Claims

1. A beverage dispensing system for dispensing a beverage, said beverage dispensing system comprising:
   - one or more pressure chambers comprising a connectable base part and lid defining a sealed inner space for accommodating and encapsulating a collapsible beverage container having a beverage outlet connectable to the base part,
   - a tapping device comprising one or more tapping heads for extracting the beverage from the collapsible beverage container(s),
   - a tapping line extending from said base part(s) to said tapping device, said tapping line comprising one or more beverage lines, and
   - at least one measuring device configured for monitoring at least one physical quantity of the tapping line, sealed inner space, base part, lid and/or collapsible beverage container,

   wherein the beverage dispensing system is configured for
   - processing data from the at least one measuring device,
   - detecting an event in the system by continuously analysing data from the at least one measuring device,

   wherein the at least one measuring device is configured for detecting a pressure change in the tapping line and/or in the sealed inner space adjacent the corresponding beverage container, and
   wherein the event is the operation of a specific tapping head and said pressure change is correlated with the operation of the specific tapping head.

2. The beverage dispensing system according to claim 1, wherein said measuring device comprises a pressure sensor configured for monitoring the pressure in the sealed inner space.

3. The beverage dispensing system according to any of the preceding claims, wherein said measuring device comprises a pressure sensor configured for monitoring the pressure in the tapping line.

4. The beverage dispensing system according to any of the preceding claims, wherein said measuring device comprises an acceleration sensor configured for monitoring

acceleration/movement of the base part, the lid and/or the corresponding collapsible beverage container.

5. The beverage dispensing system according to any of the preceding claims, wherein said measuring device comprises an audio sensor, such as a microphone, configured for monitoring sound from the base part, the lid and/or the corresponding collapsible beverage container.

6. The beverage dispensing system according to any of the preceding claims, wherein the system comprises a processing unit for processing and/or analysing the data from the measuring device(s).

7. The beverage dispensing system according to any of the preceding claims, wherein the system is configured for uploading data from the measuring device(s) to a central server and/or a cloud service.

8. The beverage dispensing system according to any of the preceding claims, wherein the event is selected from the group of: operation of a tapping head, flow of beverage in the tapping line, flow of beverage in a specific beverage line, flow of gas in the tapping line, flow of gas in a specific beverage line, opening of a specific pressure chamber, operation of a pressurisation unit, collapsing of a specific collapsible beverage container, and final collapse of a specific collapsible beverage container.

9. The beverage dispensing system according to any of the preceding claims, configured for detecting a change in a measured physical quantity associated with a change in the condition and/or state of the base part, the lid, the tapping line, and/or the sealed inner space adjacent the corresponding beverage container, wherein said detected change is the result of an event of the beverage dispensing system.

10. The beverage dispensing system according to claim 9, wherein the type of event is determined based on the detected change in the measured physical quantity.

11. The beverage dispensing system according to any of claims 9-10, wherein the event is the operation of a tapping head or the operation of a specific tapping head.

12. The beverage dispensing system according to any of the preceding claims, configured for detecting operation of a tapping head by continuously measuring the pressure in the tapping line and/or in the sealed inner space adjacent the corresponding beverage container, detecting changes in the measured pressure, and analysing said changes in order to attribute said changes to the operation of a tapping head.

13. The beverage dispensing system according to any of the preceding claims, configured for detecting operation of a specific tapping head by detecting the sound of collapse of the corresponding beverage container.

14. The beverage dispensing system according to any of the preceding claims 12-13, configured for determining the pouring volume of a beverage dispensing operation in the system by attributing a pressure change in the tapping line and/or the inner space to the operation of a specific tapping head.

15. The beverage dispensing system according to any of the preceding claims 12-14, configured for 1) detecting activation and deactivation of a specific tapping head by detecting pressure changes in the tapping line and/or the sealed inner space adjacent the corresponding beverage container, and 2) determining the elapsed time between the activation and the deactivation of said tapping head.

16. The beverage dispensing system according to any of the preceding claims 12-15, configured for estimating the beverage flow rate during beverage dispensing by measuring the change of the pressure in the tapping line and/or the sealed inner space during said beverage dispensing, wherein the measured change in pressure is correlated with the beverage flow rate.

17. The beverage dispensing system according to any of the preceding claims 9-16, wherein the system is configured for detecting sub-second changes in the measured physical quantity.

18. The beverage dispensing system according to any of the preceding claims 15-17, configured for determining the remaining volume of a collapsible beverage container by determining the pouring volume of each beverage tapping of said beverage container and subtracting said pouring volumes from the initial beverage volume of the beverage container.

19. The beverage dispensing system according to any of the preceding claims 5-18, configured for detecting the final collapse of a specific beverage container by detecting a sound related to said final collapse.

20. The beverage dispensing system according to any of the preceding claims 5-19, configured for determining the emptying of a specific beverage container by detecting the final collapse of said beverage container.

21. The beverage dispensing system according to any of the preceding claims, wherein the system comprises at least two pressure chambers, each of said pressure chambers accommodating and encapsulating a collapsible beverage container.

22. The beverage dispensing system according to any of the preceding claims, wherein the beverage outlet of the collapsible beverage container is connected to the base part by an intermediate tapping line, wherein the measuring device is configured for monitoring at least one physical quantity of the intermediate tapping line.

23. The beverage dispensing system according to any of the preceding claims, wherein measuring device configured to have a sampling rate of at least 20 Hz, preferably at least 50 Hz.

24. A method for monitoring a beverage dispensing system, said beverage dispensing system comprising one or more pressure chambers comprising a connectable base part and a lid, each pressure chamber defining a sealed inner space for accommodating and encapsulating a collapsible beverage container, a tapping device comprising one or more tapping heads for extracting the beverage from the at least one collapsible beverage container, and a tapping line extending from the at least one pressure chamber to said tapping device, the method comprising the steps of:

- continuously measuring the pressure in the sealed inner space and/or in the tapping line using a pressure sensor,
- continuously analysing the pressure data in order to detect at least one change in pressure,
- correlating said at least one change in pressure to an action or an event in the beverage dispensing system, wherein the operation of a specific tapping head is determined based on said at least one change in pressure.

25. The method according to claim 24, wherein the method is able to detect sub-second changes in pressure.

26. The method according to any of the preceding claims 24-25, wherein the change of state of the lid is determined based on said changes in pressure.

27. The method according to any of the preceding claims 24-26, wherein the emptiness and/or collapse of a beverage container is detected by analysing pressure changes of a fluid contained in the tapping line.