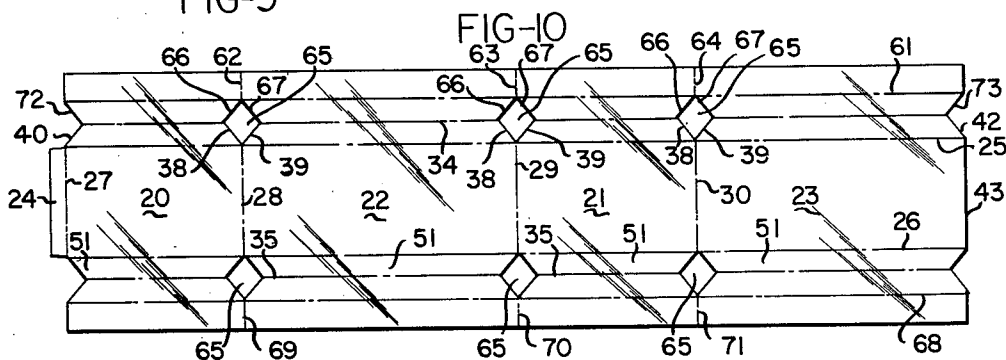
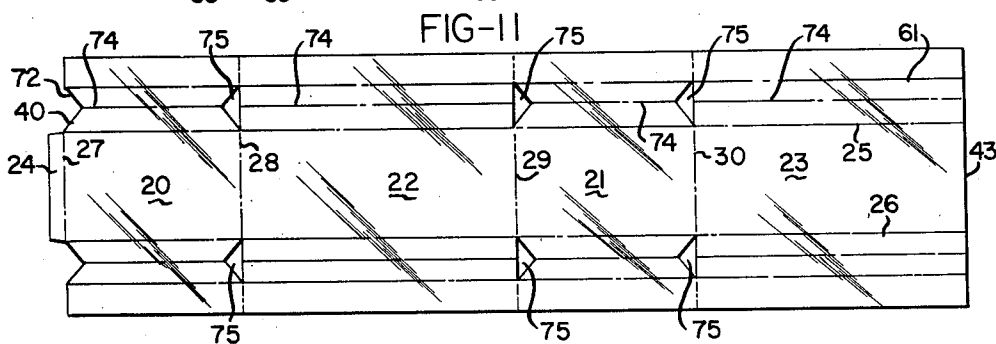
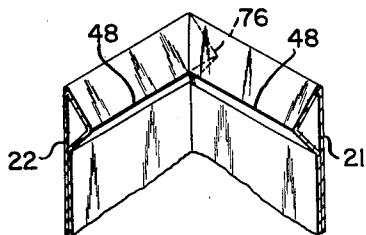
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## RIGID PACKAGE STRUCTURE

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1 Claim. (Cl. 206—45.33)

This invention relates to an improvement in packaging. More particularly it relates to a rigid package structure that is especially useful in packaging articles of any shape so that the broad surfaces of the article can be seen from either side of the package.

Articles having convex surfaces such as oval bars of soap and other articles of irregular configuration are commonly packaged in rigid paperboard boxes or the like which are overwrapped with a printed foil or other decorative wrapper. This type of package usually achieves its rigidity by simply using a heavy and therefore necessarily expensive caliper of paper board material for the carton. The appearance of these prior art packages is also dependent upon the decorative nature of the outer wrapper and this again adds to the expense of the package when highly decorative, multi-color wrappers are used. It follows, of course, that these packages do not allow the potential consumer to see the product prior to its purchase.

Accordingly, it is a principal object of this invention to eliminate these deficiencies by providing an improved package structure which is rigid and yet uses a comparatively small amount of paperboard material to achieve a very economical construction.

Another object of the invention is the provision of a new and improved package structure which is well suited for firmly supporting objects of oval or irregular configuration and yet allows the packaging operation to be performed on high speed production machinery so that the package is commercially feasible.

Still another object of the invention is the provision of a new packaging concept by means of which the major surfaces of the packaged article can be visible so that a potential consumer will be able to see and inspect the article at the point of purchase whereby he is better able to evaluate and compare competitive articles familiar to him from previous experience.

It is also an object of the invention to provide a package which is tamper-proof, viz. one from which the product is not readily removed while on display in a store.

While the package of this invention is well suited for packaging any article regardless of shape, it will be referred to herein as applied to bar soap packaging, as the invention has been found to have particular wide utility and application in this field. It will be understood, of course, that this is not to be construed as a limitation on the invention as the packaging of toothpaste tubes, shampoo containers, hair dressing containers, and like articles are well within the contemplation of the inventive concept hereinafter disclosed.

The invention can be summarized briefly as comprising oppositely disposed side and end panels folded into a rectangular frame and having a glue flap at one end adhered to the surface of the panel at the other end. Each panel has an upper and lower extending portion which is folded to form an inwardly extending tubular support on the inside of and at the upper and lower edges of each panel. The tubular supports may be beveled at their ends so that a continuous inwardly extending tubular support is formed on both sides of the package. The tubular supports form a rigid frame for the package and contact the edge surfaces of the soap bar to hold it firmly in place. The package so formed has the broad

faces of the soap bar exposed for inspection by potential purchasers. The frame can be overwrapped if desired with a transparent film if the advantages of product exposures are to be retained. On the other hand, if product exposure is not deemed necessary, it can be overwrapped with a highly decorative semi-transparent or even an opaque outer wrapper.

While the specification concludes with a claim particularly pointing out and distinctly claiming the subject matter regarded as forming the present invention, it is believed the invention will be better understood from the following description taken in connection with the accompanying drawings in which:

FIGURE 1 is a plan view of frame blank in flat form.

FIGURE 2 is a plan view of the frame blank after the tubular supports have been formed.

FIGURE 3 is an end view taken on line 3—3 of FIGURE 2 showing the tubular supports in elevation.

FIGURE 4 is an isometric view of the frame erected for receiving a bar of soap.

FIGURE 5 is an end elevation of the partially erected frame of FIGURE 4 after the bar of soap has been inserted.

FIGURE 6 is a side elevation of the completed frame showing the position of the glue flap.

FIGURE 7 is a plan view of the finished package showing the large area of the bar of soap that remains visible.

FIGURE 8 is an isometric view of the finished frame after a transparent overwrap has been applied.

FIGURE 9 is an end elevation showing a modified way of forming the tubular supports with the blank of FIGURE 1.

FIGURE 10 is a plan view of a modified form of blank in which diamond cut-outs separate the extensions for adjoining panels rather than slots as illustrated in FIGURE 1.

FIGURE 11 is a further modification of a frame blank in which triangular cut-outs separate the extensions.

FIGURE 12 is a fragmentary corner of a frame made with the blank of FIGURE 11 showing an interlocking construction for the adjoining tubular supports.

Referring now to the drawings and particularly FIGURE 1 there is shown a frame blank 19 which is formed by cutting and scoring cardboard, paperboard, carton-board or like material. The frame blank is divided into end panels 20 and 21, side panels 22 and 23 and a glue flap 24 by means of the horizontal scores 25 and 26 and the vertical scores 27, 28, 29 and 30.

Each of the panels 20 through 23 have an extending portion 31 at the top and an extending portion 32 at the bottom. Each of the extending portions 31 are divided into three parallel areas by the horizontal scores 33 and 34, the score 33 being aligned on each of the extending portions 31 and, similarly, the score 34 being aligned on each of the extending portions 31. The lower extending portions 32 are similarly divided by horizontal scores 35 and 36.

The extending portions 31 are separated by slots 37 which extend outwardly in parallel relation to the horizontal score 34. Each slot 37 is beveled at 38 and 39 at an angle of about 30° running from the horizontal score 34 inwardly to intersect at the horizontal score 25 and the respective vertical scores 28, 29 and 30.

A bevel 40 of about 30° extends from the intersection of the horizontal score 25 and the vertical score 27 to the horizontal score 34. The left edge 41 of the upper portion 31 extending from the end panel 20 is substantially perpendicular to the scores 33 and 34 outwardly of the score 34. The right edge of the upper extending portion 31 from the side panel 23 is formed with a substantially 30° bevel 42 from the intersection of the horizontal score

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25 with the end edge 43 to the horizontal score 34. The right edge 44 of the upper portion 31 extending from the side panel 23 is substantially perpendicular the scores 33 and 34 outwardly of the score 34.

The lower extending portions 32 are congruent with each of the upper extending portions 31 of their respective panels 20, 21, 22 and 23.

The lower extending portions 32 are congruent with into a channel strip configuration as illustrated in FIGURES 2 and 3. Each upper extension 31 is folded so that its outer area 45 (beyond the score 33) is contiguous to its respective panel 20, 21, 22 or 23. The length of each extension 31 is such that in so doing the intermediate area 46 (between the scores 33 and 34) and the inner area 47 (between the scores 25 and 34) form an inwardly extending reinforcing tubular support 48 along the upper edge of each panel 20, 21, 22 and 23. Similarly, each lower extension 32 is folded so that its outer area 49 is contiguous with its respective panel 20, 21, 22 and 23. In so doing, the intermediate areas 50 and the inner areas 51 form an inwardly extending tubular support 52 along the lower edge of each panel 20, 21, 22 and 23.

The areas 45 and 49 which lie against the panels 20, 21, 22 and 23 are preferably adhered thereto to any well known adhesive. In some cases, however, the package can be formed without adhering the areas 45 and 49 to the panels.

The tubular supports 48 and 52 add substantially to the rigidity of the channel strip as hollow structural members. While they are described and illustrated herein as being of substantially triangular configuration, this configuration can be altered by the manner in which the extensions 31 and 32 are scored and formed. The tubular supports 48 and 52 can be formed in half-round, rectangular or other geometric configurations as will be understood by those skilled in the art.

The channel strip is now ready for formation into a frame to receive a bar of soap. FIGURE 4 illustrates one way in which this can be accomplished. The channel strip of FIGURE 2 is folded on the scores 29 and 30 so that the side panels 22 and 23 are substantially parallel and at substantially right angles to the end panel 21. In this position, the bevels 38 and 39 are in substantially abutting relation.

After having been folded into this configuration, the partially erected frame is ready to receive a bar of soap. FIGURE 5 illustrates a bar of soap 53 that has been inserted into the open end of the frame of FIGURE 4.

It is very important to note in FIGURE 5 that the tubular supports 48 and 52 formed on each of the panels, 22 and 23 contact the convex curves of the bar 53 to hold it snugly and to prevent it from moving transversely with respect to each panel.

The package is completed by pivoting the panel 20 on the score line 28. In so doing, the tubular supports 48 and 52 on the panels 20 and 21 contact the convex curves of the bar 53. The glue flap 24 can be tucked inside the end 43 of the side panel 23 as illustrated in FIGURE 6. If desired, the glue flap 24 can be adhesively secured to the contiguous portion of the inside surface of the panel 23. As an alternative, the glue flap 24 can be adhered to the outside of panel 23.

The finished package as illustrated in FIGURE 7 is in the form of a rectangular frame 54 surrounding the bar of soap 53 on four sides. The extremities of the sides and ends of the bar 53 may touch the panels 20, 21, 22 and 23 within the superposed areas 45 and 49. However, this is not necessary to hold the bar firmly in the package. The tubular supports 48 and 52 which surround the inside of the frame 54 at the top and bottom engage the convex surfaces of the bar 53 to hold it firmly within the package.

The package may be used in the form illustrated in FIGURE 7 with the bar exposed and its broad surfaces showing on both sides of the frame. If the bar is to be

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protected from exposure to dirt, etc. the frame can be overwrapped.

FIGURE 8 illustrates an overwrapped package in which a transparent overwrap has been used. The overwrap material is cut in rectangular form, wrapped around the frame 54 to overlap at 55. The ends are tucked at 56 and 57 and the final folds 58 and 59 complete the wrapping. The folds 58 and 59 can be secured by adhesive or by heat sealing if a thermoplastic overwrap material is used. If a heat shrinkable overwrap film is used such as oriented polyvinyl chloride, the package can be heated to impart a shrink to the overwrap film thereby giving the package even greater rigidity and giving a tightly stretched transparent window 60 across the open end of the frame 54. Semi-transparent or opaque overwrap films can also be used if desired.

One modification for forming the tubular supports 48 and 52 is shown in FIGURE 9. The areas 45 and 49 are folded under the tubular supports so that their ends are about in line with the scores 25 and 26, respectively.

A modified frame blank is illustrated in FIGURE 10 wherein like parts are designated by the same reference numerals used in FIGURE 1. The upper and lower extensions are not entirely separated by slots in the FIGURE 10 modification. An outer horizontal score 61 is provided beyond which the upper extensions are continuous and are separated by the vertical scores 62, 63 and 64. Diamond shaped cut outs 65 are formed by the bevels 38 and 39 and the bevels 66 and 67. The bevels 66 and 67 extend from the score 34 and meet at the intersection of the horizontal score 61 with the vertical scores 62, 63, and 64, respectively. The bevels 72 and 73 are provided at either end of the blank to complete the upper extensions.

The lower extensions in FIGURE 10 are congruent to the upper extensions just described and include a horizontal score 68 and the vertical scores 69, 70 and 71 as well as the several diamond shaped cut outs 65. The flat blank of FIGURE 10 can be folded into a channel strip with the tubular supports 48 and 52 in the manner illustrated in either FIGURE 3 or 9.

A further modification in the manner of forming the tubular supports is illustrated in FIGURES 11 and 12 where like parts are again designated by the same reference numerals used in FIGURES 1 and 10. As in the modification of FIGURE 10, the upper and lower extensions are not entirely separated by slots in the FIGURES 11 and 12 modification. An outer horizontal score 61 is provided and an intermediate score 74 is made between the scores 61 and 25.

Triangular openings 75 having one side coextensive with the vertical scores 28, 29 and 30 are cut so that their apex lies on the horizontal scores 74. The right end of the blank is cut in a straight line 43. The upper and lower extensions are congruent as in the previous embodiments.

FIGURE 12 illustrates a fragment of one corner of the frame made from the blank of FIGURE 11 after the folding steps previously described have been followed. It will be noted that the end portion of the tubular support 48 on the panel 22 extends beyond the end portion of the tubular support 48 on the panel 21 so that in effect its end 76 abuts the panel 21. This structure adds even greater rigidity to the package.

In addition to the several modifications already described, it is also possible to form the tubular supports in other cross sectional shapes such as rectangles, for example. Furthermore, if an object of unusual configuration is to be packaged, small portions of the tubular supports can be removed to accommodate projecting portions of the article without unduly affecting the strength of the package.

While particular embodiments of the invention have been illustrated and described it will be obvious to those skilled in the art that various changes and modifications,

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can be made without departing from the spirit and scope of the invention and it is intended to cover in the appended claim all such changes and modifications that are within the scope of this invention.

What is claimed as new is:

A package comprising a frame, said frame being formed from a frame blank generally configured in the form of an elongated strip of paperboard material, said frame blank having two spaced parallel scores running longitudinally from one end of said elongated strip to the other end thereof, a plurality of transverse scores at intervals along the said frame blank and being substantially perpendicular to said parallel longitudinal scores thereby dividing the central portion of the frame blank into four panels including two side panels and two end panels, said side and end panels being alternately spaced along said frame blank, a flap articulated to and extending beyond the panel at one end of said frame blank, an extending portion projecting laterally outwardly from each of the longitudinal scores which define the edge portions of the said panels, each of said extending portions being at least partially separated by angular relief cut-outs outwardly of each of said transverse scores, each of said extending portions being folded into a tubular support, said tubular supports being adhered to their adjoining panels so that each of said side and end panels has a pair of spaced, substantially rigid tubular supports in parallel relationship alongside the longitudinal scores forming the upper and lower extremities of said side and end panels, said side and end panels being folded into a substantially rec-

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tangular frame by folding the said frame blank on said transverse scores so that the said tubular supports face inwardly, a bar of soap embraced within said frame by means of said tubular supports bearing on the convex surfaces of said bar of soap holding the said bar in place after said frame blank is formed into the said rectangular frame, said flap at one end of said frame blank being secured to the panel at the opposite end of said frame blank to complete the frame structure around said bar of soap, said frame structure being overwrapped with a flexible and heat shrinkable plastic film, said film being heated and shunk on said frame structure to impart greater rigidity to said frame structure and to retain said secured flap in the completed package.

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UNITED STATES PATENT OFFICE  
CERTIFICATE OF CORRECTION

Patent No. 3,159,274

December 1, 1964

Robert V. Burt

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 3, line 3, for "substantially perpendicular" read -- substantially perpendicular to --; line 8, for "lower extending portions 32 are congruent with" read -- blank of FIGURE 1 is next folded and formed --; same column 3, line 24, for "to" read -- by --; column 6, line 12, for "shunk" read -- shrunk --.

Signed and sealed this 20th day of April 1965.

(SEAL)

Attest:

ERNEST W. SWIDER  
Attesting Officer

EDWARD J. BRENNER  
Commissioner of Patents