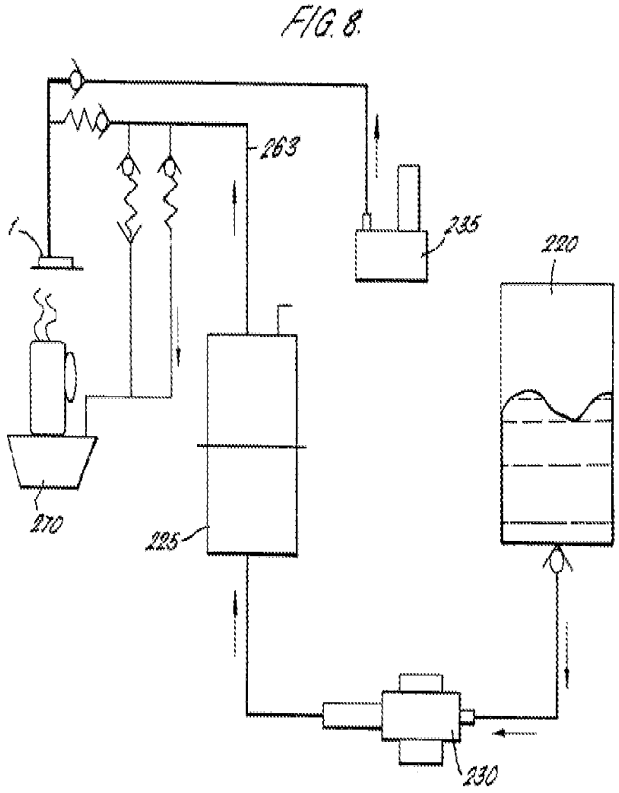
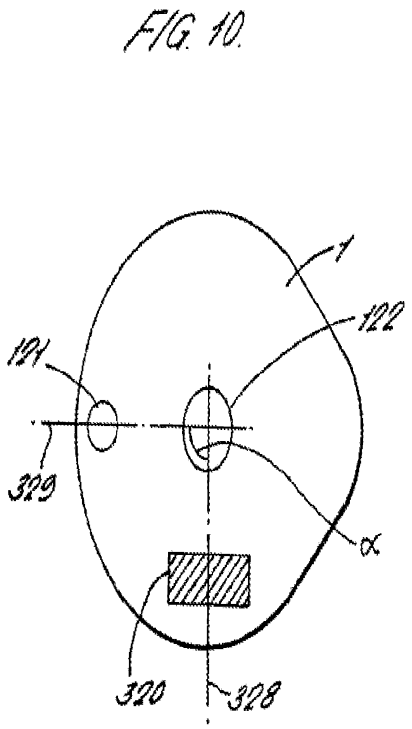
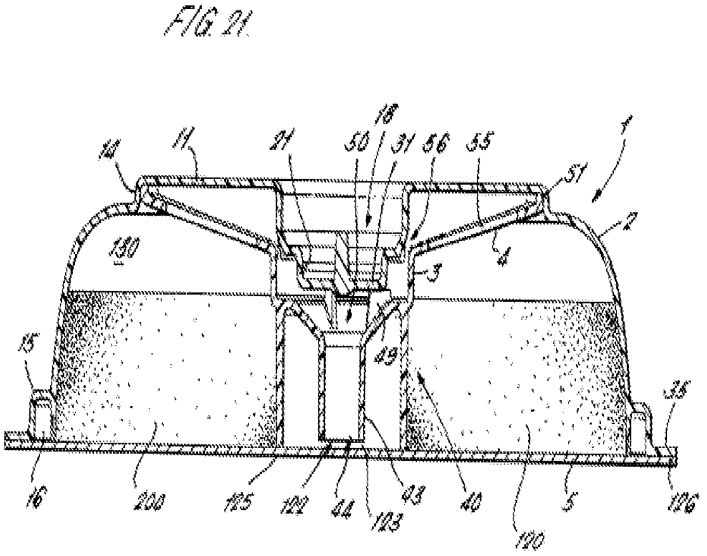
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	Panesar at FIG. 8:  The control processor of the beverage preparation machine 201 comprises a processing module and a memory. The control processor is operatively connected to, and controls operation of, the water heater 225, water pump 230, air compressor 235 and user interface 240. The memory of the control processor includes one or more variables for one or more operational parameters for the beverage preparation machine 201. The operational parameters are the temperature of the water passed through the beverage cartridge 1 during the operating stage, the speed of charging the beverage cartridge 1, the presence or otherwise

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	of a soak step, the total dispensed volume of the beverage, the flow rate of the water during the discharge stage, and the flow rate and period of the purge stage. Panesar at p. 25, ll. 8–29: The variables for the operational parameters are stored in the memory. The cartridge 1 comprises a code provided on or in the cartridge 1 representing the operational parameters required for optimal dispensation of the beverage in that cartridge 1 The code is in binary format and comprises a plurality of data bits corresponding to the variables stored in the control processor memory. Panesar at p. 34, ll. 5–12: The purpose of the recognition means 252 is to allow the machine 201 to recognise the type of beverage cartridge 1 that has been inserted and to adjust one or more operational parameters accordingly. In a typical embodiment, the recognition means 252 comprises an optical barcode reader which reads the printed barcode 320 provided on the laminate 5 of the beverage cartridge 1 as shown in Figure 10 and discussed above. Panesar at p. 34, line 28 – p. 35, line 4: The software can recognize whether the read of the barcode contained errors, although the occurrence of these is minimized as described above by specific location of the barcode 320 relative to the inlet. The barcode 320 may be rescanned a number of times before an error message is presented to the consumer. If the machine 201 is unable to read the barcode the consumer is able to use the beverage cartridge 1 to dispense a beverage using a manual mode of operation. Panesar at p. 36, ll. 15–31: Cartridge recognition is performed by the optical recognition means 252 as described above assuming that the outputs from the cartridge sensor and lock sensor are satisfactory. Once

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	the barcode 320 or RFID has been decoded the operational parameters of the machine 201 are adjusted by the control processor. The discharge cycle is then automatically commenced. The discharge cycle has four main stages, not all of which are used for all beverage types: (i) Pre-wet (ii) Pause (iii) Brew/Mixing (iv) Purge In the pre-wet stage the cartridge 1 is charged with water from the water storage tank 220 by means of the water pump 230. The charging with water causes the beverage ingredients 200 in the filtration chamber 130 to be wetted. Panesar at p. 37, ll. 17–24: In the brew/mixing stage water is passed through the cartridge 1 in order to produce the beverage from the beverage ingredients 200. The temperature of the water is determined by the control processor which sends instructions to the water heater 225 to heat the water passing from the water tank 220 to the brew head 250. Water enters the lower part 255 of the holder 251 through the conduit 262 via the inlet valve and the inlet piercer 253 into the inlet chamber 25 126 of the beverage cartridge 1. Panesar at p. 24, ll. 10–14: The water heater 225 is located in the interior of the housing 210. The heater 225 has a power rating of 1550 W and is able to heat water received from the water pump 230 from a starting temperature of approximately 20 °C to an operating temperature of around 85 °C in under 1 minute.

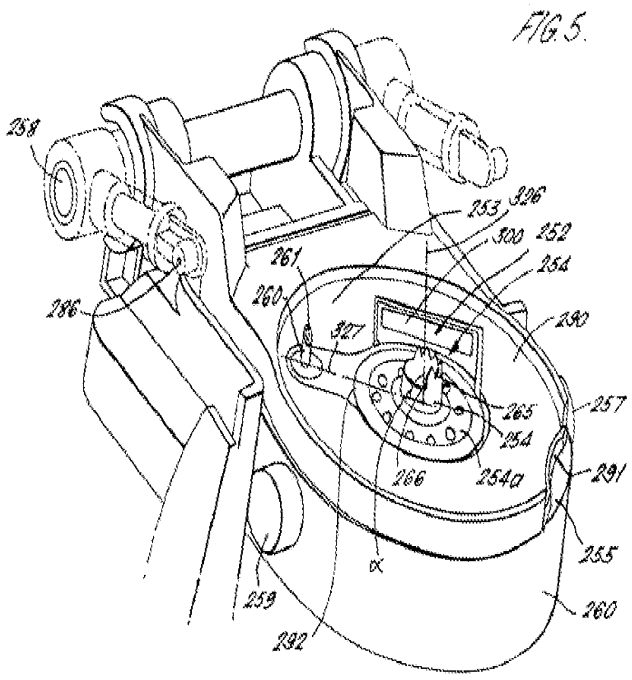
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	Panesar at FIG. 10: 

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	Panesar at FIG. 21: 
[1.j] unloading the first portion capsule from the apparatus;	Panesar discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: Panesar at p. 38, lines 8-14: Once the operating cycle has been completed the consumer removes the cartridge 1 by opening the holder 251 and manually removing and disposing of the cartridge. Alternatively, the machine 201 may be provided with an automatic ejection mechanism for removing the cartridge automatically on opening the holder 251.
[1.k] inserting a second portion capsule into the apparatus, the second portion capsule including a second foil lid sealed to a base element having a cavity within which a powdered coffee material is	Panesar discloses, either expressly or inherently, inserting a second portion capsule into the apparatus, the second portion capsule including a second foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity of the second portion capsule being free of a filter and includes a central portion and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion

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located, the cavity of the second portion capsule being free of a filter and includes a central portion and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity, the base element of the second portion capsule including a circumferential flange having a top side to which the second foil is sealed and an opposing bottom side with a second barcode located on the bottom side and being different from the first barcode, the base element of the second portion capsule includes an outside surface having a plurality of vertically oriented grooves; reading the second barcode with the barcode reader; controlling a second production process of a second coffee beverage based upon the reading of the second barcode, the second production process being different than the first production process; piercing the second foil lid with the mandrel of the apparatus in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange and/or the second foil lid of the	of the cavity, the base element of the second portion capsule including a circumferential flange having a top side to which the second foil is sealed and an opposing bottom side with a second barcode located on the bottom side and being different from the first barcode, the base element of the second portion capsule includes an outside surface having a plurality of vertically oriented grooves; reading the second barcode with the barcode reader; controlling a second production process of a second coffee beverage based upon the reading of the second barcode, the second production process being different than the first production process; piercing the second foil lid with the mandrel of the apparatus in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange and/or the second foil lid of the second portion capsule against the seal of the apparatus; and introducing the heated water into the second portion capsule to form the second coffee beverage. *See, e.g.*: *See* [1.b]-[1.i]. Panesar at p. 5, ll. 7–8: Preferably the barcode reader or RFID reader window is located at or near a periphery of the brew head. Panesar at p. 34, ll. 5–26: The purpose of the recognition means 252 is to allow the machine 201 to recognize the type of beverage cartridge 1 that has been inserted and to adjust one or more operational parameters accordingly. In a typical embodiment, the recognition means 252 comprises an optical barcode reader which reads the printed barcode 320 provided on the laminate 5 of the beverage cartridge 1 as shown in Figure 10 and discussed above. The optical barcode reader comprises one or more LEDs 321 to illuminate the barcode 320, a focusing lens 322 to acquire an image of the barcode, a charge coupled device (CCD) 323 for producing an electrical signal representative of the acquired image and support circuitry for the LEDs and CCD. The space in the lower part for accommodating the barcode reader is limited. A mirror or mirrors 324 may be used to reflect the light from the LEDs 321 to a focusing lens

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second portion capsule against the seal of the apparatus; and introducing the heated water into the second portion capsule to form the second coffee beverage.	which is not located in the lower part 255. Schematic arrangements are shown in Figures 9a and 9b. The lower part 255 comprises an aperture 326 which is the same size as the barcode 320 on the beverage cartridge 1. The aperture 326 is closed by a window, preferably glass, which can transmit the signals produced by the barcode reader. Panesar at p. 35, ll. 4–6: Alternatively, an RFID reader is provided to read an RFID located on the cartridge 1. *See also* Panesar at Claims 24, 27, 30.
[redacted]	
2. The method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs.	Panesar discloses, either expressly or inherently, the method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs. *See, e.g.*: *See also* [1].
[redacted]	
3. The method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference.	Panesar discloses, either expressly or inherently, the method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference. *See, e.g.*: Panesar at p. 4, ll. 24–29: The beverage preparation machine may comprise a brew head comprising an upwardly directed inlet for supplying water to the brew head, a downwardly directed outlet for outflow of beverage produced by the machine and a barcode or RFID reader having a window in the brew head through which signals may be transmitted . . . Panesar at p. 5, ll. 7–8:

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	Preferably the barcode reader or RFID reader window is located at or near a periphery of the brew head. *See*, *e.g.*, . Panesar at p. 34, ll. 5–26: The purpose of the recognition means 252 is to allow the machine 201 to recognize the type of beverage cartridge 1 that has been inserted and to adjust one or more operational parameters accordingly. In a typical embodiment, the recognition means 252 comprises an optical barcode reader which reads the printed barcode 320 provided on the laminate 5 of the beverage cartridge 1 as shown in Figure 10 and discussed above. The optical barcode reader comprises one or more LEDs 321 to illuminate the barcode 320, a focusing lens 322 to acquire an image of the barcode, a charge coupled device (CCD) 323 for producing an electrical signal representative of the acquired image and support circuitry for the LEDs and CCD. The space in the lower part for accommodating the barcode reader is limited. A mirror or mirrors 324 may be used to reflect the light from the LEDs 321 to a focusing lens which is not located in the lower part 255. Schematic arrangements are shown in Figures 9a and 9b. The lower part 255 comprises an aperture 326 which is the same size as the barcode 320 on the beverage cartridge 1. The aperture 326 is closed by a window, preferably glass, which can transmit the signals produced by the barcode reader. Panesar at p. 35, ll. 4–6: Alternatively, an RFID reader is provided to read an RFID located on the cartridge 1. *See*, *e.g.*, . Panesar at FIG. 5:

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	 *See also* Panesar at Claims 24, 27, 30. *See also* [1].
10. The method according to claim 1, wherein the base element of the first portion capsule is made of metal.	Panesar discloses, either expressly or inherently, the method according to claim 1, wherein the base element of the first portion capsule is made of metal. *See, e.g.*: Panesar at p. 9, ll. 8–18: <u>Cartridge for use in the system</u> As shown in Figure 10 to 21, the cartridge 1 generally comprises an outer member 2, an inner member 3 and a laminate 5. The outer member 2, inner member 3 and laminate 5 are assembled

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	to form the cartridge 1 which has an interior 120 for containing one or more beverage ingredients, an inlet 121, an outlet 122 and a beverage flow path linking the inlet 121 to the outlet 122 and which passes through the interior 120. The inlet 121 and outlet 122 are initially sealed by the laminate 5 and are opened in use by piercing or cutting of the laminate 5. Panesar at p. 35, ll. 24–31: To insert the cartridge 1 the holder 251 is opened as described above to expose the cartridge mount 257. The cartridge 1 is then placed on the cartridge mount 257 received within the recess 290 such that the handle 24 of the cartridge is located in the irregularity 291. The optical or magnetic barcode 320 or RFID of the cartridge 1 is oriented directly above the aperture 326 in the cartridge mount 257. Panesar at p. 38, ll. 15–21: <u>Insert for use in the system</u> As described above, the machine 201 of the present invention may also be used with other inserts not necessarily of a cartridge form. An example of another suitable form of insert will now be described. The insert 400 comprises an upper part 401 and a lower part 402. Panesar at p. 14 at line 21 – p. 15 at line 2: The laminate 5 is formed from two layers, a first layer of aluminium and a second layer of cast polypropylene. The aluminium layer is between 0.02 and 0.07 mm in thickness. . . . In one embodiment the aluminium layer is 0.06 mm and the polypropylene layer is 0.025 mm thick. This laminate is particularly advantageous as it has a high resistance to curling during assembly. As a result the laminate 5 may be pre-cut to the correct size and shape and subsequently transferred to the assembly station on the production line without undergoing distortion. Consequently, the laminate is particularly well suited to welding. Other laminate materials may be used including PET/Aluminium/PP, PE/EVOH/PP, PET/metallised/PP and Aluminium/PP laminates.

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	See also [1].
[redacted]	
11. The method according to claim 10, wherein the base element of the second portion capsule is made of metal.	Panesar discloses, either expressly or inherently, the method according to claim 10, wherein the base element of the second portion capsule is made of metal. *See, e.g.*: Panesar at p. 9, ll. 8–18: <u>Cartridge for use in the system</u> As shown in Figure 10 to 21, the cartridge 1 generally comprises an outer member 2, an inner member 3 and a laminate 5. The outer member 2, inner member 3 and laminate 5 are assembled to form the cartridge 1 which has an interior 120 for containing one or more beverage ingredients, an inlet 121, an outlet 122 and a beverage flow path linking the inlet 121 to the outlet 122 and which passes through the interior 120. The inlet 121 and outlet 122 are initially sealed by the laminate 5 and are opened in use by piercing or cutting of the laminate 5. Panesar at p. 35, ll. 24–31: To insert the cartridge 1 the holder 251 is opened as described above to expose the cartridge mount 257. The cartridge 1 is then placed on the cartridge mount 257 received within the recess 290 such that the handle 24 of the cartridge is located in the irregularity 291. The optical or magnetic barcode 320 or RFID of the cartridge 1 is oriented directly above the aperture 326 in the cartridge mount 257. Panesar at p. 38, ll. 15–21: <u>Insert for use in the system</u> As described above, the machine 201 of the present invention may also be used with other inserts not necessarily of a cartridge form. An example of another suitable form of insert will now be described. The insert 400 comprises an upper part 401 and a lower part 402.

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	Panesar at p. 14 at line 21 – p. 15 at line 2: The laminate 5 is formed from two layers, a first layer of aluminium and a second layer of cast polypropylene. The aluminium layer is between 0.02 and 0.07 mm in thickness. . . . In one embodiment the aluminium layer is 0.06 mm and the polypropylene layer is 0.025 mm thick. This laminate is particularly advantageous as it has a high resistance to curling during assembly. As a result the laminate 5 may be pre-cut to the correct size and shape and subsequently transferred to the assembly station on the production line without undergoing distortion. Consequently, the laminate is particularly well suited to welding. Other laminate materials may be used including PET/Aluminium/PP, PE/EVOH/PP, PET/metallised/PP and Aluminium/PP laminates. *See also* [10].
[redacted]	
12. The method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal.	Panesar discloses, either expressly or inherently, the method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal. *See, e.g.*: Panesar at p. 9, ll. 8–18: <u>Cartridge for use in the system</u> As shown in Figure 10 to 21, the cartridge 1 generally comprises an outer member 2, an inner member 3 and a laminate 5. The outer member 2, inner member 3 and laminate 5 are assembled to form the cartridge 1 which has an interior 120 for containing one or more beverage ingredients, an inlet 121, an outlet 122 and a beverage flow path linking the inlet 121 to the outlet 122 and which passes through the interior 120. The inlet 121 and outlet 122 are initially sealed by the laminate 5 and are opened in use by piercing or cutting of the laminate 5. Panesar at p. 35, ll. 24–31:

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IPR2023-00485, U.S. PATENT 11,230,430

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	To insert the cartridge 1 the holder 251 is opened as described above to expose the cartridge mount 257. The cartridge 1 is then placed on the cartridge mount 257 received within the recess 290 such that the handle 24 of the cartridge is located in the irregularity 291. The optical or magnetic barcode 320 or RFID of the cartridge 1 is oriented directly above the aperture 326 in the cartridge mount 257. Panesar at p. 38, ll. 15–21: Insert for use in the system As described above, the machine 201 of the present invention may also be used with other inserts not necessarily of a cartridge form. An example of another suitable form of insert will now be described. The insert 400 comprises an upper part 401 and a lower part 402. Panesar at p. 14 at line 21 – p. 15 at line 2: The laminate 5 is formed from two layers, a first layer of aluminium and a second layer of cast polypropylene. The aluminium layer is between 0.02 and 0.07 mm in thickness. . . . In one embodiment the aluminium layer is 0.06 mm and the polypropylene layer is 0.025 mm thick. This laminate is particularly advantageous as it has a high resistance to curling during assembly. As a result the laminate 5 may be pre-cut to the correct size and shape and subsequently transferred to the assembly station on the production line without undergoing distortion. Consequently, the laminate is particularly well suited to welding. Other laminate materials may be used including PET/Aluminium/PP, PE/EVOH/PP, PET/metallised/PP and Aluminium/PP laminates. *See also* [1.b], [1.d]. *See also* [1].

Exhibit A-6 – Invalidity of U.S. Patent No. 10,858,176 in view of Panesar

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[13.pre] A method of making a coffee beverage, comprising steps of:	Panesar discloses, either expressly or inherently, a method of making a coffee beverage. *See, e.g.*: *See* [1.pre].
[13.a] providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal;	Panesar discloses, either expressly or inherently, providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal. *See* [1.a], [1.g], [1.i], [1.h].
[13.b] inserting a first portion capsule into the apparatus, the first portion capsule being free of a filter and including a first lid that is sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines the cavity with a central interior portion,	Panesar discloses, either expressly or inherently, inserting a first portion capsule into the apparatus, the first portion capsule being free of a filter and including a first lid that is sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines the cavity with a central interior portion. *See, e.g.*: *See* [1.b].
[13.c] having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves,	Panesar discloses, either expressly or inherently, having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves. *See, e.g.*: *See* [1.c], [1.e].

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[13.d] the base element having a circumferential flange having a top side to which the first lid is sealed and an opposing bottom side with a first barcode located on the bottom side;	Panesar discloses, either expressly or inherently, the base element having a circumferential flange having a top side to which the first lid is sealed and an opposing bottom side with a first barcode located on the bottom side. *See, e.g.*: *See* [1.d].
[13.e] piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule;	Panesar discloses, either expressly or inherently, piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: *See* [1.g].
[13.f] sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus;	Panesar discloses, either expressly or inherently, sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus. *See, e.g.*: *See* [1.h].
[13.g] reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing heated water into the first portion capsule via the water inlet that is arranged along the central axis of the first portion capsule according to production conditions associated with the first barcode to form the first coffee beverage;	Panesar discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing heated water into the first portion capsule via the water inlet that is arranged along the central axis of the first portion capsule according to production conditions associated with the first barcode to form the first coffee beverage. *See, e.g.*: *See* [1.f], [1.i].

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[13.h] unloading the first portion capsule from the apparatus;	Panesar discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: *See* [1.j].
[13.i] inserting second portion capsule into the apparatus, the second portion capsule being free of a filter and including a second lid sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and an outside surface of the wall having a plurality of vertically oriented grooves, the base element has a circumferential flange having a top side to which the second lid is sealed and an opposing bottom side with a second barcode that is located on the bottom side and being different from the first barcode; piercing the second lid with the mandrel in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange of the second	Panesar discloses, either expressly or inherently, inserting second portion capsule into the apparatus, the second portion capsule being free of a filter and including a second lid sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and an outside surface of the wall having a plurality of vertically oriented grooves, the base element has a circumferential flange having a top side to which the second lid is sealed and an opposing bottom side with a second barcode that is located on the bottom side and being different from the first barcode; piercing the second lid with the mandrel in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange of the second portion capsule and/or the second lid against the seal of the apparatus; reading the second barcode with the barcode reader; controlling production of a second coffee beverage based upon the reading of the second barcode; introducing the heated water into the second portion capsule via the water inlet that is arranged along the central axis of the second portion capsule according to production conditions associated with the second barcode to form the second coffee beverage. *See, e.g.*: *See* [1.k]; [13.a]-[13.g].

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portion capsule and/or the second lid against the seal of the apparatus; reading the second barcode with the barcode reader; controlling production of a second coffee beverage based upon the reading of the second barcode; introducing the heated water into the second portion capsule via the water inlet that is arranged along the central axis of the second portion capsule according to production conditions associated with the second barcode to form the second coffee beverage.	
14. The method according to claim 13, wherein the production conditions associated with the first barcode are different from the production conditions associated with the second barcode, the production conditions include: pressure, temperature and/or an amount of the heated water.	Panesar discloses, either expressly or inherently, the method according to claim 13, wherein the production conditions associated with the first barcode are different from the production conditions associated with the second barcode, the production conditions include: pressure, temperature and/or an amount of the heated water. *See, e.g.*: Panesar at p. 5, ll. 7–8: Preferably the barcode reader or RFID reader window is located at or near a periphery of the brew head. Panesar at p. 34, ll. 5–26: The purpose of the recognition means 252 is to allow the machine 201 to recognize the type of beverage cartridge 1 that has been inserted and to adjust one or more operational parameters accordingly. In a typical embodiment, the recognition means 252 comprises an

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	optical barcode reader which reads the printed barcode 320 provided on the laminate 5 of the beverage cartridge 1 as shown in Figure 10 and discussed above. The optical barcode reader comprises one or more LEDs 321 to illuminate the barcode 320, a focusing lens 322 to acquire an image of the barcode, a charge coupled device (CCD) 323 for producing an electrical signal representative of the acquired image and support circuitry for the LEDs and CCD. The space in the lower part for accommodating the barcode reader is limited. A mirror or mirrors 324 may be used to reflect the light from the LEDs 321 to a focusing lens which is not located in the lower part 255. Schematic arrangements are shown in Figures 9a and 9b. The lower part 255 comprises an aperture 326 which is the same size as the barcode 320 on the beverage cartridge 1. The aperture 326 is closed by a window, preferably glass, which can transmit the signals produced by the barcode reader. Panesar at p. 35, ll. 4–6: Alternatively, an RFID reader is provided to read an RFID located on the cartridge 1. *See also* Panesar at Claims 24, 27, 30. *See also* [13].

Exhibit A-7 – Invalidity of U.S. Patent No. 10,858,176 in view of Ruchonnet

INVALIDITY CLAIM CHART
Invalidity of U.S. Patent No. 10,858,176 in view of Ruchonnet

According to its cover page, WO 2005/044067 A1 ("Ruchonnet") was published on May 19, 2005 from an application filed on October 26, 2004. Ruchonnet therefore constitutes prior art under at least pre-AIA 35 U.S.C. § 102(b) to the '176 Patent's PCT filing date. Ruchonnet anticipates and/or renders obvious the Asserted Claims of the '176 Patent (at least as Nespresso understands K-fee's application of the Asserted Claims in an effort to show infringement).

To the extent K-fee argues that any element below is not disclosed by Ruchonnet, a person of ordinary skill in the art would have found it obvious to combine the teachings of Ruchonnet with the background knowledge of a person of ordinary skill in the art and/or the additional references, and exemplary teachings, set forth in the charts in Exhibits A-1 to A-9 and in Appendix A.

The chart below provides representative examples of where each element of each claim is found within Ruchonnet. Citations are meant to be exemplary, not exhaustive, and Nespresso reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by K-fee. Citations to figures, drawings, tables, and the like include reference to any accompanying or related text. All internal cross references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Nespresso's position that K-fee's Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Nespresso's statements below should not be treated as an admission, implication, or suggestion that Nespresso agrees with K-fee regarding either the scope, construction, or interpretation of any of the Asserted Claims, or the infringement theories advanced by K-fee in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Nespresso specified non-limiting examples of where its application of the prior art is based on K-fee's apparent application of the claim element. These statements are not intended to suggest that Nespresso agrees with K-fee's application of any claim term, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or proposed constructions until a later date.

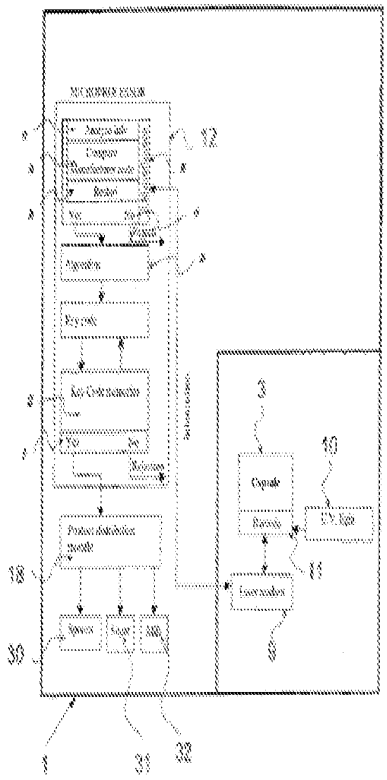
K-fee has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Ruchonnet. Nespresso therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if K-fee makes any such contention.

Where Nespresso states that Ruchonnet "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

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Exhibit A-7 – Invalidity of U.S. Patent No. 10,858,176 in view of Ruchonnet

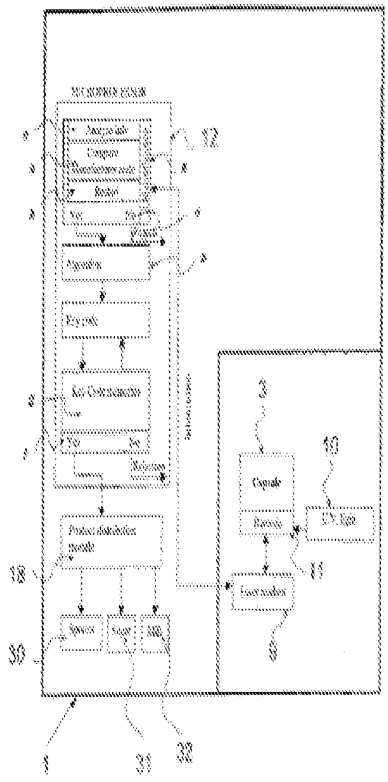
U.S. Patent No. 10,858,176	Disclosure
[1.pre] A method of making a coffee beverage comprising:	Ruchonnet discloses, either expressly or inherently, a method for making a coffee beverage. *See, e.g.*: Ruchonnet at Abstract: (57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting, processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle. Ruchonnet at Figure 1:

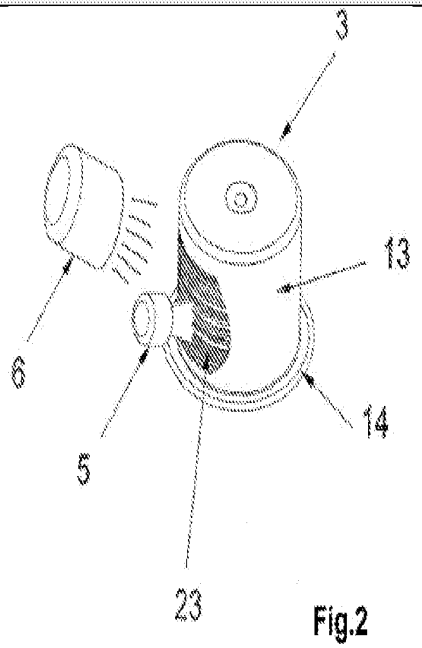
U.S. Patent No. 10,858,176	Disclosure
	 Fig.1 Ruchonnet at 1:3-9: This invention relates to the field of containers, more particularly containers enabling the storage or transport of substances intended to flavor beverages. A container is a receptacle that receives its contents from various sources. Traceability is the ability to identify the origin of a product while reconstructing its itinerary, from its production to its diffusion.

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	It is known to use apparatuses to obtain coffee by infusion, the coffee being kept in a receptacle called a capsule. Ruchonnet at 2:6-19: This purpose is achieved by an apparatus that makes it possible to establish the traceability of the contents in a receptacle and the origin of said receptacle on which readable information is displayed, by means of an optical and/or magnetic reader but invisible to the naked eye, said receptacle being of the type comprising an upper part that can be perforated for the injection of liquid into the receptacle and a lower membrane that can be perforated under pressure for the release of said liquid flavored by the contents of the receptacle, the apparatus comprising an optical and/or magnetic reader for reading said information on a receptacle introduced into the apparatus, and a microprocessor that makes it possible to encrypt/decrypt, analyze, compare, approve/reject and store information read on a receptacle, and arranged to selectively start or not start a cycle of operations including perforating the upper part of the receptacle and injecting the liquid, as well as to store the information read in order to be ready to start a new cycle. Ruchonnet at 4:20-5:5: In one embodiment, illustrated in Figures 1, 2 and 3, a system enabling the traceability of the contents in a receptacle (3) and the origin of that receptacle comprises: - a support medium (1), - a microprocessor (12), - a product distribution module (18), - a laser reading device (9), - a U.V. light emission device (10), and - a receptacle (3) comprising the traceability/origin information (11).

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	The support medium (1) is in particular a coffee machine enabling liquid to be injected into the receptacle (3). Ruchonnet at 5:19-6:6: The product distribution module (18) comprises electronics to control the openings, particularly of the liquid to be injected into the receptacle (3), of ingredients, such as sugar (31) and milk (32), to be added to said flavored liquid delivered by the receptacle (3) and of devices such as spoons (30) that make it possible to stir the ingredients into the liquid and, by simple numbering of the latter devices, to identify the recipient. The laser reading device (9) is equipped with a reading head (5 - Fig. 2) through which information (11) is distributed to the microprocessor (12). The laser reading head (5) is attached to the support medium (1) and located in such a way as to enable the information (11) on a receptacle (3) to be read when it is introduced into the support medium (1). Ruchonnet at 6:7-20: The receptacle (3) comprises a support medium (13) that is, in particular, a cylinder or a conical trunk on which, during its packaging, the information (11) has been affixed to its edge, a circular base (14) that makes it possible to hold the substance, especially coffee, that is to be filtered. This base (14) can be perforated under the pressure of the liquid so as to allow the liquid to pass through to filter and be flavored. The information (11) is in the form of an invisible barcode (23 - Fig. 2) written with ink that is reactive to ultra-violet (U.V.) light. The barcode (23) is visible when placed under a source (6 - Fig. 2) of ultraviolet (U.V.) light. The information (11) comprises all of the indications relative to the traceability of the product contained in the receptacle (3) and the origin of the receptacle.

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	The receptacle (3) bearing the barcode (23), is moved under the laser reading head (5). The barcode (23) is subjected to the U.V. light emitted by the source (6). Ruchonnet at Claims 1, 4, 15.
[1.a] providing an apparatus including a barcode reader;	Ruchonnet discloses, either expressly or inherently, providing an apparatus including a barcode reader. *See, e.g.*: Ruchonnet at Abstract: (57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting, processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle. Ruchonnet at Figures 1-2:

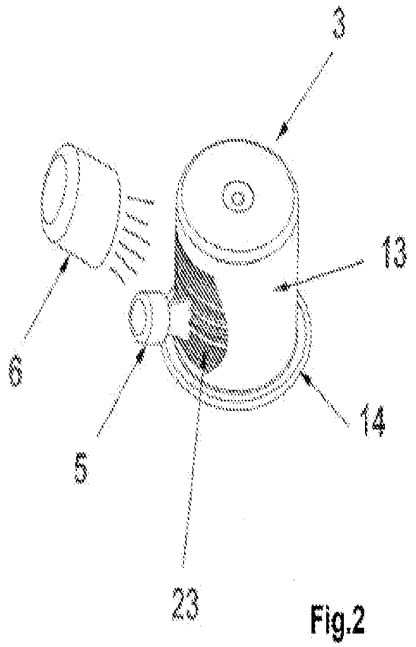
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	 Fig.1

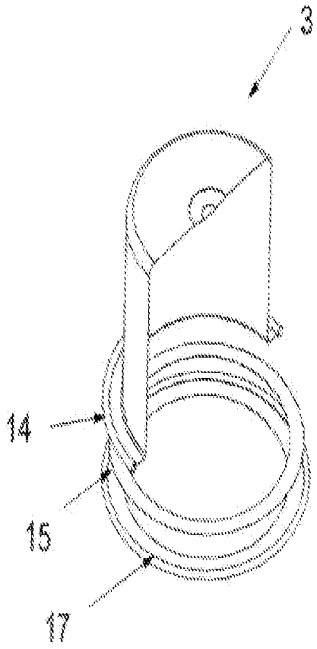
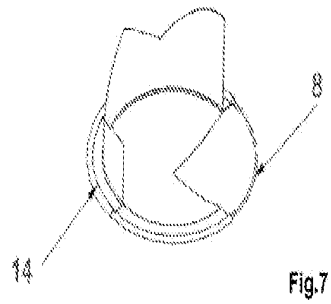
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	 Fig.2 Ruchonnet at 2:6-19: This purpose is achieved by an apparatus that makes it possible to establish the traceability of the contents in a receptacle and the origin of said receptacle on which readable information is displayed, by means of an optical and/or magnetic reader but invisible to the naked eye, said receptacle being of the type comprising an upper part that can be perforated for the injection of liquid into the receptacle and a lower membrane that can be perforated under pressure for the release of said liquid flavored by the contents of the receptacle, the apparatus comprising an optical and/or magnetic reader for reading said information on a receptacle introduced into the apparatus, and a microprocessor that makes it possible to encrypt/decrypt, analyze, compare, approve/reject and store information read on a receptacle, and arranged to selectively start or not start a cycle of operations including perforating the upper part of the receptacle and injecting the liquid, as well as to store the information read in order to be ready to start a new cycle.

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	Ruchonnet at 3:9-18: In one embodiment, the information on the receptacle is indicated in the form of a U.V. barcode located in particular around the outer lateral surface of the receptacle. In this case, the device advantageously comprises a reading device with a three-dimensional laser head. The U.V. barcode is inscribed using colorless ink, visible only when exposed to ultraviolet (U.V.) light. In another embodiment, the receptacle is made of anti-magnetic material and the information is on a circular ribbon inside said receptacle. Lastly, another variant of the invention presents a receptacle in which the magnetic code is placed between the lid and the body of the receptacle. In this case the information is stored in a flexible, ring-shaped magnetic strip. Ruchonnet at 4:20-5:5: In one embodiment, illustrated in Figures 1, 2 and 3, a system enabling the traceability of the contents in a receptacle (3) and the origin of that receptacle comprises: - a support medium (1), - a microprocessor (12), - a product distribution module (18), - a laser reading device (9), - a U.V. light emission device (10), and - a receptacle (3) comprising the traceability/origin information (11). The support medium (1) is in particular a coffee machine enabling liquid to be injected into the receptacle (3). Ruchonnet at 5:19-6:6:

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	The product distribution module (18) comprises electronics to control the openings, particularly of the liquid to be injected into the receptacle (3), of ingredients, such as sugar (31) and milk (32), to be added to said flavored liquid delivered by the receptacle (3) and of devices such as spoons (30) that make it possible to stir the ingredients into the liquid and, by simple numbering of the latter devices, to identify the recipient. The laser reading device (9) is equipped with a reading head (5 - Fig. 2) through which information (11) is distributed to the microprocessor (12). The laser reading head (5) is attached to the support medium (1) and located in such a way as to enable the information (11) on a receptacle (3) to be read when it is introduced into the support medium (1). Ruchonnet at 6:7-20: The receptacle (3) comprises a support medium (13) that is, in particular, a cylinder or a conical trunk on which, during its packaging, the information (11) has been affixed to its edge, a circular base (14) that makes it possible to hold the substance, especially coffee, that is to be filtered. This base (14) can be perforated under the pressure of the liquid so as to allow the liquid to pass through to filter and be flavored. The information (11) is in the form of an invisible barcode (23 - Fig. 2) written with ink that is reactive to ultra-violet (U.V.) light. The barcode (23) is visible when placed under a source (6 - Fig. 2) of ultraviolet (U.V.) light. The information (11) comprises all of the indications relative to the traceability of the product contained in the receptacle (3) and the origin of the receptacle. The receptacle (3) bearing the barcode (23), is moved under the laser reading head (5). The barcode (23) is subjected to the U.V. light emitted by the source (6). Ruchonnet at 6:21-7:1: The information (11) is read and transmitted to the microprocessor (12) which activates, if the information is positively recognized, the aforementioned operations and, in the event of

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	negative recognition, rejects the information (11) and stops the procedure for activating the distribution module (18) to interrupt the perforation of the upper part of the receptacle (3) and extraction of the products (30, 31, 32). It should be noted that the microprocessor (12) emits a key, recalculated by an algorithm, in the form of numbers and letters, which represents the indication compared to the manufacturer's data. All keys, after processing, are stored in the internal memory of the microprocessor (12). Ruchonnet at Claims 1-3, 5-6.
[1.b] inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion,	Ruchonnet discloses, either expressly or inherently, inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion. *See, e.g.*: Ruchonnet at Abstract: (57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting, processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle.

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	Ruchonnet at Figures 2, 6, 7:  Fig.2

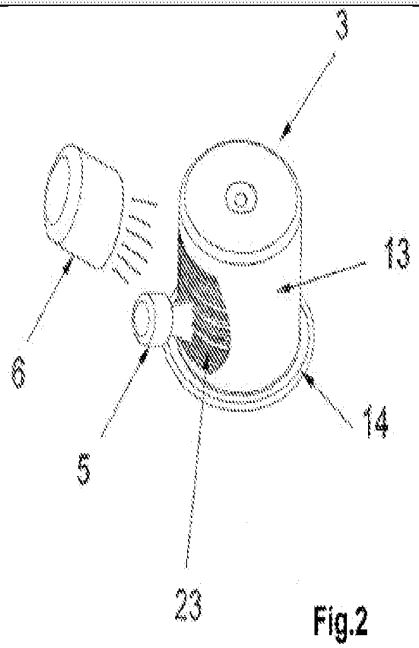
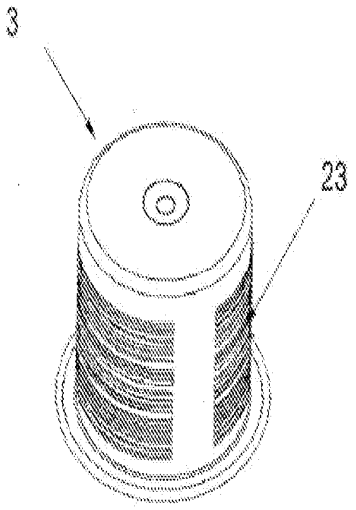
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	 Fig.6  Fig.7 Ruchonnet at 1:3-9: This invention relates to the field of containers, more particularly containers enabling the storage or transport of substances intended to flavor beverages.

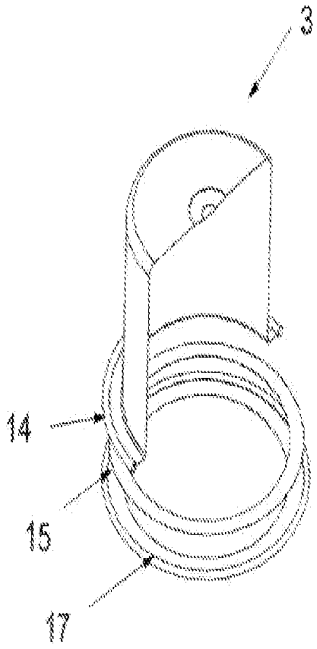
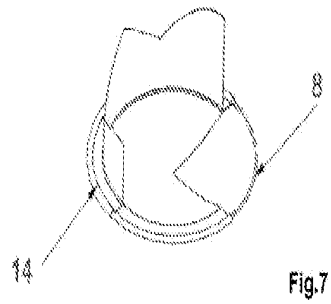
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	A container is a receptacle that receives its contents from various sources. Traceability is the ability to identify the origin of a product while reconstructing its itinerary, from its production to its diffusion. It is known to use apparatuses to obtain coffee by infusion, the coffee being kept in a receptacle called a capsule. Ruchonnet at 2:6-19: This purpose is achieved by an apparatus that makes it possible to establish the traceability of the contents in a receptacle and the origin of said receptacle on which readable information is displayed, by means of an optical and/or magnetic reader but invisible to the naked eye, said receptacle being of the type comprising an upper part that can be perforated for the injection of liquid into the receptacle and a lower membrane that can be perforated under pressure for the release of said liquid flavored by the contents of the receptacle, the apparatus comprising an optical and/or magnetic reader for reading said information on a receptacle introduced into the apparatus, and a microprocessor that makes it possible to encrypt/decrypt, analyze, compare, approve/reject and store information read on a receptacle, and arranged to selectively start or not start a cycle of operations including perforating the upper part of the receptacle and injecting the liquid, as well as to store the information read in order to be ready to start a new cycle. Ruchonnet at 3:9-18: In one embodiment, the information on the receptacle is indicated in the form of a U.V. barcode located in particular around the outer lateral surface of the receptacle. In this case, the device advantageously comprises a reading device with a three-dimensional laser head. The U.V. barcode is inscribed using colorless ink, visible only when exposed to ultraviolet (U.V.) light.

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	In another embodiment, the receptacle is made of anti-magnetic material and the information is on a circular ribbon inside said receptacle. Lastly, another variant of the invention presents a receptacle in which the magnetic code is placed between the lid and the body of the receptacle. In this case the information is stored in a flexible, ring-shaped magnetic strip. Ruchonnet at 4:20-5:5: In one embodiment, illustrated in Figures 1, 2 and 3, a system enabling the traceability of the contents in a receptacle (3) and the origin of that receptacle comprises: - a support medium (1), - a microprocessor (12), - a product distribution module (18), - a laser reading device (9), - a U.V. light emission device (10), and - a receptacle (3) comprising the traceability/origin information (11). The support medium (1) is in particular a coffee machine enabling liquid to be injected into the receptacle (3). Ruchonnet at 5:19-6:6: The product distribution module (18) comprises electronics to control the openings, particularly of the liquid to be injected into the receptacle (3), of ingredients, such as sugar (31) and milk (32), to be added to said flavored liquid delivered by the receptacle (3) and of devices such as spoons (30) that make it possible to stir the ingredients into the liquid and, by simple numbering of the latter devices, to identify the recipient. The laser reading device (9) is equipped with a reading head (5 - Fig. 2) through which information (11) is distributed to the microprocessor (12). The laser reading head (5) is

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	attached to the support medium (1) and located in such a way as to enable the information (11) on a receptacle (3) to be read when it is introduced into the support medium (1). Ruchonnet at 6:7-20: The receptacle (3) comprises a support medium (13) that is, in particular, a cylinder or a conical trunk on which, during its packaging, the information (11) has been affixed to its edge, a circular base (14) that makes it possible to hold the substance, especially coffee, that is to be filtered. This base (14) can be perforated under the pressure of the liquid so as to allow the liquid to pass through to filter and be flavored. The information (11) is in the form of an invisible barcode (23 - Fig. 2) written with ink that is reactive to ultra-violet (U.V.) light. The barcode (23) is visible when placed under a source (6 - Fig. 2) of ultraviolet (U.V.) light. The information (11) comprises all of the indications relative to the traceability of the product contained in the receptacle (3) and the origin of the receptacle. The receptacle (3) bearing the barcode (23), is moved under the laser reading head (5). The barcode (23) is subjected to the U.V. light emitted by the source (6). Ruchonnet at 7:6-14: Figures 4 and 5 illustrate an embodiment in which the receptacle (3) is made of anti-magnetic material (10) and the information (11) is on a tape, in particular a circular magnetic tape (20) inside said receptacle (3). Figure 6 illustrates a variant of the invention that presents a receptacle (3) in which the information (11) is placed on a ring (15) between a perforable lid (17) and the base (14) of the receptacle (3). 15 Figure 7 illustrates a variant in which a wire is housed (8) in the base (14) of the receptacle (3) in such a way that the information (11) is recorded in magnetic format.

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	Ruchonnet at Claims 1, 6.
[1.c] and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity,	
[1.d] the base element including a circumferential flange having a top side to which the first foil lid is sealed and an opposing bottom side with a first barcode located on the bottom side,	Ruchonnet discloses, either expressly or inherently, the base element including a circumferential flange having a top side to which the first foil lid is sealed and an opposing bottom side with a first barcode located on the bottom side. *See, e.g.*: Ruchonnet at Abstract: (57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting, processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle. Ruchonnet at Figures 2, 3, 6, 7:

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	 Fig.2  Fig.3

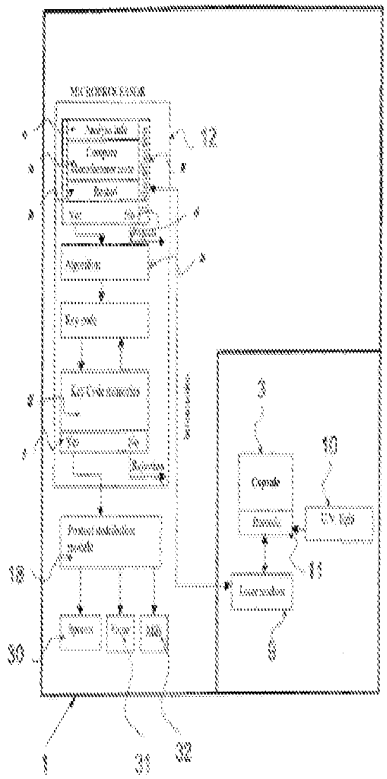
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	 Fig.6  Fig.7 Ruchonnet at 1:3-9: This invention relates to the field of containers, more particularly containers enabling the storage or transport of substances intended to flavor beverages.

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	Ruchonnet at 3:9-18: In one embodiment, the information on the receptacle is indicated in the form of a U.V. barcode located in particular around the outer lateral surface of the receptacle. In this case, the device advantageously comprises a reading device with a three-dimensional laser head. The U.V. barcode is inscribed using colorless ink, visible only when exposed to ultraviolet (U.V.) light. In another embodiment, the receptacle is made of anti-magnetic material and the information is on a circular ribbon inside said receptacle. Lastly, another variant of the invention presents a receptacle in which the magnetic code is placed between the lid and the body of the receptacle. In this case the information is stored in a flexible, ring-shaped magnetic strip. Ruchonnet at 4:20-5:5: In one embodiment, illustrated in Figures 1, 2 and 3, a system enabling the traceability of the contents in a receptacle (3) and the origin of that receptacle comprises: - a support medium (1), - a microprocessor (12), - a product distribution module (18), - a laser reading device (9), - a U.V. light emission device (10), and - a receptacle (3) comprising the traceability/origin information (11). The support medium (1) is in particular a coffee machine enabling liquid to be injected into the receptacle (3). Ruchonnet at 5:19-6:6:

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	The product distribution module (18) comprises electronics to control the openings, particularly of the liquid to be injected into the receptacle (3), of ingredients, such as sugar (31) and milk (32), to be added to said flavored liquid delivered by the receptacle (3) and of devices such as spoons (30) that make it possible to stir the ingredients into the liquid and, by simple numbering of the latter devices, to identify the recipient. The laser reading device (9) is equipped with a reading head (5 - Fig. 2) through which information (11) is distributed to the microprocessor (12). The laser reading head (5) is attached to the support medium (1) and located in such a way as to enable the information (11) on a receptacle (3) to be read when it is introduced into the support medium (1). Ruchonnet at 6:7-20: The receptacle (3) comprises a support medium (13) that is, in particular, a cylinder or a conical trunk on which, during its packaging, the information (11) has been affixed to its edge, a circular base (14) that makes it possible to hold the substance, especially coffee, that is to be filtered. This base (14) can be perforated under the pressure of the liquid so as to allow the liquid to pass through to filter and be flavored. The information (11) is in the form of an invisible barcode (23 - Fig. 2) written with ink that is reactive to ultra-violet (U.V.) light. The barcode (23) is visible when placed under a source (6 - Fig. 2) of ultraviolet (U.V.) light. The information (11) comprises all of the indications relative to the traceability of the product contained in the receptacle (3) and the origin of the receptacle. The receptacle (3) bearing the barcode (23), is moved under the laser reading head (5). The barcode (23) is subjected to the U.V. light emitted by the source (6). Ruchonnet at 7:6-14:

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	Figures 4 and 5 illustrate an embodiment in which the receptacle (3) is made of anti-magnetic material (10) and the information (11) is on a tape, in particular a circular magnetic tape (20) inside said receptacle (3). Figure 6 illustrates a variant of the invention that presents a receptacle (3) in which the information (11) is placed on a ring (15) between a perforable lid (17) and the base (14) of the receptacle (3). 15 Figure 7 illustrates a variant in which a wire is housed (8) in the base (14) of the receptacle (3) in such a way that the information (11) is recorded in magnetic format. Ruchonnet at Claims 1-3, 5-6, 8-9, 13.
[1.e] the base element of the first portion capsule includes an outside surface having a plurality of vertically oriented grooves;	
[1.f] reading the first barcode with the barcode reader; controlling a production process of a first coffee beverage based upon the reading of the first barcode;	Ruchonnet discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling a production process of a first coffee beverage based upon the reading of the first barcode. *See, e.g.*: Ruchonnet at Abstract: (57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting,

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	processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle. Ruchonnet at Figure 1:  Fig.1 Ruchonnet at 2:6-19: This purpose is achieved by an apparatus that makes it possible to establish the traceability of the contents in a receptacle and the origin of said receptacle on which readable

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	information is displayed, by means of an optical and/or magnetic reader but invisible to the naked eye, said receptacle being of the type comprising an upper part that can be perforated for the injection of liquid into the receptacle and a lower membrane that can be perforated under pressure for the release of said liquid flavored by the contents of the receptacle, the apparatus comprising an optical and/or magnetic reader for reading said information on a receptacle introduced into the apparatus, and a microprocessor that makes it possible to encrypt/decrypt, analyze, compare, approve/reject and store information read on a receptacle, and arranged to selectively start or not start a cycle of operations including perforating the upper part of the receptacle and injecting the liquid, as well as to store the information read in order to be ready to start a new cycle. Ruchonnet at 5:7-18: The microprocessor (12) controls the following functions and as shown in Figure 1: - The identification (a) of the database containing the traceability/origin information (11). - Encryption or decryption (b) of information (11) located on the receptacle (3). - Analysis (c) of the information (11). - Acceptance or refusal (d) of the information (11). - Comparison (e) of the information (11) located on the receptacle (3) with the data contained in the system. - Approval or refusal (f) of the distribution of the products (30, 31, 32). - Storage (g) of the information (11) after use, especially in the memory. - Automatic restart (h) of a cycle. Ruchonnet at 5:19-6:6: The product distribution module (18) comprises electronics to control the openings, particularly of the liquid to be injected into the receptacle (3), of ingredients, such as sugar (31) and milk (32), to be added to said flavored liquid delivered by the receptacle (3) and of

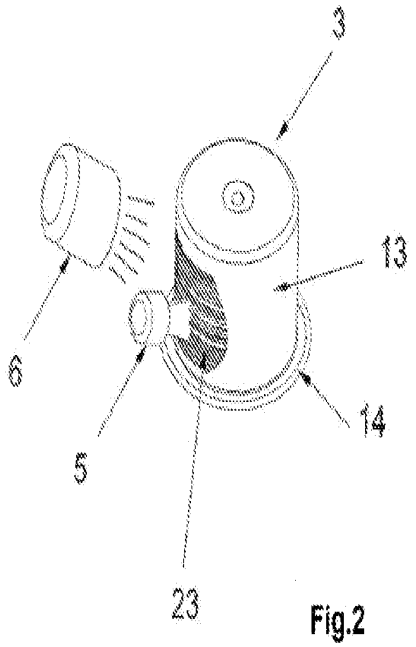
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	devices such as spoons (30) that make it possible to stir the ingredients into the liquid and, by simple numbering of the latter devices, to identify the recipient. The laser reading device (9) is equipped with a reading head (5 - Fig. 2) through which information (11) is distributed to the microprocessor (12). The laser reading head (5) is attached to the support medium (1) and located in such a way as to enable the information (11) on a receptacle (3) to be read when it is introduced into the support medium (1). Ruchonnet at Claim 4. *See also* [1.a] and [1.d]
[1.g] piercing the first foil lid with a mandrel of the apparatus in a region that is offset from a central axis of the first portion capsule;	Ruchonnet discloses, either expressly or inherently, piercing the first foil lid with a mandrel of the apparatus in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: Ruchonnet at Abstract: (57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting, processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle.

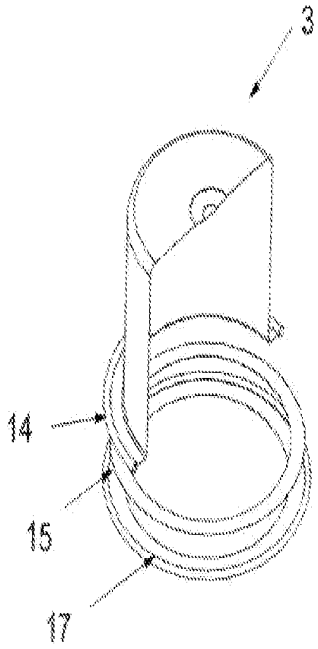
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	Ruchonnet at 2:6-19: This purpose is achieved by an apparatus that makes it possible to establish the traceability of the contents in a receptacle and the origin of said receptacle on which readable information is displayed, by means of an optical and/or magnetic reader but invisible to the naked eye, said receptacle being of the type comprising an upper part that can be perforated for the injection of liquid into the receptacle and a lower membrane that can be perforated under pressure for the release of said liquid flavored by the contents of the receptacle, the apparatus comprising an optical and/or magnetic reader for reading said information on a receptacle introduced into the apparatus, and a microprocessor that makes it possible to encrypt/decrypt, analyze, compare, approve/reject and store information read on a receptacle, and arranged to selectively start or not start a cycle of operations including perforating the upper part of the receptacle and injecting the liquid, as well as to store the information read in order to be ready to start a new cycle. Ruchonnet at 6:7-20: The receptacle (3) comprises a support medium (13) that is, in particular, a cylinder or a conical trunk on which, during its packaging, the information (11) has been affixed to its edge, a circular base (14) that makes it possible to hold the substance, especially coffee, that is to be filtered. This base (14) can be perforated under the pressure of the liquid so as to allow the liquid to pass through to filter and be flavored. The information (11) is in the form of an invisible barcode (23 - Fig. 2) written with ink that is reactive to ultra-violet (U.V.) light. The barcode (23) is visible when placed under a source (6 - Fig. 2) of ultraviolet (U.V.) light. The information (11) comprises all of the indications relative to the traceability of the product contained in the receptacle (3) and the origin of the receptacle. The receptacle (3) bearing the barcode (23), is moved under the laser reading head (5). The barcode (23) is subjected to the U.V. light emitted by the source (6).

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	Ruchonnet at 6:21-7:1: The information (11) is read and transmitted to the microprocessor (12) which activates, if the information is positively recognized, the aforementioned operations and, in the event of negative recognition, rejects the information (11) and stops the procedure for activating the distribution module (18) to interrupt the perforation of the upper part of the receptacle (3) and extraction of the products (30, 31, 32). It should be noted that the microprocessor (12) emits a key, recalculated by an algorithm, in the form of numbers and letters, which represents the indication compared to the manufacturer's data. All keys, after processing, are stored in the internal memory of the microprocessor (12). Ruchonnet at Claims 1, 6, 15.
[1.h] sealing the first foil lid against a seal of the apparatus;	Ruchonnet discloses, either expressly or inherently, sealing the first foil lid against a seal of the apparatus. *See, e.g.*: Ruchonnet at Abstract: (57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting, processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes

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	piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle. Ruchonnet at 1:15-21: A process for extracting an aromatic substance contained in an airtight receptacle is described in document EP 025810 A1, which provides for the injection of hot water into said receptacle and, once temperature/pressure conditions are obtained, cause a membrane of the receptacle to open, allowing the liquid impregnated with the aromatic substance to escape. This device does not use secure receptacles enabling the contents of said receptacles to be traced. Ruchonnet at 2:6-19: This purpose is achieved by an apparatus that makes it possible to establish the traceability of the contents in a receptacle and the origin of said receptacle on which readable information is displayed, by means of an optical and/or magnetic reader but invisible to the naked eye, said receptacle being of the type comprising an upper part that can be perforated for the injection of liquid into the receptacle and a lower membrane that can be perforated under pressure for the release of said liquid flavored by the contents of the receptacle, the apparatus comprising an optical and/or magnetic reader for reading said information on a receptacle introduced into the apparatus, and a microprocessor that makes it possible to encrypt/decrypt, analyze, compare, approve/reject and store information read on a receptacle, and arranged to selectively start or not start a cycle of operations including perforating the upper part of the receptacle and injecting the liquid, as well as to store the information read in order to be ready to start a new cycle. Ruchonnet at 6:7-20: The receptacle (3) comprises a support medium (13) that is, in particular, a cylinder or a conical trunk on which, during its packaging, the information (11) has been affixed to its edge, a circular base (14) that makes it possible to hold the substance, especially coffee, that

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	is to be filtered. This base (14) can be perforated under the pressure of the liquid so as to allow the liquid to pass through to filter and be flavored. The information (11) is in the form of an invisible barcode (23 - Fig. 2) written with ink that is reactive to ultra-violet (U.V.) light. The barcode (23) is visible when placed under a source (6 - Fig. 2) of ultraviolet (U.V.) light. The information (11) comprises all of the indications relative to the traceability of the product contained in the receptacle (3) and the origin of the receptacle. The receptacle (3) bearing the barcode (23), is moved under the laser reading head (5). The barcode (23) is subjected to the U.V. light emitted by the source (6). Ruchonnet at Claims 1, 6.
[1.i] introducing heated water into the first portion capsule through a water inlet of the apparatus that is arranged along the central axis of the portion capsule to form the first coffee beverage;	Ruchonnet discloses, either expressly or inherently, introducing heated water into the first portion capsule through a water inlet of the apparatus that is arranged along the central axis of the portion capsule to form the first coffee beverage. *See, e.g.*: Ruchonnet at Abstract: (57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting, processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes

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	piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle. Ruchonnet at Figures 2, 6:  Fig.2

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	 Fig.6 Ruchonnet at 2:6-19: This purpose is achieved by an apparatus that makes it possible to establish the traceability of the contents in a receptacle and the origin of said receptacle on which readable information is displayed, by means of an optical and/or magnetic reader but invisible to the naked eye, said receptacle being of the type comprising an upper part that can be perforated for the injection of liquid into the receptacle and a lower membrane that can be perforated under pressure for the release of said liquid flavored by the contents of the receptacle, the apparatus comprising an optical and/or magnetic reader for reading said information on a receptacle introduced into the apparatus, and a microprocessor that makes it possible to encrypt/decrypt, analyze, compare, approve/reject and store information read on a receptacle, and arranged to selectively start or not start a cycle of operations including perforating the upper part of the receptacle and injecting the liquid, as well as to store the information read in order to be ready to start a new cycle.

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	Ruchonnet at 4:20-5:5: In one embodiment, illustrated in Figures 1, 2 and 3, a system enabling the traceability of the contents in a receptacle (3) and the origin of that receptacle comprises: - a support medium (1), - a microprocessor (12), - a product distribution module (18), - a laser reading device (9), - a U.V. light emission device (10), and - a receptacle (3) comprising the traceability/origin information (11). The support medium (1) is in particular a coffee machine enabling liquid to be injected into the receptacle (3). Ruchonnet at 6:7-20: The receptacle (3) comprises a support medium (13) that is, in particular, a cylinder or a conical trunk on which, during its packaging, the information (11) has been affixed to its edge, a circular base (14) that makes it possible to hold the substance, especially coffee, that is to be filtered. This base (14) can be perforated under the pressure of the liquid so as to allow the liquid to pass through to filter and be flavored. The information (11) is in the form of an invisible barcode (23 - Fig. 2) written with ink that is reactive to ultra-violet (U.V.) light. The barcode (23) is visible when placed under a source (6 - Fig. 2) of ultraviolet (U.V.) light. The information (11) comprises all of the indications relative to the traceability of the product contained in the receptacle (3) and the origin of the receptacle. The receptacle (3) bearing the barcode (23), is moved under the laser reading head (5). The barcode (23) is subjected to the U.V. light emitted by the source (6).

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	Ruchonnet at 6:21-7:1: The information (11) is read and transmitted to the microprocessor (12) which activates, if the information is positively recognized, the aforementioned operations and, in the event of negative recognition, rejects the information (11) and stops the procedure for activating the distribution module (18) to interrupt the perforation of the upper part of the receptacle (3) and extraction of the products (30, 31, 32). It should be noted that the microprocessor (12) emits a key, recalculated by an algorithm, in the form of numbers and letters, which represents the indication compared to the manufacturer's data. All keys, after processing, are stored in the internal memory of the microprocessor (12). Ruchonnet at 7:6-14: Figures 4 and 5 illustrate an embodiment in which the receptacle (3) is made of anti-magnetic material (10) and the information (11) is on a tape, in particular a circular magnetic tape (20) inside said receptacle (3). Figure 6 illustrates a variant of the invention that presents a receptacle (3) in which the information (11) is placed on a ring (15) between a perforable lid (17) and the base (14) of the receptacle (3). 15 Figure 7 illustrates a variant in which a wire is housed (8) in the base (14) of the receptacle (3) in such a way that the information (11) is recorded in magnetic format. Ruchonnet at Claims 1, 6, 15.
[1.j] unloading the first portion capsule from the apparatus;	Ruchonnet discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: Ruchonnet at Abstract:

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	(57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting, processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle. Ruchonnet at 2:6-19: This purpose is achieved by an apparatus that makes it possible to establish the traceability of the contents in a receptacle and the origin of said receptacle on which readable information is displayed, by means of an optical and/or magnetic reader but invisible to the naked eye, said receptacle being of the type comprising an upper part that can be perforated for the injection of liquid into the receptacle and a lower membrane that can be perforated under pressure for the release of said liquid flavored by the contents of the receptacle, the apparatus comprising an optical and/or magnetic reader for reading said information on a receptacle introduced into the apparatus, and a microprocessor that makes it possible to encrypt/decrypt, analyze, compare, approve/reject and store information read on a receptacle, and arranged to selectively start or not start a cycle of operations including perforating the upper part of the receptacle and injecting the liquid, as well as to store the information read in order to be ready to start a new cycle. Ruchonnet at 2:30-3:4:

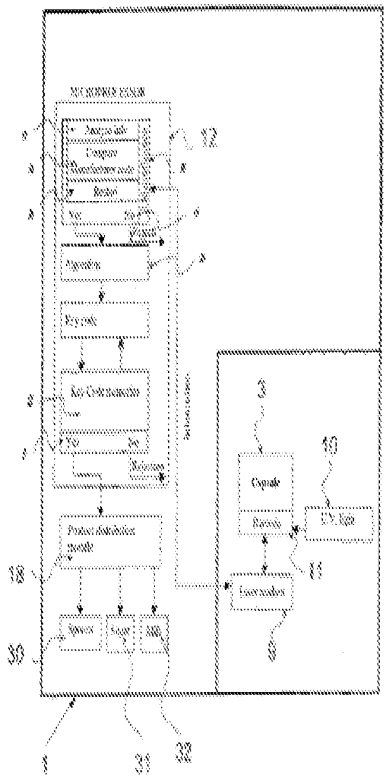
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	Acceptance/refusal is determined by a microprocessor which, after encrypting the original information, compares it to the manufacturer's key codes in order to enable/refuse product distribution. Memorization is provided by the manufacturer in particular by means of electronic chips that are installed on the device. Ruchonnet at 5:19-6:6: The product distribution module (18) comprises electronics to control the openings, particularly of the liquid to be injected into the receptacle (3), of ingredients, such as sugar (31) and milk (32), to be added to said flavored liquid delivered by the receptacle (3) and of devices such as spoons (30) that make it possible to stir the ingredients into the liquid and, by simple numbering of the latter devices, to identify the recipient. The laser reading device (9) is equipped with a reading head (5 - Fig. 2) through which information (11) is distributed to the microprocessor (12). The laser reading head (5) is attached to the support medium (1) and located in such a way as to enable the information (11) on a receptacle (3) to be read when it is introduced into the support medium (1). Ruchonnet at 7:2-5: A key is advantageously assigned to a single barcode (23) which allows the receptacle (3) to be used only once. A receptacle (3) without a barcode (23) is automatically rejected, as is an erroneous barcode (23), and the reuse of a used barcode (23) is rejected by comparison of the keys. Ruchonnet at Claims 1, 4, 14, 15.
[1.k] inserting a second portion capsule into the apparatus, the second portion capsule including a	Ruchonnet discloses, either expressly or inherently, inserting a second portion capsule into the apparatus, the second portion capsule including a second foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity of the second

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second foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity of the second portion capsule being free of a filter and includes a central portion and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity, the base element of the second portion capsule including a circumferential flange having a top side to which the second foil is sealed and an opposing bottom side with a second barcode located on the bottom side and being different from the first barcode, the base element of the second portion capsule includes an outside surface having a plurality of vertically oriented grooves; reading the second barcode with the barcode reader; controlling a second production process of a second coffee beverage based upon the reading of the second barcode, the second production process being different than the first production process; piercing the second foil lid with the mandrel of the apparatus in a region that is offset from a central	portion capsule being free of a filter and includes a central portion and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity, the base element of the second portion capsule including a circumferential flange having a top side to which the second foil is sealed and an opposing bottom side with a second barcode located on the bottom side and being different from the first barcode, the base element of the second portion capsule includes an outside surface having a plurality of vertically oriented grooves; reading the second barcode with the barcode reader; controlling a second production process of a second coffee beverage based upon the reading of the second barcode, the second production process being different than the first production process; piercing the second foil lid with the mandrel of the apparatus in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange and/or the second foil lid of the second portion capsule against the seal of the apparatus; and introducing the heated water into the second portion capsule to form the second coffee beverage. *See, e.g.*: Ruchonnet at Abstract: (57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting, processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle. Ruchonnet at 2:6-19:

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axis of the second portion capsule; sealing the top side of the flange and/or the second foil lid of the second portion capsule against the seal of the apparatus; and introducing the heated water into the second portion capsule to form the second coffee beverage.	This purpose is achieved by an apparatus that makes it possible to establish the traceability of the contents in a receptacle and the origin of said receptacle on which readable information is displayed, by means of an optical and/or magnetic reader but invisible to the naked eye, said receptacle being of the type comprising an upper part that can be perforated for the injection of liquid into the receptacle and a lower membrane that can be perforated under pressure for the release of said liquid flavored by the contents of the receptacle, the apparatus comprising an optical and/or magnetic reader for reading said information on a receptacle introduced into the apparatus, and a microprocessor that makes it possible to encrypt/decrypt, analyze, compare, approve/reject and store information read on a receptacle, and arranged to selectively start or not start a cycle of operations including perforating the upper part of the receptacle and injecting the liquid, as well as to store the information read in order to be ready to start a new cycle. Ruchonnet at 2:30-3:4: Acceptance/refusal is determined by a microprocessor which, after encrypting the original information, compares it to the manufacturer's key codes in order to enable/refuse product distribution. Memorization is provided by the manufacturer in particular by means of electronic chips that are installed on the device. Ruchonnet at 5:19-6:6: The product distribution module (18) comprises electronics to control the openings, particularly of the liquid to be injected into the receptacle (3), of ingredients, such as sugar (31) and milk (32), to be added to said flavored liquid delivered by the receptacle (3) and of devices such as spoons (30) that make it possible to stir the ingredients into the liquid and, by simple numbering of the latter devices, to identify the recipient. The laser reading device (9) is equipped with a reading head (5 - Fig. 2) through which information (11) is distributed to the microprocessor (12). The laser reading head (5) is

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	attached to the support medium (1) and located in such a way as to enable the information (11) on a receptacle (3) to be read when it is introduced into the support medium (1). Ruchonnet at 7:2-5: A key is advantageously assigned to a single barcode (23) which allows the receptacle (3) to be used only once. A receptacle (3) without a barcode (23) is automatically rejected, as is an erroneous barcode (23), and the reuse of a used barcode (23) is rejected by comparison of the keys. Ruchonnet at Claims 1, 4, 14, 15. *See* [1.b]-[1.i].
2. The method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs.	
3. The method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference.	Ruchonnet discloses, either expressly or inherently, the method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference. *See, e.g.*: Ruchonnet at Abstract: (57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or

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	magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting, processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle. Ruchonnet at Figure 1:

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	 Fig.1 Ruchonnet at 2:6-19: This purpose is achieved by an apparatus that makes it possible to establish the traceability of the contents in a receptacle and the origin of said receptacle on which readable information is displayed, by means of an optical and/or magnetic reader but invisible to the naked eye, said receptacle being of the type comprising an upper part that can be perforated for the injection of liquid into the receptacle and a lower membrane that can be perforated under pressure for the release of said liquid flavored by the contents of the receptacle, the apparatus comprising an optical and/or magnetic reader for reading said information on a receptacle introduced into the apparatus, and a microprocessor that makes it possible to encrypt/decrypt, analyze, compare, approve/reject and store information read on a receptacle,

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	and arranged to selectively start or not start a cycle of operations including perforating the upper part of the receptacle and injecting the liquid, as well as to store the information read in order to be ready to start a new cycle. Ruchonnet at 2:20-26: This results in a system that identifies a receptacle, compares the information it carries to the manufacturer's code contained in a system memory, accepts or refuses the information, memorizes it so as to prevent its recovery, authorizes the distribution of products and starts a new work cycle. It should be noted that the information contains the data on the product traceability but also the data on the origin of the receptacle and is affixed to the latter by the manufacturer at the time of the its production. Ruchonnet at 2:30-3:4: Acceptance/refusal is determined by a microprocessor which, after encrypting the original information, compares it to the manufacturer's key codes in order to enable/refuse product distribution. Memorization is provided by the manufacturer in particular by means of electronic chips that are installed on the device. Ruchonnet at 6:21-7:1: The information (11) is read and transmitted to the microprocessor (12) which activates, if the information is positively recognized, the aforementioned operations and, in the event of negative recognition, rejects the information (11) and stops the procedure for activating the distribution module (18) to interrupt the perforation of the upper part of the receptacle (3) and extraction of the products (30, 31, 32). It should be noted that the microprocessor (12) emits a key, recalculated by an algorithm, in the form of numbers and letters, which represents the indication compared to the

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	manufacturer's data. All keys, after processing, are stored in the internal memory of the microprocessor (12). Ruchonnet at 7:2-5: A key is advantageously assigned to a single barcode (23) which allows the receptacle (3) to be used only once. A receptacle (3) without a barcode (23) is automatically rejected, as is an erroneous barcode (23), and the reuse of a used barcode (23) is rejected by comparison of the keys. Ruchonnet at Claims 1, 15. *See also* [1].
[redacted]	
10. The method according to claim 1, wherein the base element of the first portion capsule is made of metal.	
[redacted]	
11. The method according to claim 10, wherein the base element of the second portion capsule is made of metal.	
[redacted]	

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12. The method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal.	
[13.pre] A method of making a coffee beverage, comprising steps of:	Ruchonnet discloses, either expressly or inherently, a method of making a coffee beverage. *See, e.g.*: *See* [1.pre].
[13.a] providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal;	Ruchonnet discloses, either expressly or inherently, providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal. *See* [1.a], [1.g], [1.i], [1.h].
[13.b] inserting a first portion capsule into the apparatus, the first portion capsule being free of a filter and including a first lid that is sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines the cavity with a central interior portion,	Ruchonnet discloses, either expressly or inherently, inserting a first portion capsule into the apparatus, the first portion capsule being free of a filter and including a first lid that is sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines the cavity with a central interior portion. *See, e.g.*: *See* [1.b].
[13.c] having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion	

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and an outside surface of the wall having plurality of vertically oriented grooves,	
[13.d] the base element having a circumferential flange having a top side to which the first lid is sealed and an opposing bottom side with a first barcode located on the bottom side;	Ruchonnet discloses, either expressly or inherently, the base element having a circumferential flange having a top side to which the first lid is sealed and an opposing bottom side with a first barcode located on the bottom side. *See, e.g.*: *See* [1.d].
[13.e] piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule;	Ruchonnet discloses, either expressly or inherently, piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: *See* [1.g].
[13.f] sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus;	Ruchonnet discloses, either expressly or inherently, sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus. *See, e.g.*: *See* [1.h].
[13.g] reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing heated water into the first portion capsule via the water inlet that is arranged along the central axis of the first portion capsule according to production conditions associated with the first	Ruchonnet discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing heated water into the first portion capsule via the water inlet that is arranged along the central axis of the first portion capsule according to production conditions associated with the first coffee beverage. *See, e.g.*: *See* [1.f], [1.i].

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barcode to form the first coffee beverage;	
[13.h] unloading the first portion capsule from the apparatus;	Ruchonnet discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: *See* [1.j].
[13.i] inserting second portion capsule into the apparatus, the second portion capsule being free of a filter and including a second lid sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and an outside surface of the wall having a plurality of vertically oriented grooves, the base element has a circumferential flange having a top side to which the second lid is sealed and an opposing bottom side with a second barcode that is located on the bottom side and being different from the first barcode; piercing the second lid with the mandrel in a region that	Ruchonnet discloses, either expressly or inherently, inserting second portion capsule into the apparatus, the second portion capsule being free of a filter and including a second lid sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and an outside surface of the wall having a plurality of vertically oriented grooves, the base element has a circumferential flange having a top side to which the second lid is sealed and an opposing bottom side with a second barcode that is located on the bottom side and being different from the first barcode; piercing the second lid with the mandrel in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange of the second portion capsule and/or the second lid against the seal of the apparatus; reading the second barcode with the barcode reader; controlling production of a second coffee beverage based upon the reading of the second barcode; introducing the heated water into the second portion capsule via the water inlet that is arranged along the central axis of the second portion capsule according to production conditions associated with the second barcode to form the second coffee beverage. *See, e.g.*: *See* [1.k]; [13.a]-[13.g].

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is offset from a central axis of the second portion capsule; sealing the top side of the flange of the second portion capsule and/or the second lid against the seal of the apparatus; reading the second barcode with the barcode reader; controlling production of a second coffee beverage based upon the reading of the second barcode; introducing the heated water into the second portion capsule via the water inlet that is arranged along the central axis of the second portion capsule according to production conditions associated with the second barcode to form the second coffee beverage.	
14. The method according to claim 13, wherein the production conditions associated with the first barcode are different from the production conditions associated with the second barcode, the production conditions include: pressure, temperature and/or an amount of the heated water.	Ruchonnet discloses, either expressly or inherently, the method according to claim 13, wherein the production conditions associated with the first barcode are different from the production conditions associated with the second barcode, the production conditions include: pressure, temperature and/or an amount of the heated water. *See, e.g.*: Ruchonnet at Abstract: (57) Abstract: The aim of the present invention is to provide an apparatus for determining the traceability of the contents of a container (3) as well as the origin of said container (3), wherein information (11) provided on said container can be read out using an optical and/or magnetic reader but is invisible to the naked eye. Said container (3) comprises a pierceable upper portion for injecting a liquid into the container (3), and a pressure-pierce-able lower

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	diaphragm for discharging the liquid flavoured by the contents of the container (3). The apparatus includes an optical and/or magnetic reader (9) for reading said information (11) off a container (3) placed inside the apparatus, a microprocessor for encrypting and decrypting, processing, comparing, approving or rejecting and storing the information (11) read off a container (3), and for selectively initiating or not initiating an operative cycle which includes piercing the upper portion of the container (3) and injecting the liquid, as well as for storing (11) said information to ensure readiness for the initiation of a fresh cycle. Ruchonnet at 2:6-19: This purpose is achieved by an apparatus that makes it possible to establish the traceability of the contents in a receptacle and the origin of said receptacle on which readable information is displayed, by means of an optical and/or magnetic reader but invisible to the naked eye, said receptacle being of the type comprising an upper part that can be perforated for the injection of liquid into the receptacle and a lower membrane that can be perforated under pressure for the release of said liquid flavored by the contents of the receptacle, the apparatus comprising an optical and/or magnetic reader for reading said information on a receptacle introduced into the apparatus, and a microprocessor that makes it possible to encrypt/decrypt, analyze, compare, approve/reject and store information read on a receptacle, and arranged to selectively start or not start a cycle of operations including perforating the upper part of the receptacle and injecting the liquid, as well as to store the information read in order to be ready to start a new cycle. Ruchonnet at 2:30-3:4: Acceptance/refusal is determined by a microprocessor which, after encrypting the original information, compares it to the manufacturer's key codes in order to enable/refuse product distribution. Memorization is provided by the manufacturer in particular by means of electronic chips that are installed on the device.

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	Ruchonnet at 5:19-6:6: The product distribution module (18) comprises electronics to control the openings, particularly of the liquid to be injected into the receptacle (3), of ingredients, such as sugar (31) and milk (32), to be added to said flavored liquid delivered by the receptacle (3) and of devices such as spoons (30) that make it possible to stir the ingredients into the liquid and, by simple numbering of the latter devices, to identify the recipient. The laser reading device (9) is equipped with a reading head (5 - Fig. 2) through which information (11) is distributed to the microprocessor (12). The laser reading head (5) is attached to the support medium (1) and located in such a way as to enable the information (11) on a receptacle (3) to be read when it is introduced into the support medium (1). Ruchonnet at 7:2-5: A key is advantageously assigned to a single barcode (23) which allows the receptacle (3) to be used only once. A receptacle (3) without a barcode (23) is automatically rejected, as is an erroneous barcode (23), and the reuse of a used barcode (23) is rejected by comparison of the keys. Ruchonnet at Claims 1, 4, 14, 15. *See also* [13].

Exhibit A-8 – Invalidity of U.S. Patent No. 10,858,176 in view of Schifferle

INVALIDITY CLAIM CHART
Invalidity of U.S. Patent No. 10,858,176 in view of Schifferle

According to its cover page, U.S. Patent Pub. US2005/0150391A1 ("Schifferle") was published on July 14, 2005 from an application filed on January 13, 2005. Schifferle therefore constitutes prior art under at least pre-AIA 35 U.S.C. § 102(b) to the '176 Patent's PCT filing date. Schifferle anticipates and/or renders obvious the Asserted Claims of the '176 Patent (at least as Nespresso understands K-fee's application of the Asserted Claims in an effort to show infringement).

To the extent K-fee argues that any element below is not disclosed by Schifferle, a person of ordinary skill in the art would have found it obvious to combine the teachings of Schifferle with the background knowledge of a person of ordinary skill in the art and/or the additional references, and exemplary teachings, set forth in the charts in Exhibits A-1 to A-9 and in Appendix A.

The chart below provides representative examples of where each element of each claim is found within Schifferle. Citations are meant to be exemplary, not exhaustive, and Nespresso reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by K-fee. Citations to figures, drawings, tables, and the like include reference to any accompanying or related text. All internal cross references are meant to incorporate the cross-referenced material as if fully set forth therein.

It is Nespresso's position that K-fee's Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Nespresso's statements below should not be treated as an admission, implication, or suggestion that Nespresso agrees with K-fee regarding either the scope, construction, or interpretation of any of the Asserted Claims, or the infringement theories advanced by K-fee in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Nespresso specified non-limiting examples of where its application of the prior art is based on K-fee's apparent application of the claim element. These statements are not intended to suggest that Nespresso agrees with K-fee's application of any claim term, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or proposed constructions until a later date.

K-fee has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Schifferle. Nespresso therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if K-fee makes any such contention.

Where Nespresso states that Schifferle "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

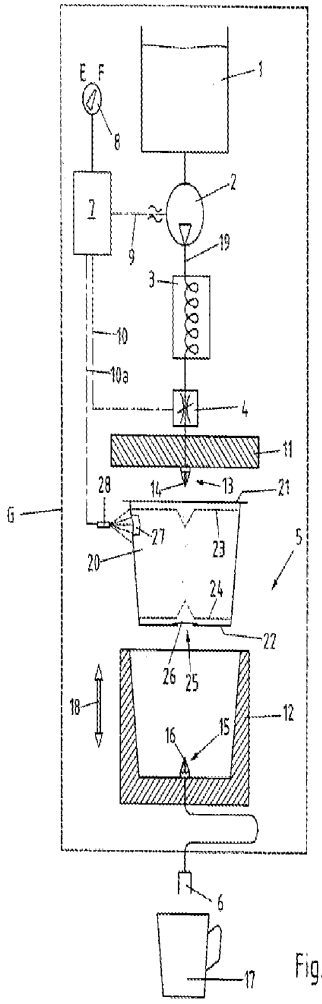
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Exhibit A-8 – Invalidity of U.S. Patent No. 10,858,176 in view of Schifferle

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[1.pre] A method of making a coffee beverage comprising:	Schifferle discloses, either expressly or inherently, a method for making a coffee beverage. *See, e.g.*: Schifferle at Abstract: The coffee maker for brewing powder coffee contained in a cartridge comprises a brewing chamber adapted to receive the cartridge, at least one punching member for punching the cartridge and a pump for feeding brewing water into the brewing chamber. In order to avoid that the prepared coffee shows froth at its surface, the coffee maker comprises means for restricting the amount of water fed by the pump into the brewing chamber per unit of time. This means ensures that the brewing water flows through the cartridge essentially unpressurized. Schifferle at [0001]: The present invention refers to a coffee maker for brewing coffee powder contained in a cartridge, comprising a brewing chamber adapted to receive a coffee powder cartridge, at least one means for punching the coffee powder cartridge, and a pump for feeding hot brewing water into the brewing chamber. Schifferle at [0010]-[0012]: It is an object of the present invention to provide a coffee maker for brewing coffee powder contained in a cartridge by means of which not only an espresso coffee beverage, but also a normal coffee beverage can be prepared, the latter one not having froth on its surface and corresponding in taste to a normal filter coffee. To meet this and other objects, the invention provides a coffee maker for brewing coffee powder contained in a cartridge, comprising a brewing chamber adapted to receive the coffee powder cartridge, at least one means for punching the coffee powder cartridge, and a pump for feeding hot brewing water into the brewing chamber. Further, means are provided for restricting the amount of brewing water fed into the brewing chamber per unit of time to

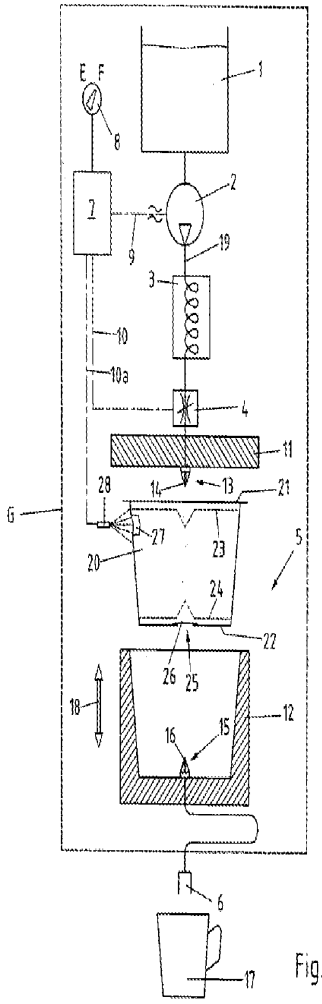
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	such an extent that the brewing water flows through the powder coffee cartridge received in the brewing chamber essentially unpressurized. Due to the fact that means are provided for restricting the amount of brewing water fed into the brewing chamber per unit of time to such an extent that the brewing water flows through the powder coffee cartridge received in the brewing chamber essentially unpressurized, the formation of froth on the surface of the coffee beverage can be essentially avoided. Preferably, both the cover and the bottom of the cartridge are punched before the brewing operation is initiated. Schifferle at [0020]-[0021]: The brewing operation using a cartridge designated for preparing a froth-less coffee beverage, a so-called filter coffee, takes place as follows: The selector switch 8 is manually rotated into the position "F" and the cartridge 20 is inserted into the cartridge retainer 12. Then, the retainer 12 is moved upwards towards the closing plate member 11. Upon completion of this upwards movement (see FIG. 2), both the cartridge cover 21 and the bottom 22 of the cartridge 20, i.e. the foil 26, are punched. Once the upper end position is reached, the closing plate member 11 not only closes the brewing chamber 5, but also presses the cartridge cover 21 against the top end face of the cartridge retainer 12 along an annular contact area, thereby hydraulically sealing the upper portion of the cartridge 20 against the bottom 22 of the cartridge 20. As soon as the brewing chamber 5 is closed, the pump 2 is operated. The amount of brewing water fed into the brewing chamber 5 per unit of time is restricted, as compared to the brewing operation of an espresso coffee, to such an extent that the brewing water flows through the cartridge 20 essentially unpessurized. The flow restriction rate is determined either by a pre-selected, stored value or on the basis of a code contained in the label or marking 27 of the cartridge 20. The flow restriction can be realized either by reducing the flow rate of the pump 2 or by adjusting the throttle valve 4. For reducing the flow rate of the pump 2, in the case of an AC operated pump, a phase controlled modulator or a wave packet controller can be used. As an alternative, the operating frequency of the pump 2 can be changed. It is understood that in

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	practice only one of the measures for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time is provided, i.e. either means are provided for reducing the flow rate of the pump 2, or a throttle valve 4 is provided for reducing the effective flow cross sectional area. It is further understood that other means for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time could be provided. Schifferle at [0029]: The coffee maker according to the invention is known under the designation "espresso machine"; it is suitable both for preparing a filter coffee beverage and particularly an espresso coffee beverage. The coffee maker can be designed as a manually operated machine, with a cartridge holder to be manually inserted into the machine, or as a semi- or fully-automatic coffee maker.
[1.a] providing an apparatus including a barcode reader;	Schifferle discloses, either expressly or inherently, providing an apparatus including a barcode reader. *See, e.g.*: Schifferle at Fig. 1:

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	 Fig.1 Schifferle at [0019]: The selector switch 8 serves for selecting the coffee beverage to be prepared. The letter "E" denotes espresso coffee, while the letter "F" denotes filter coffee. The selector switch is electrically connected to the control unit 7. The control unit is operationally connected to the pump 2 via a conductor 9 and to a throttle valve 4 via a conductor 10. The throttle valve is

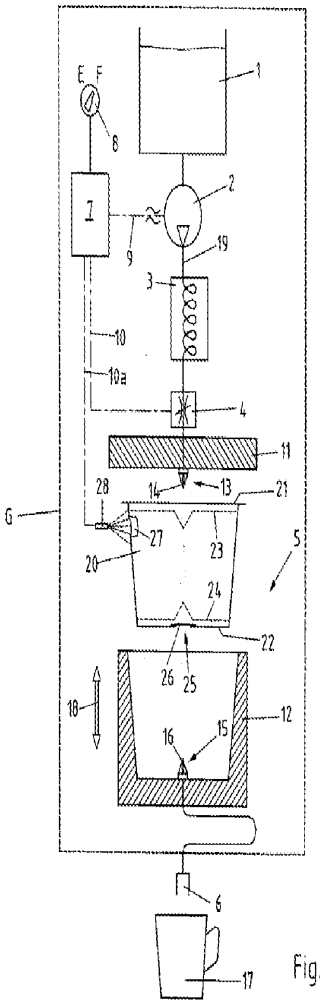
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	inserted into a brewing water conduit 19 running from the pump 2 to the closing plate member 11. Moreover, there is provided a sensor 28, electrically connected to the control unit 7 by means of a conductor 10 a. The sensor 28 serves for detecting and reading a label or marking 27, provided on the cartridge 20 and containing information about the kind and/or content of the cartridge 20. Such a label or marking 27 can consist, for example, of a barcode printed onto the cartridge 20; however, other kinds of markings are possible, for example in electronic form. It is understood that the sensor 28 and the label or marking 27 are matched to each other to enable the sensor 28 to read the label or marking 28 and to forward the information contained therein to the control unit 7. In the case where exclusively cartridges 20 are used that are provided with such a label or marking 28, the selector switch 8 can be omitted since the kind of cartridge 20 is automatically recognized by the sensor 27, and the control unit, consequently, influences certain operating parameters of the coffee maker, e.g. the delivery rate of the pump 2, the adjustment of the throttle valve 4 et cetera. Schifferle at [0021]: The selector switch 8 is manually rotated into the position "F" and the cartridge 20 is inserted into the cartridge retainer 12. Then, the retainer 12 is moved upwards towards the closing plate member 11. Upon completion of this upwards movement (see FIG. 2), both the cartridge cover 21 and the bottom 22 of the cartridge 20, i.e. the foil 26, are punched. Once the upper end position is reached, the closing plate member 11 not only closes the brewing chamber 5, but also presses the cartridge cover 21 against the top end face of the cartridge retainer 12 along an annular contact area, thereby hydraulically sealing the upper portion of the cartridge 20 against the bottom 22 of the cartridge 20. As soon as the brewing chamber 5 is closed, the pump 2 is operated. The amount of brewing water fed into the brewing chamber 5 per unit of time is restricted, as compared to the brewing operation of an espresso coffee, to such an extent that the brewing water flows through the cartridge 20 essentially unpessurized. The flow restriction rate is determined either by a pre-selected, stored value or on the basis of a code contained in the label or marking 27 of the cartridge 20. The flow restriction can be realized either by reducing the flow rate of the pump 2 or by adjusting the throttle valve 4. For reducing the flow rate of the pump 2, in the case of an AC operated pump, a phase controlled modulator or a wave packet controller can be used. As an

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	alternative, the operating frequency of the pump 2 can be changed. It is understood that in practice only one of the measures for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time is provided, i.e. either means are provided for reducing the flow rate of the pump 2, or a throttle valve 4 is provided for reducing the effective flow cross sectional area. It is further understood that other means for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time could be provided. Schifferle at Claim 12.
[1.b] inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion,	Schifferle discloses, either expressly or inherently, inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion. *See, e.g.*: Schifferle at Fig. 1:

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	 Fig.1 Schifferle at [0016]: Schematically shown in FIGS. 1 and 2 are the essential elements of the coffee maker according to the invention, namely a fresh water tank 1, a pump 2, a boiler 3, a throttle valve 4, a brewing chamber 5, a beverage outlet 6, a control unit 7 and a selector switch 8. All

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	these elements are mounted inside a schematically indicated housing G. Located below the beverage outlet 6, there is shown a coffee mug 17 for receiving the prepared coffee beverage. The cartridge to be put into the brewing chamber 5 and containing ground coffee is designated by reference numeral 20. In the present example, the bottom 22 of the cartridge 20 is provided with an aperture 25 which is covered by a foil 26 provided at the inside of the bottom 22 of the cartridge 20. Since such a cartridge is primarily suitable for preparing filter coffee, it is designated, in the following, as a filter cartridge 20, while a conventional cartridge having a continuous bottom without any opening is designated as an espresso cartridge. Schifferle at [0020]-[0021]: The brewing operation using a cartridge designated for preparing a froth-less coffee beverage, a so-called filter coffee, takes place as follows: The selector switch 8 is manually rotated into the position "F" and the cartridge 20 is inserted into the cartridge retainer 12. Then, the retainer 12 is moved upwards towards the closing plate member 11. Upon completion of this upwards movement (see FIG. 2), both the cartridge cover 21 and the bottom 22 of the cartridge 20, i.e. the foil 26, are punched. Once the upper end position is reached, the closing plate member 11 not only closes the brewing chamber 5, but also presses the cartridge cover 21 against the top end face of the cartridge retainer 12 along an annular contact area, thereby hydraulically sealing the upper portion of the cartridge 20 against the bottom 22 of the cartridge 20. As soon as the brewing chamber 5 is closed, the pump 2 is operated. The amount of brewing water fed into the brewing chamber 5 per unit of time is restricted, as compared to the brewing operation of an espresso coffee, to such an extent that the brewing water flows through the cartridge 20 essentially unpessurized. The flow restriction rate is determined either by a pre-selected, stored value or on the basis of a code contained in the label or marking 27 of the cartridge 20. The flow restriction can be realized either by reducing the flow rate of the pump 2 or by adjusting the throttle valve 4. For reducing the flow rate of the pump 2, in the case of an AC operated pump, a phase controlled modulator or a wave packet controller can be used. As an alternative, the operating frequency of the pump 2 can be changed. It is understood that in

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	practice only one of the measures for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time is provided, i.e. either means are provided for reducing the flow rate of the pump 2, or a throttle valve 4 is provided for reducing the effective flow cross sectional area. It is further understood that other means for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time could be provided. Schifferle at [0024]: As can be further seen in the drawings, the filter cartridge 20 is provided with an upper filter element 23 and a lower filter element 24. Such filter elements 23, 24 favor a consistent flow of the brewing water through the filter cartridge 20 and prevent the coffee powder contained in the cartridge 20 from escaping through the punched out apertures. The filter elements 23, 24 are provided each with a recess directed towards the interior of the cartridge 20 and located in the area where the cover 21 and the bottom 22, respectively, of the cartridge 20 are punched and into which the punching members 13, 15 extend once the cartridge cover 21 and bottom 22 are punched. In order to ensure that the bottom 22 of the cartridge 20 is reliably punched upon closing the brewing chamber 5, a foil 26 is provided which has a low ductility and a low tensile strength as compared to the material of the cartridge itself, such that it easily tears apart under the influence of the lower punching member 15 located at the bottom of the cartridge retainer 12. Schifferle at Claims 13-14.
[1.c] and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity,	

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[1.d] the base element including a circumferential flange having a top side to which the first foil lid is sealed and an opposing bottom side with a first barcode located on the bottom side,	Schifferle discloses, either expressly or inherently, the base element including a circumferential flange having a top side to which the first foil lid is sealed and an opposing bottom side with a first barcode located on the bottom side. *See, e.g.*: Schifferle at Fig. 1:  Fig.1

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	Schifferle at [0016]: Schematically shown in FIGS. 1 and 2 are the essential elements of the coffee maker according to the invention, namely a fresh water tank 1, a pump 2, a boiler 3, a throttle valve 4, a brewing chamber 5, a beverage outlet 6, a control unit 7 and a selector switch 8. All these elements are mounted inside a schematically indicated housing G. Located below the beverage outlet 6, there is shown a coffee mug 17 for receiving the prepared coffee beverage. The cartridge to be put into the brewing chamber 5 and containing ground coffee is designated by reference numeral 20. In the present example, the bottom 22 of the cartridge 20 is provided with an aperture 25 which is covered by a foil 26 provided at the inside of the bottom 22 of the cartridge 20. Since such a cartridge is primarily suitable for preparing filter coffee, it is designated, in the following, as a filter cartridge 20, while a conventional cartridge having a continuous bottom without any opening is designated as an espresso cartridge. Schifferle at [0019]: The selector switch 8 serves for selecting the coffee beverage to be prepared. The letter "E" denotes espresso coffee, while the letter "F" denotes filter coffee. The selector switch is electrically connected to the control unit 7. The control unit is operationally connected to the pump 2 via a conductor 9 and to a throttle valve 4 via a conductor 10. The throttle valve is inserted into a brewing water conduit 19 running from the pump 2 to the closing plate member 11. Moreover, there is provided a sensor 28, electrically connected to the control unit 7 by means of a conductor 10 a. The sensor 28 serves for detecting and reading a label or marking 27, provided on the cartridge 20 and containing information about the kind and/or content of the cartridge 20. Such a label or marking 27 can consist, for example, of a barcode printed onto the cartridge 20; however, other kinds of markings are possible, for example in electronic form. It is understood that the sensor 28 and the label or marking 27 are matched to each other to enable the sensor 28 to read the label or marking 28 and to forward the information contained therein to the control unit 7. In the case where exclusively cartridges 20 are used that are provided with such a label or marking 28, the selector switch 8 can be omitted since the kind of cartridge 20 is automatically recognized by the sensor 27,

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	and the control unit, consequently, influences certain operating parameters of the coffee maker, e.g. the delivery rate of the pump 2, the adjustment of the throttle valve 4 et cetera. Schifferle at [0021]: The selector switch 8 is manually rotated into the position "F" and the cartridge 20 is inserted into the cartridge retainer 12. Then, the retainer 12 is moved upwards towards the closing plate member 11. Upon completion of this upwards movement (see FIG. 2), both the cartridge cover 21 and the bottom 22 of the cartridge 20, i.e. the foil 26, are punched. Once the upper end position is reached, the closing plate member 11 not only closes the brewing chamber 5, but also presses the cartridge cover 21 against the top end face of the cartridge retainer 12 along an annular contact area, thereby hydraulically sealing the upper portion of the cartridge 20 against the bottom 22 of the cartridge 20. As soon as the brewing chamber 5 is closed, the pump 2 is operated. The amount of brewing water fed into the brewing chamber 5 per unit of time is restricted, as compared to the brewing operation of an espresso coffee, to such an extent that the brewing water flows through the cartridge 20 essentially unpessurized. The flow restriction rate is determined either by a pre-selected, stored value or on the basis of a code contained in the label or marking 27 of the cartridge 20. The flow restriction can be realized either by reducing the flow rate of the pump 2 or by adjusting the throttle valve 4. For reducing the flow rate of the pump 2, in the case of an AC operated pump, a phase controlled modulator or a wave packet controller can be used. As an alternative, the operating frequency of the pump 2 can be changed. It is understood that in practice only one of the measures for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time is provided, i.e. either means are provided for reducing the flow rate of the pump 2, or a throttle valve 4 is provided for reducing the effective flow cross sectional area. It is further understood that other means for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time could be provided. Schifferle at [0024]:

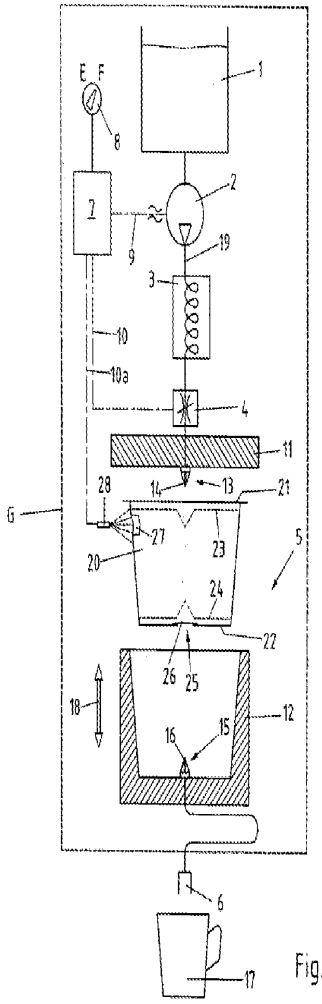
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	As can be further seen in the drawings, the filter cartridge 20 is provided with an upper filter element 23 and a lower filter element 24. Such filter elements 23, 24 favor a consistent flow of the brewing water through the filter cartridge 20 and prevent the coffee powder contained in the cartridge 20 from escaping through the punched out apertures. The filter elements 23, 24 are provided each with a recess directed towards the interior of the cartridge 20 and located in the area where the cover 21 and the bottom 22, respectively, of the cartridge 20 are punched and into which the punching members 13, 15 extend once the cartridge cover 21 and bottom 22 are punched. In order to ensure that the bottom 22 of the cartridge 20 is reliably punched upon closing the brewing chamber 5, a foil 26 is provided which has a low ductility and a low tensile strength as compared to the material of the cartridge itself, such that it easily tears apart under the influence of the lower punching member 15 located at the bottom of the cartridge retainer 12. Schifferle at Claim 12.
[1.e] the base element of the first portion capsule includes an outside surface having a plurality of vertically oriented grooves;	
[1.f] reading the first barcode with the barcode reader; controlling a production process of a first coffee beverage based upon the reading of the first barcode;	Schifferle discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling a production process of a first coffee beverage based upon the reading of the first barcode. *See, e.g.*: Schifferle at [0019]-[0021]: The selector switch 8 serves for selecting the coffee beverage to be prepared. The letter "E" denotes espresso coffee, while the letter "F" denotes filter coffee. The selector switch is electrically connected to the control unit 7. The control unit is operationally connected to the pump 2 via a conductor 9 and to a throttle valve 4 via a conductor 10. The throttle valve is inserted into a brewing water conduit 19 running from the pump 2 to the closing plate member 11. Moreover, there is provided a sensor 28, electrically connected to the control

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	unit 7 by means of a conductor 10 a. The sensor 28 serves for detecting and reading a label or marking 27, provided on the cartridge 20 and containing information about the kind and/or content of the cartridge 20. Such a label or marking 27 can consist, for example, of a barcode printed onto the cartridge 20; however, other kinds of markings are possible, for example in electronic form. It is understood that the sensor 28 and the label or marking 27 are matched to each other to enable the sensor 28 to read the label or marking 28 and to forward the information contained therein to the control unit 7. In the case where exclusively cartridges 20 are used that are provided with such a label or marking 28, the selector switch 8 can be omitted since the kind of cartridge 20 is automatically recognized by the sensor 27, and the control unit, consequently, influences certain operating parameters of the coffee maker, e.g. the delivery rate of the pump 2, the adjustment of the throttle valve 4 et cetera. The brewing operation using a cartridge designated for preparing a froth-less coffee beverage, a so-called filter coffee, takes place as follows: The selector switch 8 is manually rotated into the position "F" and the cartridge 20 is inserted into the cartridge retainer 12. Then, the retainer 12 is moved upwards towards the closing plate member 11. Upon completion of this upwards movement (see FIG. 2), both the cartridge cover 21 and the bottom 22 of the cartridge 20, i.e. the foil 26, are punched. Once the upper end position is reached, the closing plate member 11 not only closes the brewing chamber 5, but also presses the cartridge cover 21 against the top end face of the cartridge retainer 12 along an annular contact area, thereby hydraulically sealing the upper portion of the cartridge 20 against the bottom 22 of the cartridge 20. As soon as the brewing chamber 5 is closed, the pump 2 is operated. The amount of brewing water fed into the brewing chamber 5 per unit of time is restricted, as compared to the brewing operation of an espresso coffee, to such an extent that the brewing water flows through the cartridge 20 essentially unpessurized. The flow restriction rate is determined either by a pre-selected, stored value or on the basis of a code contained in the label or marking 27 of the cartridge 20. The flow restriction can be realized either by reducing the flow rate of the pump 2 or by adjusting the throttle valve 4. For reducing the flow rate of the pump 2, in the case of an AC operated pump, a phase controlled modulator or a wave packet controller can be used. As an alternative, the operating frequency of the pump 2 can be changed. It is understood that in

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	practice only one of the measures for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time is provided, i.e. either means are provided for reducing the flow rate of the pump 2, or a throttle valve 4 is provided for reducing the effective flow cross sectional area. It is further understood that other means for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time could be provided. Schifferle at Claim 12. *See also* [1.a] and [1.d]
[1.g] piercing the first foil lid with a mandrel of the apparatus in a region that is offset from a central axis of the first portion capsule;	Schifferle discloses, either expressly or inherently, piercing the first foil lid with a mandrel of the apparatus in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: Schifferle at Abstract: The coffee maker for brewing powder coffee contained in a cartridge comprises a brewing chamber adapted to receive the cartridge, at least one punching member for punching the cartridge and a pump for feeding brewing water into the brewing chamber. In order to avoid that the prepared coffee shows froth at its surface, the coffee maker comprises means for restricting the amount of water fed by the pump into the brewing chamber per unit of time. This means ensures that the brewing water flows through the cartridge essentially unpressurized. Schifferle at [0001]: The present invention refers to a coffee maker for brewing coffee powder contained in a cartridge, comprising a brewing chamber adapted to receive a coffee powder cartridge, at least one means for punching the coffee powder cartridge, and a pump for feeding hot brewing water into the brewing chamber.

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	Schifferle at [0011]-[0012]: To meet this and other objects, the invention provides a coffee maker for brewing coffee powder contained in a cartridge, comprising a brewing chamber adapted to receive the coffee powder cartridge, at least one means for punching the coffee powder cartridge, and a pump for feeding hot brewing water into the brewing chamber. Further, means are provided for restricting the amount of brewing water fed into the brewing chamber per unit of time to such an extent that the brewing water flows through the powder coffee cartridge received in the brewing chamber essentially unpressurized. Due to the fact that means are provided for restricting the amount of brewing water fed into the brewing chamber per unit of time to such an extent that the brewing water flows through the powder coffee cartridge received in the brewing chamber essentially unpressurized, the formation of froth on the surface of the coffee beverage can be essentially avoided. Preferably, both the cover and the bottom of the cartridge are punched before the brewing operation is initiated. Schifferle at [0018]: Both the lower surface of the closing plate member 11 and the bottom of the cartridge retainer 12 are provided with a punching member 13 and 15, respectively. Thereby, the upper punching member 13 serves for punching the cover 21 of the cartridge 20, while the lower punching member 15 serves for punching the bottom 22 of the cartridge 20. Both punching members 13 and 15, respectively, are located centrally on the closing plate member 11 and the bottom of the cartridge retainer 12, respectively. Moreover, both punching members 13 and 15, respectively, comprise a conically shaped front portion comprising a number of slots 14 and 16, respectively, through which the brewing water can flow into the cartridge 20 and the prepared coffee beverage can flow out of the cartridge 20, respectively. Schifferle at [0023]-[0024]:

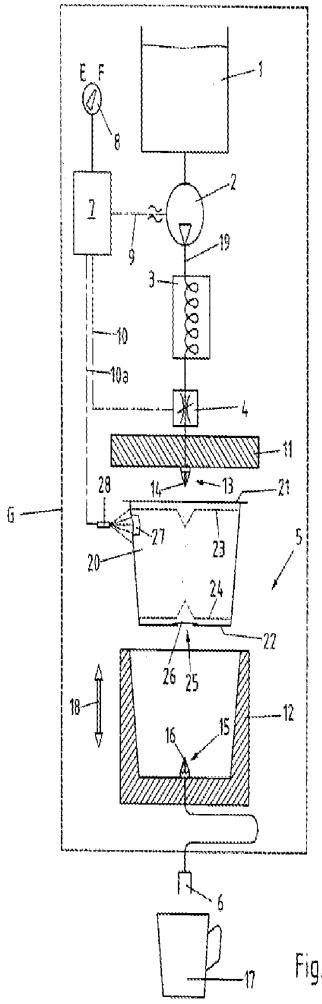
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	Further important is that both the cover 21 of the cartridge 20 and the bottom 22 of the cartridge 20 are punched, i.e. provided with an aperture, before the brewing operation is initiated in order to ensure that no hydraulic pressure build-up can take place, which would lead to the formation of froth in the beverage. As can be further seen in the drawings, the filter cartridge 20 is provided with an upper filter element 23 and a lower filter element 24. Such filter elements 23, 24 favor a consistent flow of the brewing water through the filter cartridge 20 and prevent the coffee powder contained in the cartridge 20 from escaping through the punched out apertures. The filter elements 23, 24 are provided each with a recess directed towards the interior of the cartridge 20 and located in the area where the cover 21 and the bottom 22, respectively, of the cartridge 20 are punched and into which the punching members 13, 15 extend once the cartridge cover 21 and bottom 22 are punched. In order to ensure that the bottom 22 of the cartridge 20 is reliably punched upon closing the brewing chamber 5, a foil 26 is provided which has a low ductility and a low tensile strength as compared to the material of the cartridge itself, such that it easily tears apart under the influence of the lower punching member 15 located at the bottom of the cartridge retainer 12 Schifferle at Claims 1, 4-6.
[1.h] sealing the first foil lid against a seal of the apparatus;	Schifferle discloses, either expressly or inherently, sealing the first foil lid against a seal of the apparatus. *See, e.g.*: Schifferle at Fig. 1:

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	 Fig.1 Schifferle at [0017]-[0018]: The brewing chamber 5 comprises an upper closing plate member 11 and a lower cartridge retainer 12. The inner contour of the cartridge retainer 12 essentially corresponds to the outer contour of the filter cartridge 20. In the drawings, both the closing plate member 11 and the cartridge retainer 12 are shown in a cross sectional view. The cartridge retainer 12 is

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	movable in vertical direction, as shown by the double-arrow 18. The means for moving the cartridge retainer up and down, as well as possibly provided means for feeding and removing a cartridge, are not shown since the design thereof is well within the skill of a professional person. Both the lower surface of the closing plate member 11 and the bottom of the cartridge retainer 12 are provided with a punching member 13 and 15, respectively. Thereby, the upper punching member 13 serves for punching the cover 21 of the cartridge 20, while the lower punching member 15 serves for punching the bottom 22 of the cartridge 20. Both punching members 13 and 15, respectively, are located centrally on the closing plate member 11 and the bottom of the cartridge retainer 12, respectively. Moreover, both punching members 13 and 15, respectively, comprise a conically shaped front portion comprising a number of slots 14 and 16, respectively, through which the brewing water can flow into the cartridge 20 and the prepared coffee beverage can flow out of the cartridge 20, respectively. Schifferle at [0020]-[0021]: The brewing operation using a cartridge designated for preparing a froth-less coffee beverage, a so-called filter coffee, takes place as follows: The selector switch 8 is manually rotated into the position "F" and the cartridge 20 is inserted into the cartridge retainer 12. Then, the retainer 12 is moved upwards towards the closing plate member 11. Upon completion of this upwards movement (see FIG. 2), both the cartridge cover 21 and the bottom 22 of the cartridge 20, i.e. the foil 26, are punched. Once the upper end position is reached, the closing plate member 11 not only closes the brewing chamber 5, but also presses the cartridge cover 21 against the top end face of the cartridge retainer 12 along an annular contact area, thereby hydraulically sealing the upper portion of the cartridge 20 against the bottom 22 of the cartridge 20. As soon as the brewing chamber 5 is closed, the pump 2 is operated. The amount of brewing water fed into the brewing chamber 5 per unit of time is restricted, as compared to the brewing operation of an espresso coffee, to such an extent that the brewing water flows through the cartridge 20 essentially

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	unpessurized. The flow restriction rate is determined either by a pre-selected, stored value or on the basis of a code contained in the label or marking 27 of the cartridge 20. The flow restriction can be realized either by reducing the flow rate of the pump 2 or by adjusting the throttle valve 4. For reducing the flow rate of the pump 2, in the case of an AC operated pump, a phase controlled modulator or a wave packet controller can be used. As an alternative, the operating frequency of the pump 2 can be changed. It is understood that in practice only one of the measures for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time is provided, i.e. either means are provided for reducing the flow rate of the pump 2, or a throttle valve 4 is provided for reducing the effective flow cross sectional area. It is further understood that other means for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time could be provided. Schifferle at [0025]-[0027]: For preparing a conventional espresso coffee, the selector switch 8 is manually rotated into the position marked "E". In this mode of operation, the brewing water flows through a conventional espresso cartridge under high pressure. In the present case, the expression "espresso coffee" shall mean a coffee beverage that is provided with a froth layer at its top, independent of the amount of brewing water used for preparing the coffee beverage. Preferably, for preparing a filter coffee, different cartridges are used than for preparing espresso coffee. Besides the different design of the bottom of the cartridge, also the coffee powder blend, the amount of coffee powder and/or the degree of grinding can be different. Moreover, in the case of a filter coffee cartridge, the apertures in the filter elements 23, 24 are larger and/or their number is increased, such that these filter elements 23, 24 do not constitute a hydraulic resistance to the brewing water flowing there trough. As an alternative to the embodiment discussed herein before, the coffee maker can incorporate more extensive features: For example, means can be provided to punch the bottom of the cartridge later than the cover of the cartridge, depending on the kind of coffee beverage to be prepared. In case an espresso coffee is to be prepared, the bottom of the espresso cartridge is punched only after a certain hydraulic pressure has been built up in the

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	interior of the cartridge, because this measure favors the formation of froth, as is well known. Alternatively, in the case of an espresso cartridge, its bottom can be punched by the lower punching member in a first phase only partially, i.e. to such an extent that the tip of the punching member just penetrates the bottom of the cartridge, but only so far that the slots 16 of the punching member 15 do not communicate with the interior of the espresso cartridge. In this way, a hydraulic overpressure can be built up in the interior of the espresso cartridge during a first phase of the brewing operation. Schifferle at Claim 11.
[1.i] introducing heated water into the first portion capsule through a water inlet of the apparatus that is arranged along the central axis of the portion capsule to form the first coffee beverage;	Schifferle discloses, either expressly or inherently, introducing heated water into the first portion capsule through a water inlet of the apparatus that is arranged along the central axis of the portion capsule to form the first coffee beverage. *See, e.g.*: Schifferle at Abstract: The coffee maker for brewing powder coffee contained in a cartridge comprises a brewing chamber adapted to receive the cartridge, at least one punching member for punching the cartridge and a pump for feeding brewing water into the brewing chamber. In order to avoid that the prepared coffee shows froth at its surface, the coffee maker comprises means for restricting the amount of water fed by the pump into the brewing chamber per unit of time. This means ensures that the brewing water flows through the cartridge essentially unpressurized. Schifferle at Fig. 1:

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	 Fig.1 Schifferle at [0011]: To meet this and other objects, the invention provides a coffee maker for brewing coffee powder contained in a cartridge, comprising a brewing chamber adapted to receive the coffee powder cartridge, at least one means for punching the coffee powder cartridge, and a pump for feeding hot brewing water into the brewing chamber. Further, means are provided for

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	restricting the amount of brewing water fed into the brewing chamber per unit of time to such an extent that the brewing water flows through the powder coffee cartridge received in the brewing chamber essentially unpressurized. Schifferle at [0016]: Schematically shown in FIGS. 1 and 2 are the essential elements of the coffee maker according to the invention, namely a fresh water tank 1, a pump 2, a boiler 3, a throttle valve 4, a brewing chamber 5, a beverage outlet 6, a control unit 7 and a selector switch 8. All these elements are mounted inside a schematically indicated housing G. Located below the beverage outlet 6, there is shown a coffee mug 17 for receiving the prepared coffee beverage. The cartridge to be put into the brewing chamber 5 and containing ground coffee is designated by reference numeral 20. In the present example, the bottom 22 of the cartridge 20 is provided with an aperture 25 which is covered by a foil 26 provided at the inside of the bottom 22 of the cartridge 20. Since such a cartridge is primarily suitable for preparing filter coffee, it is designated, in the following, as a filter cartridge 20, while a conventional cartridge having a continuous bottom without any opening is designated as an espresso cartridge. Schifferle at [0018]: Both the lower surface of the closing plate member 11 and the bottom of the cartridge retainer 12 are provided with a punching member 13 and 15, respectively. Thereby, the upper punching member 13 serves for punching the cover 21 of the cartridge 20, while the lower punching member 15 serves for punching the bottom 22 of the cartridge 20. Both punching members 13 and 15, respectively, are located centrally on the closing plate member 11 and the bottom of the cartridge retainer 12, respectively. Moreover, both punching members 13 and 15, respectively, comprise a conically shaped front portion comprising a number of slots 14 and 16, respectively, through which the brewing water can flow into the cartridge 20 and the prepared coffee beverage can flow out of the cartridge 20, respectively.

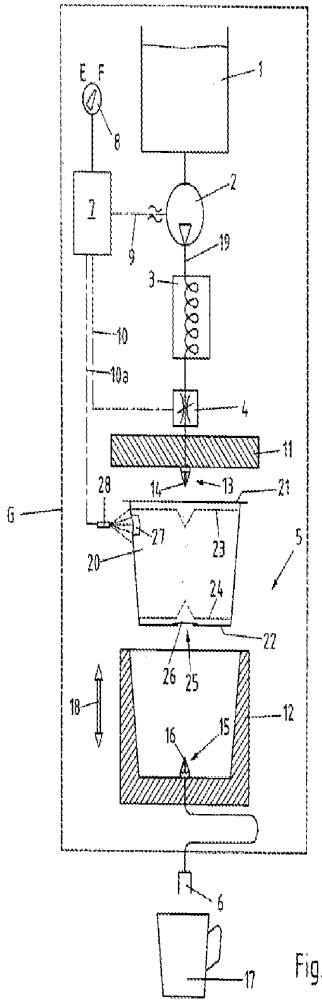
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	Schifferle at [0020]-[0021]: The brewing operation using a cartridge designated for preparing a froth-less coffee beverage, a so-called filter coffee, takes place as follows: The selector switch 8 is manually rotated into the position "F" and the cartridge 20 is inserted into the cartridge retainer 12. Then, the retainer 12 is moved upwards towards the closing plate member 11. Upon completion of this upwards movement (see FIG. 2), both the cartridge cover 21 and the bottom 22 of the cartridge 20, i.e. the foil 26, are punched. Once the upper end position is reached, the closing plate member 11 not only closes the brewing chamber 5, but also presses the cartridge cover 21 against the top end face of the cartridge retainer 12 along an annular contact area, thereby hydraulically sealing the upper portion of the cartridge 20 against the bottom 22 of the cartridge 20. As soon as the brewing chamber 5 is closed, the pump 2 is operated. The amount of brewing water fed into the brewing chamber 5 per unit of time is restricted, as compared to the brewing operation of an espresso coffee, to such an extent that the brewing water flows through the cartridge 20 essentially unpessurized. The flow restriction rate is determined either by a pre-selected, stored value or on the basis of a code contained in the label or marking 27 of the cartridge 20. The flow restriction can be realized either by reducing the flow rate of the pump 2 or by adjusting the throttle valve 4. For reducing the flow rate of the pump 2, in the case of an AC operated pump, a phase controlled modulator or a wave packet controller can be used. As an alternative, the operating frequency of the pump 2 can be changed. It is understood that in practice only one of the measures for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time is provided, i.e. either means are provided for reducing the flow rate of the pump 2, or a throttle valve 4 is provided for reducing the effective flow cross sectional area. It is further understood that other means for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time could be provided. Schifferle at Claims 5-6.

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[1.j] unloading the first portion capsule from the apparatus;	Schifferle discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: Schifferle at [0003]: For brewing the coffee powder contained in the cartridge, either manually operated or semi-automatic as well as fully automatic coffee makers are used. Usually, in a manually operated coffee maker, the cartridge is inserted into a cartridge holder that in turn is inserted into the coffee maker. In the semi-automatic coffee makers, the cartridge is inserted into a cartridge retainer or directly into the brewing chamber of the machine, whereby the brewing chamber is manually closed by means of a central lever mechanism. In a fully automatic coffee maker, however, the cartridge is removed from a cartridge magazine and automatically inserted into the brewing chamber; after the brewing operation, the cartridge is removed from the brewing chamber and discarded into a trash receptacle without any intervention of the operator. Schifferle at [0029]: The coffee maker according to the invention is known under the designation "espresso machine"; it is suitable both for preparing a filter coffee beverage and particularly an espresso coffee beverage. The coffee maker can be designed as a manually operated machine, with a cartridge holder to be manually inserted into the machine, or as a semi- or fully-automatic coffee maker.
[1.k] inserting a second portion capsule into the apparatus, the second portion capsule including a second foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity of the second portion capsule being free of a filter	Schifferle discloses, either expressly or inherently, inserting a second portion capsule into the apparatus, the second portion capsule including a second foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity of the second portion capsule being free of a filter and includes a central portion and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity, the base element of the second portion capsule including a circumferential flange having a top side to which the second foil is sealed and an opposing bottom side with a second barcode located on the bottom side and being different from the first barcode, the

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and includes a central portion and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity, the base element of the second portion capsule including a circumferential flange having a top side to which the second foil is sealed and an opposing bottom side with a second barcode located on the bottom side and being different from the first barcode, the base element of the second portion capsule includes an outside surface having a plurality of vertically oriented grooves; reading the second barcode with the barcode reader; controlling a second production process of a second coffee beverage based upon the reading of the second barcode, the second production process being different than the first production process; piercing the second foil lid with the mandrel of the apparatus in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange and/or the second foil lid of the second portion capsule against the seal of the apparatus; and	base element of the second portion capsule includes an outside surface having a plurality of vertically oriented grooves; reading the second barcode with the barcode reader; controlling a second production process of a second coffee beverage based upon the reading of the second barcode, the second production process being different than the first production process; piercing the second foil lid with the mandrel of the apparatus in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange and/or the second foil lid of the second portion capsule against the seal of the apparatus; and introducing the heated water into the second portion capsule to form the second coffee beverage. *See, e.g.*: *See* [1.b]-[1.i]. Schifferle at [0019]-[0021]: The selector switch 8 serves for selecting the coffee beverage to be prepared. The letter "E" denotes espresso coffee, while the letter "F" denotes filter coffee. The selector switch is electrically connected to the control unit 7. The control unit is operationally connected to the pump 2 via a conductor 9 and to a throttle valve 4 via a conductor 10. The throttle valve is inserted into a brewing water conduit 19 running from the pump 2 to the closing plate member 11. Moreover, there is provided a sensor 28, electrically connected to the control unit 7 by means of a conductor 10 a. The sensor 28 serves for detecting and reading a label or marking 27, provided on the cartridge 20 and containing information about the kind and/or content of the cartridge 20. Such a label or marking 27 can consist, for example, of a barcode printed onto the cartridge 20; however, other kinds of markings are possible, for example in electronic form. It is understood that the sensor 28 and the label or marking 27 are matched to each other to enable the sensor 28 to read the label or marking 28 and to forward the information contained therein to the control unit 7. In the case where exclusively cartridges 20 are used that are provided with such a label or marking 28, the selector switch 8 can be omitted since the kind of cartridge 20 is automatically recognized by the sensor 27,

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introducing the heated water into the second portion capsule to form the second coffee beverage.	and the control unit, consequently, influences certain operating parameters of the coffee maker, e.g. the delivery rate of the pump 2, the adjustment of the throttle valve 4 et cetera. The brewing operation using a cartridge designated for preparing a froth-less coffee beverage, a so-called filter coffee, takes place as follows: The selector switch 8 is manually rotated into the position "F" and the cartridge 20 is inserted into the cartridge retainer 12. Then, the retainer 12 is moved upwards towards the closing plate member 11. Upon completion of this upwards movement (see FIG. 2), both the cartridge cover 21 and the bottom 22 of the cartridge 20, i.e. the foil 26, are punched. Once the upper end position is reached, the closing plate member 11 not only closes the brewing chamber 5, but also presses the cartridge cover 21 against the top end face of the cartridge retainer 12 along an annular contact area, thereby hydraulically sealing the upper portion of the cartridge 20 against the bottom 22 of the cartridge 20. As soon as the brewing chamber 5 is closed, the pump 2 is operated. The amount of brewing water fed into the brewing chamber 5 per unit of time is restricted, as compared to the brewing operation of an espresso coffee, to such an extent that the brewing water flows through the cartridge 20 essentially unpessurized. The flow restriction rate is determined either by a pre-selected, stored value or on the basis of a code contained in the label or marking 27 of the cartridge 20. The flow restriction can be realized either by reducing the flow rate of the pump 2 or by adjusting the throttle valve 4. For reducing the flow rate of the pump 2, in the case of an AC operated pump, a phase controlled modulator or a wave packet controller can be used. As an alternative, the operating frequency of the pump 2 can be changed. It is understood that in practice only one of the measures for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time is provided, i.e. either means are provided for reducing the flow rate of the pump 2, or a throttle valve 4 is provided for reducing the effective flow cross sectional area. It is further understood that other means for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time could be provided. Schifferle at Claim 12.

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[redacted]	
2. The method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs.	
[redacted]	
3. The method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference.	Schifferle discloses, either expressly or inherently, the method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference. *See, e.g.*: Schifferle at Fig. 1:

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	 Fig.1 Schifferle at [0019]: The selector switch 8 serves for selecting the coffee beverage to be prepared. The letter "E" denotes espresso coffee, while the letter "F" denotes filter coffee. The selector switch is electrically connected to the control unit 7. The control unit is operationally connected to the pump 2 via a conductor 9 and to a throttle valve 4 via a conductor 10. The throttle valve is

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	inserted into a brewing water conduit 19 running from the pump 2 to the closing plate member 11. Moreover, there is provided a sensor 28, electrically connected to the control unit 7 by means of a conductor 10 a. The sensor 28 serves for detecting and reading a label or marking 27, provided on the cartridge 20 and containing information about the kind and/or content of the cartridge 20. Such a label or marking 27 can consist, for example, of a barcode printed onto the cartridge 20; however, other kinds of markings are possible, for example in electronic form. It is understood that the sensor 28 and the label or marking 27 are matched to each other to enable the sensor 28 to read the label or marking 28 and to forward the information contained therein to the control unit 7. In the case where exclusively cartridges 20 are used that are provided with such a label or marking 28, the selector switch 8 can be omitted since the kind of cartridge 20 is automatically recognized by the sensor 27, and the control unit, consequently, influences certain operating parameters of the coffee maker, e.g. the delivery rate of the pump 2, the adjustment of the throttle valve 4 et cetera. Schifferle at [0021]: The selector switch 8 is manually rotated into the position "F" and the cartridge 20 is inserted into the cartridge retainer 12. Then, the retainer 12 is moved upwards towards the closing plate member 11. Upon completion of this upwards movement (see FIG. 2), both the cartridge cover 21 and the bottom 22 of the cartridge 20, i.e. the foil 26, are punched. Once the upper end position is reached, the closing plate member 11 not only closes the brewing chamber 5, but also presses the cartridge cover 21 against the top end face of the cartridge retainer 12 along an annular contact area, thereby hydraulically sealing the upper portion of the cartridge 20 against the bottom 22 of the cartridge 20. As soon as the brewing chamber 5 is closed, the pump 2 is operated. The amount of brewing water fed into the brewing chamber 5 per unit of time is restricted, as compared to the brewing operation of an espresso coffee, to such an extent that the brewing water flows through the cartridge 20 essentially unpessurized. The flow restriction rate is determined either by a pre-selected, stored value or on the basis of a code contained in the label or marking 27 of the cartridge 20. The flow restriction can be realized either by reducing the flow rate of the pump 2 or by adjusting the throttle valve 4. For reducing the flow rate of the pump 2, in the case of an AC operated pump, a phase controlled modulator or a wave packet controller can be used. As an

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	alternative, the operating frequency of the pump 2 can be changed. It is understood that in practice only one of the measures for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time is provided, i.e. either means are provided for reducing the flow rate of the pump 2, or a throttle valve 4 is provided for reducing the effective flow cross sectional area. It is further understood that other means for reducing the flow rate of the brewing water flowing through the brewing chamber 5 per unit of time could be provided. Schifferle at Claim 12. *See also* [1].
10. The method according to claim 1, wherein the base element of the first portion capsule is made of metal.	
11. The method according to claim 10, wherein the base element of the second portion capsule is made of metal.	
12. The method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal.	

Exhibit A-8 – Invalidity of U.S. Patent No. 10,858,176 in view of Schifferle

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[redacted]	
[13.pre] A method of making a coffee beverage, comprising steps of:	Schifferle discloses, either expressly or inherently, a method of making a coffee beverage. *See, e.g.*: *See* [1.pre].
[13.a] providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal;	Schifferle discloses, either expressly or inherently, providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal. *See* [1.a], [1.g], [1.i], [1.h].
[13.b] inserting a first portion capsule into the apparatus, the first portion capsule being free of a filter and including a first lid that is sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines the cavity with a central interior portion,	Schifferle discloses, either expressly or inherently, inserting a first portion capsule into the apparatus, the first portion capsule being free of a filter and including a first lid that is sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines the cavity with a central interior portion. *See, e.g.*: *See* [1.b].
[13.c] having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves,	

Exhibit A-8 – Invalidity of U.S. Patent No. 10,858,176 in view of Schifferle

U.S. Patent No. 10,858,176	Disclosure
[13.d] the base element having a circumferential flange having a top side to which the first lid is sealed and an opposing bottom side with a first barcode located on the bottom side;	Schifferle discloses, either expressly or inherently, the base element having a circumferential flange having a top side to which the first lid is sealed and an opposing bottom side with a first barcode located on the bottom side. *See, e.g.*: *See* [1.d].
[13.e] piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule;	Schifferle discloses, either expressly or inherently, piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: *See* [1.g].
[13.f] sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus;	Schifferle discloses, either expressly or inherently, sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus. *See, e.g.*: *See* [1.h].
[13.g] reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing heated water into the first portion capsule via the water inlet that is arranged along the central axis of the first portion capsule according to production conditions associated with the first barcode to form the first coffee beverage;	Schifferle discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing heated water into the first portion capsule via the water inlet that is arranged along the central axis of the first portion capsule according to production conditions associated with the first barcode to form the first coffee beverage. *See, e.g.*: *See* [1.f], [1.i].

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IPR2023-00485, U.S. PATENT 11,230,430

U.S. Patent No. 10,858,176	Disclosure
[13.h] unloading the first portion capsule from the apparatus;	Schifferle discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: *See* [1.j].
[13.i] inserting second portion capsule into the apparatus, the second portion capsule being free of a filter and including a second lid sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and an outside surface of the wall having a plurality of vertically oriented grooves, the base element has a circumferential flange having a top side to which the second lid is sealed and an opposing bottom side with a second barcode that is located on the bottom side and being different from the first barcode; piercing the second lid with the mandrel in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange of the second	Schifferle discloses, either expressly or inherently, inserting second portion capsule into the apparatus, the second portion capsule being free of a filter and including a second lid sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and an outside surface of the wall having a plurality of vertically oriented grooves, the base element has a circumferential flange having a top side to which the second lid is sealed and an opposing bottom side with a second barcode that is located on the bottom side and being different from the first barcode; piercing the second lid with the mandrel in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange of the second portion capsule and/or the second lid against the seal of the apparatus; reading the second barcode with the barcode reader; controlling production of a second coffee beverage based upon the reading of the second barcode; introducing the heated water into the second portion capsule via the water inlet that is arranged along the central axis of the second portion capsule according to production conditions associated with the second barcode to form the second coffee beverage. *See, e.g.*: *See* [1.k]; [13.a]-[13.g].

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IPR2023-00485, U.S. PATENT 11,230,430

U.S. Patent No. 10,858,176	Disclosure
portion capsule and/or the second lid against the seal of the apparatus; reading the second barcode with the barcode reader; controlling production of a second coffee beverage based upon the reading of the second barcode; introducing the heated water into the second portion capsule via the water inlet that is arranged along the central axis of the second portion capsule according to production conditions associated with the second barcode to form the second coffee beverage.	
14. The method according to claim 13, wherein the production conditions associated with the first barcode are different from the production conditions associated with the second barcode, the production conditions include: pressure, temperature and/or an amount of the heated water.	Schifferle discloses, either expressly or inherently, the method according to claim 13, wherein the production conditions associated with the first barcode are different from the production conditions associated with the second barcode, the production conditions include: pressure, temperature and/or an amount of the heated water. *See, e.g.*: Schifferle at [0025]-[0027]: For preparing a conventional espresso coffee, the selector switch 8 is manually rotated into the position marked "E". In this mode of operation, the brewing water flows through a conventional espresso cartridge under high pressure. In the present case, the expression "espresso coffee" shall mean a coffee beverage that is provided with a froth layer at its top, independent of the amount of brewing water used for preparing the coffee beverage. Preferably, for preparing a filter coffee, different cartridges are used than for preparing espresso coffee. Besides the different design of the bottom of the cartridge, also the coffee powder blend, the amount of coffee powder and/or the degree of grinding can be different.

U.S. Patent No. 10,858,176	Disclosure
	Moreover, in the case of a filter coffee cartridge, the apertures in the filter elements 23, 24 are larger and/or their number is increased, such that these filter elements 23, 24 do not constitute a hydraulic resistance to the brewing water flowing there trough. As an alternative to the embodiment discussed herein before, the coffee maker can incorporate more extensive features: For example, means can be provided to punch the bottom of the cartridge later than the cover of the cartridge, depending on the kind of coffee beverage to be prepared. In case an espresso coffee is to be prepared, the bottom of the espresso cartridge is punched only after a certain hydraulic pressure has been built up in the interior of the cartridge, because this measure favors the formation of froth, as is well known. Alternatively, in the case of an espresso cartridge, its bottom can be punched by the lower punching member in a first phase only partially, i.e. to such an extent that the tip of the punching member just penetrates the bottom of the cartridge, but only so far that the slots 16 of the punching member 15 do not communicate with the interior of the espresso cartridge. In this way, a hydraulic overpressure can be built up in the interior of the espresso cartridge during a first phase of the brewing operation. *See also* [13].

Exhibit A-9 – Invalidity of U.S. Patent No. 10,858,176 in view of Yoakim

INVALIDITY CLAIM CHART
Invalidity of U.S. Patent No. 10,858,176 in view of Yoakim

According to its cover page, U.S. Patent Pub. 2010/0239734 ("Yoakim") was published on September 23, 2010 from an application filed on May 7, 2010. Yoakim therefore constitutes prior art under pre-AIA 35 U.S.C. § 102(e). Yoakim anticipates and/or renders obvious the Asserted Claims of the '176 Patent (at least as Nespresso understands K-fee's application of the Asserted Claims in an effort to show infringement).

To the extent K-fee argues that any element below is not disclosed by Yoakim, a person of ordinary skill in the art would have found it obvious to combine the teachings of Yoakim with the background knowledge of a person of ordinary skill in the art and/or the additional references, and exemplary teachings, set forth in Exhibits A-1 to A-9 and in Appendix A.

The chart below provides representative examples of where each element of each claim is found within Yoakim. Citations are meant to be exemplary, not exhaustive, and Nespresso reserves the right to identify and discuss additional portions of the reference in support of its contentions and/or to rebut arguments made by K-fee. Citations to figures, drawings, tables, and the like include reference to any accompanying or related text. All internal cross references are meant to incorporate the cross-referenced material as if fully set forth therein.

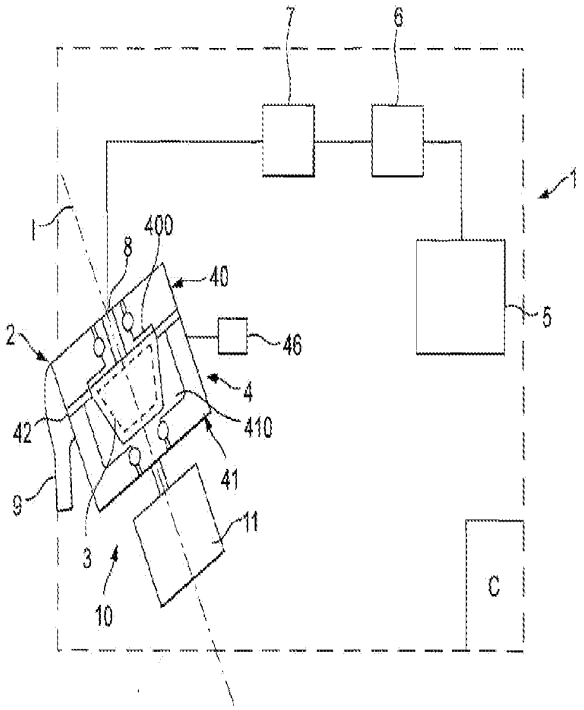
It is Nespresso's position that K-fee's Infringement Contentions have not established that any accused product or service infringes any valid claim. Thus, Nespresso's statements below should not be treated as an admission, implication, or suggestion that Nespresso agrees with K-fee regarding either the scope, construction, or interpretation of any of the Asserted Claims, or the infringement theories advanced by K-fee in its Infringement Contentions, including whether any Asserted Claim satisfies 35 U.S.C. §§ 101 or 112. In certain cases, Nespresso specified non-limiting examples of where its application of the prior art is based on K-fee's apparent application of the claim element. These statements are not intended to suggest that Nespresso agrees with K-fee's application of any claim term, suggest a proposed construction at this stage of the case, or suggest that construction is needed, as the parties are not required to exchange terms for construction or proposed constructions until a later date.

K-fee has yet to identify any limitation of the Asserted Claims that it contends is not anticipated and/or rendered obvious by Yoakim. Nespresso therefore expressly reserves the right to respond to any such contention, including by identifying additional obviousness combinations, if K-fee makes any such contention.

Where Nespresso states that Yoakim "discloses" a limitation, that disclosure may be express, implicit, and/or inherent.

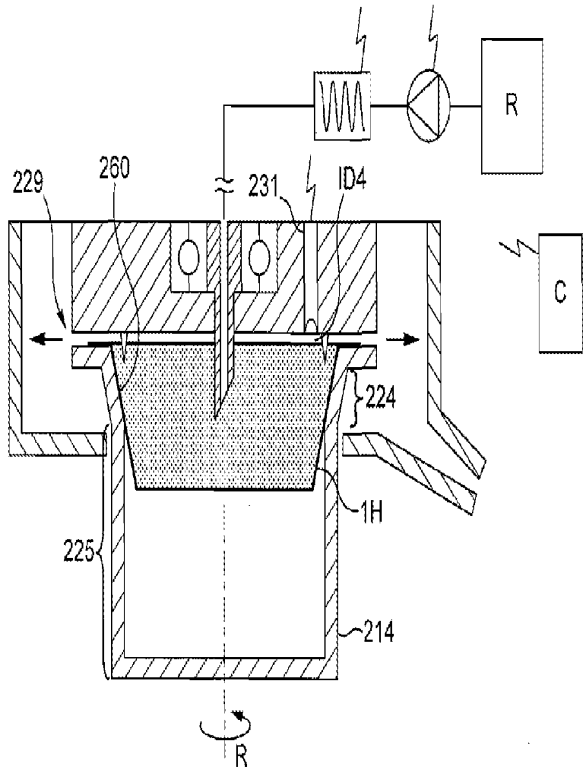
Exhibit A-9 – Invalidity of U.S. Patent No. 10,858,176 in view of Yoakim

U.S. Patent No. 10,858,176	Disclosure
[1.pre] A method of making a coffee beverage comprising:	Yoakim discloses, either expressly or inherently, a method for making a coffee beverage. *See, e.g.*: Yoakim at [0002]: The present invention relates to a capsule, device, system, and method for preparing a beverage or food liquid from a food substance which is brewed or extracted by using centrifugal forces exerted on a capsule which contains the substance. Yoakim at [0139]-[0144]: The invention also concerns a system for preparing a beverage or food liquid from a food substance contained in a filtering receptacle by passing water through the substance using centrifugal forces . . . wherein the system further comprises referencing means for positioning and referencing the capsule in a removable manner in the device and in operational relationship with the water feed means and along an axis of rotation along the driving means. Yoakim at [0180]: The system 1 of the invention is illustrated in FIG. 1 in the more general sense. The system comprises a device 2 and a capsule 3. The device has a brewing module 4 into which the capsule can be inserted for being brewed and is removed after use for being discarded (e.g., for waste or recycling). The module is in fluid communication with a water reservoir 5 containing fresh or, alternatively heated water. A fluid transport means such as a low pressure pump 6 can be provided in the water circuit to transport water from the reservoir to the module. A water heater 7 is further provided to heat water to the desired temperature. It can be noted that water could be heated in the reservoir itself and water could be transported from the reservoir by effect of vaporization. Water can be fed into the module 4 at low or substantially no pressure. For example, a pressure between 0 and 2 bars above atmospheric pressure can be envisaged at the inlet 8 of the module.

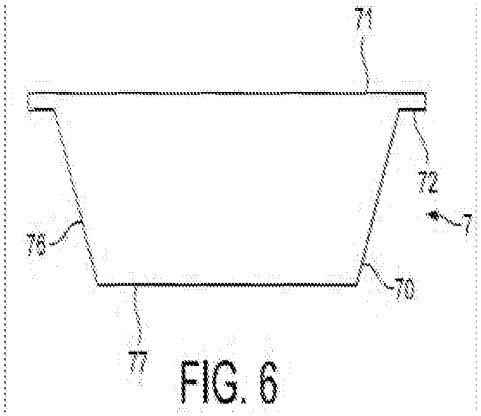
U.S. Patent No. 10,858,176	Disclosure
	Yoakim at FIG. 1:  FIG. 1
[1.a] providing an apparatus including a barcode reader;	Yoakim discloses, either expressly or inherently, providing an apparatus including a barcode reader. *See, e.g.*; Yoakim at [0025]: The device is useful for preparing beverages from a plurality of different capsules, in which case it further comprises identification means for identifying the different capsules, and control means capable of operating the device in centrifugation for any of the different capsules according to predetermined liquid food preparation parameters including the flow rate and the volume of liquid to be injected into the capsule, with the identification means

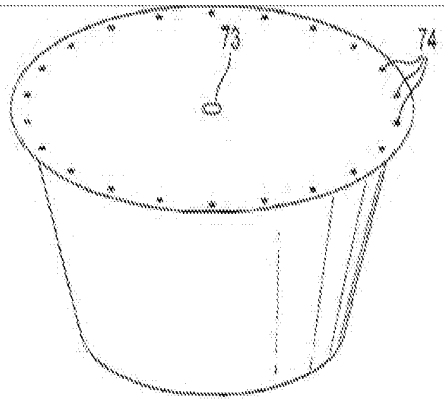
U.S. Patent No. 10,858,176	Disclosure
	comprising capsule recognition means which are recognized by sensing means connected to the control means of the device to control the preparation parameters accordingly. Yoakim at [0192]: Therefore, as much as two, three, four or even more different flow rates and/or speed ranges can be provided in function of the types of coffee to be delivered. Therefore, depending on the types of beverage to be brewed, the control unit can be programmed to adjust the optical centrifugal conditions. For instance, the control unit may be associated to a capsule recognition system enabling to recognize the types of capsules, i.e., espresso, lungo, cappuccino, long coffee (e.g., 180-400 ml), latte, tea, etc., and to adjust the speed and/or other brewing parameters (e.g., water temperature) according the capsule which is inserted in the device. A recognition system uses a code on the capsule and recognized by the device, such as a color, a barcode, an RFID, a magnetic code, ferromagnetic micro-wires or labels, shapes and combinations thereof. Yoakim at [0477]: The capsule system further comprises an identification means associated to the different capsules in the set for identifying each capsule and adjusting brewing parameters accordingly. The adjustable parameters can be the rotational speed, the back-pressure at the outlet of the capsule, and/or the volume of liquid fed in the capsule. The identification means participates to deliver a wider range of beverages having differentiated characteristics (volume, taste, strength, crema, colour, etc.). The identification means are associated to control means placed in the centrifugal brewing device which controls the adjustment of the said parameters, by controlling the rotational motor driving the capsule holder or/and the pump supplying liquid in the capsule. Yoakim at [0494]: The identification means can be sensed by sensing means connected to the control means for an active control of the parameters or can be passive identification means, e.g., selective

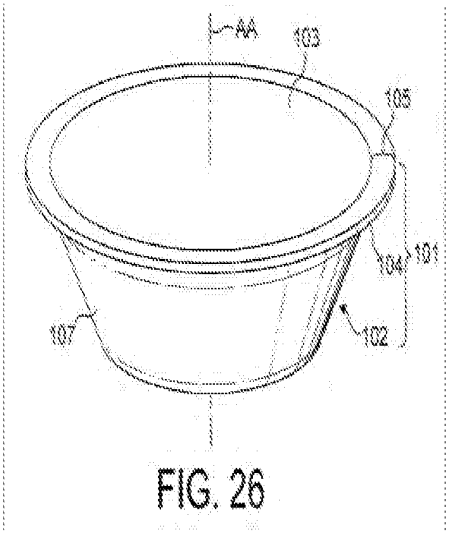
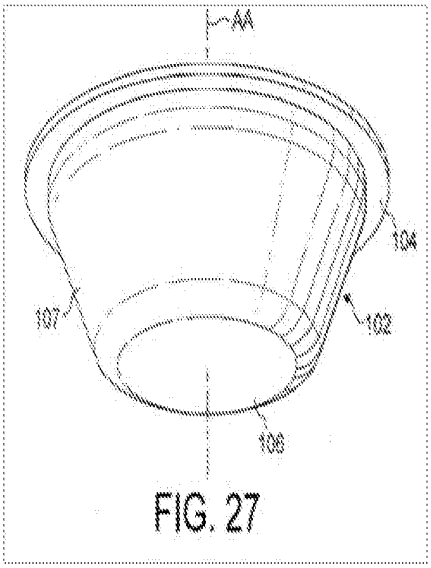
U.S. Patent No. 10,858,176	Disclosure
	flow restriction means. In particular, the identification means comprises capsule recognition means which are recognized by the sensing means connected to the control means of the brewing device which controls the brewing parameters accordingly. The recognition means can be differentiable by a visual code such as a barcode, a colour, a sign, a logo, etc., or by a radio-frequency (RFID), a magnetic element or by an identifiable shape. Yoakim at [0525]: In an alternative illustrated in FIGS. 61 and 62, the identification means are directly associated to the different capsules. In this case, the identification means ID4 and ID5 are capsule recognition means attached to or embedded in the capsules. The recognition means can be any mechanical, optical, magnetic, or radio-frequency recognition means capable of delivering information to the brewing device, via a sensing device 231, as to which type of capsule is inserted in the device. For example, the recognition means is a barcode, a colour code, a RFID tag, a magnetically sensitive element, or a mechanical key or shape.

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	Yoakim at FIG. 61:  FIG. 61
[1.b] inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity	Yoakim discloses, either expressly or inherently, inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion. *See, e.g.*:

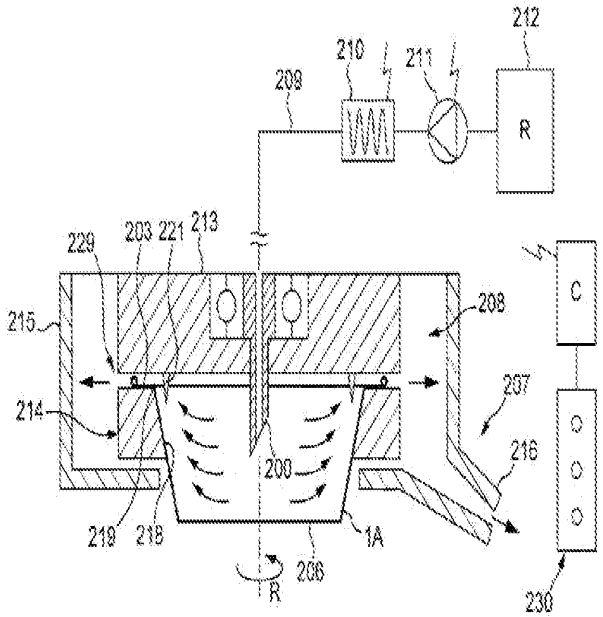
U.S. Patent No. 10,858,176	Disclosure
being free of a filter and including a central portion,	Yoakim at [0125]: The food substance in the capsule can be ground coffee powder, soluble coffee, tea, chocolate, whitener, flavours, and combinations thereof. Yoakim at [0128]: The capsule can comprise a sealing lid. The sealing lid can comprise a flexible membrane. The membrane can comprise gas barrier and support layers made of polymers, aluminium, and/or aluminium alloys. Yoakim at [0129]: The capsule can also comprise a cup-shaped body onto which the sealing lid is sealed. The cup-shaped body may also comprise gas barrier materials, such as metal, e.g., thin aluminium and/or plastic. Yoakim at [0180]: The system 1 of the invention is illustrated in FIG. 1 in the more general sense. The system comprises a device 2 and a capsule 3. The device has a brewing module 4 into which the capsule can be inserted for being brewed and is removed after use for being discarded (e.g., for waste or recycling). Yoakim at [0180]: FIGS. 6 and 7 illustrate a capsule that can suit the device according to the different embodiments of FIGS. 2 to 5. In FIG. 6, the capsule 7 comprises a cup-shaped body 70 with upwardly oriented sidewall 76 and a bottom wall 77. The sidewall forms a portion of cone which promotes the collection of the brewed liquid internally. The body terminates by an upper edge 72 raising outwards onto which is sealed a lid 71. The lid may be a flexible pierceable membrane of several microns in aluminium and/or plastic. The lid can be welded

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	on the upper edges 72 of the body. It can be pointed out that the membrane and body preferably comprise gas barrier layers such as aluminium and/or EVOH. Yoakim at [0198]: The capsule contains a substance chosen among the list consisting of ground coffee, soluble coffee, tea, a whitener such as dairy or non-dairy ingredient(s), herbal tea, nutritional substance, culinary ingredients and a mixture thereof. Yoakim at [0219]: The invention also relates to a food liquid preparation device for preparing a food liquid from a food substance contained in a single-use capsule, removably insertable in the device Yaokim at FIGS. 6-7:  FIG. 6

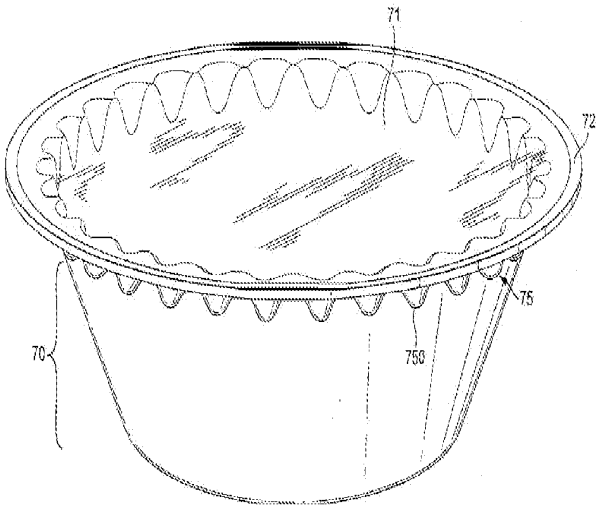
U.S. Patent No. 10,858,176	Disclosure
	Yoakim at [0414]: As shown in FIGS. 26 and 27, a preferred capsule 101 of the invention generally comprises a dished body 102 onto which is sealed a sealing foil 103. The sealing foil 103 is sealed onto a peripheral rim 104 of the body at a sealing annular portion 105. The rim 104 can extend outwards forming a small annular portion, e.g., of about 2-5mm. The dished body comprises a bottom wall 106 and a side wall 107 which preferably widens in direction of the large open end of the body opposed to the bottom wall. The dished body is preferably rigid or semi-rigid. It can be formed of a food grade plastics, e.g., polypropylene, with a gas barrier layer such as EVOH and the like or aluminium alloy or a complex of plastic and aluminium alloy.  FIG. 7 The sealing foil 103 can be made of a thinner material such as a plastic laminate also including a barrier layer or aluminium alloy or a combination of plastic and aluminium alloy. The sealing foil is usually of a thickness between 30 and 250 microns, for example. The sealing foil membrane can be pierced for creating the water inlet and the beverage outlet(s) as will be described later in the description.

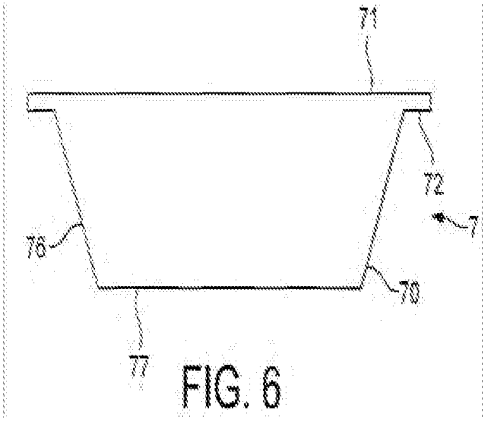
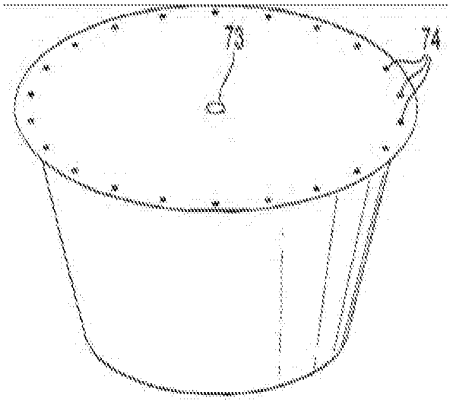
U.S. Patent No. 10,858,176	Disclosure
	Yoakim at FIGS. 26 and 27:  FIG. 26  FIG. 27

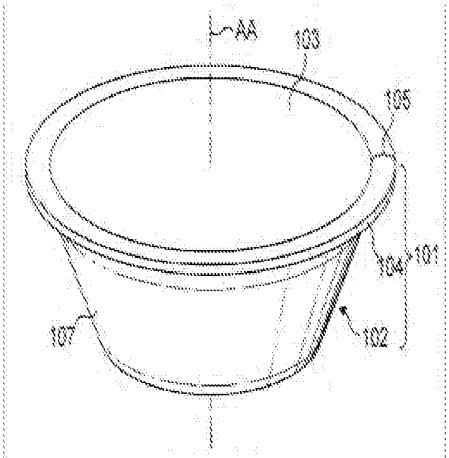
	Yoakim at [0171]: In this mode, premade radial outlets for the brewed liquid are provided in the capsule. For instance, a series of slits are provide in the lid and/or body. When the capsule is driven in rotation, the brewed liquid can pass through the slits whereas the solid particles are retained in the capsule. An additional filtering layer can be used to filter the liquid depending on the size of the outlets. Yoakim at [0288]: The capsule may comprise a filter means to filter the centrifuged before the liquid is released from the outlets at the sidewall. Yoakim at [0343]: In a possible mode, the portion of wall with the outlet openings can be formed from a paper filter or woven, non-woven fibres, meshed material, porous polymer membrane or combination thereof. In this case, part of the portion of wall can be formed by a band or different parts of the filter, fibres or meshed material. . . . Yoakim at [0461]: FIGS. 45 to 50 are other variants of capsules according to the invention. For example, the capsule of FIG. 45 has a cylindrical side wall 700, an upper wall 701 and a lower wall 702 both sealed or connected to the sidewall 700. The capsule is gastight by choosing materials for the walls, e.g., aluminium and/or suitable plastics, which have gas barrier properties. The upper walls and lower walls can be flexible or rigid depending on said materials. For example, wall 701 can be a flexible sealing membrane welded on upper rim 703 of the body 705 forming the sidewall 700 and lower wall 702. The side wall 700 may comprise outlets 704, 706 for release of the liquid when centrifuged in the beverage preparation device around central axis AA of the capsule. Optionally, the capsule may comprise a filter part 708 delimiting the cavity 709 for the substance and a collecting recess 710 peripherally placed relative to the central cavity.

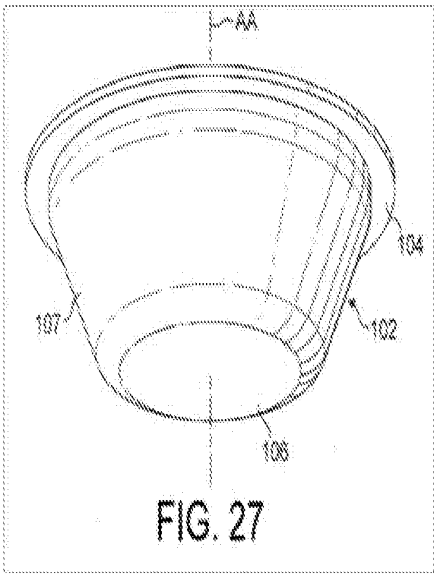
U.S. Patent No. 10,858,176	Disclosure
	Yoakim at FIG. 54:  FIG. 54
[1.c] and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity,	Yoakim discloses, either expressly or inherently, a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity. *See, e.g.*: Yoakim at [0161]: In yet another embodiment, the surface of the capsule comprises a toothed structure. Yoakim at [0215]: FIG. 23 illustrates another capsule of the invention. The capsule comprises means for connecting it to the external rotational driving means of the device. For this, capsule has a

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	toothed structure 75 on at least one of its outer surface. The capsule has a body 70 comprising an upper edge 72 which can be closed by an upper membrane 71. The toothed structure comprises a series of teeth which is positioned below the edge or rim 72 of the body of the capsule. The teeth are placed along the whole periphery of the body of the capsule. The body of the capsule can be made of plastic and/or aluminium or aluminium alloy. For example, it can be moulded by injection of plastic or deep drawn in aluminium. For example, the shape of the teeth could be slightly triangular, oval, rectangular or pyramidal. It should be noticed that the teeth could be replaced by other equivalent structures such as series of elements in relief and/or hollow. For example, slits, pins or small needles can be envisaged. Yoakim at [0216]: The device itself that receives the capsule of FIG.23 comprises a toothed surface of complementary shape. FIG. 24 shows a capsule holder 44 adapted to receive the capsule of FIG. 23. The capsule holder has a cavity into which are provided hollow teeth 440. The hollow teeth are arranged to fit the teeth 750 on the outer surface of the capsule.

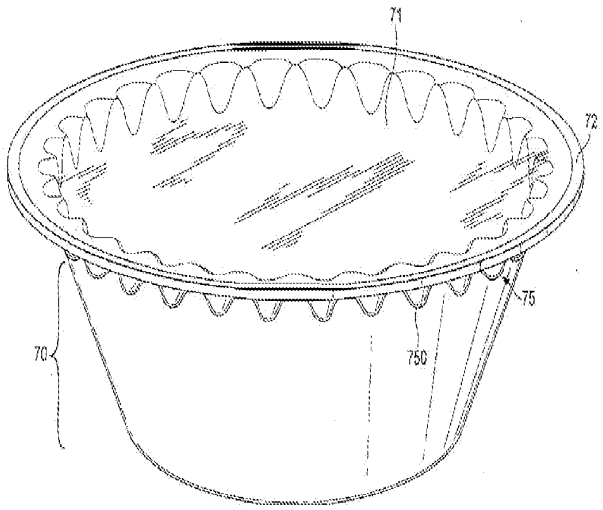
U.S. Patent No. 10,858,176	Disclosure
	Yoakim at FIG. 23:  FIG. 23
[1.d] the base element including a circumferential flange having a top side to which the first foil lid is sealed and an opposing bottom side with a first barcode located on the bottom side,	Yoakim discloses, either expressly or inherently, the base element including a circumferential flange having a top side to which the first foil lid is sealed and an opposing bottom side with a first barcode located on the bottom side. *See, e.g.*: Yoakim at [0197]: FIGS. 6 and 7 illustrate a capsule that can suit the device according to the different embodiments of FIGS. 2 to 5. In FIG. 6, the capsule 7 comprises a cup-shaped body 70 with upwardly oriented sidewall 76 and a bottom wall 77. The sidewall forms a portion of cone which promotes the collection of the brewed liquid internally. The body terminates by an upper edge 72 raising outwards onto which is sealed a lid 71. The lid may be a flexible pierceable membrane of several microns in aluminium and/or plastic. The lid can be welded

U.S. Patent No. 10,858,176	Disclosure
	on the upper edges 72 of the body. It can be pointed out that the membrane and body preferably comprise gas barrier layers such as aluminium and/or EVOH. Yoakim at FIGS. 6-7:  FIG. 6  FIG. 7 Yoakim at [0414]:

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	As shown in FIGS. 26 and 27, a preferred capsule 101 of the invention generally comprises a dished body 102 onto which is sealed a sealing foil 103. The sealing foil 103 is sealed onto a peripheral rim 104 of the body at a sealing annular portion 105. The rim 104 can extend outwards forming a small annular portion, e.g., of about 2-5mm. The dished body comprises a bottom wall 106 and a side wall 107 which preferably widens in direction of the large open end of the body opposed to the bottom wall. The dished body is preferably rigid or semi-rigid. It can be formed of a food grade plastics, e.g., polypropylene, with a gas barrier layer such as EVOH and the like or aluminium alloy or a complex of plastic and aluminium alloy. The sealing foil 103 can be made of a thinner material such as a plastic laminate also including a barrier layer or aluminium alloy or a combination of plastic and aluminium alloy. The sealing foil is usually of a thickness between 30 and 250 microns, for example. The sealing foil membrane can be pierced for creating the water inlet and the beverage outlet(s) as will be described later in the description. Yoakim at FIGS. 26 and 27:  FIG. 26

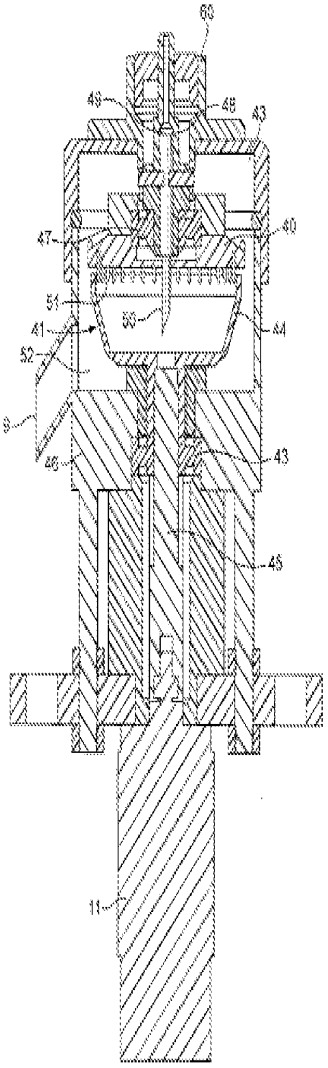
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	 FIG. 27 Yoakim at [0477]: The capsule system further comprises an identification means associated to the different capsules in the set for identifying each capsule and adjusting brewing parameters accordingly. Yoakim at [0496]: The recognition means can be differentiable by a visual code such as a barcode, a colour, a sign, a logo, etc., or by a radio-frequency code (RFID), a magnetic element or by an identifiable shape.
[1.e] the base element of the first portion capsule includes an outside surface having a plurality of vertically oriented grooves;	Yoakim discloses, either expressly or inherently, the base element of the first portion capsule includes an outside surface having a plurality of vertically oriented grooves. *See, e.g.*:

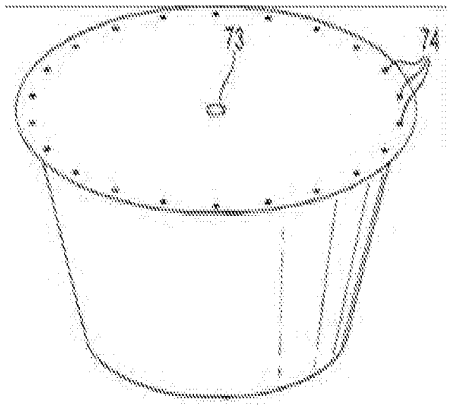
	Yoakim at [0161]: In yet another embodiment, the surface of the capsule comprises a toothed structure. Yoakim at [0215]: FIG. 23 illustrates another capsule of the invention. The capsule comprises means for connecting it to the external rotational driving means of the device. For this, capsule has a toothed structure 75 on at least one of its outer surface. The capsule has a body 70 comprising an upper edge 72 which can be closed by an upper membrane 71. The toothed structure comprises a series of teeth which is positioned below the edge or rim 72 of the body of the capsule. The teeth are placed along the whole periphery of the body of the capsule. The body of the capsule can be made of plastic and/or aluminium or aluminium alloy. For example, it can be moulded by injection of plastic or deep drawn in aluminium. For example, the shape of the teeth could be slightly triangular, oval, rectangular or pyramidal. It should be noticed that the teeth could be replaced by other equivalent structures such as series of elements in relief and/or hollow. For example, slits, pins or small needles can be envisaged. Yoakim at [0216]: The device itself that receives the capsule of FIG.23 comprises a toothed surface of complementary shape. FIG. 24 shows a capsule holder 44 adapted to receive the capsule of FIG. 23. The capsule holder has a cavity into which are provided hollow teeth 440. The hollow teeth are arranged to fit the teeth 750 on the outer surface of the capsule.

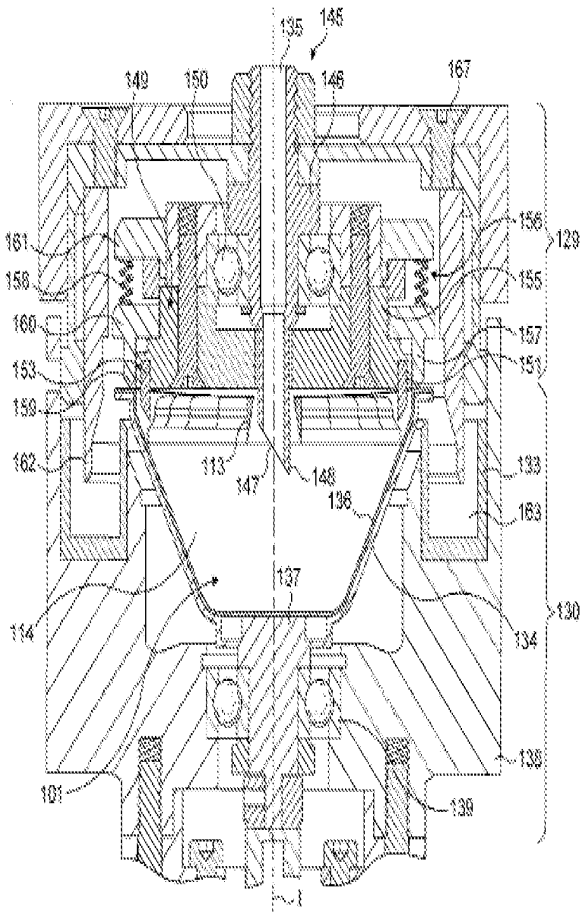
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	 FIG. 23 Yoakim at FIG. 23:
[1.f] reading the first barcode with the barcode reader; controlling a production process of a first coffee beverage based upon the reading of the first barcode;	Yoakim discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling a production process of a first coffee beverage based upon the reading of the first barcode. *See, e.g.*: Yoakim at [0477]: The capsule system further comprises an identification means associated to the different capsules in the set for identifying each capsule and adjusting brewing parameters accordingly. . . . The identification means are associated to control means placed in the centrifugal brewing device which controls the adjustment of the said parameters, by controlling the rotational motor driving the capsule holder and/or the pump supplying liquid in the capsule.

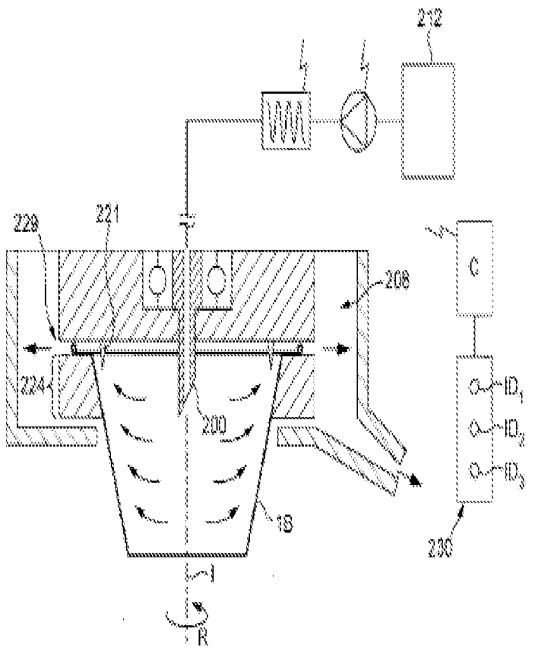
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	Yoakim at [0192]: Therefore, as much as two, three, four or even more different flow rates and/or speed ranges can be provided in function of the types of coffee to be delivered. Therefore, depending on the types of beverage to be brewed, the control unit can be programmed to adjust the optimal centrifugal conditions. For instance, the control unit may be associated to a capsule recognition system enabling to recognize the types of capsules, i.e., espresso, lungo, cappuccino, long coffee (e.g., 180-400 ml), latte, tea, etc., and to adjust the speed and/or other brewing parameters (e.g., water temperature) according the capsule which is inserted in the device. A recognition system uses a code on the capsule and recognized by the device, such as a color, a barcode, an RFID, a magnetic code, ferromagnetic micro-wires or labels, shapes and combinations thereof. Yoakim at [0153]: The device comprises a control unit adapted to vary the speed of the driving means for driving the capsule in centrifugal rotation therefore providing different centrifugal pressures in the capsule. As a result, the brewing pressure conditions in the capsule can be easily tailored to the type of beverages to be brewed. *See also* [1.a] and [1.d]
[1.g] piercing the first foil lid with a mandrel of the apparatus in a region that is offset from a central axis of the first portion capsule;	Yoakim discloses, either expressly or inherently, piercing the first foil lid with a mandrel of the apparatus in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: Yoakim at [0186]: At the inside surface of the injection lid 40 is placed a piercing structure 450 which has the function of piercing the injection side 30 of the capsule. A water injector or lance 50 is provided which traverses the injection side 30 and which comprises an injection conduit for

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	carrying water from the water circuit into the capsule. The water injector 50 is preferably located in the center of the capsule. Yoakim at [0187]: A series of needles 51 . . . positioned on the side of the lid 40 to form small perforations at the periphery of the upper side of the capsule. Yoakim at FIG. 4:

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	 FIG. 4 Yoakim at FIG. 7:

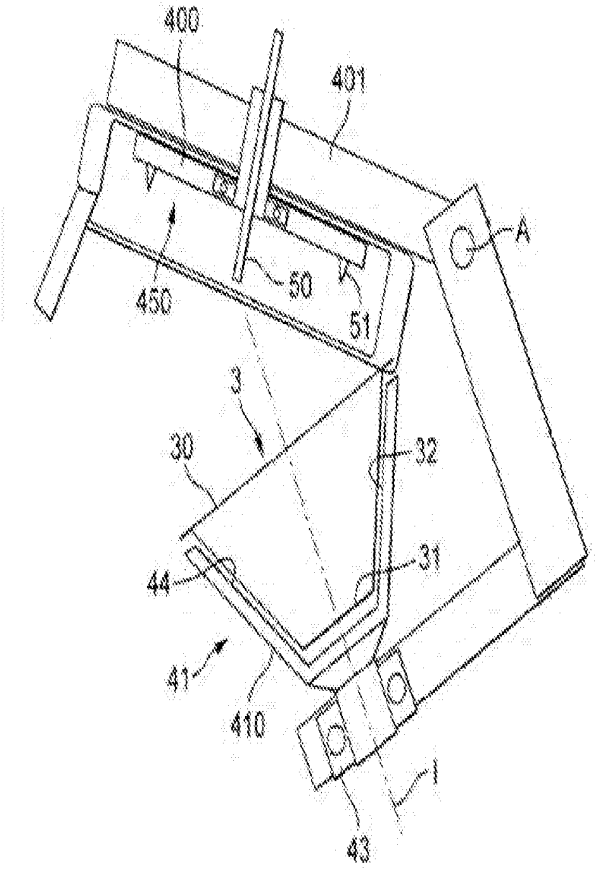
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	 FIG. 7 Yoakim at [0435]: About the water injector is mounted a capsule rotary engaging part 149. The engaging part 149 has a central bore for receiving the water injector and rotational guiding means such as a ball or needle bearing 150 inserted between the part 149 and the injector 145. The engaging part further comprises outlet piercing members 151,152, 153, 154 protruding from a disc-shaped engaging wall 155 of the part 149. The piercing members can be small cylindrical portions with a slanted cutting surface able to cut or perforate small holes in the sealing foil 103 of the capsule. The piercing members are arranged at the periphery of the wall 155, preferably evenly distributed to provide several openings in the capsule for the centrifuged liquid to leave the capsule forming several streams of liquid. . . .

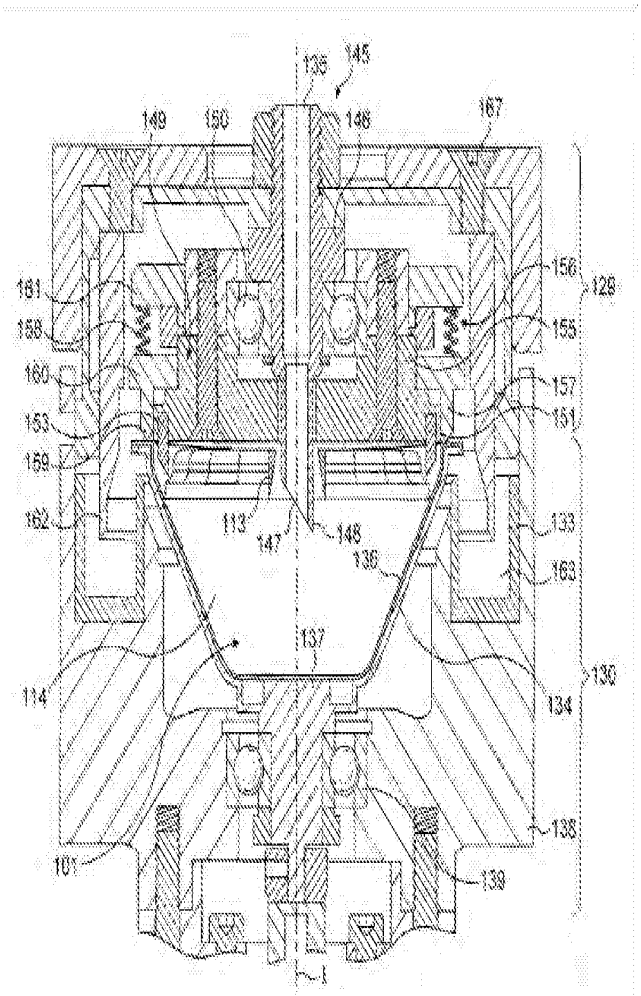
	Yoakim at FIG. 35:  FIG. 35 Yoakim at [0507]: . . . .The assembly 213 comprises a central injection needle 200 capable of being introduced precisely along the axis of rotation I of the capsule. At its periphery the interface assembly 213 can comprise a series of outlet perforators 221 for allowing centrifuged beverage to

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	leave the capsule through the peripheral outlet 229 between the capsule holder 214 and the interface assembly 213. . . . Yoakim at FIG. 55:  FIG. 55
[1.h] sealing the first foil lid against a seal of the apparatus;	Yoakim discloses, either expressly or inherently, sealing the first foil lid against a seal of the apparatus. *See, e.g.*: Yoakim at [0384]: A valve means in the device provide the advantage of a control of the pressure of liquid exerted in the capsule at the level of the device. The valve means can be designed to open at a certain pressure threshold, for example by calibration or adjustment, for matching the

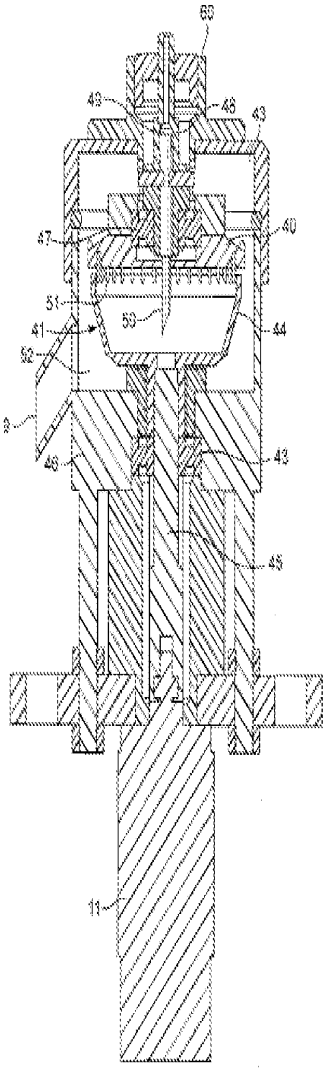
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	features of various or specific beverages, e.g., coffee extract, tea extract, instant beverages, etc. Yoakim at [0388]: For example, the engaging portion of the valve means can also comprise an annular pressing edge which is arranged to seal on the engaging portion of the capsule. The pressing edge may take different forms such as a V, W or U shape in order to exert a sufficient sealing pressure on the capsule when the pressure of liquid is still under a predetermined threshold. Yoakim at [0436]: According to one aspect of the invention, the water injection subassembly 129 further comprises a valve system 156 for controlling the flow of liquid that is discharged from the device. . . .The annular engaging portion 157 includes a pressing peripheral surface 159 which applies a closing force on the peripheral rim 104 of the capsule to be able to restrict the flow of liquid under the force of the elastic loading means. The surface 159 can form a cone or V for increasing the sealing pressure in a localized area. Yoakim at [0445]: [T]he valve system 156 of the device can start opening as pressure of liquid increases on the valve when liquid leaves the capsule. Therefore, a certain time delay before opening can be controlled by the valve system to enable sufficient interaction between water and the substance contained in the capsule. This controlled delay depends on various parameters . . . . Yoakim at [0446]: In another mode of the invention illustrated in FIGS. 37 and 38, the same numeral references have been taken to identify the same or equivalent technical means. In this mode, the valve system 156 differs in that the elastic loading means is obtained by a rubber elastic O-ring

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	169 inserting between a lower member comprising a pinching surface 159 and an upper fixed portion 161 of the water injection subassembly 129. The O-ring is maintained in place between two concave surfaces 170, 171 of valve system. Again during brewing, the pressure of liquid in the capsule tends to lift the pinching surface 159 to create an annular passage between the rim 104 of the capsule and the pinching Surface. The pinching surface can be shaped with a sharp tip or edge that can create a concentration of the pinching forces onto the rim.

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	Yoakim at FIG. 2:  FIG. 2 Yoakim at FIG. 35:

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	 FIG. 35

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[1.i] introducing heated water into the first portion capsule through a water inlet of the apparatus that is arranged along the central axis of the portion capsule to form the first coffee beverage;	Yoakim discloses, either expressly or inherently, introducing heated water into the first portion capsule through a water inlet of the apparatus that is arranged along the central axis of the portion capsule to form the first coffee beverage. *See, e.g.*: Yoakim at [1080]: The module is in fluid communication with a water reservoir 5 containing fresh or, alternatively heated water. A fluid transport means such as a low pressure pump 6 can be provided in the water circuit to transport water from the reservoir to the module. A water heater 7 is further provided to heat water to the desired temperature. It can be noted that water could be heated in the reservoir itself and water could be transported from the reservoir by effect of vaporization. Yoakim at [0019]: The inlet port [is] aligned with the central axis of the capsule, wherein the liquid to be injected into the capsule is water[.] Yoakim at [0220]: . . . a water injector, as part of the water injection head, arranged for introducing water along a central axis relative to the capsule holder[.]

	Yoakim at FIG. 4:  FIG. 4 Yoakim at [0021]:

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	The liquid introducing means preferably comprises at least one needle for injecting liquid into the capsule at or near its central axis . . .
[1.j] unloading the first portion capsule from the apparatus;	Yoakim discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: Yoakim at [0107]-[0109]: In one embodiment, the invention provides for a method of preparing a beverage or food liquid from a food substance contained in a filtering receptacle by passing water through the substance using brewing centrifugal forces comprising: wherein the receptacle is formed by a sealed capsule before it use which is opened for water to be introduced in the capsule; said capsule containing a predetermined dose of food substance and being discarded after use. Yoakim at [0118]: . . . wherein the capsule is placed in the beverage preparation device[.] Yoakim at [0120]: . . . wherein the capsule is removed from the beverage preparation device for being discarded after the liquid has been brewed from the capsule by centrifugation of the capsule in the beverage preparation device. Yoakim at [0180]: The system 1 of the invention is illustrated in FIG. 1 in the more general sense. The system comprises a device 2 and a capsule 3. The device has a brewing module 4 into which the capsule can be inserted for being brewed and is removed after use for being discarded (e.g., for waste of recycling).

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	Yoakim at [0427]: Thus, the system comprises a capsule 101 as aforementioned and a beverage preparation device 123. The device has a module 124 into which a capsule can be inserted. The capsule contains a food substance for being brewed and the capsule is removed from the module after use for being discarded (e.g., for waste or recycling of the organic and inorganic raw materials).
[1.k] inserting a second portion capsule into the apparatus, the second portion capsule including a second foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity of the second portion capsule being free of a filter and includes a central portion and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity, the base element of the second portion capsule including a circumferential flange having a top side to which the second foil is sealed and an opposing bottom side with a second barcode located on the bottom side and being different from the first barcode, the base element of the second portion capsule includes an outside surface having a plurality of vertically oriented grooves; reading	Yoakim discloses, either expressly or inherently, inserting a second portion capsule into the apparatus, the second portion capsule including a second foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity of the second portion capsule being free of a filter and includes a central portion and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity, the base element of the second portion capsule including a circumferential flange having a top side to which the second foil is sealed and an opposing bottom side with a second barcode located on the bottom side and being different from the first barcode, the base element of the second portion capsule includes an outside surface having a plurality of vertically oriented grooves; reading the second barcode with the barcode reader; controlling a second production process of a second coffee beverage based upon the reading of the second barcode, the second production process being different than the first production process; piercing the second foil lid with the mandrel of the apparatus in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange and/or the second foil lid of the second portion capsule against the seal of the apparatus; and introducing the heated water into the second portion capsule to form the second coffee beverage. *See, e.g.*: *See* [1.b]-[1.i]. Yoakim at [0025]: The device is useful for preparing beverages from a plurality of different capsules, in which case it further comprises identification means for identifying the different capsules, and

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the second barcode with the barcode reader; controlling a second production process of a second coffee beverage based upon the reading of the second barcode, the second production process being different than the first production process; piercing the second foil lid with the mandrel of the apparatus in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange and/or the second foil lid of the second portion capsule against the seal of the apparatus; and introducing the heated water into the second portion capsule to form the second coffee beverage.	control means capable of operating the device in centrifugation for any of the different capsules according to predetermined liquid food preparation parameters including the flow rate and the volume of liquid to be injected into the capsule. . . Yoakim at [0192]: Depending on the type of beverage to be brewed, the control unit can be programmed to adjust the optimal centrifugal conditions. For instance, the control unit may be associated to a capsule recognition system enabling to recognize the types of capsules, i.e., espresso, lungo, cappuccino, long coffee (e.g., 180-400 ml), latte, tea, etc., and to adjust the speed and/or other brewing parameters (e.g., water temperature) according [to] the capsule which is inserted in the device. A recognition system uses a code on the capsule and recognized by the device, such as a . . . barcode. Yoakim at [0477]: The capsule system further comprises an identification means associated to the different capsules in the set for identifying each capsule and adjusting brewing parameters accordingly. The adjustable parameters can be the rotational speed, the back-pressure at the outlet of the capsule, and/or the volume of liquid fed in the capsule. The identification means participates to deliver a wider range of beverages having differentiated characteristics (volume, taste, strength, crema, colour, etc.
[redacted]	
2. The method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs.	Yoakim discloses, either expressly or inherently, the method according to claim 1, wherein one or both of the introducing steps include: inducing turbulent flow of the heated water by the ribs. *See, e.g.*:

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	Yoakim at [0218]: In FIG. 25, is illustrated another embodiment of the brewing system of the invention. The difference is here that a water by-pass conduit 500 is provided in addition to the main water conduit 50 for adding a volume of water in the collecting assembly 52. A volume of water may be added before, during or after the centrifugal brewing operation in the capsule. The by-pass conduit ends on the upper surface of the rotating lid 400. The upper surface of the lid 400 may comprise a water distribution structure such as radial grooves or recesses to promote the flow of water toward the surface of the collecting assembly. The control unit may control the delivery of the added volume of water so that the volume is added at the same time as the coffee extract is delivered by centrifugation so that the foam that is created on the top of the beverage is not destroyed. *See also* [1].
3. The method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference.	Yoakim discloses, either expressly or inherently, the method according to claim 1, wherein the method comprises: comparing the read barcode with a stored reference. *See, e.g.*: Yoakim at [0025]: The device is useful for preparing beverages from a plurality of different capsules, in which case it further comprises identification means for identifying the different capsules, and control means capable of operating the device in centrifugation for any of the different capsules according to predetermined liquid food preparation parameters including the flow rate and the volume of liquid to be injected into the capsule, with the identification means comprising capsule recognition means which are recognized by sensing means connected to the control means of the device to control the preparation parameters accordingly. Yoakim at [0477]:

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	The capsule system further comprises an identification means associated to the different capsules in the set for identifying each capsule and adjusting brewing parameters accordingly. The adjustable parameters can be the rotational speed, the back-pressure at the outlet of the capsule, and/or the volume of liquid fed in the capsule. The identification means participates to deliver a wider range of beverages having differentiated characteristics (volume, taste, strength, crema, colour, etc.). The identification means are associated to control means placed in the centrifugal brewing device which controls the adjustment of the said parameters, by controlling the rotational motor driving the capsule holder or/and the pump supplying liquid in the capsule. *See also* [1].
10. The method according to claim 1, wherein the base element of the first portion capsule is made of metal.	Yoakim discloses, either expressly or inherently, the method according to claim 1, wherein the base element of the first portion capsule is made of metal. *See, e.g.*: Yoakim at [0128]: The capsule can comprise a sealing lid. The sealing lid can comprise a flexible membrane. The membrane can comprise gas barrier and support layers made of polymers, aluminium and/or aluminium alloys. Yoakim at [0129]: The capsule can also comprise a cup-shaped body onto which the sealing lid is sealed. The cup-shaped body may also comprise gas barrier materials, such as metal, e.g., thin aluminium and/or plastic. Yoakim at [0215]:

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	The body of the capsule can be made of plastic and/or aluminium or aluminium alloy. For example, it can be moulded by injection of plastic or deep drawn in aluminium. Yoakim at [0461]: FIGS. 45 to 50 are other variants of capsules according to the invention. For example, the capsule of FIG. 45 has a cylindrical side wall 700, an upper wall 701 and a lower wall 702 both sealed or connected to the sidewall 700. The capsule is gastight by choosing materials for the walls, e.g., aluminium and/or suitable plastics, which have gas barrier properties. *See also, e.g.*, [0414]. *See also* [1].
[redacted]	[redacted]
11. The method according to claim 10, wherein the base element of the second portion capsule is made of metal.	Yoakim discloses, either expressly or inherently, the method according to claim 10, wherein the base element of the second portion capsule is made of metal. *See, e.g.*: Yoakim at [0128]: The capsule can comprise a sealing lid. The sealing lid can comprise a flexible membrane. The membrane can comprise gas barrier and support layers made of polymers, aluminium and/or aluminium alloys. Yoakim at [0129]: The capsule can also comprise a cup-shaped body onto which the sealing lid is sealed. The cup-shaped body may also comprise gas barrier materials, such as metal, e.g., thin aluminium and/or plastic. Yoakim at [0215]:

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	The body of the capsule can be made of plastic and/or aluminium or aluminium alloy. For example, it can be moulded by injection of plastic or deep drawn in aluminium. Yoakim at [0461]: FIGS. 45 to 50 are other variants of capsules according to the invention. For example, the capsule of FIG. 45 has a cylindrical side wall 700, an upper wall 701 and a lower wall 702 both sealed or connected to the sidewall 700. The capsule is gastight by choosing materials for the walls, e.g., aluminium and/or suitable plastics, which have gas barrier properties. *See also* Yoakim at [0414]. *See also* [10].
[redacted]	
12. The method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal.	Yoakim discloses, either expressly or inherently, the method according to claim 1, wherein the first foil lid and/or the second foil lid is made of metal. *See, e.g.*: Yoakim at [0128]: The capsule can comprise a sealing lid. The sealing lid can comprise a flexible membrane. The membrane can comprise gas barrier and support layers made of polymers, aluminium, and/or aluminium alloys. Yoakim at [0129]: The capsule can also comprise a cup-shaped body onto which the sealing lid is sealed. The cup-shaped body may also comprise gas barrier materials, such as metal, e.g., thin aluminium and/or plastic. Yoakim at [0180]:

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	The system 1 of the invention is illustrated in FIG. 1 in the more general sense. The system comprises a device 2 and a capsule 3. The device has a brewing module 4 into which the capsule can be inserted for being brewed and is removed after use for being discarded (e.g., for waste or recycling). Yoakim at [0197]: FIGS. 6 and 7 illustrate a capsule that can suit the device according to the different embodiments of FIGS. 2 to 5. In FIG. 6, the capsule 7 comprises a cup-shaped body 70 with upwardly oriented sidewall 76 and a bottom wall 77. The sidewall forms a portion of cone which promotes the collection of the brewed liquid internally. The body terminates by an upper edge 72 raising outwards onto which is sealed a lid 71. The lid may be a flexible pierceable membrane of several microns in aluminium and/or plastic. The lid can be welded on the upper edges 72 of the body. It can be pointed out that the membrane and body preferably comprise gas barrier layers such as aluminium and/or EVOH. *See also* [1].
[13.pre] A method of making a coffee beverage, comprising steps of:	Yoakim discloses, either expressly or inherently, a method of making a coffee beverage. *See* [1.pre].
[13.a] providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal;	Yoakim discloses, either expressly or inherently, providing an apparatus including a barcode reader configured to read a barcode, the apparatus including a mandrel, a water inlet, and a seal. *See* [1.a], [1.g], [1.i], [1.h].
[13.b] inserting a first portion capsule into the apparatus, the first	Yoakim discloses, either expressly or inherently, inserting a first portion capsule into the apparatus, the first portion capsule being free of a filter and including a first lid that is sealed

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portion capsule being free of a filter and including a first lid that is sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines the cavity with a central interior portion,	to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines the cavity with a central interior portion. *See, e.g.*: *See* [1.b].
[13.c] having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves,	Yoakim discloses, either expressly or inherently, having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central interior portion and an outside surface of the wall having plurality of vertically oriented grooves. *See, e.g.*: *See* [1.c], [1.e].
[13.d] the base element having a circumferential flange having a top side to which the first lid is sealed and an opposing bottom side with a first barcode located on the bottom side;	Yoakim discloses, either expressly or inherently, the base element having a circumferential flange having a top side to which the first lid is sealed and an opposing bottom side with a first barcode located on the bottom side. *See, e.g.*: *See* [1.d].
[13.e] piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule;	Yoakim discloses, either expressly or inherently, piercing the first lid with the mandrel in a region that is offset from a central axis of the first portion capsule. *See, e.g.*: *See* [1.g].
[13.f] sealing the top side of the flange of the first portion capsule	Yoakim discloses, either expressly or inherently, sealing the top side of the flange of the first portion capsule and/or the first lid against the seal of the apparatus. *See, e.g.*:

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and/or the first lid against the seal of the apparatus;	*See* [1.h].
[13.g] reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing heated water into the first portion capsule via the water inlet that is arranged along the central axis of the first portion capsule according to production conditions associated with the first barcode to form the first coffee beverage;	Yoakim discloses, either expressly or inherently, reading the first barcode with the barcode reader; controlling production of a first coffee beverage based upon the reading of the first barcode; introducing heated water into the first portion capsule via the water inlet that is arranged along the central axis of the first portion capsule according to production conditions associated with the first barcode to form the first coffee beverage. *See, e.g.*: *See* [1.f], [1.i]. Yoakim at [0180]: The module is in fluid communication with a water reservoir 5 containing fresh or, alternatively heated water. A fluid transport means such as a low pressure pump 6 can be provided in the water circuit to transport water from the reservoir to the module. A water heater 7 is further provided to heat water to the desired temperature. It can be noted that water could be heated in the reservoir itself and water could be transported from the reservoir by effect of vaporization. Water can be fed into the module 4 at low or substantially no pressure. For example, a pressure between 0 and 2 bars above atmospheric pressure can be envisaged at the inlet 8 of the module. Yoakim at [0192]: Therefore, as much as two, three, four or even more different flow rates and/or speed ranges can be provided in function of the types of coffee to be delivered. Therefore, depending on the types of beverage to be brewed, the control unit can be programmed to adjust the optical centrifugal conditions. For instance, the control unit may be associated to a capsule recognition system enabling to recognize the types of capsules, i.e., espresso, lungo, cappuccino, long coffee (e.g., 180-400 ml), latte, tea, etc., and to adjust the speed and/or other brewing parameters (e.g., water temperature) according the capsule which is inserted in the device. A recognition system uses a code on the capsule and recognized by the device,

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	such as a color, a barcode, an RFID, a magnetic code, ferromagnetic micro-wires or labels, shapes and combinations thereof. Yoakim at [0477]: The capsule system further comprises an identification means associated to the different capsules in the set for identifying each capsule and adjusting brewing parameters accordingly. The adjustable parameters can be the rotational speed, the back-pressure at the outlet of the capsule, and/or the volume of liquid fed in the capsule. The identification means participates to deliver a wider range of beverages having differentiated characteristics (volume, taste, strength, crema, colour, etc.). The identification means are associated to control means placed in the centrifugal brewing device which controls the adjustment of the said parameters, by controlling the rotational motor driving the capsule holder or/and the pump supplying liquid in the capsule. Yoakim at [0494]-[0496]: The identification means can be sensed by sensing means connected to the control means for an active control of the parameters or can be passive identification means, e.g., selective flow restriction means. In particular, the identification means comprises capsule recognition means which are recognized by the sensing means connected to the control means of the brewing device which controls the brewing parameters accordingly. The recognition means can be differentiable by a visual code such as a barcode, a colour, a sign, a logo, etc., or by a radio-frequency (RFID), a magnetic element or by an identifiable shape.
[13.h] unloading the first portion capsule from the apparatus;	Yoakim discloses, either expressly or inherently, unloading the first portion capsule from the apparatus. *See, e.g.*: *See* [1.j].

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[13.i] inserting second portion capsule into the apparatus, the second portion capsule being free of a filter and including a second lid sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and an outside surface of the wall having a plurality of vertically oriented grooves, the base element has a circumferential flange having a top side to which the second lid is sealed and an opposing bottom side with a second barcode that is located on the bottom side and being different from the first barcode; piercing the second lid with the mandrel in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange of the second portion capsule and/or the second lid against the seal of the apparatus; reading the second barcode with the barcode reader; controlling	Yoakim discloses, either expressly or inherently, inserting second portion capsule into the apparatus, the second portion capsule being free of a filter and including a second lid sealed to a base element having a cavity within which a powdered coffee material is located, the base element has been shaped to define a wall that defines a cavity with a central interior portion, and having a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the cavity central interior portion, and an outside surface of the wall having a plurality of vertically oriented grooves, the base element has a circumferential flange having a top side to which the second lid is sealed and an opposing bottom side with a second barcode that is located on the bottom side and being different from the first barcode; piercing the second lid with the mandrel in a region that is offset from a central axis of the second portion capsule; sealing the top side of the flange of the second portion capsule and/or the second lid against the seal of the apparatus; reading the second barcode with the barcode reader; controlling production of a second coffee beverage based upon the reading of the second barcode; introducing the heated water into the second portion capsule via the water inlet that is arranged along the central axis of the second portion capsule according to production conditions associated with the second barcode to form the second coffee beverage. *See, e.g.*: *See* [1.k]; [13.a]-[13.g].

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production of a second coffee beverage based upon the reading of the second barcode; introducing the heated water into the second portion capsule via the water inlet that is arranged along the central axis of the second portion capsule according to production conditions associated with the second barcode to form the second coffee beverage.	
[redacted]	
14. The method according to claim 13, wherein the production conditions associated with the first barcode are different from the production conditions associated with the second barcode, the production conditions include: pressure, temperature and/or an amount of the heated water.	Yoakim discloses, either expressly or inherently, the method according to claim 13, wherein the production conditions associated with the first barcode are different from the production conditions associated with the second barcode, the production conditions include: pressure, temperature and/or an amount of the heated water. *See, e.g.*: Yoakim at [0025]: The device is useful for preparing beverages from a plurality of different capsules, in which case it further comprises identification means for identifying the different capsules, and control means capable of operating the device in centrifugation for any of the different capsules according to predetermined liquid food preparation parameters including the flow rate and the volume of liquid to be injected into the capsule. . . Yoakim at [0192]: Depending on the type of beverage to be brewed, the control unit can be programmed to adjust the optimal centrifugal conditions. For instance, the control unit may be associated to a capsule recognition system enabling to recognize the types of capsules, i.e., espresso, lungo, cappuccino, long coffee (e.g., 180-400 ml), latte, tea, etc., and to adjust the speed

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	and/or other brewing parameters (e.g., water temperature) according [to] the capsule which is inserted in the device. A recognition system uses a code on the capsule and recognized by the device, such as a . . . barcode. Yoakim at [0477]: The capsule system further comprises an identification means associated to the different capsules in the set for identifying each capsule and adjusting brewing parameters accordingly. The adjustable parameters can be the rotational speed, the back-pressure at the outlet of the capsule, and/or the volume of liquid fed in the capsule. The identification means participates to deliver a wider range of beverages having differentiated characteristics (volume, taste, strength, crema, colour, etc. *See also* [13].

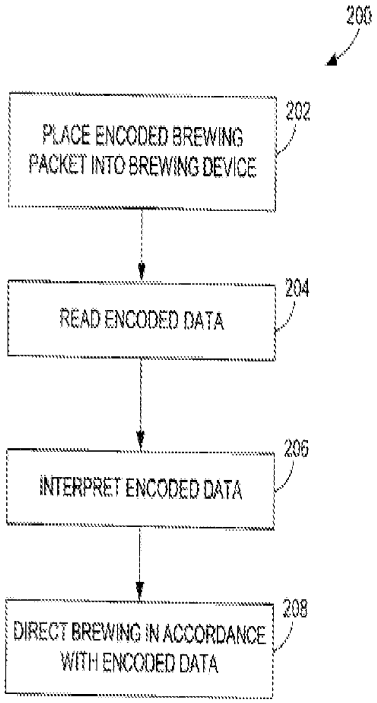
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[1.pre] A method of making a coffee beverage comprising:	The below cited art discloses, either expressly or inherently, a method for making a coffee beverage. *See, e.g.*: Boyd at Abstract: A brewing packet is provided for use in the preparation of hot or cold beverages. The brewing packet envelops a brewing ingredient chosen according to the tastes of a beverage drinker. The packet includes a machine interpret-able feature that contains encoded data capable of being read by a beverage producing device. Furthermore, the data on the packet is capable of directing the beverage producing device to employ a specific brewing operation suited for the particular brewing packet. This allows for producing the optimal beverage from the brewing ingredient. The packet may be utilized with a variety of brewing ingredients to produce a variety of beverages. Similarly, the packet may be configured to produce single or multiple servings of a beverage. Boyd at [0006]: A brewing packet is provided for use in the preparation of hot or cold beverages. The brewing packet envelops a brewing ingredient chosen according to the tastes of a beverage drinker. The packet includes a machine interpret-able feature that contains encoded data capable of being read by a beverage producing device. Furthermore, the data on the packet may be capable of directing the beverage producing device to employ a specific brewing operation suited for the particular brewing packet. This allows for producing the optimal beverage from the brewing ingredient. The packet may be utilized with a variety of brewing ingredients to produce a variety of beverages. Similarly, the packet may be configured to produce single or multiple servings of a beverage. Boyd at [0019]–[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949

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	to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated hat the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. Boyd at [0034]–[0037]: Referring now to FIG. 4, a method of operation for the present invention is illustrated at 200. At 202, a brewing packet encoded with packet-characteristic data is placed into a brewing device. At 204, the packet-characteristic data is read by a sensor. At 206, the packet-characteristic data is interpreted by a processor. Finally, at 208, brewing is directed in accordance with the packet-characteristic data read by the sensor and interpreted by the processor.

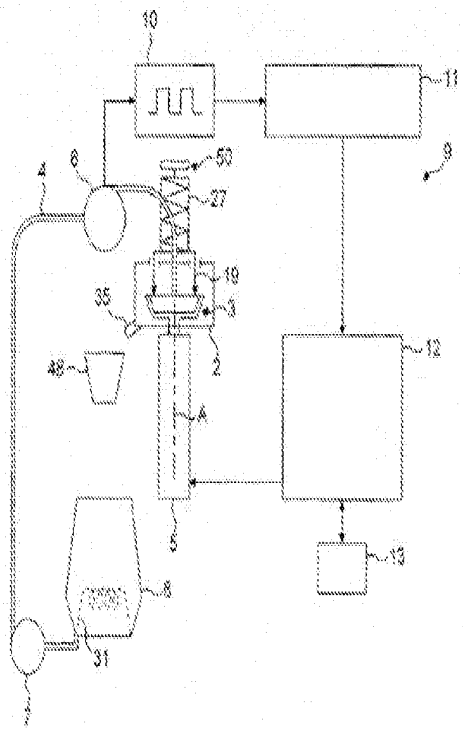
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	Because the processor may be employed to effect the aforementioned predefined brewing directives based on the machine interpretable feature associated with each packet. The brewing operation may be made consistent based on consistent machine interpretable features from packet to packet. Similarly, the brewing operation may be altered in accordance with desired brewing characteristics each time the packet is replaced. Particular brew characteristics thus may be controlled simply by selection of a packet with the desired encoded brewing directives (whether or not such directives are known to the coffee machine operator). Control of the brewing process thus may be handed off to the brewing professionals who produce the packets, rather than relying on untrained machine operators. This may be done without sacrificing variety in brew operation based on differing characteristics of the packet contents or consumer tastes. For example, a person desiring weaker coffee may purchase packets designated such in order to direct the machine to add water to the brewed coffee beverage in accordance with proper brewing procedure. This avoids problems associated with ill-advised attempts to dilute coffee by decreasing the quantity of coffee used, a change which may result in a corresponding change in bed depth, and thus in an undesirable change in coffee taste. The encoded packets also may be used to track brewing information which may be useful in ensuring satisfaction with the brewed coffee beverage. For example, the packet may include an encoded date for use in tracking freshness of the coffee grounds contained within the packet. Upon determining that the packet is stale, the processor may direct the machine to note such staleness, thus avoiding an unsatisfactory beverage. Similarly, the packet may contain encoded data related to the coffee blend contained within the packet, such data being stored in memory to provide a history of coffee blends. The encoded packet also may contain encoded data defining the source of the packet so as to prohibit use of counterfeit packets, or packets from unauthorized suppliers.

	Boyd at Fig. 4:  FIG. 4 *See also* Boyd at Claims 1–25. Jarisch at Abstract: Capsule for the preparation of a beverage comprising a con-tainer and a beverage ingredient contained therein, wherein the container comprises a code (65) adapted for being iden-tified or read by external reading means (62), wherein the code is arranged on the container to be read while the capsule is rotated around an axis of rotation traversing the capsule. Jarisch at [0014]:

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	The aim of the present invention is to propose an improved way to identify the capsule within a beverage production machine to ensure a more reliable and convenient retrieval or reading of information so as to adjust working parameters of the machine. Jarisch at [0023]: The invention further relates to a system for preparing a beverage from a capsule as aforementioned and further comprising a beverage preparation device; wherein the device comprises capsule holding means for holding the capsule and rotational drive means for driving the holding means and capsule in rotation along said axis of rotation and reading means arranged for reading the code when the capsule is rotated along said axis. Jarisch at [0034]: FIG. 1 illustrates an example of a beverage preparation system 1 as described in WO2010/026053 for which the capsule of the invention can be used. Jarisch at FIG. 1:

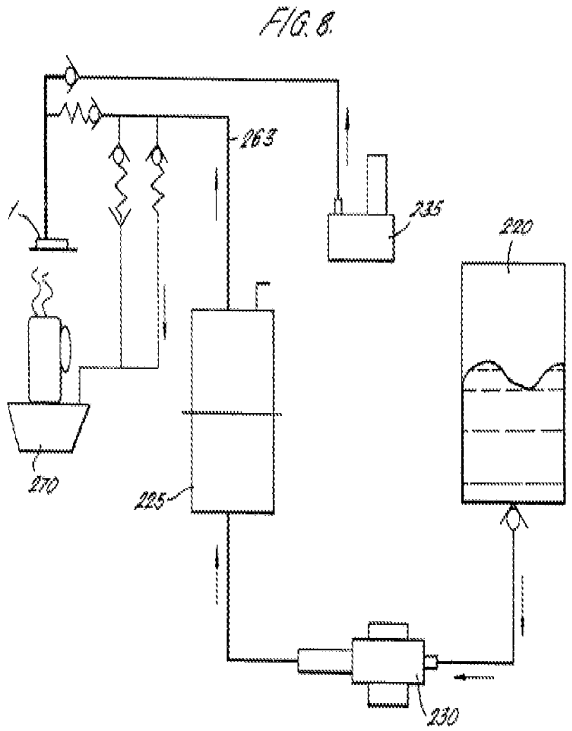
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U.S. Patent No. 10,858,176	Disclosure
	 Fig. 1 Lazaris at Abstract: A brewer operates during a brew cycle to brew a beverage by infusing heated liquid with a dry beverage medium contained in a single serve disposable cartridge. During the brew cycle, the cartridge is contained in a cup-shaped housing closed by a lid. Rotation of the cartridge within the housing is resisted by locating surfaces arranged to interengage with at least one surface irregularity in the cartridge sidewall. Inlet and outlet probes pierce the cartridge and serve, respectively, to admit the heated liquid and to remove the served beverage.

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	Panesar at p. 1, ll. 4–5: The present invention relates to an insert, a machine and a system for the preparation of beverages. Panesar at p. 1, ll. 20–28: In the domestic market consumers may not wish to use separate machines when preparing beverages from different beverage ingredient containing containers or, indeed, loose beverage ingredients. It is therefore an object of the present 25 invention to provide an insert, a beverage preparation machine and a beverage preparation system which allows consumers to use a variety of containers or loose ingredients in a single beverage preparation machine. Panesar at p. 8, ll. 17–26: <u>Beverage Preparation System</u> A beverage preparation machine 201 of the beverage preparation system of the present invention is shown in Figures la to 9b. The beverage preparation machine 201 generally comprises a housing 210 containing a water tank 220, a water heater 225, a water pump 230, an air compressor 235, a control processor, a user interface 240 and a brew head 250. The brew head 250 in turn generally comprises a holder 251, recognition means 252 and inlet and outlet piercers 253, 254. Panesar at FIG. 8:

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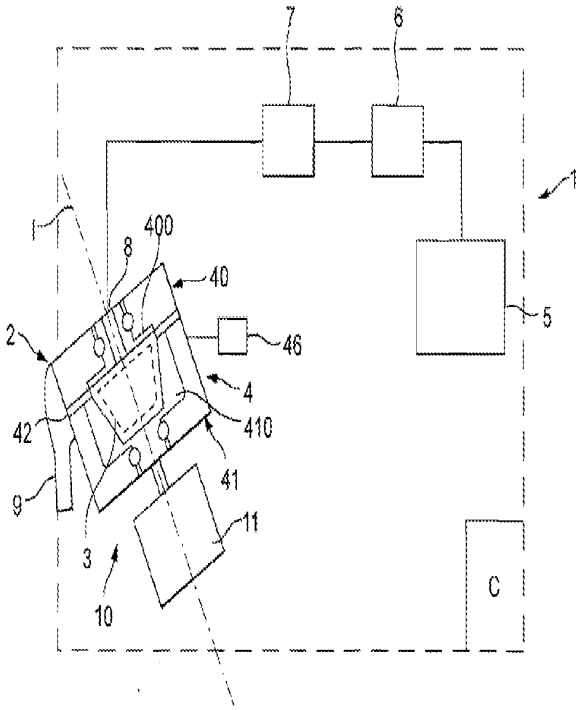
U.S. Patent No. 10,858,176	Disclosure
	 Panesar at p. 9, ll. 8–18: Cartridge for use in the system As shown in Figure 10 to 21, the cartridge 1 generally comprises an outer member 2, an inner member 3 and a laminate 5. The outer member 2, inner member 3 and laminate 5 are assembled to form the cartridge 1 which has an interior 120 for containing one or more beverage ingredients, an inlet 121, an outlet 122 and a beverage flow path linking the inlet 121 to the outlet 122 and which passes through the interior 120. The inlet 121 and outlet 122

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	are initially sealed by the laminate 5 and are opened in use by piercing or cutting of the laminate 5. Panesar at p. 5, ll. 23–32: The insert of the present invention may contain or be loaded with one or more beverage ingredients suitable for 25 the formation of a beverage product. The beverage product may be, for example, one of coffee, tea, chocolate or a dairy-based beverage including milk. The beverage ingredients may be powdered, ground, leaf-based or liquid. The beverage ingredients may be insoluble or soluble. 30 Examples include roast and ground coffee, leaf tea, powdered chocolate and soup, liquid milk-based beverages, carbonated drinks and concentrated fruit juices. *See also* Panesar at Claims 23–31. Rossi at 1: The present invention relates to a system of an edible- product making machine and a load element, and a process for controlling the operation of the edible-product making machine . Edible-product making machines of the type being fed with a single use load element having a brewable or water soluble aromatic substance for preparation of said edible product are often used for the preparation of coffee, tea, or other beverages, as well as for soups. The load element generally comprises a capsule containing coffee powder, instant coffee granules, tea leaves, freeze-dried soup granules or other substances designed to be put in contact with water within machine. The load element is usually sealed, and the element is inserted into the machine, without the user being in contact with the substance therein. Inside the machine, the load element is generally pierced to allow water to pass through it, or the contents of the load element are emptied out into a different container for the preparation of the edible product. The contents of the load element are brewed or dissolved in the water in order to make the edible product.

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	See also Rossi at 3–6. Yoakim at [0002]: The present invention relates to a capsule, device, system, and method for preparing a beverage or food liquid from a food substance which is brewed or extracted by using centrifugal forces exerted on a capsule which contains the substance. Yoakim at [0139]–[0144]: The invention also concerns a system for preparing a beverage or food liquid from a food substance contained in a filtering receptacle by passing water through the substance using centrifugal forces . . . wherein the system further comprises referencing means for positioning and referencing the capsule in a removable manner in the device and in operational relationship with the water feed means and along an axis of rotation along the driving means. Yoakim at [0180]: The system 1 of the invention is illustrated in FIG. 1 in the more general sense. The system comprises a device 2 and a capsule 3. The device has a brewing module 4 into which the capsule can be inserted for being brewed and is removed after use for being discarded (e.g., for waste or recycling). The module is in fluid communication with a water reservoir 5 containing fresh or, alternatively heated water. A fluid transport means such as a low pressure pump 6 can be provided in the water circuit to transport water from the reservoir to the module. A water heater 7 is further provided to heat water to the desired temperature. It can be noted that water could be heated in the reservoir itself and water could be transported from the reservoir by effect of vaporization. Water can be fed into the module 4 at low or substantially no pressure. For example, a pressure between 0 and 2 bars above atmospheric pressure can be envisaged at the inlet 8 of the module.

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	Yoakim at FIG. 1:  FIG. 1
[1.a] providing an apparatus including a barcode reader;	The below cited art discloses, either expressly or inherently, providing an apparatus including a barcode reader. *See, e.g.*: Boyd at [0006]: A brewing packet is provided for use in the preparation of hot or cold beverages. The brewing packet envel-ops a brewing ingredient chosen according to the tastes of a beverage drinker. The packet includes a machine interpretable feature that contains encoded data capable of being read by a beverage producing device. Furthermore, the data on the packet may be capable of directing the beverage producing device to employ a specific brewing operation suited for the particular brewing packet. This allows for producing the optimal beverage from the brewing ingredient. The packet may be utilized with a variety of brewing

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	ingredients to produce a variety of beverages. Similarly, the packet may be configured to produce single or multiple servings of a beverage. Boyd at [0019]–[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated hat the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. Boyd at [0023]:

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	With the foregoing in mind, it will be appreciated that it would be desirable to automatically customize the brew operation based on particular characteristics of the packet, the characteristics of the coffee, and/or the tastes of the user, whether or not the user is aware of what changes in the brew operation will lead to the desired taste. The present invention provides a vehicle for such customization in the form of an encoded packet configured to provide the brewing machine with data useful in directing the brewing operation in accordance with packet or packet content characteristics and/or the user's tastes. Boyd at [0030]: Machine interpretable feature 30, it will be appreciated, is capable of storing a significant amount of data, including specific brewing directives and/or packaging or ingredient characteristics. Examples of the types of brewing directives stored in machine interpretable feature 30 may include, for example, contact time, contact pattern, fluid volume, fluid temperature, fluid pressure, and/or fluid pass-through rate. The above brewing directives are all well known in the coffee brewing industry to affect the taste and quality of the coffee beverage. Examples of ingredient characteristics which may be stored in machine interpretable feature 30 include grind, blend, roast, quantity, bed depth, freshness, and expiration date. These examples are meant to be exemplary, not limiting in scope. Boyd at [0032]–[0034]: Coffee machine 100 includes a sensor 130 designed to read machine interpretable feature 30 of packet 10. Sensor 130 is in turn operatively connected to a processor 140 which controls coffee machine 100. Machine interpretable feature 30 may store data which is read by sensor 130 and passed to processor 140. Processor 140 may then direct the brewing operation in accordance with its interpretation of the data derived from machine interpretable feature 30. For example, processor 140 may direct coffee machine 100 to brew using a pre-selected contact time, contact pattern, fluid quantity, fluid temperature, fluid pressure, and/or fluid pass-through rate expressed in machine interpretable feature 30. Alternatively, the processor may itself make determinations of contact time, contact pattern, fluid quantity, fluid temperature, fluid pressure, and/or fluid pass-through rate based on information contained in

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	machine interpretable feature 30. The processor may also, based on information contained in machine interpretable feature 30, direct the coffee machine to add water, milk, cream, sugar, or any suitable condiment to the coffee beverage. As alluded to above, machine interpretable feature 30 need not store data specifically including brewing directives and ingredient characteristics. Instead machine interpretable feature 30 may act as an identifier so that brewing directives and ingredient characteristics may be looked up from data storage 150 within (or external to) coffee machine 100. Sensor 130 thus may read machine interpretable feature 30 and processor 140 may match the machine interpretable feature with predefined brewing operation instructions stored in such memory. Processor 140 may then direct the brewing operation based on brewing operation instructions. In one embodiment, the brewing operation instructions are matched to a machine interpretable feature using a look-up table in which brewing operation instructions correspond in a one-to-one ratio with each known ingredient variety, packet size, packet construction, user preference, etc. It will be appreciated, however, that other arrangements for matching machine interpretable feature 30 with brewing directives similarly may be used. Referring now to FIG. 4, a method of operation for the present invention is illustrated at 200. At 202, a brewing packet encoded with packet-characteristic data is placed into a brewing device. At 204, the packet-characteristic data is read by a sensor. At 206, the packet-characteristic data is interpreted by a processor. Finally, at 208, brewing is directed in accordance with the packet-characteristic data read by the sensor and interpreted by the processor.

Boyd at Fig. 4:

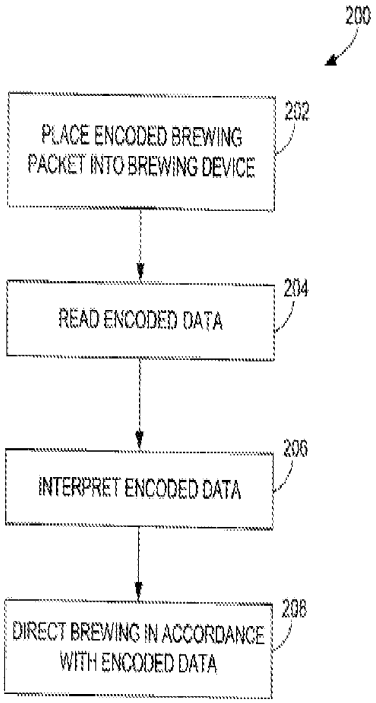


FIG. 4

Jarisch at [0023]:

The invention further relates to a system for preparing a beverage from a capsule as aforementioned and further comprising a beverage preparation device; wherein the device comprises capsule holding means for holding the capsule and rotational drive means for driving the holding means and capsule in rotation along said axis of rotation and reading means arranged for reading the code when the capsule is rotated along said axis.

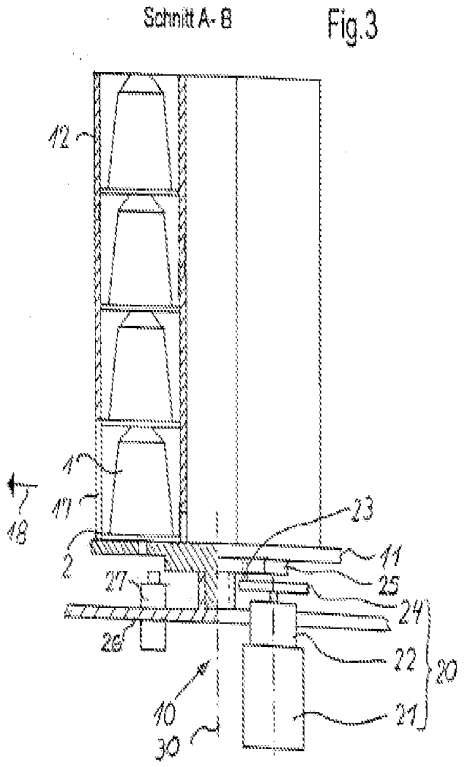
Jarisch at [0024]:

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	In particular, the reading means may comprise a light emitter and a light sensor. In an alternative, the reading means comprises an inductive sensor. The optical reading means or inductive sensor may be arranged to detect a code on the rim of the capsule. Jarisch at [0071]–[0073]: The reader may consist of: • A light source with/without focusing optic, and • A light sensor with/without focusing optic. Jarisch at [0082]: In the embodiment of the figure 4, the light source is placed at the bottom of the centrifugal cell 3. This cell is light conductive allowing the beam to reach the bottom side 72 of its rim 73. The reflected light is conducted by the transparent (or light conductive) centrifugal cell 3 to reach the sensor 62. In case that the sensor 62 cannot be aligned with the transparent part of the centrifugal cell 3, a mirror can be placed as illustrated in the figure 4 to deflect the forward and backward beams. *See also* Jarisch at Claims 14–16; FIGs. 2–7. Lazaris at [0042]: It is contemplated that the housings may be mounted such that they do not pivot to automatically eject the cartridges at the end of the brewing cycle, thus requiring users to manually remove the used cartridges. The holder may also employ multiple inlet probes to increase liquid distribution within the cartridge. The inlet probes also may have different heights to improve saturation of the beverage medium within the cartridge. It is also contemplated that the brewer may include a control system for automatically determining the type of cartridge (e.g., the beverage medium within the cartridge) and adjust the brewing cycle accordingly. This may include providing machine readable data such as bar codes, data

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	matrixes, dielectric encoding, etc, on a portion of the cartridge exterior accessible to a corresponding reader in the brewer. Mahlich at [0008]: It is thus the task of the present invention to equip the actual single-serving units to be selected with suitable machine readable identification whereby complicated voluminous double mirror scanners are not required for reading the identification code and whereby the accurate alignment of the single-serving pouch with regard to the scanner or its reading unit does not matter. In particular, the difficult process of aligning a rotation-symmetrical single-serving unit, whereby the shape of the capsule is mainly frustoconical and the pouch is mainly lozenge-shaped, is thus eliminated. Mahlich at [0010]: According to the invention, direct scanning or immediate reading of the identification on the single-serving unit, particularly of the single-serving capsule itself and not of any part of the storage magazine adjacent to the capsule, guarantees that the selected type of coffee is correctly identified with the single-serving unit and is actually being brewed after removal of the single-serving unit from the storage magazine. The identification can be read easily and accurately via an uncomplicated and compact reading head able to read in a linear manner, provided that the reading head is able to register the rotation-symmetrical identification. However, the rotational or angular position of the rotation-symmetrical identification with regard to the reading head that reads in a linear manner is not important, whereby the alignment of the single-serving unit with regard to the reading head is greatly simplified. In addition, the rotation-symmetrical identification is suitable for testing via a simple procedure according to claim 12. Mahlich at [0014]–[0016]: Apart from coffee type identification, the identification on any single-serving unit may also contain producer identification, whereby the latter in conjunction with an adapted evaluation

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	system for controlling the espresso machine can block operation of the espresso machine if the producer identification on the single-serving unit does not correspond to the machine's preprogrammed producer identification. As mentioned above, an uncomplicated system for the registration of the machine readable identification on a single-serving unit according to the invention may consist of a registration device with at least one reading head able to read in a linear manner. The reading head comprises a reading sensor consisting of a transmitter scanning a luminous spot on the identification or part thereof, and of a decoder receiver. The latter may be equipped with a controlling device whereby the setting, particularly that of a magazine unit, can be controlled in order to convey the single-serving units containing the desired coffee type into the dispensing position. According to claim 7 the linear reading head is located in a compact and secure position below the magazine tubes of the magazine unit. The reading head is directed upwards towards the plane where the bases of the single-serving capsules are positioned within the magazine tubes, in such a way that the rotation-symmetrical identification on the base of the respective lowest single-serving capsule can be read. Mahlich at [0037]: The support frame 26 also carries a reading head 27 mainly consisting of a scan transmitter and an encoder receiver. Reading head 27 is pointing from below towards the turntable 11 in such a way that it is able to register and scan the single-serving capsules stacked with their base facing downwards inside the magazine tubes 12 to 16 when the magazine tubes are moved across the reading head 27. For this purpose at least part of turntable 11 is transparent to the scanning of the ID code: windows 29 located below the magazine tubes 12 to 16 are designed as slits and are each arranged at equal radial distance to a main axis 30 of turntable 11, cf. FIG. 3. The ID codes 3 on the bases 2 of the single-serving capsules can be registered across their greatest radius r_1 and r_2 through these slits, according to FIG. la. In this case ID code 3 is being registered on

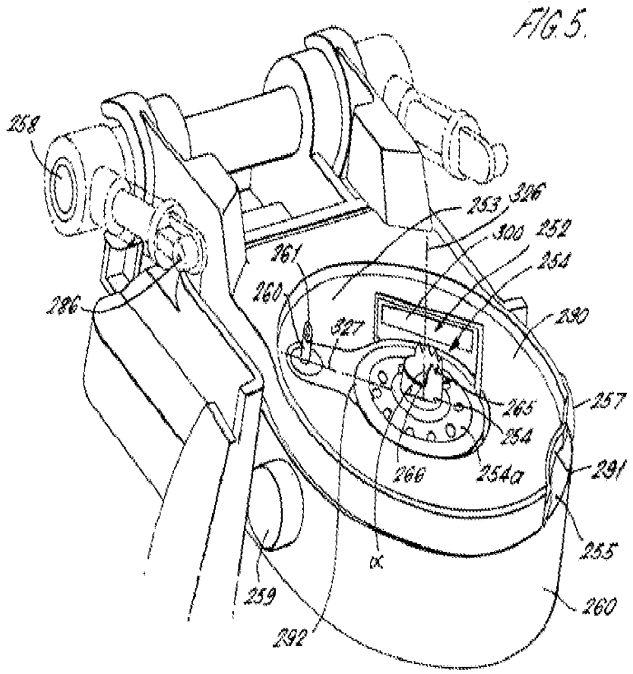
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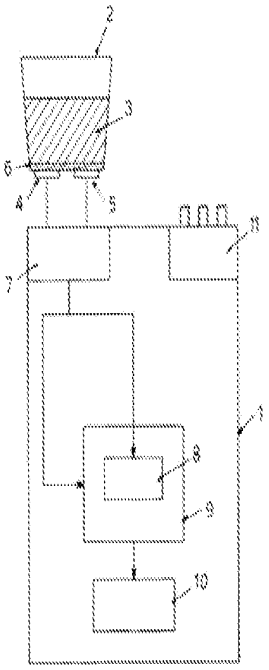
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	entering and on leaving the reading station when the base 2 of the capsule, equipped with the ID code, passes on its circular path across reading head 27 arranged in front of dispensing station 18 in the direction of rotation 28 of the turntable. It is thus guaranteed, via comparison of the two registered ID codes as well as via data processing, that only one single-serving capsule 1 containing the desired coffee type is conveyed to the dispensing station 18, once the desired coffee type has been selected, for example by means of a control panel or a knob. Mahlich at Fig. 3:  *See also* Mahlich at Claims 1–12.

Appendix A – Obviousness Chart for U.S. Patent No. 10,858,176

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	Panesar at p. 4, ll. 24–29: The beverage preparation machine may comprise a brew head comprising an upwardly directed inlet for supplying water to the brew head, a downwardly directed outlet for outflow of beverage produced by the machine and a barcode or RFID reader having a window in the brew head through which signals may be transmitted . . . Panesar at p. 5, ll. 7–8: Preferably the barcode reader or RFID reader window is located at or near a periphery of the brew head. Panesar at p. 34, ll. 5–26: The purpose of the recognition means 252 is to allow the machine 201 to recognize the type of beverage cartridge 1 that has been inserted and to adjust one or more operational parameters accordingly. In a typical embodiment, the recognition means 252 comprises an optical barcode reader which reads the printed barcode 320 provided on the laminate 5 of the beverage cartridge 1 as shown in Figure 10 and discussed above. The optical barcode reader comprises one or more LEDs 321 to illuminate the barcode 320, a focusing lens 322 to acquire an image of the barcode, a charge coupled device (CCD) 323 for producing an electrical signal representative of the acquired image and support circuitry for the LEDs and CCD. The space in the lower part for accommodating the barcode reader is limited. A mirror or mirrors 324 may be used to reflect the light from the LEDs 321 to a focusing lens which is not located in the lower part 255. Schematic arrangements are shown in Figures 9a and 9b. The lower part 255 comprises an aperture 326 which is the same size as the barcode 320 on the beverage cartridge 1. The aperture 326 is closed by a window, preferably glass, which can transmit the signals produced by the barcode reader. Panesar at p. 35, ll. 4–6:

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	Alternatively, an RFID reader is provided to read an RFID located on the cartridge 1. Panesar at Fig. 5:  *See also* Panesar at Claims 24, 27, 30. Rossi at Abstract: The process for controlling the operation of an edible-product making machine (1) of the type being fed with a single use load element (2) having a brewable or water soluble aromatic substance (3) for preparation of the edible product, comprises a first step of recognition wherein the edible-product making machine (1) recognises an identifying element (4) on the load element (2) allowing the edible-product making machine (1) to take

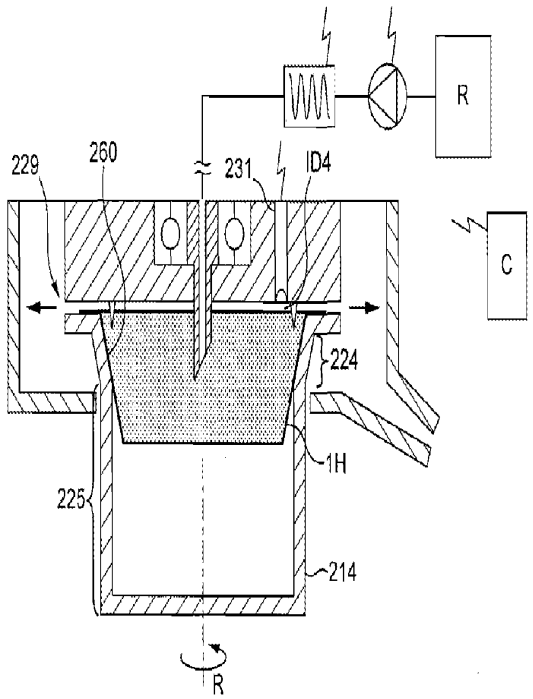
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	further steps only if it also recognises on the load element (2) a validation element (5) to be validated, a second step of validation of the validation element (5), and a third step of activation wherein the edible-product making machine (1) automatically activates a cycle of production of the edible product only after having recognised on the load element (2) the identifying element (4) in combination with the validation element (5) as validated. Rossi at Fig. 1:  FIG.1 Rossi at 4: The technical task, as well as these and other objects, are achieved according to the present invention by a process for controlling the operation of an edible-product making machine of the type being fed with a single use load element having a brewable or water soluble aromatic substance for preparation of said edible product, characterised in that it comprises a

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	first step of recognition wherein said edible-product making machine recognises an identifying element on said load element allowing said edible-product making machine to take further steps only if it also recognises on said load element a validation element to be validated, a second step of validation of said validation element, and a third step of activation wherein said edible-product making machine automatically activates a cycle of production of said edible product only after having recognised on said load element said identifying element in combination with said validation element as validated. Rossi at 6: The process of the present invention comprises a first step of the edible-product making machine recognising an identifying element on the load element. This can optionally be through an infra red (IR) wave communication channel, a radio frequency (RF) wave communication channel, or an optical wave communication channel. The user may hold the identifying element on the load element up against recognition means located externally on the edible-product making machine. Rossi at 9: The load element of the system comprises an identifying element for its recognition and a validation element for its validation. These are preferably in the form of barcodes, antennae, or paints having optically measurable properties. The machine comprises means for recognising the load element and the validation element, such as at least one infra red barcode reader, radio frequency wave transmitter and receiver, or optical sensor. These are preferably located externally on a lateral wall of the capsule, externally on the protective packaging of the capsule, or externally on the protective sheet on the outlet base of the capsule. Rossi at 10: Figure 1 shows a schematic view of one embodiment of the system of the present invention.

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	With reference to the above figure, the system comprises an edible-product making machine 1 and a single use load element in the form of a capsule 2. The load element contains a brewable or water soluble aromatic substance 3 for preparation of an edible product. The capsule 2 comprises an identifying element in the form of a barcode 4 and a validation element also in the form of a barcode 5, both located externally on a protective sheet 6 of the outlet base of the capsule. The machine 1 comprises recognising means in the form of an infrared barcode reader 7. This is connected to checking means 8 stored within a control unit 9 of the machine. The checking means allow the machine activation means 10 to be engaged only if the barcode reader 7 recognises the identification barcode 4 and the validation barcode 5. The machine 1 further comprises validation means in the form of a mechanical tool 11 having a plurality of tips for destroying the validation barcode 5, for example by ripping, cutting, scratching or piercing, such that the barcode reader 7 cannot recognise it as an unvalidated validation barcode. If, after the positive signal from the checking means 8 from the first recognition of the identification and validation barcodes 4,5, the barcode reader 7 performs a second recognition of the identification barcode 4 combined with the validated validation barcode 5, the activation means 10, connected to the barcode reader 7 through the control unit 9, automatically activate a cycle of production of the edible product. Rossi at Claim 15. Yoakim at [0025]: The device is useful for preparing beverages from a plurality of different capsules, in which case it further comprises identification means for identifying the different capsules, and control means capable of operating the device in centrifugation for any of the different capsules according to predetermined liquid food preparation parameters including the flow rate and the volume of liquid to be injected into the capsule, with the identification means comprising capsule recognition means which are recognized by sensing means connected to the control means of the device to control the preparation parameters accordingly. Yoakim at [0192]:

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	Therefore, as much as two, three, four or even more different flow rates and/or speed ranges can be provided in function of the types of coffee to be delivered. Therefore, depending on the types of beverage to be brewed, the control unit can be programmed to adjust the optical centrifugal conditions. For instance, the control unit may be associated to a capsule recognition system enabling to recognize the types of capsules, i.e., espresso, lungo, cappuccino, long coffee (e.g., 180–400 ml), latte, tea, etc., and to adjust the speed and/or other brewing parameters (e.g., water temperature) according the capsule which is inserted in the device. A recognition system uses a code on the capsule and recognized by the device, such as a color, a barcode, an RFID, a magnetic code, ferromagnetic micro-wires or labels, shapes and combinations thereof. Yoakim at [0477]: The capsule system further comprises an identification means associated to the different capsules in the set for identifying each capsule and adjusting brewing parameters accordingly. The adjustable parameters can be the rotational speed, the back-pressure at the outlet of the capsule, and/or the volume of liquid fed in the capsule. The identification means participates to deliver a wider range of beverages having differentiated characteristics (volume, taste, strength, crema, colour, etc.). The identification means are associated to control means placed in the centrifugal brewing device which controls the adjustment of the said parameters, by controlling the rotational motor driving the capsule holder or/and the pump supplying liquid in the capsule. Yoakim at [0494]: The identification means can be sensed by sensing means connected to the control means for an active control of the parameters or can be passive identification means, e.g., selective flow restriction means. In particular, the identification means comprises capsule recognition means which are recognized by the sensing means connected to the control means of the brewing device which controls the brewing parameters accordingly. The recognition means

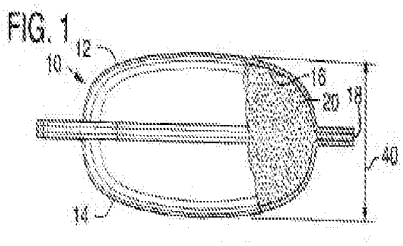
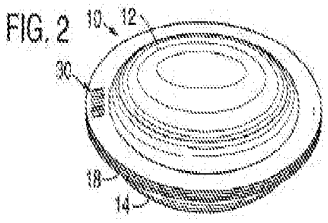
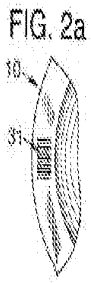
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	can be differentiable by a visual code such as a barcode, a colour, a sign, a logo, etc., or by a radio-frequency (RFID), a magnetic element or by an identifiable shape. Yoakim at [0525]: In an alternative illustrated in FIGS. 61 and 62, the identification means are directly associated to the different capsules. In this case, the identification means ID4 and ID5 are capsule recognition means attached to or embedded in the capsules. The recognition means can be any mechanical, optical, magnetic, or radio-frequency recognition means capable of delivering information to the brewing device, via a sensing device 231, as to which type of capsule is inserted in the device. For example, the recognition means is a barcode, a colour code, a RFID tag, a magnetically sensitive element, or a mechanical key or shape.

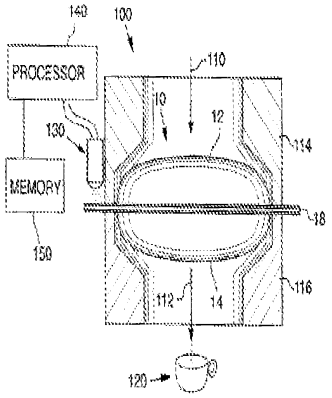
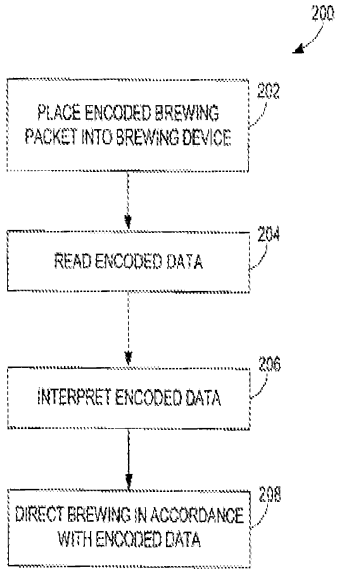
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	Yoakim at FIG. 61:  FIG. 61
[1.b] inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion,	The below cited art discloses, either expressly or inherently, inserting a first portion capsule into the apparatus, the first portion capsule including a first foil lid sealed to a base element having a cavity within which a powdered coffee material is located, the cavity being free of a filter and including a central portion. *See, e.g.*: Boyd at [0006]: A brewing packet is provided for use in the preparation of hot or cold beverages. The brewing packet envelops a brewing ingredient chosen according to the tastes of a beverage drinker. The packet includes a machine interpretable feature that contains encoded data

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	capable of being read by a beverage producing device. Furthermore, the data on the packet may be capable of directing the beverage producing device to employ a specific brewing operation suited for the particular brewing packet. This allows for producing the optimal beverage from the brewing ingredient. The packet may be utilized with a variety of brewing ingredients to produce a variety of beverages. Similarly, the packet may be configured to produce single or multiple servings of a beverage. Boyd at [0019]–[0021]: Although the present invention may be used in virtually any brewing machine, it is described herein for use in the context of machines such as those disclosed in U.S. Pat. No. 5,974,949 to Weber et al. and U.S. Pat. No. 6,035,762 to Ruckstuhl. Those patents disclose machines for brewing espresso using espresso packets in the form of filter capsules which are received through a funnel into a brewing chamber where water is passed through the filter capsule to produce an espresso beverage. The subject matter of each of these patents is incorporated herein by this reference. The invention also may be practiced in connection with espresso machines such as those disclosed in U.S. Pat. Nos. 4,253,385, 4,254,694, 4,353,293, 4,429,623, 4,484, 515, 4,555,894 and 4,852,333, all to Illy. These patents disclose various aspects of espresso machines which include brewing chambers configured to receive pre-fabricated espresso packets through which water is passed to produce an espresso drink. The subject matter of each of these patents also is incorporated herein by this reference. While the aforementioned machines generally are described for use in connection with espresso packets which contain a single serving of espresso, it will be appreciated that the present invention considers application of the relevant principles to machines which employ coffee packets for use in brewing multiple cups, which employ coffee packets of various size and shape, which employ various filter media and which contain coffee of various varieties, roasts, and grinds. Furthermore, the packet and methodology described herein may also produce other types of beverages such as tea, cider, and/or any beverage which is produced

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	by mixing various ingredients. The packet and methodology is not limited to hot beverages and may be used to produce cold beverages. Boyd at [0023]–[0025]: With the foregoing in mind, it will be appreciated that it would be desirable to automatically customize the brew operation based on particular characteristics of the packet, the characteristics of the coffee, and/or the tastes of the user, whether or not the user is aware of what changes in the brew operation will lead to the desired taste. The present invention provides a vehicle for such customization in the form of an encoded packet configured to provide the brewing machine with data useful in directing the brewing operation in accordance with packet or packet content characteristics and/or the user's tastes. Focusing now particularly on the invented encoded coffee packet, it will be appreciated that such packet typically takes the form of a coffee-filled packet configured for placement in a fluid path of a coffee machine whereby hot water (or steam) flows through the packet to produce a coffee beverage. An exemplary packet is depicted in FIGS. 1–3, such packet being indicated generally at 10. In accordance with the present invention, packet 10 is of somewhat conventional construction, including a filter with a first filter portion 12 and a second filter portion 14 which collectively define a cavity 16 containing ground coffee 20. The filter is selected to permit flow of water therethrough, but to restrict flow of the ground coffee therethrough, other than in the form of a coffee beverage. Boyd at [0028]: As shown in FIG. 2, packet 10 includes a machine interpretable feature 30 which directs operation of the coffee machine in accordance with predefined brewing directives. In the first depicted embodiment, the machine interpretable feature is a barcode 31 as depicted in

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	FIG. 2 and 2a. It will be understood that the machine interpretable feature may be any machine readable feature associated with packet 10. Boyd at [0034]: Referring now to FIG. 4, a method of operation for the present invention is illustrated at 200. At 202, a brewing packet encoded with packet-characteristic data is placed into a brewing device. At 204, the packet-characteristic data is read by a sensor. At 206, the packet-characteristic data is interpreted by a processor. Finally, at 208, brewing is directed in accordance with the packet-characteristic data read by the sensor and interpreted by the processor. Boyd at [0037]: The encoded packets also may be used to track brewing information which may be useful in ensuring satisfaction with the brewed coffee beverage. For example, the packet may include an encoded date for use in tracking freshness of the coffee grounds contained within the packet. Upon determining that the packet is stale, the processor may direct the machine to note such staleness, thus avoiding an unsatisfactory beverage. Similarly, the packet may contain encoded data related to the coffee blend contained within the packet, such data being stored in memory to provide a history of coffee blends. The encoded packet also may contain encoded data defining the source of the packet so as to prohibit use of counterfeit packets, or packets from unauthorized suppliers.

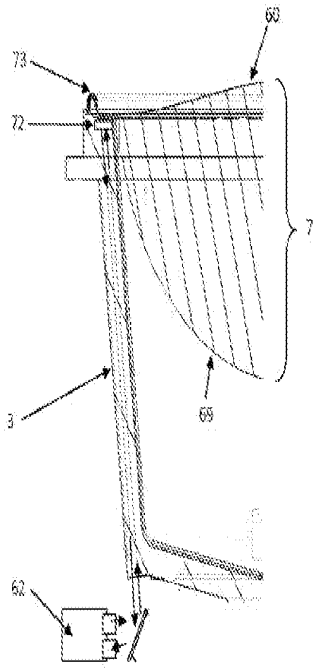
	Boyd at Fig. 1:  Boyd at Fig. 2:  Boyd at Fig. 2a:  Boyd at Fig. 3:

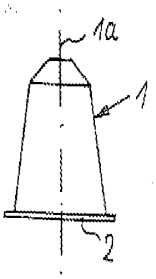
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	FIG.3  Boyd at Fig. 4:  FIG. 4

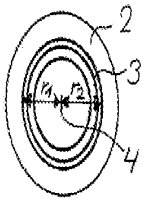
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	See also, Boyd at Claims 1–25. Jarisch at [0021]: In an embodiment, the container comprises a body and a lid connected to the body and wherein the code is present on the lid of the container. The lid may be a closed foil and/or a filter, for example. Jarisch at [0036]: In the following examples (see FIG. 4), the capsule comprises a cup-shaped body 69 extending by a flange-like rim 73. A lid such as a foil or membrane (liquid-tight or permeable to liquid) 60 is connected to the body, e.g., sealed on the rim. The capsule is filled with beverage ingredient such as ground coffee.

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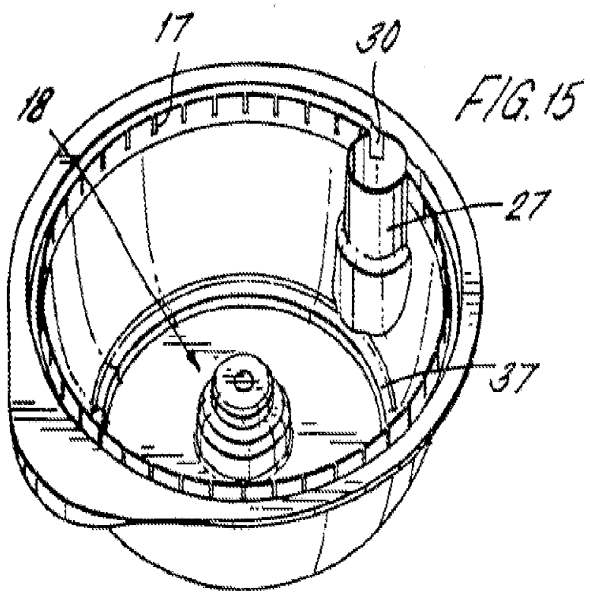
	See also Jarisch at FIG. 4:  Fig. 4 Mahlich at Abstract: A machine readable identification on a single-serving unit containing coffee powder for espresso machines, designed so that it can be read easily and accurately, is structured in a rotation-symmetrical manner and is applied to an essentially level surface of the single-serving unit, whereby the single-serving unit preferably consists of a single-serving capsule (1) having an essentially circular base (2) where-upon the identification is applied in a coaxial manner. Mahlich at [0004]: The invention concerns single-serving units for the simplified stocking of espresso machines with coffee powder. Increasingly, single-serving capsules or pouches are being used as single-serving units. The pouches enclose a certain amount of pre-portioned coffee powder within a transparent material similar to that of coffee filter paper. Compared to the

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	previously common method of supplying the brewing head of an espresso machine with loose coffee powder, the use of pouches is advantageous due to the fact that the coffee powder contained therein is already pre-pressed, which is important for the generation of crema. Mahlich at [0030]–[0032]: FIGS. 1, la and 3 show a single-serving capsule 1 of an essentially frustoconical design arranged in a rotation-symmetrical manner around a symmetrical axis la. Mahlich at Fig 1: Fig.1 

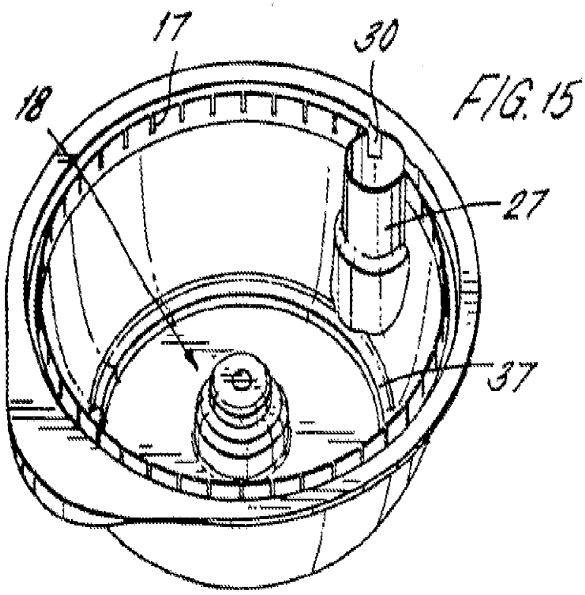
	Mahlich at Fig. 1a: Fig.1a  Panesar at p. 3 at line 22 – p. 4 at line 2: The insert may be a cartridge. The cartridge may be rigid or semi-rigid. The lower surface may be a laminate. In this case, the inlet and outlet of the cartridge may be portions of the lower surface which are opened for transportation, in use, by piercing the lower surface. Alternatively, the insert may define a receptacle for receiving loose beverage ingredients. Alternatively, the insert may define a receptacle for receiving a container of beverage ingredients, wherein the container comprises filtering means. In one aspect, the container is formed at least in part from filter paper or filtering membrane. For example, the container may be a filter bag. Panesar at p. 35, ll. 24–31: To insert the cartridge 1 the holder 251 is opened as described above to expose the cartridge mount 257. The cartridge 1 is then placed on the cartridge mount 257 received within the recess 290 such that the handle 24 of the cartridge is located in the irregularity 291. The optical or magnetic barcode 320 or RFID of the cartridge 1 is oriented directly above the aperture 326 in the cartridge mount 257. Panesar at p. 9, ll. 8–18: Cartridge for use in the system

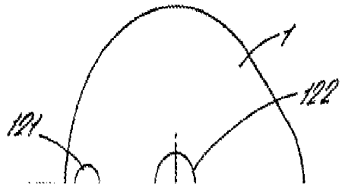
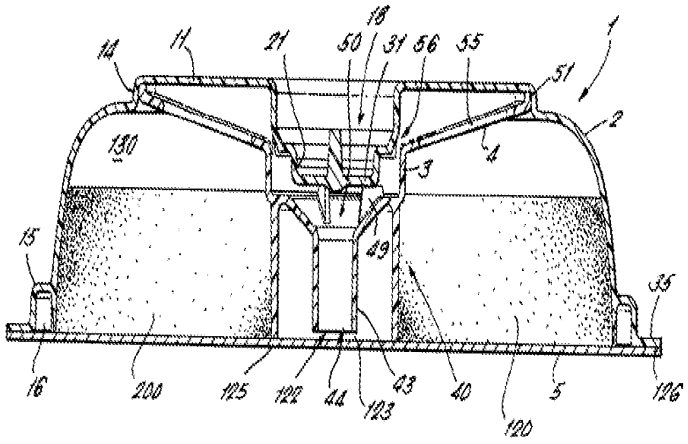
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	As shown in Figure 10 to 21, the cartridge 1 generally comprises an outer member 2, an inner member 3 and a laminate 5. The outer member 2, inner member 3 and laminate 5 are assembled to form the cartridge 1 which has an interior 120 for containing one or more beverage ingredients, an inlet 121, an outlet 122 and a beverage flow path linking the inlet 121 to the outlet 122 and which passes through the interior 120. The inlet 121 and outlet 122 are initially sealed by the laminate 5 and are opened in use by piercing or cutting of the laminate 5. Panesar at p. 5, ll. 23–32: The insert of the present invention may contain or be loaded with one or more beverage ingredients suitable for 25 the formation of a beverage product. The beverage product may be, for example, one of coffee, tea, chocolate or a dairy-based beverage including milk. The beverage ingredients may be powdered, ground, leaf-based or liquid. The beverage ingredients may be insoluble or soluble. 30 Examples include roast and ground coffee, leaf tea, powdered chocolate and soup, liquid milk-based beverages, carbonated drinks and concentrated fruit juices.

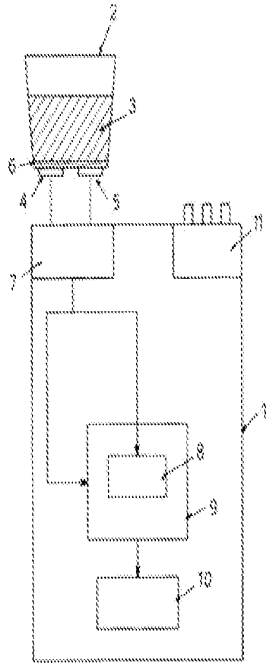
U.S. Patent No. 10,858,176	Disclosure
	Panesar at Fig. 15:  Panesar at p. 3 at line 22 – p. 4 at line 2: The insert may be a cartridge. The cartridge may be rigid or semi-rigid. The lower surface may be a laminate. In this case, the inlet and outlet of the cartridge may be portions of the lower surface which are opened for transportation, in use, by piercing the lower surface. Alternatively, the insert may define a receptacle for receiving loose beverage ingredients. Alternatively, the insert may define a receptacle for receiving a container of beverage ingredients, wherein the container comprises filtering means. In one aspect, the container is formed at least in part from filter paper or filtering membrane. For example, the container may be a filter bag. Panesar at p. 35, ll. 24–31: To insert the cartridge 1 the holder 251 is opened as described above to expose the cartridge mount 257. The cartridge 1 is then placed on the cartridge mount 257 received within the

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	recess 290 such that the handle 24 of the cartridge is located in the irregularity 291. The optical or magnetic barcode 320 or RFID of the cartridge 1 is oriented directly above the aperture 326 in the cartridge mount 257. Panesar at p. 9, ll. 8–18: Cartridge for use in the system As shown in Figure 10 to 21, the cartridge 1 generally comprises an outer member 2, an inner member 3 and a laminate 5. The outer member 2, inner member 3 and laminate 5 are assembled to form the cartridge 1 which has an interior 120 for containing one or more beverage ingredients, an inlet 121, an outlet 122 and a beverage flow path linking the inlet 121 to the outlet 122 and which passes through the interior 120. The inlet 121 and outlet 122 are initially sealed by the laminate 5 and are opened in use by piercing or cutting of the laminate 5. Panesar at p. 5, ll. 23–32: The insert of the present invention may contain or be loaded with one or more beverage ingredients suitable for 25 the formation of a beverage product. The beverage product may be, for example, one of coffee, tea, chocolate or a dairy-based beverage including milk. The beverage ingredients may be powdered, ground, leaf-based or liquid. The beverage ingredients may be insoluble or soluble. 30 Examples include roast and ground coffee, leaf tea, powdered chocolate and soup, liquid milk-based beverages, carbonated drinks and concentrated fruit juices.

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	Panesar at Fig. 15: 

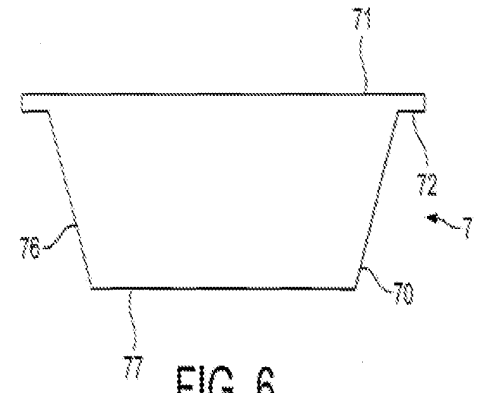
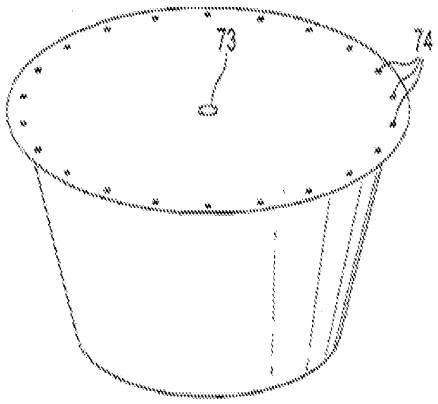
	Panesar at Figs. 10 and 21: FIG. 10.  FIG. 21.  Sweeney at 1:19–25: This beverage filter cartridge is comprised basically of an impermeable yieldably-pierceable cup-shaped outer container internally subdivided by a permeable cone-shaped filter into first and second chambers. A granular or powdered dry beverage medium, e.g., roasted ground coffee, is stored in the first chamber, and the container is closed by an impermeable yieldably pierceable lid.

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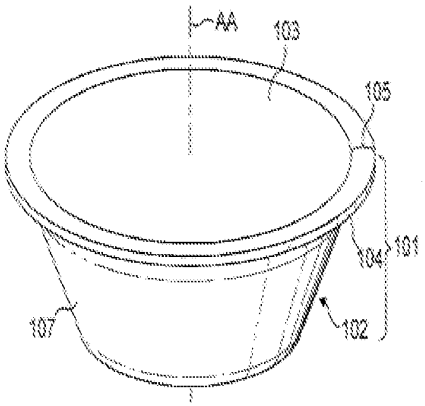
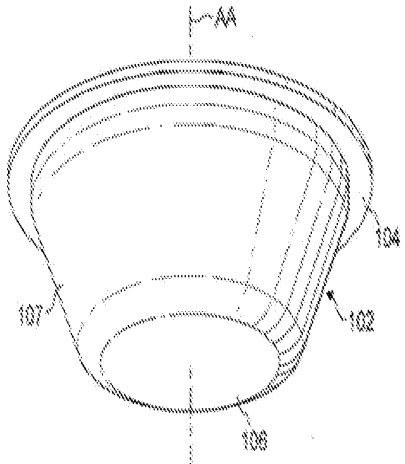
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	Sweeney at 4:20–23: The lid may be cut or blanked from any suitable impermeable heat sealable and yieldably pierceable material, such as for example, a metallic/polymer laminate supplied by Winpak Heat Seal Packaging, Inc. of Montreal, Canada. Rossi at Fig. 1:  FIG.1 Rossi at 1: The present invention relates to a system of an edible- product making machine and a load element, and a process for controlling the operation of the edible-product making machine . Edible-product making machines of the type being fed with a single use load element having a brewable or water soluble aromatic substance for preparation of said edible product are often used for the preparation of coffee, tea, or other beverages, as well as for soups. The

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	load element generally comprises a capsule containing coffee powder, instant coffee granules, tea leaves, freeze-dried soup granules or other substances designed to be put in contact with water within machine. The load element is usually sealed, and the element is inserted into the machine, without the user being in contact with the substance therein. Inside the machine, the load element is generally pierced to allow water to pass through it, or the contents of the load element are emptied out into a different container for the preparation of the edible product. The contents of the load element are brewed or dissolved in the water in order to make the edible product. Rossi at 8: The system of the present invention comprises an edible- product making machine and at least one single use load element having a brewable or water soluble aromatic substance to be fed into the machine for preparation of an edible product. The load element is preferably in the form of a capsule, and is preferably sealed. It may optionally comprise a capsule and a protective packaging thereof . The capsule may have a protective sheet on the outlet base of the capsule, designed to be removed by the user or by the machine prior to activation of the production cycle. Yoakim at [0125]: The food substance in the capsule can be ground coffee powder, soluble coffee, tea, chocolate, whitener, flavours, and combinations thereof. Yoakim at [0128]: The capsule can comprise a sealing lid. The sealing lid can comprise a flexible membrane. The membrane can comprise gas barrier and support layers made of polymers, aluminium, and/or aluminium alloys. Yoakim at [0129]:

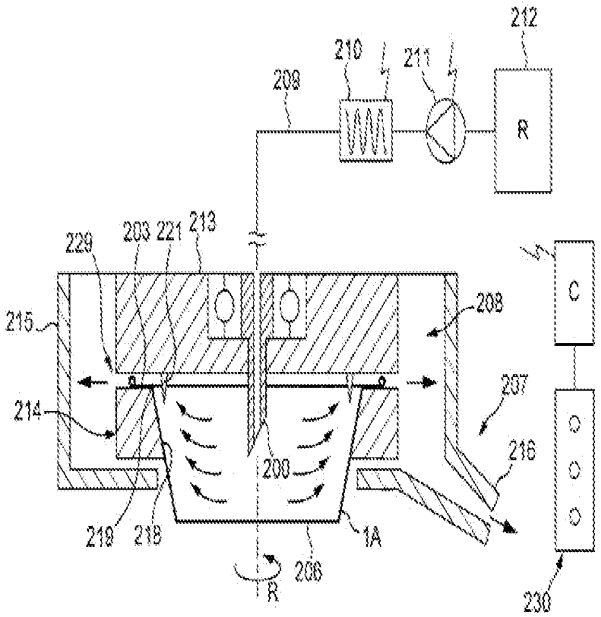
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	The capsule can also comprise a cup-shaped body onto which the sealing lid is sealed. The cup-shaped body may also comprise gas barrier materials, such as metal, e.g., thin aluminium and/or plastic. Yoakim at [0180]: The system 1 of the invention is illustrated in FIG. 1 in the more general sense. The system comprises a device 2 and a capsule 3. The device has a brewing module 4 into which the capsule can be inserted for being brewed and is removed after use for being discarded (e.g., for waste or recycling). Yoakim at [0180]: FIGS. 6 and 7 illustrate a capsule that can suit the device according to the different embodiments of FIGS. 2 to 5. In FIG. 6, the capsule 7 comprises a cup-shaped body 70 with upwardly oriented sidewall 76 and a bottom wall 77. The sidewall forms a portion of cone which promotes the collection of the brewed liquid internally. The body terminates by an upper edge 72 raising outwards onto which is sealed a lid 71. The lid may be a flexible pierceable membrane of several microns in aluminium and/or plastic. The lid can be welded on the upper edges 72 of the body. It can be pointed out that the membrane and body preferably comprise gas barrier layers such as aluminium and/or EVOH. Yoakim at [0198]: The capsule contains a substance chosen among the list consisting of ground coffee, soluble coffee, tea, a whitener such as dairy or non-dairy ingredient(s), herbal tea, nutritional substance, culinary ingredients and a mixture thereof. Yoakim at [0219]: The invention also relates to a food liquid preparation device for preparing a food liquid from a food substance contained in a single-use capsule, removably insertable in the device

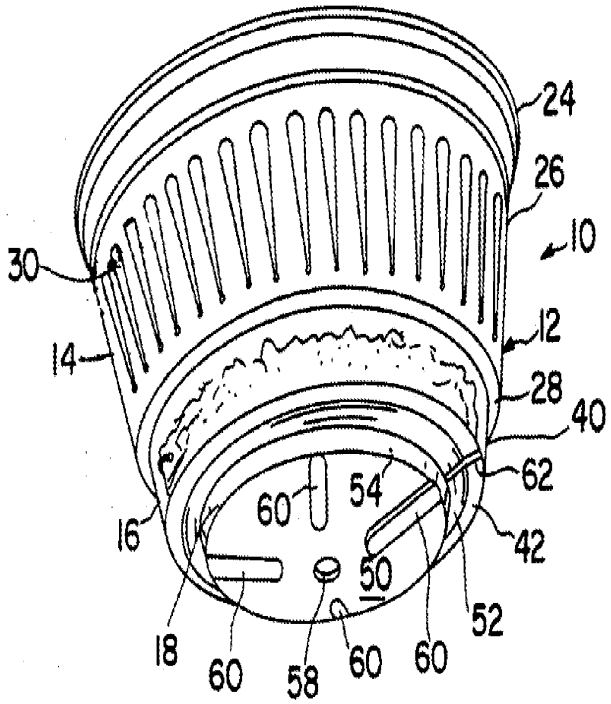
U.S. Patent No. 10,858,176	Disclosure
	Yaokim at FIGS. 6–7:  FIG. 6  FIG. 7 Yoakim at [0414]: As shown in FIGS. 26 and 27, a preferred capsule 101 of the invention generally comprises a dished body 102 onto which is sealed a sealing foil 103. The sealing foil 103 is sealed onto a peripheral rim 104 of the body at a sealing annular portion 105. The rim 104 can extend outwards forming a small annular portion, e.g., of about 2–5mm. The dished body comprises a bottom wall 106 and a side wall 107 which preferably widens in direction of the

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	large open end of the body opposed to the bottom wall. The dished body is preferably rigid or semi-rigid. It can be formed of a food grade plastics, e.g., polypropylene, with a gas barrier layer such as EVOH and the like or aluminium alloy or a complex of plastic and aluminium alloy. The sealing foil 103 can be made of a thinner material such as a plastic laminate also including a barrier layer or aluminium alloy or a combination of plastic and aluminium alloy. The sealing foil is usually of a thickness between 30 and 250 microns, for example. The sealing foil membrane can be pierced for creating the water inlet and the beverage outlet(s) as will be described later in the description.

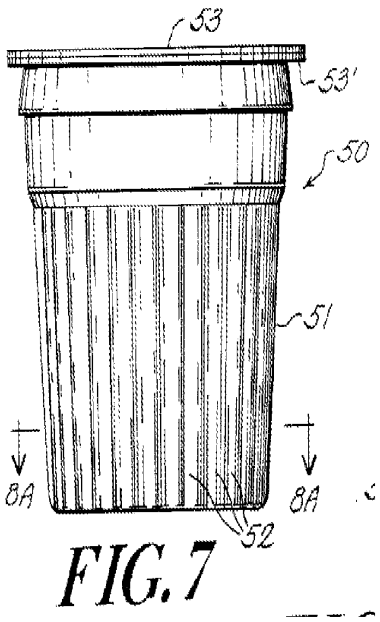
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	Yoakim at FIGS. 26 and 27:  FIG. 26  FIG. 27

	Yoakim at [0171]: In this mode, premade radial outlets for the brewed liquid are provided in the capsule. For instance, a series of slits are provide in the lid and/or body. When the capsule is driven in rotation, the brewed liquid can pass through the slits whereas the solid particles are retained in the capsule. An additional filtering layer can be used to filter the liquid depending on the size of the outlets. Yoakim at [0288]: The capsule may comprise a filter means to filter the centrifuged before the liquid is released from the outlets at the sidewall. Yoakim at [0343]: In a possible mode, the portion of wall with the outlet openings can be formed from a paper filter or woven, non-woven fibres, meshed material, porous polymer membrane or combination thereof. In this case, part of the portion of wall can be formed by a band or different parts of the filter, fibres or meshed material. . . . Yoakim at [0461]: FIGS. 45 to 50 are other variants of capsules according to the invention. For example, the capsule of FIG. 45 has a cylindrical side wall 700, an upper wall 701 and a lower wall 702 both sealed or connected to the sidewall 700. The capsule is gastight by choosing materials for the walls, e.g., aluminium and/or suitable plastics, which have gas barrier properties. The upper walls and lower walls can be flexible or rigid depending on said materials. For example, wall 701 can be a flexible sealing membrane welded on upper rim 703 of the body 705 forming the sidewall 700 and lower wall 702. The side wall 700 may comprise outlets 704, 706 for release of the liquid when centrifuged in the beverage preparation device around central axis AA of the capsule. Optionally, the capsule may comprise a filter part 708 delimiting the cavity 709 for the substance and a collecting recess 710 peripherally placed relative to the central cavity.

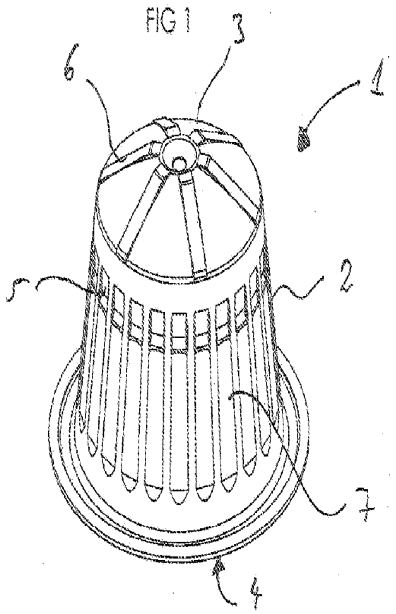
U.S. Patent No. 10,858,176	Disclosure
	Yoakim at FIG. 54:  FIG. 54
[1.c] and a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity,	The below cited art discloses, either expressly or inherently, a plurality of ribs that are radially spaced, vertically oriented, and configured to extend toward the central portion of the cavity. *See, e.g.*: Erickson at 5:9–26: The reservoir 14 of the container 12 is open at the top and includes a rim 24, a depending side wall 26 and a bottom wall 28. The rim 24 extends laterally and outwardly from the upper end of the wall 26 to facilitate pouring of the water or other liquid into the reservoir and movement of the coffee maker 10 without spilling. The wall 26 is cylindrical and is stepped and tapered inwardly and includes vertical ribs 30 for strengthening. The bottom

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	wall 28, in the illustrative embodiment, is in the form of an annular shoulder and includes a relatively large central opening 32. As illustrated, the reservoir 14 of the invention is configured to contain the appropriate amount of water necessary to brew the desired amount of coffee and to provide the necessary hydrostatic pressure to the partition 20 to cause the partition 20 to allow the flow of water therethrough at the desired brewing temperature. Erickson at Fig. 1:  FIG. 1 Lazaris at [0028]:

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	A typical beverage filter cartridge is depicted ay 50 in FIGS. 7 and 8A. The cartridge includes a cup-shaped base 51 having an inverted frustum-shaped side wall interrupted by surface irregularities indicated typically at 52 and comprising circumferentially spaced grooves. The cup-shaped base is closed by a lid 53. As herein employed, the term "surface irregularity" is intended to broadly encompass any deviation from a smooth surface than can mechanically interengage with adjacent components or surfaces of the housing 28. Non limiting examples of such surface irregularities may comprise a uniform array of grooves as shown in FIG. 8A, or pairs of oppositely disposed grooves 52 a in the side wall of a cartridge 50 a as shown in FIG. 8B, or a single surface irregularity such as the outwardly projecting rib 54 b in the side wall of cartridge 50 b as shown in FIG. 8C. Lazaris at [0039]: FIG. 6 illustrates an alternative embodiment of a cartridge holder in which the side wall of the housing 28 is provided with internal grooves 300″ configured and arranged to slidably receive and coact in mechanical interengagement with externally projecting ribs 52 c in the side wall of cartridge 50 c Still another embodiment of a cartridge holder is illustrated in FIGS. 9–11. The cartridge 50 d is of the type described in the above-referenced patent application Ser. No. 09/782,660, with generally flat side walls diverging upwardly from a bottom to a top opening closed by a lid 53 a. Oppositely facing side walls are provided with surface irregularities in the form of protruding somewhat triangular-shaped bosses 52 d. Lazaris at [0041]: The recesses 301 in the housing side walls coact with the bosses 52 d in the cartridge side wall to orientate the cartridge within the housing in one of two possible positions. Lazaris at Fig. 7:

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	 FIG. 7 *See also* Lazaris at Fig. 8A. Mariller at [0020]–[0032]: List of numerical references used in the figures: 1. capsule 2. side wall 3. top wall 4. bottom wall 5. cavity 6. top wall stiffening element 7. side wall stiffening element 8. top edge stiffening element 9. internal protrusion 10. beading 11. weakened zone

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	12. piercing element Mariller at [0034]: a) The top part of the capsule is reinforced by an architecture known as an "exposed beams", "reinforcing" or "framework" architecture the purpose of which is to reinforce the capsule in its ability to withstand the pressure of the water and at the time of its perforation. It is also possible to obtain a reinforced structure using folds of material. The rigidity may also be reinforced using an architecture of the "exposed beams" or "framework" type which is concave in relation to the capsule (see FIG. 2). Mariller at [0037]–[0038]: c) On the outside of the capsule, opposite each projecting element or opposite a circumferential rim, a cavity is created which strengthens the lateral parts of the capsule through a framework effect while at the same time saving on material (see cross section) and in particular allows the use of biodegradable material and fine materials of the PET or metal type or any other petroleum-derived material. The lateral reinforcement of the capsule may also be created by folds of the material (see FIGS. 5–6). d) The outer lateral part of the capsule has facets which may extend as far as the vicinity of the bottom part of the capsule or over a certain distance in the heightwise direction. In this alternative form also, it is therefore possible to save on material while at the same time reinforcing the lateral parts of the capsule (see FIGS. 7–8). Mariller at Fig. 1:

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	 *See also* Mariller at Figs. 2, 7, 8. Mock at [0027]: The packaging according to the invention may be produced with very diverse shapes and in very diverse materials, It may be rigid, for example made of thermoforming plastic or stamping thin metal sheet, for example made of aluminum, and have an outline that is, for example, circular, rectangular or hexagonal. Mock at [0036]: According to another preferred embodiment, the part of the packaging from which the hollow shaft departs is produced with strengthening ribs and/or with ribs for positioning the nozzle, these ribs being formed, for example by thermoforming, as recesses in the end wall and the wall and being orientated toward the hollow shaft.

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	Mock at [0077]: As can also be seen in FIGS. 2 and 3, in this first embodiment, the capsule 2 has ribs 6a, 6b extending from the hollow shaft 9 to the periphery. A first series of ribs 6a plays a part in reinforcing the capsule 2, and possibly in partitioning it as will be seen later on. A second series of ribs 6b is designed to prevent the nozzle from rotating in the packaging, as will be explained with reference to FIGS. 6 and 7. . . . Mock at FIGs. 1–2.

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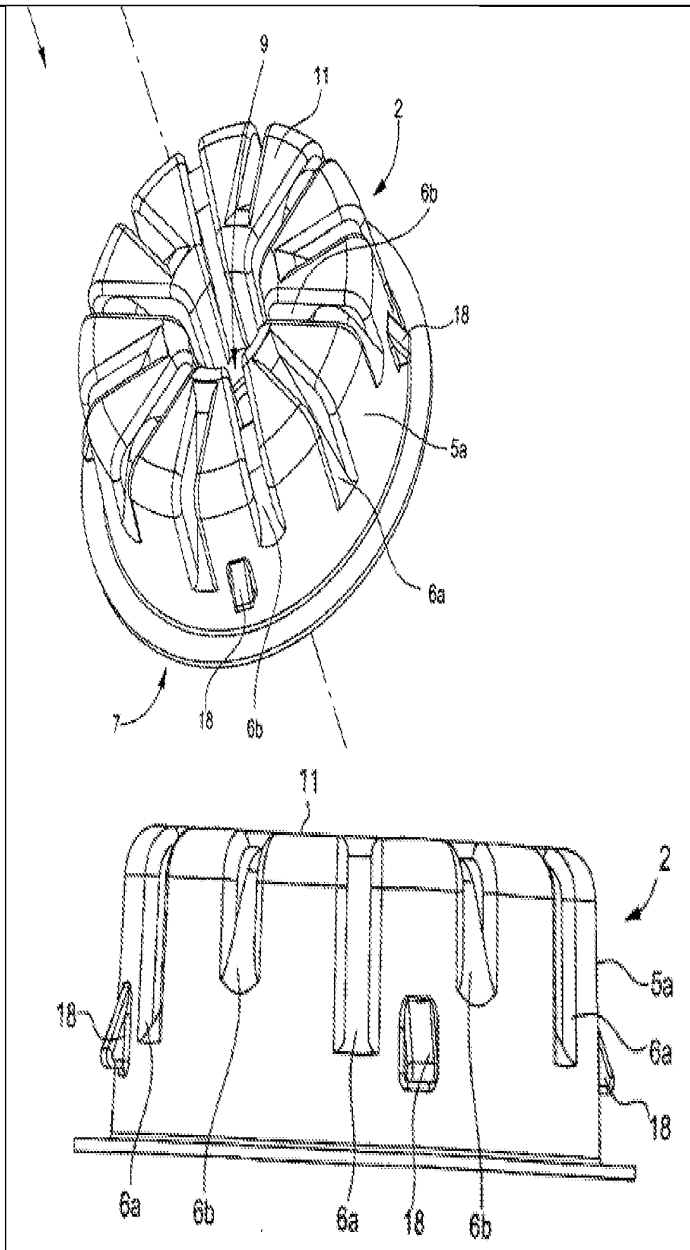
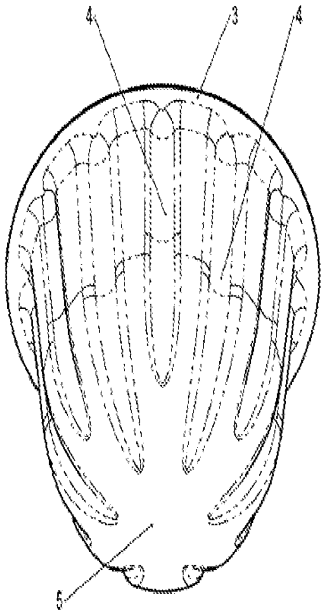


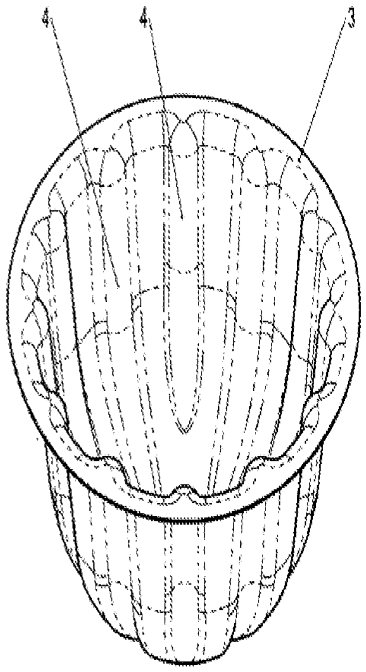
Fig.2

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	Rapparini at [0007]: The present invention allows overcoming the problems and drawbacks of the systems known in the prior art. In particular, the present invention guarantees stability of the structure of filtering and permeable containers so that they can be easily handled in packaging and/or filling machines even when these machines operate at very high rates. Moreover, the present invention provides containers which are easily employed in automatic machines both for domestic and industrial use. Rapparini at [0009]–[0011]: The present invention is based on the idea of providing the body of the container with longitudinal stiffening ribs wherein the length of the ribs is variable along the surface of the body. The presence of ribs having different lengths on the body of the container allows the optimization of the stability of the container. The modulation of the length of the ribs along the surface of the container allows improving the stability and rigidity of the system. According to an embodiment of the present invention, a filtering and permeable container for substances suitable for the preparation of beverages is provided, the container being made by means of thermoforming starting from a flat strip of permeable, filtering and thermoformable material, wherein the body of the container comprises longitudinal stiffening ribs, wherein the length of the ribs is variable along the surface of the body. According to a further embodiment of the present invention, a container is provided, wherein long and short ribs are alternated along the surface of the body. The stability of the container is accordingly optimized by providing for example long ribs extending at least partially in the bottom region of the container alternated to short ribs extending only along the side region of the container. Rapparini at [0013]–[0014]:

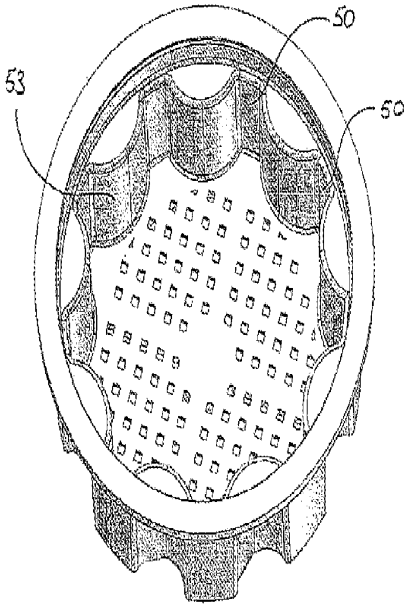
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	According to a further embodiment of the present invention, a container is provided, wherein at least along a portion of one or more of the ribs, the width of the ribs decreases toward the bottom of the container, so that said one or more of the ribs have a pointed shape. In this way the stability of the container is further optimized. In particular, the side portion of the body is stiffened by the presence of the stiffening ribs and the bottom portion is minimally altered by the presence of those ribs having a pointed shape pointing toward the bottom of the container. According to a further embodiment of the present invention , a container is provided, wherein the stiffening ribs increase the filtering surface of the body. Rapparini at [0019]: According to a further embodiment of the present invention, a container is provided, wherein the container is adapted to be employed in automatic espresso machines. In particular, the container can be adapted to be employed for example for automatic domestic espresso machines or for industrial espresso machines. Rapparini at [0052]: Figures 6 and 6bis schematically display 3D views of the container according to an embodiment of the present invention. The container is provided with longitudinal stiffening ribs 4, and the length L of the stiffening ribs 4 is variable along the surface of the body 2 of the container. In particular, long and short ribs are alternated along the surface of the body 2. The long ribs extends toward the bottom region 5 of the container. In particular, the long ribs occupy a portion of the bottom region 5 of the container. The container has a cup-shaped bottom region 5. The long stiffening ribs occupy, therefore, a portion of the cup-shaped bottom region 5. Each short rib is placed between two long ribs and extends along the lateral region of the container. Accordingly, the stabilization of the structure is optimized and, at the same time, the filtering surface of the container is increased.

Appendix A – Obviousness Chart for U.S. Patent No. 10,858,176

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	Rapparini at FIG. 6 bis:  FIG. 6 bis Rapparini at FIG. 6:

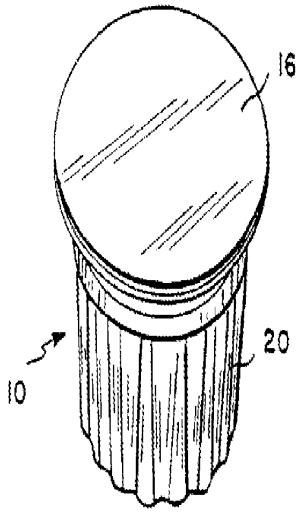
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	See also [1.h], [1.i].  Rubino at [0009]: The present invention provides several relevant advantages. The main advantage lies in the fact that the internal grooves of the capsule attain optimal flow conditions for the liquid passing through the capsule itself, to the advantage of the quality and repeatability of the end beverage and also of the correct operation of the associated machines, which are not subject to unforeseeably variable flow conditions. Rubino at [0012]: The capsule 1 comprises a main body of substantially cylindrical overall geometry, which has just a longitudinal axis of symmetry A. In particular, the main body is comprised of a top face 2 and a bottom face 3 having a substantially circular contour, and of a lateral surface or

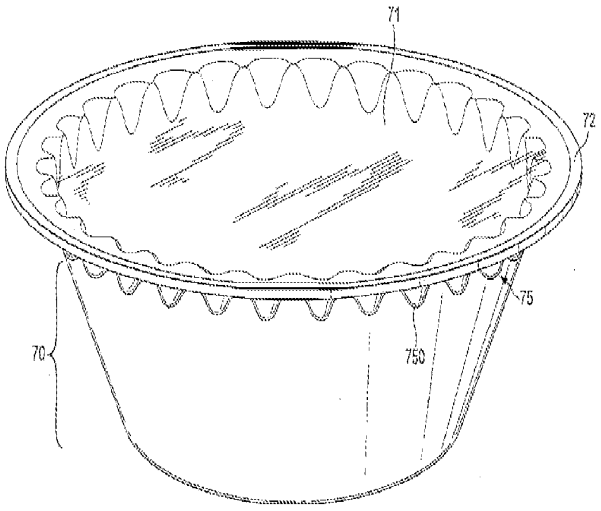
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	skirt 4 bearing a plurality of grooves that will be detailed hereinafter. Such top and bottom faces 2 and 3 and lateral skirt 4 define an internal housing 10 of the capsule 1, better seen in Figures 7 and 8, receiving the ground coffee. Rubino at [0018]–[0019]: As mentioned above, in correspondence of its lateral skirt 4 the main body of the capsule 1 has a plurality of concave external grooves 5, identical the one to the other and equally distributed over the entire lateral extension of the skirt 4 itself according to an axial geometry. The grooves 5 develop in a direction substantially parallel to axis A of the capsule 1 and are partitioned by external longitudinal ribs 52. Also the latter are identical the one to the other, equally distributed over the entire lateral extension of the skirt 4, and develop along a direction substantially parallel to the axis A of the capsule 1. As it is better seen in Figure 8, the external ribs 52 are internally hollow, thereby producing in correspondence of the housing 10 a plurality of grooves or internal notches 50 of the capsule itself. Therefore, said internal notches 50 define longitudinal portions of the housing 10 inside which part of the ground coffee is received. The presence and arrangement of the notches 50 allows, as already mentioned above, optimal conveyance of the extraction fluid within the capsule 1, preventing stagnation, allowing to accurately control and foresee the properties of said flow and generally to optimize the extraction process. Rubino at Claim 1: A capsule (1) of the type containing or apt to contain a substantially granular infusion for making beverages such as coffee and the like in an extraction process providing the passing through the capsule itself by an extraction fluid, said capsule (1) comprising a main body (2, 3, 4) defining an internal housing (10) apt to receive said infusion (C), characterized in that said main body (2, 3, 4) has, in correspondence of at least part of the lateral wall (4) of said housing (10), a plurality of internal longitudinal grooves (50) arranged substantially in the

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	direction of the extraction fluid flow and apt to convey such a fluid through the capsule (1) itself. Rubino at Fig. 8:  FIG. 8 *See also* Rubino at Claims 2, 3, 6; Figs. 1–4, 7. Sweeney at Abstract: A beverage filter cartridge includes a cup-shaped outer container with a bottom and a side wall extending upwardly from the bottom wall to a circular rim surrounding an upper opening. The side wall has an upper section extending downwardly from the rim to an intermediate section, and a tapered lower section configured to provide a plurality of

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	circumferentially spaced flutes extending downwardly from the intermediate section to the bottom wall. A filter element subdivides the interior of the container into first and second chambers. A beverage medium is stored in the first chamber. A cover is joined to the side wall at the rim to close the upper opening. The cover is yieldably piercable to accommodate an injection of liquid into the first chamber for combination with the beverage medium to produce a beverage. The filter element is permeable to accommodate a flow of the beverage from the first chamber into the second chamber, and the bottom wall is yieldably piercable to accommodate an outflow of the beverage from the second chamber to the exterior of the cartridge. Sweeney at 2:20–35: In accordance with the present invention, the container side wall is provided with circumferentially spaced flutes which are strategically positioned to enhance resistance to buckling without interfering with or compromising the integrity of the seal between the side wall and the filter component. The location at which the filter component is joined to the interior side wall of the container is lowered to achieve a beneficial increase in beverage medium storage capacity. This location is defined by a tapered circular ledge against which the tapered filter component is reliably sealed. The channels formed between the circumferentially spaced flutes serve to efficiently direct the brewed beverage downwardly towards the pierced container bottom, with an accompanying beneficial increase in turbulence in the head space defined between the filter element and container side wall. Sweeney at 2:47–55: In a third embodiment of the present invention, the circumferentially spaced flutes protrude sufficiently inwardly into the container interior to radially contact the filter element at circumferentially spaced locations. This radial contact beneficially guides the filter element into its centrally located position during assembly of the cartridge components, and, during

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	the processing cycle, provides radial support which resists distortion and possible bursting of the filter element. Sweeney at 3:65–4:8: The lower tapered wall section 20 c is configured to provide a plurality of circumferentially spaced flutes 20 e, the upper ends of which terminate beneath the intermediate section defined by ledge 20 b, and the lower ends of which terminate as indentations in the bottom wall 18. It will be seen from FIG. 8 that the depths "d" of the flutes 20 e gradually increase from a minimum at their upper ends to a maximum at their lower ends. Likewise, as can be seen from FIG. 7, the widths "w" of the flutes also gradually increase from a minimum at their upper ends to a maximum at their lower ends. Sweeney at 5:11–19: In all embodiments, the downwardly diverging and gradually deepening of the flutes serves to promote downward flow of the brewed beverage in chamber B while beneficially encouraging turbulence. The upwardly protruding bosses 18 a, 318 a on the container bottoms of the first and third embodiments provide readily accessible support platforms for the bottoms of the filter elements. Securing the bottoms of the filter elements to the bosses 18 a, 218 a insures that the filter elements will not be punctured by the outlet probe 30. Sweeney at Fig. 1:

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	 FIG. 1 *See also* Sweeney at Figs. 2, 3, 5, 7, 9–11, and 15. Yoakim at [0161]: In yet another embodiment, the surface of the capsule comprises a toothed structure. Yoakim at [0215]: FIG. 23 illustrates another capsule of the invention. The capsule comprises means for connecting it to the external rotational driving means of the device. For this, capsule has a toothed structure 75 on at least one of its outer surface. The capsule has a body 70 comprising an upper edge 72 which can be closed by an upper membrane 71. The toothed structure comprises a series of teeth which is positioned below the edge or rim 72 of the body of the capsule. The teeth are placed along the whole periphery of the body of the capsule. The body of the capsule can be made of plastic and/or aluminium or aluminium alloy. For example, it can be moulded by injection of plastic or deep drawn in aluminium. For example, the shape of the teeth could be slightly triangular, oval, rectangular or

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	pyramidal. It should be noticed that the teeth could be replaced by other equivalent structures such as series of elements in relief and/or hollow. For example, slits, pins or small needles can be envisaged. Yoakim at [0216]: The device itself that receives the capsule of FIG.23 comprises a toothed surface of complementary shape. FIG. 24 shows a capsule holder 44 adapted to receive the capsule of FIG. 23. The capsule holder has a cavity into which are provided hollow teeth 440. The hollow teeth are arranged to fit the teeth 750 on the outer surface of the capsule. Yoakim at FIG. 23:  FIG. 23