

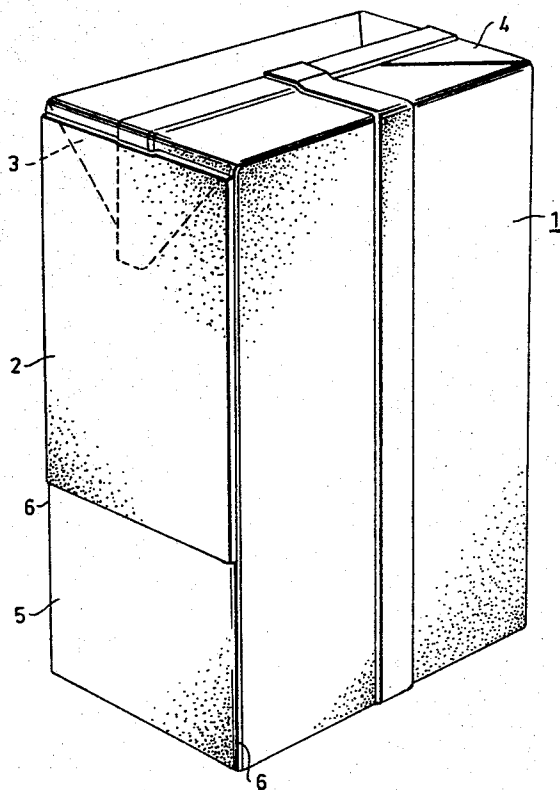
Oct. 18, 1966

T. L. LINDH

3,279,678

FILLED AND SEALED PACKAGE HAVING REINFORCING SIDE PANELS

Filed Jan. 14, 1964



INVENTOR

Thorsten Lennartson Lindh

BY

Pierce, Schiffer & Parker  
ATTORNEYS

1

3,279,678

## FILLED AND SEALED PACKAGE HAVING REINFORCING SIDE PANELS

Thorsten Lennartson Lindh, Husmansvagen 25F,  
Lund, Sweden

Filed Jan. 14, 1964, Ser. No. 337,662

Claims priority, application Sweden, Jan. 16, 1963,  
444/63

1 Claim. (Cl. 229—17)

The present invention relates to a filled and sealed package of flexible, relatively rigid packaging material and more particularly to a package of the kind which is prepared from a tube through which filling material is fed and which is divided off through successive transverse sealing operations along narrow zones located at a distance from each other along the tube axis, and is thereupon given the desired shape and divided off so as to form individual packaging units by means of cuts through the said sealing zones, comprising a packaging body containing at least one essentially plane side wall panel defined by straight lines formed by folding, over which panel the package is meant to be grasped.

At the forming operation which is required in order to convert a blank prepared e.g. from a tube through successive transverse sealing operations into a package having for instance a parallelepipedic form, double-walled, essentially triangular corner flaps are formed from the surplus material which cannot be converted into parallelepipedic form for reasons of geometry.

Packages of the present kind, which are preferably used for liquid filling material, are preferably made from packaging material coated with some thermoplastic material, e.g. polyethylene, Elwax, wax or lacquer, which is liquid proof in itself and permits liquid-proof seals to be made in a simple and inexpensive way by pressing two material surfaces coated with thermoplastic material against each other, while heat is simultaneously supplied, whereby the coatings facing each other will fuse along the zones exposed to pressure and heat. Should it for any reason be considered more preferable to unite the sealing joints by means of glue, this is also possible.

Further advantages of a package of the present kind are that it can be manufactured in a practical way, starting from a plane web of material which is shaped into a tube, which is filled, divided off and sealed by successive transverse sealing operations, thereupon separated off and finally converted into individual packaging units of the desired shape.

As packages prepared in accordance with the method described here cannot very well be made from packaging material which is too rigid and cannot be worked in the manner described above, the walls of the finished package become relatively weak and will buckle easily when the package is grasped with the hand.

When the package is grasped in such a way that stress is applied between the edge lines defining one side panel of the package, so called "rolling cracks" will also form, i.e. the packaging material will crack adjacent the said edge lines, whereby a new edge crack or crease will form inside the original one. If the grasping stress acting transversely over the side surface, i.e. if the grasp is maintained, the cracking of the packaging material is repeated successively, and the cracks or creases formed can be said to "roll" in over the side panel, which results in the panel losing its rigidity in the transverse sense.

Quite naturally, it is known to manufacture packagings having such rigid walls that the above drawbacks will not appear. However, in such cases the packages must be prepared in another way than described above, viz. by transverse sealing and shaping of a tube, since material which is too rigid cannot be shaped in this way.

2

The present invention, which aims at removing the drawbacks of a package having weak walls, is characterized in that a panel of relatively rigid material, wholly or partly covering one plane side wall of the package is fixed to the plane side wall panel in order to make it rigid and thus prevent the above-mentioned "rolling cracks" from forming.

The invention will be described in the following with reference to the enclosed diagrammatic drawing showing a package of the kind manufactured by submitting a tube to successive transverse sealing operations and subsequently shaping it into parallelepipedic form.

The packaging body 1, which is made from material that is relatively rigid but still flexible to such a degree that it can be formed in accordance with the method described above, is provided at the top portion of one of the narrower side walls 5 with a panel 2 of rigid material. In order that it may have a reinforcing effect, it is, of course, preferable that the panel 2 extends beyond the full width of the side wall 5 defined by the edge lines 6 and that it is fixed to the said side wall along a substantial portion of its surface.

As the purpose of the panel 2 is to reinforce the side wall 5 within the areas, i.e. between the edge lines 6, where a hand will grasp when the package is to be emptied of filling material, it is, of course, advisable to dispose the emptying outlet 4 of the package at the side surface of the packaging body 1 which is opposite to the side wall 5. The panel 2 should be applied on the flap 3 which is folded in towards the side surface and partly concealed in the figure, so that the said flap 3, which is not very pleasing from an aesthetical viewpoint, will be concealed. In order quickly to obtain a durable connection between the panel 2, the side wall 5 and the flap 3 it is advisable to coat both the panel 2 and the outside of the packaging body with a thermoplastic material. This connection can be brought about by supplying heat while the said parts are being pressed against each other.

The panel 2 may be provided with a suitable decor or informative or advertising text.

This embodiment of the invention has turned out to be particularly suitable since at the manufacture of the package of the kind described in the embodiment it has previously been queried whether it is possible to use a flexible material of such a kind that it can be shaped starting from a tube, and use a material which is so rigid that "rolling cracks" will not appear at the side walls of the finished package when the package is grasped by the hand.

These requirements of the packaging material are largely controversial, at least in suitable materials or combinations of materials of known kinds, and at the manufacture of the said packages it has therefore been necessary to make a compromise between the rigidity of the material and its ability of being shaped from a tube in the manner described above.

By means of the reinforcing panel applied to the packaging body according to the invention it is consequently possible to use a packaging material which permits the use of a more practical and more inexpensive method of making packages by submitting a tube to transverse sealing operations, at the same time as the finished package will obtain, by the application of the reinforcing panel, an acceptable resistance to cracking within the areas where the hand will grasp the package, for instance when filling material is to be emptied from the package.

Of course, it is possible to find other solutions of details within the scope of the inventive idea. Thus, the reinforcing panel may have U-shape and may comprise part of the sides which are adjacent to the reinforced side wall, or the reinforcing panel may be allowed to project somewhat from the edge lines of the side wall.

## I claim:

A filled and sealed package of the kind which is prepared from a tube through which filling material is fed and which is divided off through transverse sealing operations along narrow zones located at a distance from each other along the tube axis, and is then separated so as to form individual packaging units by means of cuts through the said sealing zones, and given a parallelepipedic form, said package comprising four plane side wall panels and plane top and bottom wall panels of relatively flexible material, a first and a second of two opposite side wall panels being connected to said top wall panel by two triangular double-walled flaps, one of said triangular flaps connecting one edge of said top wall panel and the upper edge of said first side wall panel being arranged to constitute a pouring outlet for the contents of said package and the other said two triangular flap located at the opposite edge of said top wall panel being folded downwardly against said second side wall panel, and a further reinforcing panel of relatively rigid material overlying and secured against at least a substantial part of said second side wall panel only and covering said other

triangular flap thereby to reinforce said second side wall panel and increase its resistance to formation of cracks therein when the package is grasped by the user for emptying its contents through said pouring outlet.

## References Cited by the Examiner

## UNITED STATES PATENTS

|           |         |                  |        |
|-----------|---------|------------------|--------|
| 1,137,281 | 4/1915  | Peterson.        |        |
| 1,940,078 | 12/1933 | Cooper           | 229—55 |
| 1,994,923 | 3/1935  | Ross             | 229—17 |
| 2,192,722 | 3/1940  | Vogt             | 229—55 |
| 2,214,172 | 9/1940  | Moore            | 229—55 |
| 2,463,992 | 3/1949  | Moore            | 229—55 |
| 3,065,895 | 11/1962 | Lipschutz et al. | 229—14 |
| 3,083,890 | 4/1963  | Ignell           | 229—17 |

JOSEPH R. LECLAIR, *Primary Examiner.*

FRANKLIN T. GARRETT, GEORGE O. RALSTON,  
*Examiners.*

V. A. TOMPSON, J. F. McNULTY, R. PESHOCK,  
*Assistant Examiners.*