

## BEVERAGE DISPENSER WITH POWDER CONTAINER

### **Field of the invention**

The present invention relates to beverage dispensers enabling the preparation of various  
5 different beverages and having a front panel with selection buttons for ordering said  
different beverages.

### **Background of the invention**

There exist beverage dispensers enabling the preparation of various different beverages  
10 like espresso and other coffee beverages, milk beverages, chocolate beverages, tea  
beverages, soups, ... Generally these beverage are prepared by mixing a beverage  
ingredient - a soluble beverage powder or a beverage concentrate - with a diluent.  
Usually these beverage ingredients are stored in containers within the dispenser.

The number of different beverages the dispenser is able to prepare depends on the  
15 number of containers in the dispenser and on the nature of the beverage ingredients  
stored in the containers ; for example, different containers can store the same beverage  
ingredient or each container can store different beverage ingredients.

Generally these beverage dispensers present a front door with a selection panel  
enabling the consumer to order a beverage. The selection panel comprises selection  
20 buttons for each of the beverages that can be prepared by the dispenser. Generally  
these selection buttons are mechanical buttons embedded in the front door. Since, for  
manufacturing costs optimization, it is not possible to manufacture different front doors  
with different selection panels having a different number of buttons, the dispensers  
always present the same high number of selection buttons even if they are able to  
25 dispense only a small number of beverages. When it is the case, some selection buttons  
remain apparent and do not work or several selection buttons enable the preparation of  
the same beverage. As a result the dispenser is not very appealing or looks like if some  
buttons do not work.

30 There is a need for improving the selection panel of beverage dispensers whatever the  
number of beverage dispensable by the dispenser.

It would be advantageous to provide a selection panel that makes apparent a number of  
buttons corresponding exactly to the number of beverage dispensable by the machine.

35

It would be advantageous to provide a selection panel that makes apparent only some buttons out of all the buttons of the selection panel and that does not give the customer the feeling that some buttons are missing or are broken.

## 5 **Summary of the invention**

In a first aspect of the invention, there is provided a beverage preparation machine configured for dispensing a plurality of different beverages comprising :

- a plurality of containers for storing, dosing and dispensing different beverage ingredients,
- 10 - at least one beverage preparation unit for preparing a beverage from at least one of the beverage ingredients and a diluent,
- a control system operable to execute a preparation process comprising controlling said containers and beverage preparation unit(s) to prepare the beverage,
- the control system comprising a user interface,
- 15 - the user interface comprising a plurality of selection buttons enabling the ordering of different beverages,
- said selection buttons being positioned on the front face of the beverage preparation machine, and
- each selection button being associated with one beverage identification label and
- 20 cooperating with a corresponding backlight device so that the selection button and the associated label are made visible when backlit only,
- wherein, during the operation of configuration of the machine, the control system is configured to :
- receive input relative to the number of different beverages dispensable by the machine,
- 25 and
- in response to said input :
  - . switch on a number of backlight devices equal to the number of different beverages dispensable by the machine, and
  - . select the backlight devices to be switched on.

30

The beverage preparation machine comprises a plurality of containers for storing, dosing and dispensing different beverage ingredients. Usually this type of containers comprises a tank and a dosing device for displacing the beverage ingredient stored in the tank to a dispensing outlet.

35 The containers can be configured for storing, dosing and dispensing soluble beverage powders like instant coffee, instant tea, milk powder, cocoa powder, dehydrated soup, ...

The dosing device for dosing powder can be any device able to meter a dose of powder like a rotary pierced disc, a dosing auger, a shut off valve, an endless screw, a barrel, a sliding chamber or other known powder dosing devices. The dosing device is usually actuated by a motor.

- 5 The containers can be configured for storing, dosing and dispensing soluble beverage concentrates like coffee concentrate, tea concentrate, milk concentrate, coca concentrate, syrups, ...

When a liquid beverage concentrate is used, the dosing means can be a non-return valve associated with a peristaltic pump. It can be part of the tank holding the  
10 concentrate or it can be an independent device in which an outlet of the source of a concentrate emerges.

The beverage preparation machine comprises at least one beverage preparation unit operatively linked to the containers for preparing a beverage from at least one of the  
15 beverage ingredient.

The beverage preparation unit can be comprised in the list of : a jet(s) head, a mixing bowl, a whipper bowl.

The jet(s) head can be a nozzle delivering at least one jet of diluent. Preferably it delivers at least two jets of diluent and even more preferably the jets head is able to rotate during  
20 the delivery of the diluent through the nozzle.

The mixing bowl can be a chamber configured to receive the diluent and the beverage ingredient. It can be designed so as to make an efficient contact of the beverage ingredient and the diluent and improve the dissolution of a beverage ingredient. The whipper bowl usually comprises a first part which is a mixing chamber configured to  
25 receive the diluent and a beverage ingredient and a second part comprising a whipper configured to make the mixture of the diluent and the beverage ingredient foam.

One beverage preparation unit can cooperate with one dedicated container for storing, dosing and dispensing soluble beverage or one beverage preparation unit can cooperate with several, generally two, dedicated containers for storing, dosing and dispensing  
30 soluble beverage. In that latter case, a beverage can be produced by mixing and dissolution of several beverage ingredients.

The beverage preparation machine comprises a control system operable to execute a preparation process comprising controlling said containers and beverage preparation  
35 unit(s) to prepare the beverage.

The control system may comprise a processor operatively connected to the user interface, containers and the beverage preparation unit(s).

Typically a memory unit associated with the processor of the control system can have executable programs related to the preparation process stored thereon.

5

In particular the control system can control the motors associated to the containers to dose a beverage ingredient amount and dispense said dose in a part of the beverage preparation unit. The control system can actuate the beverage preparation unit in order to mix the dose of beverage ingredient with a diluent.

10

The control system comprises a user interface. To enable a consumer to select a beverage the user interface comprises an input unit. The input unit comprises a plurality of selection buttons enabling the ordering of different beverages.

These selection buttons are positioned on the front face of the beverage preparation machine.

15

Each selection button is associated with one beverage identification label. Accordingly the consumer identifies the beverage prepared by the machine when said button is activated. Each selection button cooperates with a corresponding backlight device so that the selection button and the associated label are made visible when backlit only.

20

During the operation of configuration of the machine, the control system of the machine is configured to :

- receive input relative to the number of different beverages dispensable by the machine, and

25

- in response to said input :

- . switch on a number of backlight devices equal to the number of different beverages dispensable by the machine, and

- . select the backlight devices to be switched on from all the backlight devices of the user interface.

30

Consequently, if the machine is designed with a user interface comprising N selection buttons but the machine enables the preparation of only n beverage ( $n < N$ ), the control system enables the actuation of only n backlight devices and accordingly only n selection buttons becomes apparent on the front face of the machine. The other  $N-n$  buttons remain invisible because their corresponding backlight devices are not switched on. For

35

consumers there is no impression that  $N-n$  buttons do not work because they cannot see said buttons.

This operation of configuration of the machine is generally handled by the operator in charge of the maintenance of the machine. The choice of the natures and number of beverages to be dispensed is usually defined by the owner of the machine. Based on this definition, the operator configures the front door of the machine by means of the control system.

The control system does not enable the actuation of only n backlight devices only, it selects too which backlight devices has to be switched on from all the backlight devices of the user interface. Preferably the selection is implemented so that the backlight devices to be switched on are positioned one next to the others.

Accordingly, the selection shows buttons that are grouped together and, for consumers, there is no impression that some buttons are isolated from the others and that a part of the user interface does not work.

Preferably all the buttons have the same size and the same shape.

According to the preferred embodiment, the plurality of selection buttons of the user interface are positioned on the front face according to at least two horizontal lines, the buttons being distributed equally in each horizontal line, and the buttons of one horizontal line being offset compared to the buttons of the next horizontal line.

In said embodiment, preferably, the control system is configured to select the backlight devices to be switched on so that the switched on backlight devices illuminate selection buttons positioned on a same line or distributed on several adjacent lines equally.

Generally the user interface is positioned on the front door of the machine.

Generally the front door comprises a back wall and a front wall, said front wall comprising at least one transparent area and the user interface is positioned between the back wall and the transparent area of the front wall.

According to one first embodiment, the user interface comprises :

- touch activated switches for each selection button, said touch activated switches being positioned close to the back wall and being held on a common printed circuit board,
- backlight devices, said backlight devices being positioned close to the back wall,

- a light separator positioned between the back light devices and the front wall, said light separator orientating the light of each backlight devices to the transparent area of the front wall,
- a cover positioned between the light separator and the transparent area of the front wall, said cover being transparent when backlighted,
- springs associated to each of the touch activated switches, said springs being hold between the cover and the common printed circuit board of the touch activated switches,
- beverage identification labels positioned between the cover and the transparent area of the front wall, each label being associated with one backlight device and one touch activated switch.

Preferably the backlight devices are positioned on the common printed circuit board of the touch activated switches.

- 15 In this first embodiment the selection buttons are spring activated. -

The cover positioned between the light separator and the transparent area of the front wall, is transparent when backlighted and, if not, remains opaque.

- 20 According to one second embodiment, the user interface comprises :

- backlight devices, said backlight devices being positioned close to the back wall and hold on a common printed circuit board,
- a light separator positioned between the back light devices and the front wall, said light separator orientating the light of each backlight devices to the transparent area of the front wall,
- a touch film with a plurality of touch zones, each of said touch zones corresponding to a selection button, said touch film being positioned between the backlight devices and the at least one transparent area of the front wall, and each touch zone cooperating with a corresponding backlight device,
- a cover positioned between the touch film and the transparent area of the front wall, said cover being transparent when backlighted,
- beverage identification labels positioned between the cover and the transparent area of the front wall, each label being associated with one backlight device and one touch zone of the touch film.

- 35 Preferably the printed circuit board of the backlight devices controls the touch film.

The cover positioned between the light separator and the transparent area of the front wall, is transparent when backlighted and, if not, remains opaque.

- 5 According to a second aspect, there is provided a beverage preparation machine 1 configured for dispensing a plurality of different beverages comprising :
- a plurality of containers for storing, dosing and dispensing different beverage ingredients,
  - at least one beverage preparation unit for preparing a beverage from at least one of the
  - 10 beverage ingredients and a diluent,
  - a control system operable to execute a preparation process comprising controlling said containers and beverage preparation unit(s) to prepare the beverage,
  - the control system comprising a user interface,
  - the user interface comprising a plurality of selection buttons (6) enabling the ordering of
  - 15 different beverages,
- said selection buttons being positioned on the front face of the beverage preparation machine, and
- each selection button being associated with one beverage identification label and cooperating with a corresponding backlight device so that the selection button and the
- 20 associated label are made visible when backlighted only,
- wherein the plurality of selection buttons of the user interface are positioned on the front face of the machine according to at least two horizontal lines, the buttons being distributed equally in each horizontal line, and the buttons of one horizontal line being offset compared to the buttons of the next horizontal line.

25

In this text, the term "a plurality" means at least two.

- The above aspects of the invention may be combined in any suitable combination. Moreover, various features herein may be combined with one or more of the above
- 30 aspects to provide combinations other than those specifically illustrated and described. Further objects and advantageous features of the invention will be apparent from the claims, from the detailed description, and annexed drawings.

### **Brief description of the drawings**

The characteristics and advantages of the invention will be better understood in relation to the following figures :

- Figure 1 is a schematic view of a beverage preparation machine of the state of the art,
- 5 - Figure 2 is a view of the machine of Figure 1 with the front door opened,
- Figure 3 is a schematic view of the front door of a machine according to the invention,
- Figures 4a to 4e are a schematic representation of the buttons of the machine according to the invention,
- Figure 5 is a block diagram showing a control system of a machine according to the
- 10 invention,
- Figure 6 illustrates the different components of the front door of a beverage preparation machine according to a first embodiment of the present invention,
- Figure 7 is a cross section view of the door of Figure 6,
- Figure 8 illustrates the different components of the front door of a beverage preparation
- 15 machine according to a second embodiment of the present invention.

### **Detailed description of the drawings**

**Figure 1** illustrates a beverage preparation machine according to the state of the art. The front door 2 of the machine comprises a user interface enabling a user to select the

20 beverage to be prepared. In Figure 1 the machine comprises eight mechanical buttons 6 for activating the beverage preparation and eight labels 28 for identifying the beverage associated to each button.

**Figure 2** illustrates the machine of Figure 1 with its front door 2 opened. Internally the

25 machine comprises 4 containers 3 for storing, dosing and dispensing different beverage ingredients. Each container 3 - also known as canister - enables the storage of a power ingredient, the dosing by means of a dosing device lodged within the container and its dispensing through an outlet 31. Each outlet is positioned above a mixing chamber 4. The mixing chamber enables the mixing of the dose of beverage ingredient with a

30 diluent, usually water.

The machine comprises a diluent fluid system (not illustrated) comprising a diluent supply (a tank or a connection to tap water), a diluent heater and/or a diluent cooler and a pump for delivering either hot or cold diluent to the diluent tubes 41 and inside the chambers 4.

35 The bottom of each mixing chamber comprises a dispensing tube 41 for evacuating the prepared beverage to a dispensing area 10 where a drinking cup 11 can be positioned.

Up to eight different beverages can be prepared with the machine depending on the nature of the beverage ingredients in the containers 3 taking into account that two different beverages obtained from two different beverage ingredients can be mixed together in the drinking cup (e.g. in order to prepare a cappuccino from milk powder and instant coffee).

Yet, the proprietor of the machine may not be interested in preparing eight different beverages and may fill the containers with only two different types of beverage powder to prepare three types of beverage only.

In that case only three buttons 6 can be actuated and only three corresponding labels 28 are present to list these beverages. The other buttons remain visible but cannot be used.

**Figure 3** illustrates a machine according to the present invention. This machine presents the same internal parts as the machine of Figure 2, but its front door 2 and its user interface are different. The user interface comprises eight selection buttons 6 enabling the ordering of different beverages. Each selection button 6 is associated with one beverage identification label (B1, B2, B3, B4, B5, B6, B7, B8).

Each label and button is illuminated by a dedicated backlight device so that the selection button and the associated label are made visible when backlighted only. In Figure 3, the eight buttons are backlighted and visible. The consumer is able to order the preparation of one of these eight beverages.

**Figures 4a to 4e** illustrate the appearances of the selection buttons 6 of the machine of Figure 3 depending on which backlighted devices are switched on.

In Figure 4a, only three backlighted devices are switched on and accordingly only the labels B1, B2 and B3 of the corresponding backlighted buttons are apparent. The other five buttons remain invisible.

Similarly Figures 4b to 4e illustrate the user interface with four to seven backlighted devices switched on respectively.

The number of buttons to be backlighted is selected by the control system of the machine based on an input of the operator of the machine, said input providing the number of beverages dispensable by the machine.

Once the number of buttons is set, the control system is configured to choose the backlight devices to be switched on from the eight backlight devices so that said switched on backlight devices are positioned one next to the others.

Preferably, as illustrated in Figure 3, the plurality of selection buttons of the user interface are positioned on the front face of the machine according to at least two horizontal lines. On each horizontal line the buttons are distributed equally one from the other. Each line presents the same distribution of buttons (same number of buttons, size of the buttons, spacing between the buttons). Finally the buttons of one horizontal line are offset compared to the buttons of the next horizontal line.

With that configuration preferably the control system is configured to select the backlight devices to be switched on so that the switched on backlight devices illuminate selection buttons positioned on a same line (Figures 4a, 4b) or distributed on several adjacent lines equally (Figures 4c, 4d). By equally, it is meant that the several adjacent lines look almost the same and that there is not a strong difference of number of illuminated buttons between two adjacent lines. For example, in the illustrated embodiments comprising at most four buttons per line, the difference of number of illuminated buttons between two adjacent lines is of at most 1. For dispensers presenting a higher number of buttons per line, the difference might be higher too.

Accordingly the user interface does not look like if some buttons were missing.

The control system 5, an example of which is illustrated in **Figure 5**, is operable to control the beverage preparation unit 4, the containers 3, the diluent heater and/or cooler 8, the diluent pump 9 to execute a beverage preparation process. The control system 5 typically comprises : a processor 51, a user interface comprising buttons 6 and backlighted devices 25, a power supply 12.

The user interface is operatively connected to the processor 51 to provide an input for monitoring the beverage preparation process.

The power supply 12 is operable to supply electrical energy to the processor 51, the motors of the beverage preparation units, of the containers, to the heater and or cooler and to the pump of the diluent.

30

For the current preparation of a beverage, the processor 51 is generally operable :

- to receive an input, i.e. a command from the user interface, one of the buttons 6,
- process the input according to program code stored on a memory unit 13 (or as programmed logic),
- provide an output, which is generally the said preparation process.

35

The processor 51 generally comprises memory, input and output system components, which are arranged as an integrated circuit, typically as a microprocessor or a microcontroller. The processor 51 may comprise other suitable integrated circuits, such as : an ASIC, a programmable logic device such as an FPGA, an analogue integrated circuit such as a controller. The processor 51 may also comprise one or more of the  
 5 aforementioned integrated circuits, i.e. multiple processors. The processor 51 generally comprises a memory unit 13 for storage of the program code (such as preparation programs executable for a preparation process) and optionally data. The memory unit typically comprises : a non-volatile memory e.g. EPROM, EEPROM or Flash for program  
 10 code and operating parameter storage, volatile memory (RAM) for data storage. The memory unit may comprise separate and/or integrated (e.g. on a die of the processor) memory. Typically the processor 51 comprises a clock for timing of the preparation process (and for execution of instructions).

15 For the operation of the configuration of the user interface of the beverage preparation machine before the machine is operable, the control system 51 is configured to :

- receive input relative to the number of different beverages dispensable by the machine, and
- in response to said input :

20 . switch on a number of backlight devices 25 equal to the number of different beverages dispensable by the machine, and

. select the backlight devices 25 to be switched on.

**Figure 6** is an exploded view of the front door of a machine according to the first  
 25 embodiment of the present invention. **Figure 7** is a partial section view of this front door.

The door comprises a back wall 21 and a front wall 22. At least a part 221 of the front wall is transparent. The space within the front and the back walls comprises the components of the user interface.

The user interface comprises eight touch activated switches 24a, 24b, ... said touch  
 30 activated switches being positioned close to the back wall and being held on a common printed circuit board 23.

The printed circuit board 23 holds eight backlight devices 25a, 25b, ... each of them being associated with one dedicated touch activated switches 24. Preferably these  
 35 backlight devices 25a, 25b, ... are LEDs. According to a particular embodiment each touch activated switches can comprise several associated backlight devices, these

devices differing by their colours. Accordingly the colour of the activated backlight device can provide an additional information like an error mode.

The user interface comprises a light separator 26 positioned between the back light devices 25a, 25b, ... and the front wall 22. This light separator prevents the light from one backlight device 25a associated with one touch activated switch 24a to light on a close other touch activated switch 24b. The light is kept orientated to the transparent area of the front wall only.

The user interface comprises a cover 27 positioned between the light separator 26 and the transparent area 221 of the front wall. Preferably, this cover is transparent when backlighted. The cover can be made of a transparent plastic covered on one of its side (preferably the front cover facing the front wall 22) by a layer of paint. The nature and/or the thickness of the paint layer is such that when the cover is backlighted, light is not stopped by the paint and can be seen through the front wall 22. Preferably a transparent film is present above the paint layer in order to protect the paint. This transparent film is preferably produced by in-mold labelling.

The user interface comprises springs 241a, 241b, associated to each of the touch activated switches, said springs being hold between the cover 27 and the printed circuit board 23 of the touch activated switches.

The user interface comprises beverage identification labels 28, 28a, 28b positioned between the cover and the transparent area 221 of the front wall, each label 28a, 28b being associated with one backlight device 25a, 25b and one touch activated switch 24a, 24b. Preferably the labels are self-adhesive and can be removably stick on the front face of the cover 27, preferably on the transparent film above the paint layer

**Figure 8** is an exploded view of the front door of a machine according to the second embodiment of the present invention. The door comprises a back wall 21 and a front wall 22. At least a part 221 of the front wall is transparent. The space within the front and the back walls comprises the components of the user interface.

The user interface comprises eight backlight devices 25a, 25b, ... said backlight devices being positioned close to the back wall and being hold on a common printed circuit board 23.

Preferably these backlight devices 25a, 25b, ... are LEDs.

The user interface comprises a light separator 26 positioned between the back light devices 25a, 25b, ... and the front wall 22. This light separator prevents the light from one backlight device 25a to light on a close other touch activated switch 24b. The light is kept orientated to the transparent area of the front wall only.

The user interface comprises a touch film 29 with eight touch zones 29a, 29b, ... for each selection button,. The touch film is positioned between the backlight devices 25a, 25b, ... and the transparent area 221 of the front wall. Each touch zone cooperates with a corresponding backlight device through the light separator.

- 5 The user interface comprises a cover 27 positioned between the touch film 29 and the transparent area 221 of the front wall. This cover is similar to the cover 27 of the first embodiment.

The user interface comprises beverage identification labels 28, 28a, 28b positioned between the cover 27 and the transparent area 221 of the front wall, each label 28a, 28b  
10 being associated with one backlight device 25a, 25b and one touch zone 29a, 29b. Labels are similar to the first embodiment.

Although the invention has been described with reference to the above illustrated embodiments, it will be appreciated that the invention as claimed is not limited in any way  
15 by these illustrated embodiments.

Variations and modifications may be made without departing from the scope of the invention as defined in the claims. Furthermore, where known equivalents exist to specific features, such equivalents are incorporated as if specifically referred in this specification.

20 As used in this specification, the words "comprises", "comprising", and similar words, are not to be interpreted in an exclusive or exhaustive sense. In other words, they are intended to mean "including, but not limited to".

List of references in the drawings :

|    |                              |              |
|----|------------------------------|--------------|
| 25 | beverage preparation machine | 1            |
|    | front door                   | 2            |
|    | back wall                    | 21           |
|    | front wall                   | 22           |
|    | transparent part             | 221          |
| 30 | printed circuit board        | 23           |
|    | touch activated switch       | 24, 24a, 24b |
|    | springs                      | 241a, 241b   |
|    | pushing device               | 242a, 242b   |
|    | backlight device             | 25, 25a, 25b |
| 35 | light separator              | 26           |
|    | cover                        | 27           |

|    |                           |              |
|----|---------------------------|--------------|
|    |                           | 14           |
|    | label                     | 28, 28a, 28b |
|    | touch film                | 29           |
|    | touch zones               | 29a, 29b     |
|    | container                 | 3            |
| 5  | beverage preparation unit | 4            |
|    | dispensing tube           | 41           |
|    | diluent tube              | 42           |
|    | control system            | 5            |
|    | processor                 | 51           |
| 10 | selection buttons         | 6            |
|    | poster                    | 7            |
|    | heater                    | 8            |
|    | pump                      | 9            |
|    | dispensing area           | 10           |
| 15 | drinking cup              | 11           |
|    | power supply              | 12           |
|    | memory unit               | 13           |

**CLAIMS**

1. Beverage preparation machine (1) configured for dispensing a plurality of different beverages comprising :

- 5 - a plurality of containers (3) for storing, dosing and dispensing different beverage ingredients,  
- at least one beverage preparation unit (4) for preparing a beverage from at least one of the beverage ingredients and a diluent,  
- a control system (5) operable to execute a preparation process comprising controlling  
10 said containers and beverage preparation unit(s) to prepare the beverage,  
- the control system comprising a user interface,  
- the user interface comprising a plurality of selection buttons (6) enabling the ordering of different beverages,  
said selection buttons being positioned on the front face of the beverage preparation  
15 machine, and  
each selection button being associated with one beverage identification label and cooperating with a corresponding backlight device so that the selection button and the associated label are made visible when backlit only,  
wherein, during the operation of configuration of the machine, the control system is  
20 configured to :  
- receive input relative to the number of different beverages dispensable by the machine, and  
- in response to said input :  
. switch on a number of backlight devices equal to the number of different beverages  
25 dispensable by the machine, and  
. select the backlight devices to be switched on.

2. Beverage preparation machine according to Claim 1, wherein the control system is configured to select the backlight devices to be switched on so that said backlight  
30 devices are positioned one next to the others.

3. Beverage preparation machine according to Claim 1 or 2, wherein the plurality of selection buttons of the user interface are positioned on the front face of the machine according to at least two horizontal lines, the buttons being distributed equally in each  
35 horizontal line, and the buttons of one horizontal line being offset compared to the buttons of the next horizontal line.

4. Beverage preparation machine according to the precedent claim, wherein the control system is configured to select the backlight devices to be switched on so that the switched on backlight devices illuminate selection buttons positioned on a same line or distributed on several adjacent lines equally.
5. Beverage preparation machine according to any one of the precedent claims wherein the user interface is positioned on the front door of the machine.
6. Beverage preparation machine according to the precedent claim wherein the front door (2) comprises a back wall (21) and a front wall (22), said front wall comprising at least one transparent area and wherein the user interface is positioned between the back wall and the at least one transparent area of the front wall.
7. Beverage preparation machine according to the precedent claim wherein the user interface comprises :
- touch activated switches (24, 24a, 24b) for each selection button, said touch activated switches being positioned close to the back wall and being hold on a common printed circuit board (23),
  - backlight devices (25a, 25b), said backlight devices being positioned close to the back wall,
  - a light separator (26) positioned between the back light devices and the front wall, said light separator orientating the light of each backlight devices to the transparent area of the front wall,
  - a cover (27) positioned between the light separator (26) and the at least one transparent area of the front wall, said cover being transparent when backlighted,
  - springs (24) associated to each of the touch activated switches, said springs being hold between the cover (27) and the printed circuit board (23) of the touch activated switches,
  - beverage identification labels (28, 28a, 28b) positioned between the cover and the transparent area of the front wall, each label (28a, 28b) being associated with one backlight device (25a, 25b) and one touch activated switch (24a, 24b).
8. Beverage preparation machine according to the precedent claim wherein the backlight devices are positioned on the common printed circuit board of the touch activated switches.

9. Beverage preparation machine according to the Claim 6 wherein the user interface comprises :

- backlight devices (25a, 25b), said backlight devices being positioned close to the back wall (21) and hold on a common printed circuit board (23),
- 5 - a light separator (26) positioned between the back light devices (25) and the front wall (22), said light separator orientating the light of each backlight devices to the at least one transparent area of the front wall,
- a touch film (29) with a plurality of touch zones (29a, 29b), each of said touch zones corresponding to a selection button, said touch film being positioned between the
- 10 backlight devices (25a, 25b) and the at least one transparent area of the front wall, and each touch zone cooperating with a corresponding backlight device,
- a cover (27) positioned between the touch film (29) and the at least one transparent area of the front wall, said cover being transparent when backlit,
- beverage identification labels (28) positioned between the cover (27) and the at least
- 15 one transparent area of the front wall, each label (28a, 28b) being associated with one backlight device (25a, 25b) and one touch zone (29a, 29b) of the touch film.