

28 JUL 2000

PACKAGING BOX FOR BOTTLES

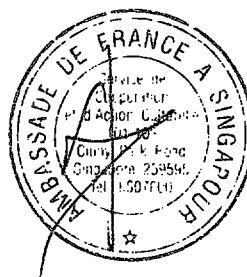
The present invention concerns a packaging box intended to protect bottles during its transportation or handling and is suitable to be used for the presentation of the product that is contained in the bottles in places that display goods for sale.

The bottles containing quality drinks such as fine wine and liqueurs, are often sold individually, each being put in a packaging, that is certain first of all to protect the bottle during transportation and handling, but which also presents often an esthetic character. Of course, the invention is not limited to that of wine and spirits, nor to drinks in general, this invention can be used for goods in other domain, which can benefit in the same way with the same functions. It can also be used equally as a packaging box for all types of bottles or other containers, whatever the physical nature or chemical contents.

Normally, we use inflexible tube, in cardboard or in similar material, which may show some parts, for example in metal. These packagings are made to give a good protection for the bottle, but stocking them in the place of production requires considerable space and high cost.

We know besides, the packaging boxes which are made from cardboard moulds or similar show prepared folding lines. Such boxes always show actually a rectangular or square section when the boxes can be stocked flat, in general in the shape of simple moulds in a layer which are then opened by producing a base and eventually a cover at the time of packaging.

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The process of producing these boxes are relatively complex and take a lot of time. Besides, it is difficult to obtain a solid base which will not fall apart during transportation or handling.

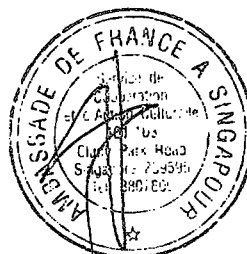
It is therefore desirable to have a packaging box for bottles that provides a definite protection, in particular concerning the strength of the base, which can be stocked flat, and in which producing it is easy and requires little time.

For this purpose, this present invention aims to produce a packaging box for bottles, in flexible material such as the cardboard, designed such that the box has an opened mould consisting of a lateral surface in two identical parts folded one on the other according to a generating lateral, so as to be able to be stocked flat, and two identical base elements having the shape of a half-section of the box in an opened position and comprising each a base flap set to the length of its diameter, the two base flap being glued to one another in a way that makes an element that strengthens the base and the grip, the unfolding of the box, upon receiving a bottle, is obtained by pushing the two base elements in the lateral surface, where this piece is blocked automatically by jamming.

The packaging box according to the invention can be stocked flat and therefore does not require a large storing space. Its unfolding is made by a simple and rapid manoeuvre and the blocking effect is made by jamming the two base elements, this makes it possible to obtain a solid base that will not lose its shape or come apart.

Favourably, each of the two base elements is joined to the lateral surface by a strengthening flap in which the width corresponds to the one of the base flap and which is closed towards the interior of the lateral surface in such a way that the base elements pulls back into the lateral surface and the free

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edge of the two strengthening flap forms, with the interior side of the lateral surface, the support base of the box.

Thanks to this layout, we obtain a laterally strong base which is particularly solid. Furthermore, the support base of the box consists of a diagonal component made up of the edge of the two strengthening flap, which makes it possible to obtain a reliable base support.

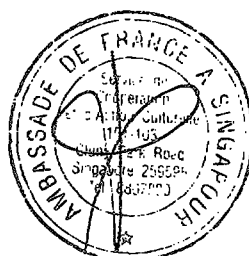
According to another characteristic of the invention, the lateral surface is made of three upper strengthening flap and a cover element joined to its upper side in a way to produce an upper square section box. This layout allows a better positioning of the boxes next to each other without having a gap between them, when we keep to an arrangement of square formation the most often however, we will prefer that the section is round throughout the height of the box.

The two parts making up the lateral surface can have the shape of a trapezium rectangle, which allows to produce a sawn-off cone box.

Each part of the lateral surface may consists of, a narrow interval from each of its vertical sides, a folding parallel line of the said sides, which makes it possible to produce an oval section box in which the set up is facilitated to the extreme of its big axis.

Favourably, the said parts of the lateral surface are assembled to one another by gluing to the middle of a pasting flap set to the length of the free side of one of the parts and glued on the free side of the other parts. Besides, one of the strengthening lateral flap is cut out to a length that corresponds logically to the width of the pasting flap. This layout makes it possible to avoid an over thickness in the level of the base of the packaging box.

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According to yet another characteristic of this invention, each part of the lateral surface consists of a middle cover element having the shape of the half section of the box in an opened position.

The cover is obtained by folding the two cover elements inside from the upper part of the box.

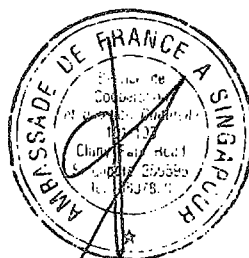
Favourably, each cover element is made up of two half sections joined by a strip in which is obviously centrally fitted, the upper half section of one of the cover elements consists of a flap that projects on the diameter of the upper half section and is made obviously to engage itself to the other cover element and this consists of a flap that projects on the diameter of the lower half section and is made obviously to engage itself to the first cover element.

This makes it possible to obtain a cover with double surface in which the two elements are blocked the one in the other, such cover does not risk breaking down during transportation or handling of the box.

Favourably, each obviously consists, a flap on its opposite side, two central support flap from the other cover element. This improves the solidness of the cover.

According to yet another characteristic of the invention, the base flap consist of two sides, a non-stick extension that folds on its own at the time of unfolding. These two extensions strengthen the support base to the extreme level of the base flap, what is particularly advantageous in the case of packaging boxes in which the base is of oval section, even more when its side is circular.

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All the above-mentioned elements stated above of the packaging box are joined together by a folding line, which facilitates the opening and the set up of the packaging box.

Other favourable characteristics of the invention will come from the following description, done with illustrative heading by referring to the designs, (see annex) in which :

- Figure 1 represents a mould made to produce an oval section packaging box,

- Figure 2 represents the mould of the figure 1 after being folded and glued making up a packaging box that can be stocked flat,

- Figure 3 is a perspective view of the packaging box obtained,

- Figure 4 is a view from below of the box of figure 3,

- Figure 5 represents a mould made to produce a packaging box with a lower circular section and an upper square section,

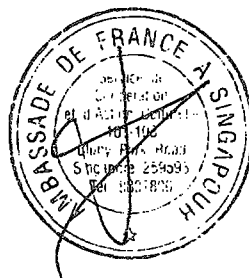
- Figure 6 represents the mould of figure 5 after being folded on itself and glued,

- Figure 7 represents the box obtained at the time of unfolding,

- Figure 8 is a view from below of the box of figure 7.

- Figure 9 is a partial view of the upper part of a mould made to produce a box with a circular section consisting of a double cover and,

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- Figure 10 is a partial cross section view of the upper part of the box produced with the mould from figure 9.

- On these drawings, the dotted lines represent the prefolded lines.

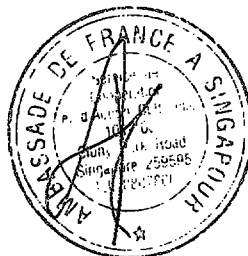
Figures 1 to 4 relates to an oval section packaging box. This box is produced from a cut out mould of a sheet of cardboard and consists of prefolded lines. This mould 1 is made up of a lateral surface consisting of two identical parts 2 and 3 separated by a prefolded middle line 4 which is a generating lateral of the lateral surface. One of these parts 3 present on its free vertical side a pasting flap 5 which is separated by a prefolded line 6.

Other prefolded lines 7, 8, 9 and 11 are produced respectively close to each other from the two free vertical sides and close to the middle prefolded line 4, on either side of the latter.

Each part 2 and 3 of the lateral part is made up of, the length of its lower side, a strengthening lateral flap 12, respectively 13, the strengthening lateral flap 13 of the part 2 which does not consist of a pasting flap being cut out to the length that corresponds logically to the width of the pasting flap 5, . This means logically to the level of the prefolded line 8. The other prefolded lines 7,9 and 11 extend themselves on these flap 12 and 13.

On these flap 12 and 13 a base element 14 , respectively 15 is joined, in which the shape corresponds to the half-section of the packaging box to be produced, a base flap 16, respectively 17, being set to the diagonal length of the element 14, respectively 15, being joined by a prefolded line 18 respectively 19. Each of these base flap 16 and 17 consist of, at its tip, an

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extension 21, 22, 23 and 24 which is connected by a prefolded vertical line 25.

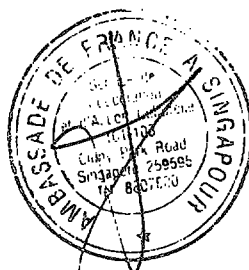
In order to obtain a packaging box for bottle ready to use but able to be stocked flat, we fold again, half of the mould 1 one on the other by folding the length of the middle prefolded line 4 and we glue the pasting flap 5 on the free vertical side of the part 2 in such a way that the pasting flap is found inside. The strengthening lateral flap 12 and 13 are folded and pulled down towards the interior of the two base elements 14 and 15 being folded in the other sense. We glue the two base flap 16 and 17 one on the other and, eventually, the strengthening lateral foot are glued on the inside at the base of the box.

We obtain then the mould folded again on itself and glued which is represented on figure 2.

In order to open and make the packaging box of an oval section which is represented in figure 3, we push back lightly the two lateral surface to the base level and we take hold of the two base flap 16 and 17, which are glued to one another, to push the base elements 14 and 15 to the inside of the lower part of the box. We introduce the bottle to be packed through the top of the box, in which the interior surroundings is adjusted to the exterior surroundings of the bottle in such a way that it creates a piston effect which slows down the bottle in its movement of descent in the box. In fact, the bottle descends itself on the account of its weight when stored to come in contact with the base elements 14 and 15 which are folded again on the inside of the box.

To understand better the structure of the base of the bottle, we represented, on figure 4, the different elements separated from each other, while the elements are in contact, and even glued to one another for certain ones.

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We see the two parts 2 and 3 of the lateral surface with the prefolded middle line 4, and the pasting flap 5 which is glued at the end of the part 2 to the inside of the box. We see the edge of the lateral strengthening flap 12 and 13 which are turned down to the length the two parts 2 and 3 of the lateral surface, the two elements 14 and 15 and the edges of the base flap 16 and 17 which are glued to one another. The extensions 21, 22, 23 and 24 of the base flap 16 and 17 are folded and turned down in a way that it strengthens the support base to the extreme level of the big axis of the base of the box.

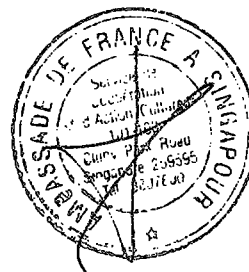
Figure 5 represents a mould made to produce a packaging box presenting on its lower part a circular section and, on its upper part, a rectangular section. The lateral surface is made up of two parts 2 and 3, which has the shape of a rectangular trapezium in such a way that the lateral surface has the shape of an isosceles trapezium in which the upper base is larger, which makes it possible to obtain a packaging box for a bottle with a circular section in a sawn-off cone shape, the diameter of the bottle increases towards the top.

We find on this mould the prefolded middle line, the pasting flap 5, the prefolded line 7, the two lateral strengthening elements 12 and 13, the two base elements 14 and 15, and the two base flap 16 and 17.

On its upper part, the mould 1 of figure 5 is made up of three upper strengthening flap 31, 32 and 33 and a cover element 34 consisting of a flap 35.

The production of the box in figures 5 to 8 is made in a similar way to the one on figures 1 to 4, the pasting flap 5 being glued on the inner side of part 3' of the lateral surface and two base flaps 16 and 17 glued to one another, the two strengthening lateral flaps 12 and 13 are turned down towards the inside of the box and

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Singapour, le 25/11/20



eventually glued on the inner side of the lateral surface. We obtain then the folded box in figure 6, which can be stocked flat.

In order to unfold the box, we operate in the same manner, by taking hold of the base elements and going through the flaps 16 and 17 and by pushing the inner of the box where they are jammed. We obtain then the box which is represented on figure 7.

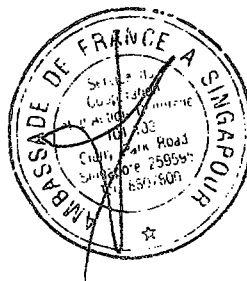
Figure 8 is similar to figure 4 where we find all the elements that makes up the base of the bottle.

We see on figure 7 that we obtain a box in which the lower section is round and the upper section is square, which may allow a better positioning of the bottles when we put several in a packaging element such as a case, due to the square shape of the upper part of the boxes, the ones here are arranged in an adjacent manner to its upper part, without the possibility of a gap nor moving.

The figures 9 and 10 represent a variant of producing the cover in the preferred case of a bottle with a circular upper section. The mould 1 is made up of the base length of its upper two cover elements 41 and 42, in the shape of a half circle, which are pushed towards the inner of the box when the mould has been unfolded and the bottle is put in place. The two cover elements 41 and 42 come in contact through its diameter and close the upper part of the box.

In the production method in figure 9, each cover element consists of another cover element in the shape of a half circle 43, respectively 44, which is joined to the first cover element by a strip 45, respectively 46.

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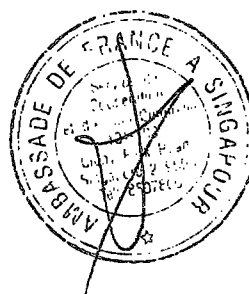
In each of the strips 45 and 46 we make obviously a centre 47, respectively 48. The upper cover element 43, consists of a flap 49, to project obviously 47. In a similar way, the lower cover element 42 consists of a flap 51 to project obviously 48. On the opposite side of the flap 49, respectively 51, obviously 47, respectively 48, consists of two central support 53, respectively 54.

This structure makes it possible to produce a much more solid cover, of double surface, as being illustrated on figure 10. For this purpose, when the bottle is in place, we fold back the two strips to a right angle 45 and 46 and the two exterior cover elements 43 and 44 in such a way that the two cover elements 41 and 43, respectively 42 and 44, are parallel to one another. The flap 49 of the upper cover element 43 between obviously 48 of the flap 46; in a similar way, the flap 51 of the lower cover element 42 go in obviously 47 of the strip 45; We obtain then a double locking of the two cover one in the other and the blockage is still improved by the centring of each flap 49 respectively 51, between the support 54, respectively 53.

This general cover structure of two half sections can also be used to produce a handle. Favourably, the prefolded lines of the lateral surface are produced with a tracing tool making a cut of half-thickness. This facilitates the folding of the lateral surface. On the contrary, the other prefolded base lines and the cover are made with a cutting tool that squash the cardboard in order to produce a groove. The groove lines fold less easily than the traced lines and have the tendency to bring together an elastic resistance as an effect of springing back.

We see that the invention makes it possible to produce

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packaging boxes for bottles of strong structure that have resistance during transportation and handling. The moulds that are being used for the production of the packaging for bottles are glued and folded on themselves, the boxes can be stocked flat in a small space.

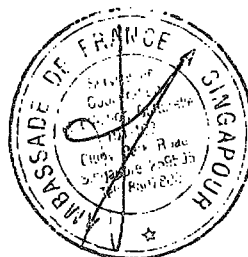
The unfolding of the boxes is done in a simple and fast manner while assuring a good strong base and, if need be, a cover.

The invention applies well to bottles with oval section as well bottles of sawn-off cone shape that widen towards the top. However, the description provided here is only an example and it is evident that we are able to make modifications and variants without getting out of the scope of the present invention.

In particular, we can use other flexible materials than the cardboard, especially synthetic materials like polyvinyl chloride,

We can also design the packaging combining different possibilities which have been described above, for example boxes meant for bottles of oval and sawn-off cone sections.

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CLAIMS

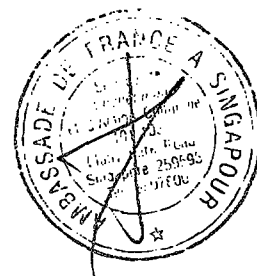


1. Packaging for bottles (1), in flexible material such as the cardboard, characterised in what is made up of an opened mould consisting of a lateral surface in two identical parts (2, 3, 2', 3'), folded one on the other according to a generating lateral (4), in a way that it can be stocked flat, and two identical base elements (14, 15) having the shape of a half-section of the box in an opened position and consisting each a base flap (16,17) set to the length of its diameter, the two base flap (16,17) being glued to one another in order to produce an element that strengthens the base and the grip, the opening of the box, upon receiving a bottle, being obtained by pushing the two base elements in the lateral surface where this piece is blocked through jamming.

2. The box according to claim 1, characterised in each of the two base elements (14, 15) is joined to the lateral surface (2, 3, 2', 3') by a strengthening lateral flap (12,13) in which the width corresponds to the base flap and which is turned down towards the inside of the surface in such a way that the base elements (14 and 15) are pulled back in the lateral surface and that the free edge of the two strengthening flap (12, 13) forms, with the lower sides of the lateral surface, a support base for the box.

3. The box according to claim 1, characterised in the lateral surface consists of three upper strengthening flap (31, 32, 33) and a cover element (34, 35) joined to its upper side in a way to produce a box of an upper square section.

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Singapour, le 25/7/80





4. The box according to claim 1, characterised in the two parts (2, 3') is made up of the lateral surface which has the shape of a rectangular trapezium in a way to make up a box of a sawn off cone shape.

5. The box according to claim 1, characterised in each part (2, 3, 2', 3') of the lateral surface is made up closely to each of its vertical sides, a prefolded line (7, 8, 9, 11), parallel to the said side, in a way to produce an oval section box.

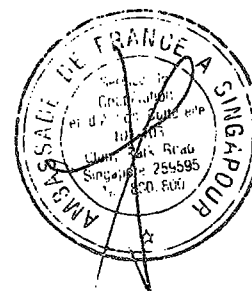
6. The box according to claim 1, characterised in the two parts (2, 3, 2', 3') of the lateral surface are assembled one on the other by gluing to the middle of a pasting flap (5) set to the length of the free side of one of the two parts and glued on the free side of the other part.

7. The box according to claim 6, characterised in one of the strengthening lateral flap (13) is cut out from a length corresponding logically to the width of the sticking flap.

8. The box according to claim 1, characterised in each part (2, 3, 2', 3') of the lateral surface consists of a middle cover element (41, 42) having the shape of half section of the box in an opened position.

9. The box according to claim 8, characterised in each cover element is made up of two half sections (41, 42, 43, 44), joined by a strip (45, 46) in which is fitted obviously a centre (47, 48), in which the upper half section (43) of one of the cover elements is made up of a flap (49)

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to project on the diameter of its upper half section and made to engage itself obviously (40) to the other cover element, and in which the other cover element is made up of a flap (51) to project the diameter of its lower half section and made to engage itself obviously (47) to the first cover element (41).

10. The box according to claim 9, characterised in each obviously (47, 48) consists of, on its opposite side of the flap (49) the corresponding cover element, two central support (53, 54) of the equivalent flap (49) of the other cover element.

11. The box according to claim 1, characterised in the section of the lateral surface is adjusted to the one of the bottle to be packed, at least closely to its base.

12. The box according to claim 2, characterised in which the base flap (16, 17) consists of, two sides, non-stick extension (21, 22, 23, 24) which folds on itself at the time of unfolding.

13. The box according to claim 1, characterised in which all the elements belonging to the said mould are joined between themselves by a prefolded line.

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