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(54) **CONTAINER, IN PARTICULAR BOTTLE WITH AN IDENTIFICATION ELEMENT FOR ALIGNING THE SAME**

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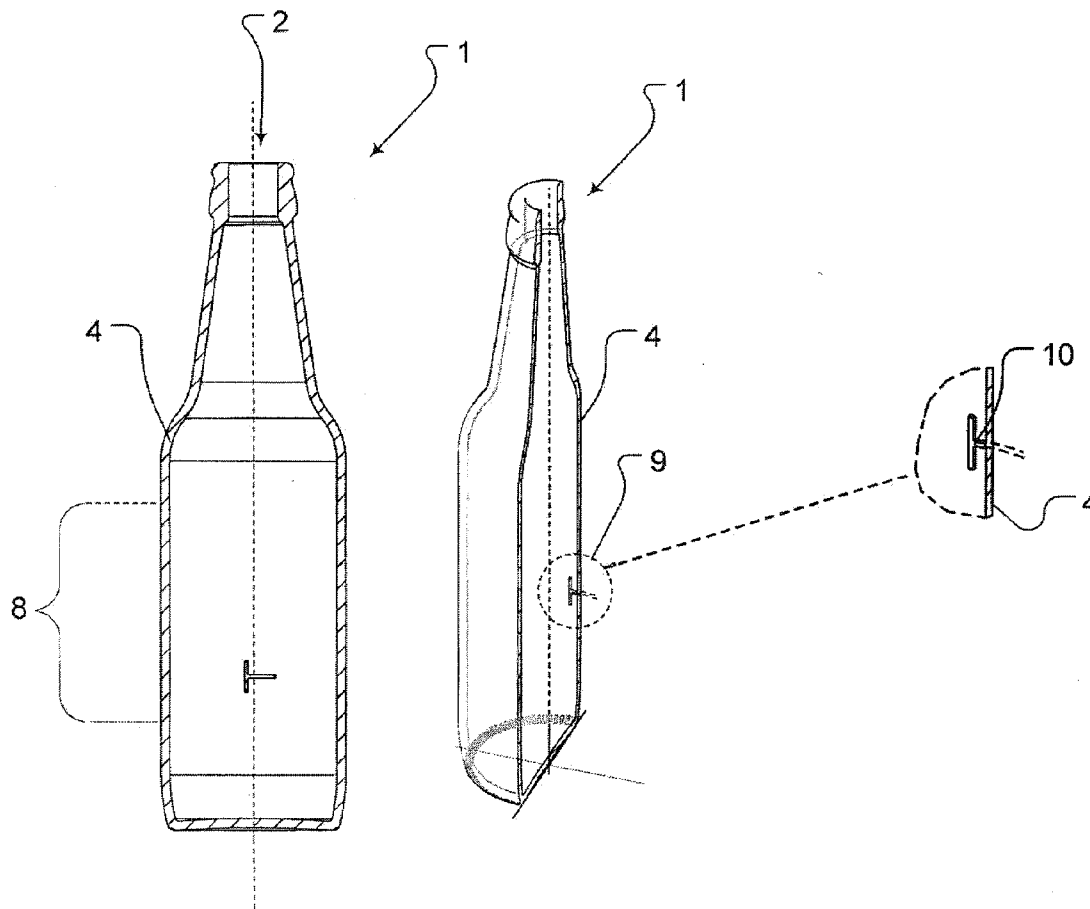
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(57) **ABSTRACT**

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The invention relates to a container (1) comprising at least one identification element (9). The at least one identification element (9) is arranged in the interior of the container (1) or preferably in the lateral wall (4) of the same.



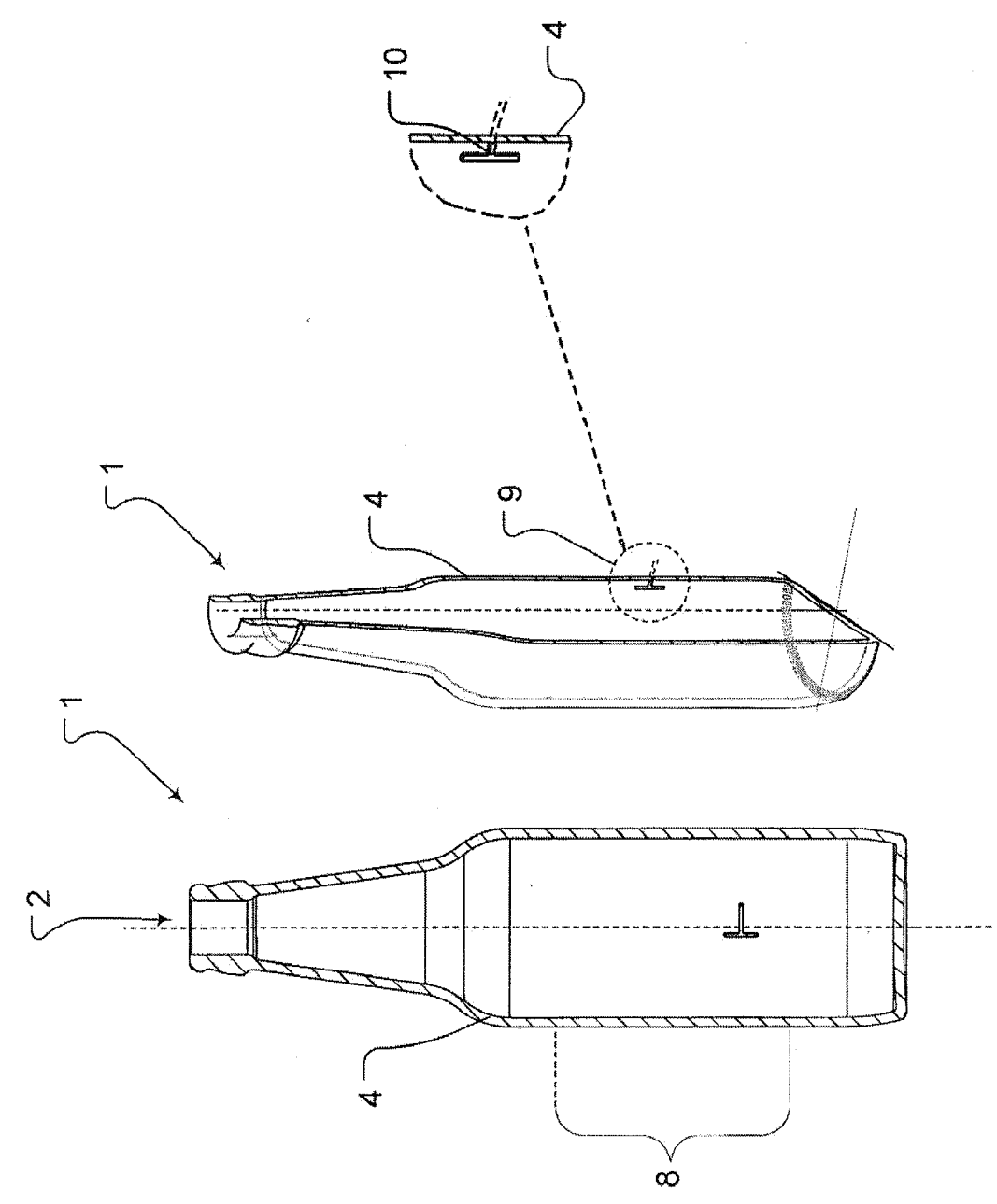


Fig. 1

**CONTAINER, IN PARTICULAR BOTTLE
WITH AN IDENTIFICATION ELEMENT FOR
ALIGNING THE SAME**

[0001] The invention relates to a container, which has at least one identification element.

[0002] These types of containers can be used in the manner of bottles or the like for liquids, for example beverages. The containers can be produced from a transparent or translucent material, for example glass, or from a translucent plastics material, e.g. PET. The containers are supplied, for example, to a labelling machine in which a label is to be located in a predetermined and repeatable position always oriented in an identical manner relative to external development features on the outside of the container.

[0003] In order to be able to achieve the desired position, the containers are moved past a detecting device, which includes, for example, suitable optical elements, evaluating units and control units. The position of the container in the labelling machine is detected by means of the optical elements, the identification element being included herein. The identification element can be arranged in the form of an embossing, an indentation and/or a notch on the outside of the container. The optical elements detect the initially random position of the container in the labelling machine, by way of the established position of the at least one identification element. The established actual position of the identification element is compared to the required deposited position (required image). A correction amount is determined from deviations between the actual position and the required position, said correction amount being forwarded to a rotatable container support as correction signal such that the container can be rotated into the required position. This consequently ensures that the label is always located in the desired position on the container.

[0004] The containers of different manufacturers, however, each have different identification elements. For example, different manufacturers' beer bottles naturally have different brand names embossed on the outside of the bottle. In this case, a letter or another suitable symbol could be used as the identification feature to align the container or the bottle from the actual position into the required position. However, mineral water bottles can also have such brand embossing, which could be used as an identification element. It is also conceivable to locate the at least one identification element on a bottom region on the outside of the container.

[0005] As, however, containers or series of containers being labelled in labelling machines are to all intents and purposes, for example, produced by different beverage manufacturers that can each have different identification elements for aligning the container into the required position, a separate learning process is naturally necessary in each case for the detecting device when a subsequent series of containers produced by a different beverage manufacturer, for example, is to be labelled. In order to teach the detecting device about the respective identification elements, which, as described, can be positioned and/or realized in a different manner, time-consuming operations have to be performed, the labelling machine possibly having to be stopped.

[0006] Consequently, it is the object of the invention to make available a container of the aforementioned type, which is improved using simple means to the effect that a learning process when converting the labelling machine for example

to containers or series of containers produced by different beverage manufacturers is avoided or at least is reduced in an extensive manner.

[0007] The object is achieved according to the invention by a container with the features of Claim 1, the at least one identification element being located in an interior of the container.

[0008] On account of the advantageous arrangement of the at least one identification element in the interior of the container, a learning process, when converting the labelling machine to containers or series of containers for example produced by different beverage manufacturers, is avoided or is at least extensively reduced as the at least one identification element, for example, is preferably realized in an identical manner even on containers produced by different beverage manufacturers. It is also conceivable for the identification element to be able to be located in each case at an identical spatial relationship relative to other development features of the container. For the detecting device no longer has to be taught about the different identification elements. Rathermore, the detecting device can be taught once about a universal identification element in order to be able to accomplish the alignment from the actual position into the required position. To this end, the corresponding required image, which corresponds to the new container or the new series of containers, simply has to be deposited in the evaluating unit. This is, however, less costly as the respective required images can be stored and called up correspondingly quickly. In addition, it is expedient that the identification element located inside is not detectable from the outside such that, for example, brand manufacturers can also use an identification element that differs from their trademark without jeopardizing the distinctiveness of their trademark. In other words, the identification element is located in this manner in the interior of the container such that a change to the exterior is avoided.

[0009] The container can have a mouth opening and a bottom that is situated opposite thereto. A side wall extends from the mouth opening in the direction of the bottom. The side wall can have a container neck located in the region of the mouth opening and a container belly connecting thereto. A labelling region can be provided, for example, on the container belly.

[0010] It is expedient in terms of the invention when the at least one identification element is located on the side wall in the interior of the container, the at least one identification element being located in an expedient manner in the labelling region. The identification element is covered by the label such that by means of this measure, visual perception can be ruled out extensively after the labelling procedure.

[0011] So that the identification element can be accommodated by a detecting device, it is provided in a more advantageous manner that the identification element has indentations, notches and/or elevations, the identification element being in an expedient manner a three-dimensional, spatial element.

[0012] In order to reduce the learning process, it is provided in an advantageous manner that the at least one identification element is located in a defined position with reference to the shaping of the container. For example, the at least one identification element can be located at a defined spacing from the bottom and/or from the mouth opening, that is always in an identical manner in a spatially defined arrangement in the interior of the respective container.

[0013] It is additionally conceivable to provide at least one second identification element in the interior of the container, said second element being located equally in a spatially defined position relative to the first identification element and/or to the bottom or to the mouth opening. A particular advantage is that very prominent markings that are technically easy to detect can be provided at an exposed position. Nevertheless, the subsequent labelling procedure is not impaired in any way as there are no ridges or edges on the undisturbed outside surface that might result in unwanted air pockets and optical disadvantages.

[0014] Further additional developments of the invention are disclosed in the sub claims and the following description of the Figures, in which, in detail:

[0015] FIG. 1 shows a basic representation of a cross section of a container.

[0016] FIG. 1 shows a basic representation of a container 1, for example in the manner of a bottle, for example a beverage bottle. The container 1 can be produced from a transparent or translucent material, for example glass, or from a translucent plastics material, e.g. PET.

[0017] The container 1 has a mouth opening 2, a bottom 3 located opposite thereto and a side wall 4.

[0018] The side wall 4 has a container neck 6 and a container belly 7. From the mouth opening 2, the container neck 6 merges, for example via a cylindrical portion that widens in the form of a cone, into the container belly 7. The bottom 3 is located at the container belly 7 situated opposite the mouth opening 2. The bottom 3 is realized in a continuously planar manner purely as an example. The bottom 3 can also naturally have other forms of development. The individual components of the container 1 are edged to improve clarity, a respective wall thickness being represented excessively thickly. The container 1 is obviously produced in one piece.

[0019] A labelling region 8 is located at the container belly 7, said labelling region being indicated by means of a boundary shown by a broken line. The labelling region 8 is only to be indicated as an example. There can naturally also be a labelling region in the neck region.

[0020] An identification element 9 is located in the interior of the container 1. The identification element 9 is represented with exaggerated dimensions and can also be identified as an embossing or inside embossing. In principle, the identification element 9, as a three-dimensional element with indentations and/or elevations 10 (not shown), can be located in the side wall 4, preferably in the labelling region 8. In a preferred embodiment, the identification element 9 is introduced into the side wall 4 using suitable means without the container characteristics being impaired by the identification element 9. For example, the identification element 9 could be realized by means of elevations in the form of a symbol of the Applicant, which is indicated as an example in FIG. 1. The outside contour of the side wall 4 can, in this case, be permanently deformed, which means in the example shown that said outside contour is realized in a uniformly cylindrical manner.

[0021] The identification element 9 can naturally also be located in a bottom region, or in other suitable positions inside the container 1.

[0022] The represented position of the identification element 9 preferably inside the labelling region 8 is simply to be understood as an example. It is possible to locate the identification element 9 in a defined spatial position for example with reference to the bottom 3 and/or to the mouth opening 2. It is also expedient in terms of the invention when the iden-

tification element 9, with containers for example produced by different beverage manufacturers, is located not only identically in its development but also as identical as possible in its defined position.

[0023] In addition, a second identification element 9 could be located in the interior of the container 1, it being possible for said second identification element to be located equally in a spatially defined position in relation to the bottom and/or to the mouth opening 2 and preferably also in relation to the first identification element 9. Naturally, even more than two identification elements can be provided in the interior of the container 1.

[0024] The identification element 9 is used, for example, for the aligning of the container 1 in a labelling machine from an actual position into a required position in order to label the container or containers with a label at a predetermined reference relative to the external development features of the container 1. To this end, the container 1 is moved past a detecting device, which establishes the actual position of the container 1, for example, by optical elements recording the identification element 9. The actual position is compared with a required position in an evaluating unit, a correction signal being determined from the differences, said correction signal brings about a rotation of the container support such that the container 1 is rotated out of the actual position into the required position. This can also be accomplished in at least two steps, in a first rough alignment and in a second fine alignment connected thereto.

[0025] It is possible to provide a second detecting device, or at least a second optical system, which is coupled to the evaluating unit. This can also be understood as a safety function if the container 1 has not quite reached the required position after the first positional correction.

[0026] The invention should obviously not be restricted to the described alignment of containers in labelling machines. Rathermore, a rotating of the container out of an actual position into a required position can also be expedient in other machines, for example in printing machines for printing the container or labels applied beforehand at a predetermined reference in relation to external development features. The described container naturally does not just have to be realized as a beverage bottle. Rathermore, the container can also deviate from the represented form and can to all intents and purposes accommodate other media.

LIST OF REFERENCES

- [0027]** 1 Container
- [0028]** 2 Mouth opening
- [0029]** 3 Bottom
- [0030]** 4 Side wall
- [0031]** 5
- [0032]** 6 Container neck
- [0033]** 7 Container belly
- [0034]** 8 Labelling region
- [0035]** 9 Identification element
- [0036]** 10
- [0037]** 11 Indentation/notch
- [0038]** 12 Elevation

1. A container having at least one identification element 9 at least one identification element being located in an interior of the container.

2. The container according to claim 1, wherein the at least one identification element is located in a side wall in the interior of the container.

3. The container according to claim 1 wherein the at least one identification element is located in a labelling region of the container.

4. The container according to claim 1, wherein the at least one identification element comprises indentations.

5. The container according to claim 1, wherein the identification element is three-dimensional.

6. The container according to claim 1, wherein the identification element is located in a defined position in the interior of the container.

7. The container according to claim 1, wherein the at least one identification element comprises notches.

8. The container according to claim 1, wherein the at least one identification element comprise elevations.

9. The container according to claim 2 wherein the at least one identification element is located in a labelling region of the container.

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