

Bottle including a safety corking

The present invention relates to the field of beverage containers, and more particularly to a bottle intended to contain a beverage, in particular an
5 alcoholic beverage.

The production and marketing costs of high-quality alcoholic beverages, such as spirits, result in high sale prices. These high prices generate, as is often for luxury goods, fraud as well as acts of counterfeiting. Thus, there is regularly observed the apparition on the market of counterfeit bottles, that is to say
10 having the external apparition of an authentic bottle, but filled with a bad quality beverage, much less than the quality of the original product. This phenomenon of counterfeiting is in particular important for high quality spirits, such as cognac for example.

For economic, safety and brand image reasons, the concerned
15 producers are vigorously fighting against these acts of fraud and counterfeiting. This fight results in particular in the manufacture of bottles including increasingly advanced anti-counterfeiting devices, aimed at preventing the exact reproduction of a bottle and/or its reuse. Many solutions have been proposed for this purpose. These solutions generally consist in using secure plugs, the
20 manufacture of which is expensive and complex.

Embodiments of the present invention seek to propose an anti-counterfeiting device for a bottle which has an optimum safety level, and which is simple and inexpensive to implement. Embodiments of the invention also seek to allow presenting information to the consumer before opening the bottle,
25 in particular for the purpose of allowing the authentication of the bottle by the consumer.

An aspect of the invention provides a bottle intended to contain a beverage, such as an alcoholic beverage, said bottle including a body whose upper end includes a neck, the neck of the bottle ending with a mouth and
30 receiving a plug, the bottle being provided with a safety corking, said safety corking including:

- a security label whose first part is adhered to the plug and whose second part is adhered to the neck of the bottle, and
- a cover covering at least partially the plug and at least one part of
35 the neck of the bottle, said cover also covering at least one part of the security label,

the security label further including

- a lower portion projecting from a lower edge of the cover, and bearing a first code, for example an optically readable code, the first code being representative of a unique identifier of the bottle; and

5 - an upper portion, covered by the cover, adhered to the plug, and bearing a second code, for example an optically readable code, the second code being representative of a unique identifier of the plug.

10 Thus, by providing a security label disposed under the cover of the bottle, the security label is protected and the access to said security label requires unsealing the cap. In an advantageous embodiment of the invention, the cover is adhered to the bottle, which may constitute an additional protection. Furthermore, the invention may have the advantage of being adapted to any type of bottles and plugs, without requiring any modifications. In an advantageous embodiment of the invention, the presence of the first and second codes may allow certainly authenticating a bottle, and, also, may
15 guarantee that its content cannot be modified or exchanged fraudulently. Indeed, when these codes correspond respectively to a unique identifier of the bottle and to a unique identifier of the plug, these two codes may be associated in a database updated by the producer of the beverage. The checking, by the consumer, of the correspondence between the first and second codes allows
20 authenticating the concerned bottle. The arrangement of the second code, masked under the cover and consequently invisible before the tearing of the cover prior to the first opening of the bottle, may allow increasing the safety of the corking and limiting any possibility of fraud. Furthermore, when the second code is representative of a unique identifier of the plug, the reconstitution of
25 fraudulent bottles with recovery plugs may be avoided.

 In an embodiment, the top portion is adhered to an upper surface of the plug.

 In an embodiment, the upper portion is adhered to a lateral surface of the plug.

30 In an embodiment, at least one portion of the security label is definitively modified in case of detachment, for example by a color change.

 In an embodiment, the cover is a metal cap adhered to the neck of the bottle, preferably by means of a safety adhesive.

35 In an embodiment, the cover is made of a shrinkable sleeve, in particular a sleeve made of a heat-shrinkable plastic material.

In an embodiment, the shrinkable sleeve is adhered to the neck of the bottle, preferably by means of a safety adhesive.

In an embodiment, the security label includes in the vicinity of the mouth a pre-rupture area, such as a precut line.

5 In an embodiment, a marking is etched at the interface between the cover and the neck of the bottle, such that a part of said marking is etched in the cover, the other part being etched in the bottle.

In an embodiment, the marking is etched by means of laser.

10 In an embodiment, the first code remains readable even after detachment of the lower portion of the security label.

In an embodiment, the second code remains readable even after detachment of the upper portion of the security label.

15 In an embodiment, the first and/or the second code(s) is(are) a two-dimensional optically readable code(s), for example a QR type code or a Datamatrix type code.

In an embodiment, the security label includes a radio frequency identification system.

20 In an embodiment, the radio frequency identification system includes an electronic chip and an antenna, the antenna being arranged such that the first opening of the plug causes the rupture of the antenna.

The invention also concerns a checking system of the authenticity of a bottle containing a drink, said bottle being as defined above, the system including a server including a database, the database including data relating to the manufactured bottles, these data including in particular, for each bottle, a
25 unique identifier of the bottle and a unique identifier of the plug associated to this bottle

30 In an embodiment, the database included in the server is remotely accessible, for example from a portable apparatus, such as a mobile phone, the server being configured to transmit data relating to a bottle in response to a request including the first corresponding to said bottle.

In an embodiment, the server is configured to transmit data allowing confirming the authenticity of a bottle, in response to a request including the first and second codes of said bottle.

The invention subject of the present application will be better understood upon reading the following detailed description, made with reference to the appended drawings, among which:

- figures 1 shows a bottle in accordance with the invention;
- 5 - figures 2a and 2b are partial views of the bottle of figure 1, after removal of the upper part of the cover, and before the first opening of the plug,
- figure 3 is a view similar to that of figure 2a, but after a first opening of the plug;
- figure 4 is a partial view of a variant of the bottle of figure 2a.

10 The figure 1 shows a bottle 1 in accordance with the invention. The bottle 1, in the example a glass bottle, is adapted to receive all types of beverage, and more particularly alcoholic beverages such as wines or spirits. It is shown in figure 1 as put on the market, that is to say prior to any opening by a consumer.

15 Conventionally, the bottle 1 includes a body 10, whose lower part ends with a bottom 11, and whose upper part ends with a neck 12. The neck 12 includes in the upper part an opening closed by a plug 14, the assembly of the neck and the plug being covered by a cover, in the example, a metallic cap 13. The cap 13 includes a lower portion 13a and an upper portion 13b. The upper portion 13b of the cap 13 should be, during the first use, separated from the
20 bottle to access the plug. This separation is generally performed by tearing, and to this end, the cap 13 may include a device for facilitating the tearing thereof, for example a tear strip.

25 According to the invention, the bottle of figure 1 includes a safety corking, ensuring in particular the function of tamperproof seal. The safety corking in accordance with the invention includes in particular a security label, allowing detecting whether the bottle has already been opened a first time. In figure 1, which shows the bottle 1 before unsealing the cap 13, only a lower part of the security label, projecting from the lower edge of the cap 13, is visible.

30 The security label is better shown in figures 2a, 2b, and 3, which show a partial view of the bottle of figure 1, the upper part 13a of the cap 13 having been removed. Thus, figures 2a and 2b show the plug 14, which includes an upper surface 14a and a lateral surface 14b. In figures 2a and 2b, the plug 14 has never been removed. Therefore, these two figures show a security label 15, in the example in the form of a tape. This security label 15 includes a first part
35 15a fastened to the plug 14 and a second part 15b fastened to the neck 12 of the bottle. The fastening of the security label 15 is made by gluing, said security

label being preferably self-adhesive. Between the first part 15a and the second part 15b, the security label 15 includes a pre-rupture area 15c, constituted for example by a precut line. Thus, this pre-rupture area 15c has a fragility greater than the rest of the security label 15 and allows ensuring that the security label 15 is easily breakable at this location.

As shown in figure 3, which shows the bottle of figure 1 after a first opening of the plug 14, the first opening of the plug 14 leads to the rupture of the security label 15, precisely at the rupture area 15c. Thus, this rupture constitutes a visual indication that the plug 14 has already been removed a first time, and therefore that the bottle 1 has already been opened.

To ensure that the security label 15 is totally secure, said security label is of the non-reusable type, in particular for the purpose of preventing the label from being transferred intact on a bottle other than the original one. Thus, any attempt of detachment will result in altering the label, for example by the disintegration of said label. In the example, at least one portion of the security label is to this end definitively destructible and/or modifiable, for example by delamination. Thus, it will be possible to expect that at least one portion of the security label is permanently modified in case of detachment, for example by a color change. This modification will remain visible in case of later adhesion, even if the label is re-adhered to the same bottle, in its initial position. In case of re-adhering on another support, the modification will of course remain visible, thus allowing visually warning that the label has been transferred after manufacturing the bottle. Advantageously, the label will comprise portions accordingly modifiable on either side of the pre-rupture area 15c. Thus, the security label 15 will allow detecting the attempts to access the plug 14 by detachment of the security label 15, whether by detachment of the first part 15a, fastened by gluing to the plug 14, or by detachment of the second part 15b of the security label 15, fastened by gluing to the neck 12 of the bottle.

To reinforce the safety offered by the security label 15, the cap 13 is, in accordance with the invention, disposed over the security label 15. It is advantageous that the cap 13, in particular when it is metallic, is adhered to the bottle, in particular by means of a safety adhesive. The safety adhesive will prevent the possibility to remove the cap 13 without harming its entirety. Advantageously, the safety adhesive will be arranged in the form of one or more ring(s) along the perimeter of the neck of the bottle. In this case, a portion of the

safety adhesive will be disposed on the security label, thereby bonding a part of the cap to the security label.

Instead of a metal cap, it is possible to provide a sleeve made of a heat-shrinkable plastic material. This heat-shrinkable sleeve may be also adhered to the bottle by means of a safety adhesive, in a similar manner to that described above.

It has been seen that the fact that the security label is covered, and therefore protected, by the cap 13, has great advantages. However, to further reinforce the protection of the bottle against fraud, it is advantageous that one part of the security label 15 is visible even without opening the cap 13. In the example, the security label 15 projects from the lower edge 13c of the cap and is therefore visible. The second part 15b of the security label 15 ends at its lower end with a lower portion 15d. In the example, the lower portion 15d forms an enlarged area relative to the rest of the security label 15. This lower portion 15d may thus serve to display a first optically readable code 15e (such as a QR code, a Datamatrix code, or a bar code), and/or an alphanumeric code readable by a consumer. The lower portion 15d projecting from the lower edge 13c of the cap, the first code 15e will be visible in all circumstances, and in particular without the need to remove the cap. The first code 15e might advantageously be representative of a unique identifier of the bottle. Thus, this code may be read by a consumer, including before the purchase of the bottle. The first code 15e might be advantageously read by means of a portable apparatus (typically a mobile phone), and accordingly be automatically checked by connection to a remote server, this server including a database whose data are made available by the producer of the beverage. Information of the database returned by the server might comprise: the product brand, its type, the date of bottling, etc. This information might be accordingly compared by the consumer with said information shown on the label of the bottle. This *in situ* checking constitutes an additional level of safety.

Advantageously, the lower portion 15d will, as the rest of the security label 15, be definitively alterable and/or modifiable (for example by delamination) in case of detachment. However, unlike the rest of the security label 15, the lower portion 15d will be configured so that in case of detachment and definitive alteration and/or modification, in particular by delamination, the first code 15e remains readable.

As shown in figure 2b, the first part 15a of the security label 15 bears a second code 15g, arranged such that said second code remains invisible before the removal of the cover 13. The first part 15a of the security label 15 might for this purpose include, at its upper end, an upper portion 15f extending at the upper surface 14a of the plug 14, and being adhered to this upper surface 14a. This upper portion 15f bears, in the example of figure 2b, the second code 15g, which is optically readable (in particular a QR or Datamatrix type code, or a bar code), or of alphanumeric type (directly readable by the consumer), or of graphic pattern type. As well as for the lower portion 15d, the upper portion will be definitively alterable and/or modifiable (for example by delamination) in case of detachment, such that, if necessary, the optically readable code 15g remains readable. The second code 15g will advantageously be representative of a unique identifier of the plug. The second code being disposed at the surface of the plug, it remains masked and invisible as long as the top part of the cap has not been removed. This masked code, representative of a unique identifier of the plug, constitutes an additional safety level.

In a variant shown in figure 4, the second code 15g may be disposed on an upper portion 15h of the security label 15, which corresponds to the portion facing the lateral surface 14b of the plug 14. This configuration has in particular the advantage of ensuring that the code is not visible under the cover 13 when said cover does not fully cover the upper surface 14a of the plug 14 (for example in case where the cover 13 is a heat-shrinkable sleeve).

The security label 15 including the first and second codes 15e, 15g, one located on the lower portion 15d and the other located on the upper portion 15f, the two codes 15e, 15g are advantageously associated in the aforementioned database. The association of the two codes might be used to check the authenticity of the concerned bottle. Indeed, the consumer, who will have been able to check the authenticity of the bottle by transmission of the first code (representative of a unique identifier of the bottle) to the server, will be able, after removing the cap, to transmit to the server the second code (representative of a unique identifier of the plug). After checking the correspondence between the first and second codes stored in the database (and therefore of the correspondence between the bottle and the plug), the server might return information confirming the authenticity of the bottle, and, consequently, because its contents could not be changed or modified.

Additionally or alternatively to one or more of the aforementioned optically readable code(s) 15, it might be expected that the security label 15 includes a radio frequency identification system, of the RFID type (« Radio Frequency Identification »). The information stored in the identification system will comprise, in particular, a unique identifier of the bottle. The radio frequency identification system will, in particular, comprise an electronic chip and an antenna. Advantageously, it is possible to expect that the antenna is disposed along the security label 15, such that the first opening of the plug of the bottle causes the rupture of the antenna. Thus, the first opening of the plug will make the reading of the electronic chip impossible, the impossibility of the reading indicating that the bottle has already been opened.

In order to further enhance the safety level offered by the bottle of figure 1, it is possible to provide a common marking of the bottle and of the cap, for example by means of a laser etching. As shown in figures 2a, 2b and 3, this marking, constituted in the example by a pattern 16, is carried out such that a part of the marking is etched in the cap 13, in the vicinity of, the lower edge 13c thereof, the other part of the marking being etched in the neck 12 of the bottle 1. The size and the delicacy of the marking will advantageously be selected such that removing and repositioning the cap 13 such that the two marking parts coincide will be extremely complex or even impossible. The common marking might consist of a pattern (as shown in the figures) or of a sequence of alphanumeric characters, or a combination of the two.

CLAIMS

1. A bottle intended to contain a beverage, such as an alcoholic beverage, said bottle including a body whose upper end includes a neck, the neck of the bottle ending with a mouth and receiving a plug, the bottle being
5 provided with a safety corking, said safety corking including:

- a security label whose first part is adhered to the plug and a second part is adhered on the neck of the bottle, and

- a cover covering at least partially the plug and at least one part of
10 the neck of the bottle, said cover also covering at least one part of the security label,

the security label further including

- a lower portion projecting from a lower edge of the cover, and bearing a first code, for example an optically readable code, the first code being
15 representative of a unique identifier of the bottle; and

- an upper portion, covered by the cover, adhered to the plug, and bearing a second code, for example an optically readable code, the second code being representative of a unique identifier of the plug.

20 2. The bottle according to claim 1, wherein the upper portion is adhered to an upper surface of the plug.

3. The bottle according to claim 1, wherein the upper portion is adhered to a lateral surface of the plug.

25 4. The bottle according to any of claims 1 to 3, wherein at least one portion of the security label is definitively modified in case of detachment, for example by a color change.

30 5. The bottle according to any of claims 1 to 4, wherein the cover is a metallic cap adhered to the neck of the bottle, preferably by means of a safety adhesive.

6. The bottle according to any of claims 1 to 4, wherein the cover is made of a shrinkable sleeve, in particular a sleeve made of a heat-shrinkable plastic material.

5 7. The bottle according to the preceding claim, wherein the shrinkable sleeve is adhered to the neck of the bottle, preferably by means of a safety adhesive.

10 8. The bottle according to any of the preceding claims, wherein the security label includes in the vicinity of the mouth a pre-rupture area, such as a precut line.

15 9. The bottle according to any of the preceding claims, wherein a marking is etched at the interface between the cover and the neck of the bottle, such that a part of said marking is etched in the cover, the other part being etched in the bottle.

20 10. The bottle according to the preceding claim, wherein the marking is etched by means of laser.

25 11. The bottle according to any of the preceding claims, wherein the first code remains readable even after detachment of the lower portion of the security label.

30 12. The bottle according to any of the preceding claims, wherein the second code remains readable even after detachment of the upper portion of the security label.

35 13. The bottle according to any of the preceding claims, wherein the first and/or the second code(s) is(are) a two-dimensional optically readable code(s), for example a QR type code or a Datamatrix type code.

 14. The bottle according to any of the preceding claims, wherein the security label includes a radio frequency identification system.

15. The bottle according to the preceding claim, wherein the radio frequency identification system includes an electronic chip and an antenna, the antenna being arranged such that the first opening of the plug causes the rupture of the antenna.

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16. A checking system of the authenticity of a bottle containing a drink, said bottle being in accordance with one of the preceding claims, the system including a server including a database, the database including data relating to the manufactured bottles, these data including in particular, for each bottle, a
10 unique identifier of the bottle and a unique identifier of the plug associated to this bottle.

17. The system according to the preceding claim, wherein the database included in the server is remotely accessible, for example from a portable
15 apparatus, such as a mobile phone, the server being configured to transmit data relating to a bottle in response to a request including the first code corresponding to said bottle.

18. The system according to the preceding claim, wherein the server is
20 configured to transmit data allowing confirming the authenticity of a bottle, in response to a request including the first and second codes of said bottle.