Claims

1. An automatic beverage vending machine, comprising:

an at least one beverage maker operable for making at least one beverage;

a receiving station operable for receiving at least one cup at an exterior of the automatic beverage vending machine and moving the at least one cup to an interior of the automatic beverage vending machine;

a conveying mechanism operable for transferring the at least one cup from the receiving station to the at least one beverage maker in order to receive the at least one beverage into the at least one cup; ~~and~~

a controller connected to the at least one beverage maker, the receiving station and the conveying mechanism, and is operable for coordinating movement of receiving the at least one cup, transferring the at least one cup and dispensing the at least one beverage into the at least one cup;

an integrated station that integrates a delivering station with the receiving station, and operable for receiving the at least one cup and/or delivering the at least one cup filled with the at least one beverage;~~.~~

wherein the receiving station, the delivering station, the integrated station or a combination of any of these stations comprise at least one pigeon hole unit operable for handling the at least one cup;

the at least one pigeon hole unit comprises a pigeon hole cup holder operable for holding the at least one cup; and

the at least one pigeon hole unit comprises a pigeon hole receptacle for rotating the pigeon hole cup holder.

~~2. The automatic beverage vending machine of claim 1 further comprising an integrated station that integrates a delivering station with the receiving station, and operable for receiving the at least one cup and/or delivering the at least one cup filled with the at least one beverage.~~

~~3. The automatic beverage vending machine of claim 2, wherein the receiving station, the delivering station, the integrated station or a combination of any of these stations comprise at least one pigeon hole unit operable for handling the at least one cup.~~

4.2. The automatic beverage vending machine of claim 31, wherein the at least one pigeon hole unit comprises a lock for enabling authorized retrieval of the at least one cup at the at least one pigeon hole unit.

5. The automatic beverage vending machine of claim 3, wherein the at least one pigeon hole unit comprises a pigeon hole cup holder operable for holding the at least one cup.

6.3. The automatic beverage vending machine of claim 51 or 2, wherein the pigeon hole cup holder comprises a drip tray for catching a drip of the at least one beverage falling from the at least one cup.

7.4. The automatic beverage vending machine of claim 51 or 2, wherein the at least one pigeon hole unit comprises a pigeon hole receptacle for rotating the pigeon hole cup holder.

8.5. The automatic beverage vending machine of claim 31, 2 or 4, wherein the at least one pigeon hole unit comprises a detector operable for detecting a readiness of the at least one cup before being moved to the interior of the automatic beverage vending machine.

9.6. The automatic beverage vending machine of claim 85, wherein the detector is connected to the controller, the controller being operable to

generate an alert if the at least one cup is in an unready state, and

control the receiving station to transfer the at least one cup from the exterior of the automatic beverage vending machine to the interior of the automatic beverage vending machine if the at least one cup is in a ready state.

10.7. The automatic beverage vending machine of any of the preceding claimsclaim 1, wherein the conveying mechanism comprises a robotic arm for transferring the at least one cup to the receiving station and the at least one beverage maker.

~~11.~~8. The automatic beverage vending machine of ~~claim 1~~any of the preceding claims further comprising an automatic curtain connected to the controller, being operable to cover the interior of the automatic beverage vending machine and/or expose the interior of the automatic beverage vending machine and a display mode for text and pictorial images.

~~12.~~9. The automatic beverage vending machine of ~~claim 1~~any of the preceding claims further comprising an order panel connected to the controller, being operable to

display an option of beverages, and

facilitate a selection of a beverage from the option of beverages.

~~13.~~10. The automatic beverage vending machine of ~~claim 1~~any of the preceding claims further comprising a Point Of Sale (POS) Terminal connected to the controller, being operable to

facilitate a payment for a selected beverage, and

dispense a receipt after making the payment for the selected beverage.

~~14.~~11. The automatic beverage vending machine of ~~claim 1~~any of the preceding claims further comprising an input panel to enable an input of a code by a customer for facilitating a delivery of the at least one cup filled with the beverage to the customer.

~~15.~~12. The automatic beverage vending machine of ~~claim 1~~any of the preceding claims further comprising a cup washer configured to wash the at least one cup.

~~16.~~13. The automatic beverage vending machine of ~~claim 1~~any of the preceding claims further comprising a cup holding station for keeping the at least one cup filled with the at least one beverage at a predetermined temperature.

~~17.~~14. The automatic beverage vending machine of any of the preceding claims, wherein the at least one cup comprises a reusable cup.

~~18.~~15. A reusable cup that is operable for being used with the vending machine of any of the preceding claims, the reusable cup comprising

a cup body having a base, an open top at an opposite end, and a sidewall extending between the base and the open top to define a height,

wherein the cup body is made of steel and coated with an industrial porcelain enamel.

~~19.~~16. The reusable cup of claim ~~18~~ 15 further comprising an identification tag for storing an information associated with a customer as well as at least one beverage ordered by the customer.

~~20.~~17. The reusable cup of claim ~~18~~15 or 16 further comprising a rubber sleeve for covering the cup body, the rubber sleeve and the cup body have an air gap between them.

~~21.~~18. The reusable cup of ~~claim 18~~any of the preceding claims 15 to 17 further comprising a lid adapted to fit on the open top of the cup body for covering & sealing the reusable cup.

~~22.~~19. The reusable cup of any of the preceding ~~claim 18~~claims 15 to 18 further comprising a suction cup adapted to fit on a bottom of the cup body for gripping the reusable cup to a surface.

~~23. A method of operating an automatic beverage vending machine, comprising:~~

~~receiving an order for at least one beverage;~~

~~receiving at least one cup in a receiving station;~~

~~detecting whether the at least one cup is in a ready state for receiving the at least one beverage;~~

~~generating an alert if the at least one cup is not in a ready state;~~

~~operating the receiving station for moving the at least one cup from an exterior of the automatic beverage vending machine to an interior of the automatic beverage vending machine;~~

~~controlling a conveying mechanism to transfer the at least one cup from the receiving station to at least one beverage maker;~~

~~controlling the at least one beverage maker to dispense the at least one beverage into the at least one cup;~~

~~controlling the conveying mechanism to transfer the at least one cup filled with the beverage to the receiving station; and~~

~~operating the receiving station for moving the at least one cup from the interior of the automatic beverage vending machine to the exterior of the automatic beverage vending machine.~~

~~24. The method of claim 23 further comprising a step of determining a vacant pigeon hole cup holder for receiving the at least one cup from a customer, and notifying a customer of the respective pigeon hole cup holder.~~

~~25. The method of claim 23 further comprising a step of determining a vacant pigeon hole cup holder for delivering the at least one cup with the at least one beverage, and notifying a customer of the respective pigeon hole cup holder.~~