The invention relates to a drinks container (2), produced from a thermoplastic material, in particular PET, comprising a tapping valve unit (9) and a CO₂ pressurized gas dispenser arranged in the interior of the container for discharging the liquid of the drink and having assigned to it a pressure regulating unit (8), which releases the pressurized gas from the CO₂ pressurized gas dispenser into the liquid of the drink as soon as the pressure in the drinks container (2) drops when liquid is removed. The intention is to provide a drinks container that allows a simpler construction and improved handling. For this purpose, the CO₂ pressurized gas dispenser is a container (3) that likewise consists of thermoplastic PET material and is filled from the outset with CO₂ pressurized gas.
BEVERAGE CONTAINER MADE OF A THERMOPLASTIC RESIN, IN PARTICULAR PET

[0001] The invention relates to a beverage container made of a thermoplastic material, in particular PET, comprising a tap valve, and a compressed-CO$_2$ dispenser having a pressure regulator, the dispenser being inside the container and functioning to force out the liquid beverage, and the tap valve releasing the pressurized gas from the compressed-CO$_2$ dispenser into the liquid beverage as soon as the pressure in the beverage container drops in response to the withdrawal of liquid.

[0002] Beverage containers of this type are in wide use, in particular, in the form of a beverage dispenser as a nonreturnable container for compressed CO$_2$-operated dispensing of beverages cooled to serving temperature, such as beer, wine, and soft beverages. When a lever is actuated, the beverage is forced up and out the beverage outlet through a riser tube projecting down into the container.

[0003] WO 2008/005887 [US 2010/005888] discloses an approach for using a spherical PET container serving as a nonreturnable container, the PET container having an inner bag holding the beverage. This container unfolds when filled and prevents air from passing into the beer or carbon dioxide from escaping.

[0004] EP 1 140 692 discloses a beverage dispenser in which the pressurized-CO$_2$ supply is a compressed-gas bottle carrying a pressure regulator, the gas bottle being on the bottom inside the beverage container. Activated carbon is used to generate the pressurized gas in the pressurized gas bottle. Aside from the fact that the activated carbon only enables CO$_2$ to be generated slowly, the pressurized gas must in fact first be produced in the pressurized gas bottle or other pressurized gas container, for example through a chemical reaction of at least two substances.

[0005] The object of this invention is to create a beverage container of the type described above in the form of a nonreturnable container of simple construction that also has an improved compressed-CO$_2$ supply.

[0006] This object is achieved according to the invention in that the compressed-CO$_2$ dispenser is also a container made of thermoplastic PET material, this container being filled from the start with compressed CO$_2$. This thus enables an extremely light beverage container or nonreturnable container to be provided for standard 5 L use, for which container the pressurized gas does not first have to be generated in the second, inner container—hereafter identified as CO$_2$ container—but is already immediately available in sufficient quantity ready for use.

[0007] It is preferably recommended that the fill volume of the beverage container relative to the CO$_2$ container be designed with a ratio of 3:1. If the beverage container thus has a fill volume of 7 L and the CO$_2$ container a volume of 1.7 L, along with a maximum filling pressure to be maintained of 7 bar, the result is a KEG or a beverage container having the standard 5 L volume for the liquid beverage, without allowing the total weight of the two-container unit according to the invention to exceed the prescribed limit for handling.

[0008] According to one embodiment of the invention the upper mouth of the beverage container is larger than the greatest outside dimension of the CO$_2$ container. This allows the CO$_2$ container to be inserted with clearance and in a simple manner into the actual outer beverage container of the nonreturnable container. It is recommended in this regard that the CO$_2$ container be of the longest possible design, thereby enabling the mouth to be kept correspondingly small, while not unnecessarily weakening the outer container.

[0009] A preferred embodiment of the invention provides that the CO$_2$ container be attached to a beverage container cap closing the mouth, in the simplest case snapped onto this cap.

[0010] If, in another preferred embodiment of the invention, the beverage container cap is unitarily formed with the pressure regulator and the tap valve comprising the riser tube, this allows a completely preassembled assembly to be provided that contains all the functional components and that then only has to be mounted on the beverage container or outer container. A simple screw-type connection is again appropriate to attach the cap and thus the preassembled assembly.

[0011] Additional details and features of the invention are described in the claims and in the following description of an embodiment of the invention that is illustrated in the drawing. Therein:

[0012] FIG. 1 is a schematic longitudinal section of a CO$_2$ container made of PET that is inserted in a beverage container made of PET; and

[0013] FIG. 2 show the assembly of FIG. 1 made of two PET containers, the assembly being in the form of a nonreturnable container ready to tap state with a tap valve and pressure regulator.

[0014] As indicated in FIG. 1, a nonreturnable container 1 for withdrawing or tapping liquid beverage comprises a beverage container 2 and an inner CO$_2$ container 3 that is filled in advance with compressed CO$_2$ and thus does not first have to be activated during tapping. Both the beverage container 2 as well as the CO$_2$ container 3 are made of PET. The upper mouth 4 of the beverage container 2 is sufficiently wide to allow it to be installed in the beverage container 2 in unimpeded fashion and without interference. The CO$_2$ container 3 is very long so that the mouth 4 can have a very small diameter. Both containers 2 and 3 have attachment necks 5 or 6 formed with snap-on lobes or ridges. Threaded connections are also possible.

[0015] The tap-ready nonreturnable container 1 is shown in FIG. 2. The mouth 4 of the beverage container 2 is closed by a cap 7 that is mounted on the attachment neck 5, snap-connected thereto. At the same time, the cap 7 is of made unitarily with a pressure regulator 8 for the CO$_2$ container 3, designed for 7 bar, and with a tap valve 9 provided with a riser tube 10 that is extends down to the bottom of the beverage container 2. The elongated CO$_2$ container 3 is thus fixed in this cap unit by its attachment neck 6.

[0016] When the tip of the nonreturnable container 1 is actuated, the requisite quantity of compressed CO$_2$ passes out of the CO$_2$ container 3 through the pressure regulator 8 as indicated by the flow arrow 11 into the beverage container 2 and forces the liquid out through the riser tube 10 and the tap valve 9 to a spout 12.

List of reference numerals:

| 1 | nonreturnable container |
| 2 | beverage container/outer container |
| 3 | CO$_2$ container |
| 4 | mouth |
6. A package for dispensing a liquid beverage, the package comprising:

an outer beverage container made of polyethylene terephthalate, adapted to hold a body of the beverage and having an upper open mouth;

an inner gas container made of polyethylene terephthalate, holding compressed CO₂, having an upper mouth, and
dimensioned so as to fit inside the outer container and through the mouth of the beverage container;

a single cap fitting to and closing the mouth of the beverage container and the mouth of the gas container;

tap valve carried on the cap and openable to release the beverage from the beverage container; and

a pressure regulator on the cap and openable to release the gas from the gas container into the beverage container.

7. The package defined in claim 6 wherein the gas container has a volume equal to about a third of a volume of the beverage container.

8. The package defined in claim 6 wherein the tap valve and pressure regulator are unitarily formed with the cap.

9. The package defined in claim 8 wherein the cap is formed as a single piece closing the beverage container and the gas container and forming the tap valve and pressure regulator.

10. The package defined in claim 9 wherein the cap is of plastic.