Jan. 16, 1968 M. MAULINI ETAL 3,363,822

DOUBLE CONTAINER HAVING AN INNER BAG OF IMPERMEABLE MATERIAL

Filed Oct. 24, 1965

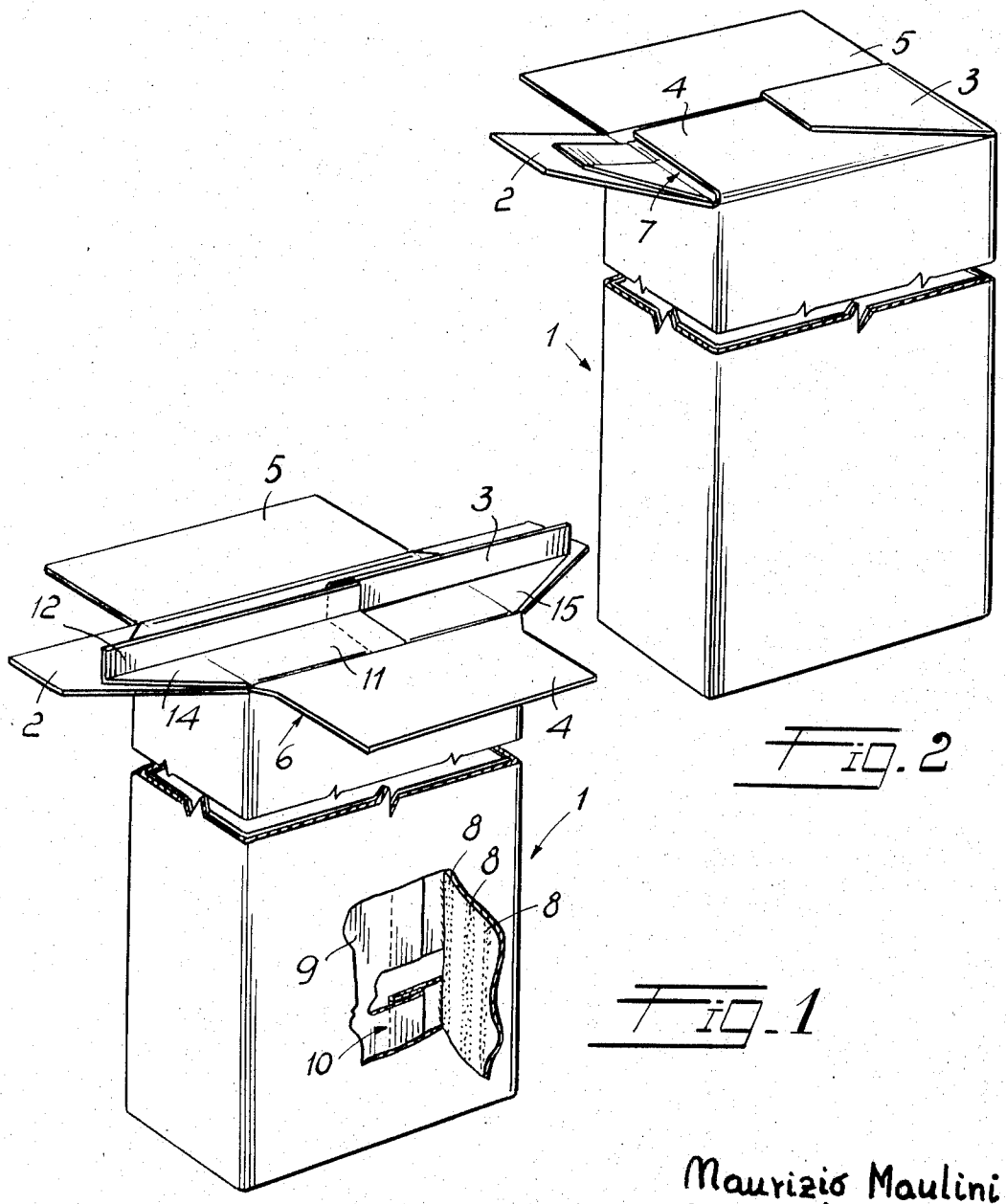


Fig. 2

Fig. 1

Maurizio Maulini
Franco Aiuola
INVENTORS

BY

Agent

United States Patent Office 3,363,822
Patented Jan. 16, 1968

3,363,822

DOUBLE CONTAINER HAVING AN INNER BAG OF IMPERMEABLE MATERIAL

Maurizio Maulini and Franco Aiuola, both of Via Fioravanti 27, Bologna, Italy

Filed Oct. 24, 1965, Ser. No. 504,933
Claims priority, application Italy, Feb. 27, 1965, Patent 747,616
1 Claim. (Cl. 229—14)

ABSTRACT OF THE DISCLOSURE

This invention relates to a container in the form of a carton having an inner bag of flexible sheet material at least partially adhered to the inner surface of said carton, said carton having closure flaps at least on one end thereof and said bag having at least one closed end thereof formed with laterally projecting ears arranged between the said closure flaps of the carton, thereby clamping said ears therebetween and securing the closed end of the bag on the carton.

The present invention relates to a double container for liquids, loose materials, hygroscopic materials, viscous materials and the like, made of paper or paper-like materials, in which a inner impermeable bag is secured to an external rigid box in the range of the head or bottom parts thereof.

Containers made of paper board or paper or similar materials and having an hermetic seal are sometimes made of two distinct parts: a first one which is in the form of a bag and is fomed of a tubular element of impermeable material (films of plastics or plasticized paper or paraffin coated material) the ends of which, after the filling occurred, are compressed one against the other and then,welded or adhered, and a second part forming an outer box having a certain rigidity, wherein the bag is introduced, so that it remains conveniently protected.

Such containers have, at least in their current embodiments, some imperfect ions and give rise to certain drawbacks, which make their use non practical and not reliable, particularly in view of the possibility of breaking of the impermeable bag at the head portions thereof, since this bag is not completely supported in said zones by the corresponding parts of the rigid box.

It is a principal object of the invention to provide a container of the type having two envelope members, which substantially obviate the drawbacks affecting those currently in use. More particularly it is an object of the invention to provide a container, in which the two envelopes which form the container are connected together at the head or bottom parts. These and other objects are reached by a container according to the invention which comprises a first outer box made of rigid material having two wings and two lateral extensions at each of its two mouths, each wing having cutouts defining a slot, an inner bag made of impermeable material, said inner bag having top portions extending beyond the mouths of said box and having in filled and closed conditions top portions formed of adhered border parts and lateral triangular extensions obtained by bending in outward direction, towards said extensions the lateral sections of said top portions of the inner bag. The invention is diagrammatically illustrated by way of example in the accompanying drawings, in which:

FIG. 1 is a perspective view of a container according to the invention, with opened top portions, and with a part of the wall of the outer rigid box supposed to be broken, and the broken part to be turned open in the manner of a door.

FIG. 2 is a similar perspective view of the same container, with its top portions in partially closed condition.

Referring more particularly to the drawings, the container comprises a box or carton 1, preferably made of paper board or similar material, which has been subjected to conventional operations to form a series of bends and has been then folded so as to form a tubular element having a quadrilateral cross section, which is adhered along a corner and the walls of which are extended at the two ends by lateral extensions or small closure flaps 2 and 3 and by wings or recessed larger closure flaps 4 and 5.

The lateral extensions are of equal trapezoidal shape, while the wings or recessed larger closure flaps 4 have on their sides cutouts 6 which reduce the width so that, when they lie across the top or bottom of the box on a plane which is perpendicular to the axis of the tubular element, they give rise, with the assistance of the borders of the lateral walls, to slots or passages, generally indicated by 7. The wings or larger closure flaps 5 (one at the top, one at the bottom of the box) keep a shape which shows no width reducing cutouts.

In the inside of the box, a bag 9 is adhered at zones 8 conveniently coated with adhesive material, said bag being preferably made from a sheet, the opposite parallel borders of which are brought to overlap, the inner side against an inner side and are then doubly folded as seen in 10 in FIG. 1.

The bag 9 extends at its ends beyond the mouths of the box with end portions, of which only the top end portions 11 are seen in the drawing, since the bottom end portions are assumed to be within the closed box bottom. The two top portions 11, have each a size corresponding to half the maximum transverse width of extensions 2 and 3, said portions 11 ending with borders 12 which have their internal surfaces adhered one against the other, in the vertical axial plane of the box 1 in the position shown in FIG. 1. When the bag is filled or erected, this condition gives rise to a prismatic body portion, as far as the part exceeding the filled volume is concerned, on top of which body the triangular ears 14 and 15, adjacent to the adhered border 12 project.

When this border 12 is folded over the portion 11, a thickness deriving from three layers of the bag forming sheet is obtained, which thickness becomes four times as large as that of the sheet in the range of the triangular ears 14, 15 when the border 12 is folded thereover and when the ears 14 or 15 are folded, together with the end portions of the border 12.

On the top portions 11, there is a zone, which, when seen in sectional view, has a thickness corresponding to that of seven superposed sheets. Now the inventive feature to provide a cutout 6 and thus a slot 7 allows the wing 4 to be folded on the multiple folded bag end portions 11, 12, 14 or 15, thus bringing about an efficient supporting of the top of the inner bag, which is a feature failed to be achieved by containers according to the prior art. Folding of the wing 5 on the wing 4 and adhering or welding by heat techniques ensures a tight seal of the container mouth ends.

It may be seen from this description of the inventive container that an article is obtained which is suitable for mass packaging techniques.

We claim:

1. A container with a carton and an inner bag of flexible sheet material at least partially adhered to the inner surface of said carton, said carton having a body portion of prismatic shape, when in erected position and a top and a bottom end having edges defining the cross-sectional area of said body portion, said carton having further closure flaps at least on one end thereof, said closure flaps including two opposite small closure flaps

extending over an area less than said cross-sectional area and two opposite larger closure flaps extending each over an area corresponding to said cross-sectional area, the folding lines of said larger closure flaps extending perpendicular to the folding lines of said small closure flaps, one of said larger closure flaps having cut-out portions near the edges thereof nearest to said small closure flaps to provide passage between said recessed larger closure flap and said small closure flaps, said inner bag having at least one closed end thereof formed with laterally projecting ears passing through said passage when folded over said recessed larger closure flap, where in according to the improvement said recessed larger closure flap when folded is arranged with its inwardly facing surface in contact with said closed end of the bag, and with its outwardly facing surface in contact with said ears folded thereon, said small closure flaps extending, when folded, over said ears and in contact therewith thereby clamping

said ears between said small closure flaps and said recessed larger closure flap and completely covering said ears, and wherein said other larger closure flap when folded contacts with its inwardly facing surface the outwardly facing surface of said small closure flaps.

References Cited

UNITED STATES PATENTS

2,879,933	3/1959	Bergstein et al.	229—14
3,113,712	12/1963	Kindseth	229—14

FOREIGN PATENTS

545,380	3/1959	Belgium.
93,219	4/1962	Denmark.
960,832	6/1964	Great Britain.

DAVIS T. MOORHEAD, *Primary Examiner.*