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A B O G A D O S

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 07-086524-00004-0000

Fecha: 2008-10-22 16:03:35 Dep. 2020 NUECREACION
 Tra 11 PATENTEYII Eje: 378 FASENACIONAL
 Act 538 PETICION Folios: 2

Señor

SUPERINTENDENTE DE INDUSTRIA Y COMERCIO

DIVISION DE NUEVAS CREACIONES

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Re: P1.-NESTEC S.A.-Solicitud de Patente de Invención en Fase Nacional PCT para "DISPOSITIVO PARA PREPARAR UNA BEBIDA A PARTIR DE UNA CAPSULA POR INYECCION DE UN FLUIDO PRESURIZADO, Y CONTENEDOR DE CAPSULA ADAPTADO PARA ELLO".-Clase A47J 31/40; A47J 31/06.-Expediente número 07-086.524.-

1. Me refiero a mi memorial de 31 de Octubre de 2007.
2. De conformidad con lo dispuesto en el Artículo 5.2.12 de la Circular Externa No. 03 de 28 de Abril de 2003, y estando dentro del plazo de seis meses contados desde la fecha de la publicación de la solicitud en la Gaceta de la Propiedad Industrial número 591 de 30 de Abril de 2008, solicito a ese Despacho proceder a realizar el examen de patentabilidad de la presente invención.
3. Me permito recordar a usted, que tal como se informó en el Petitorio de la invención, la presente solicitud corresponde a Capítulo I.
4. Anexo me permito acompañar recibo número 08-79.754, expedido por la Superintendencia de Industria y Comercio, que acredita el pago de la tasa que dicho examen causa.

Señor Superintendente,

ALICIA LLORED A RICAURTE

T.P. 53.215

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 08 - 79,754
FECHA : OCTUBRE 7 DE 2008

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 07-086524-00004-0000

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***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
LLOREDA Y CIA S. A	CONSIGNACION	BANCO DE BOGOTA	062754387	4891946	07/10/2008	11,020,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01 SOLICITUDES	B5 EXAMEN DE PATENTABILIDAD DE INVEN	420,000.00
TOTAL :			\$ 420,000.00

SON: CUATROCIENTOS VEINTE MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 07-86524

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No 591 DE

FECHA **30 DE ABRIL DE 2008** EL TÉRMINO HÁBIL SEÑALADO POR LA LEY

EXPIRA EL **30 DE JULIO DE 2008**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____

NO X



US 2003/0066431A1

(19) United States

(12) Patent Application Publication

Fanzutti et al.

(10) Pub. No.: US 2003/0066431 A1

(43) Pub. Date: Apr. 10, 2003

(54) COFFEE MAKER

(22) Filed: Sep. 30, 2002

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Related U.S. Application Data

(60) Provisional application No. 60/327,535, filed on Oct. 5, 2001.

Publication Classification

(51) Int. Cl.⁷ A23F 3/00

(52) U.S. Cl. 99/279

(57) ABSTRACT

A coffee maker including a frame; a water reservoir connected to the frame; a peristaltic pump connected to the water reservoir; and a heater connected to the peristaltic pump. The frame comprises a coffee pod holder for removably holding a coffee grounds containing pod. Hot water can be received from the heater into the coffee grounds containing pod and liquid coffee can pass out of the coffee grounds containing pod.

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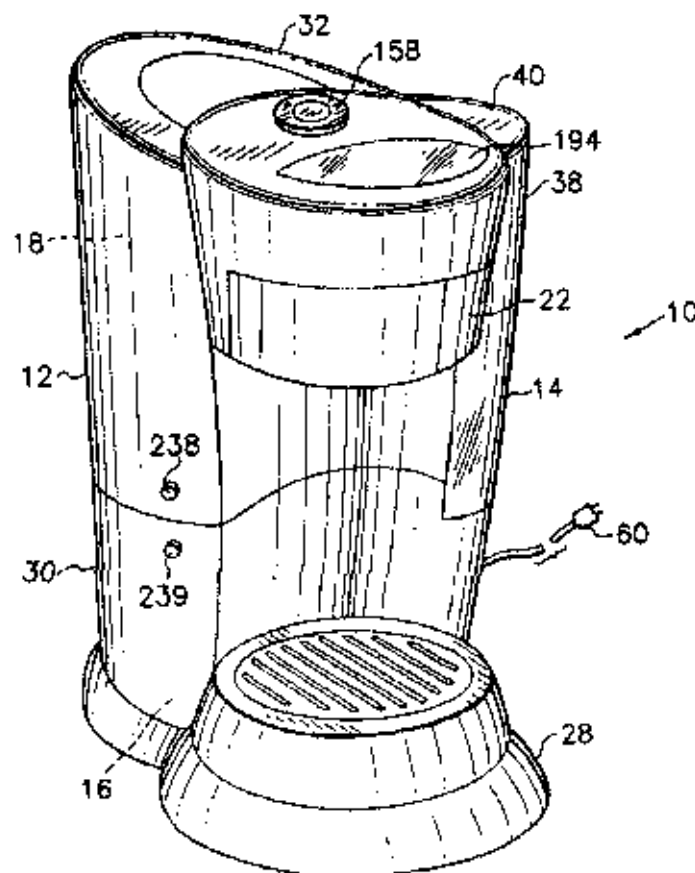
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(21) App. No.: 10/260,045



[0022] FIG. 7 is a block diagram of the control system of the coffee maker shown in FIG. 1;

[0023] FIG. 8 is a perspective view of an alternate embodiment of the tray shown in FIG. 5;

[0024] FIG. 9 is a cross sectional view of a top front end of an alternate embodiment of a coffee maker incorporating features of the present invention;

[0025] FIG. 10 is a cross sectional view of the top front end of the coffee maker shown in FIG. 9 with the needle carriage and needles in a down position;

[0026] FIG. 11 is a cross sectional view of a top front end of another alternate embodiment of a coffee maker incorporating features of the present invention;

[0027] FIG. 12 is a cross sectional view of the top front end of the coffee maker shown in FIG. 11 with the needle carriage and needles in a down position;

[0028] FIG. 13 is a cross sectional view of the top front end of the coffee maker shown in FIG. 11 with the needle carriage and lid in an up position;

[0029] FIG. 14 is a cross sectional view of a top front end of another alternate embodiment of a coffee maker incorporating features of the present invention with the lid in an up position;

[0030] FIG. 15 is a perspective view of an alternate embodiment of the present invention;

[0031] FIG. 16 is a perspective view of the front top end of another alternate embodiment of the present invention;

[0032] FIG. 17 is a diagrammatic view of a water flow path through a coffee maker incorporating features of the present invention;

[0033] FIG. 18 is an operational flow chart of one method of a main routine which can be used in operating a coffee maker incorporating features of the present invention;

[0034] FIG. 19 is an operational flow chart of one method when brewing black coffee with a coffee maker incorporating features of the present invention; and

[0035] FIG. 20 is an operational flow chart of one method when brewing creamy coffee with a coffee maker incorporating features of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0036] Referring to FIG. 1, there is shown a perspective view of a coffee maker 10 incorporating features of the present invention. Although the present invention will be described with reference to the embodiments shown in the drawings, it should be understood that the present invention can be embodied in many alternate forms of embodiments. In addition, any suitable size, shape or type of elements or materials could be used.

[0037] Referring also to FIGS. 2 and 5, the coffee maker 10 generally comprises a frame or housing 12, a water reservoir 14, a motor and pump assembly 16, a heater 18, a diverter 20, a coffee pod section 22, and a controller 24. The frame 12 generally comprises a base 26, a bottom housing section 28, a middle housing section 30 and a top housing section 32. However, in alternate embodiments, the frame

could be comprised of any suitable number or type of members. In the embodiment shown, the frame 12 also comprises a coffee cup stand. The coffee cup stand comprises a standoff member 34 and a spill grate 36. In the embodiment shown, the coffee maker 10 does not comprise a warmer for a coffee pot or coffee cup.

[0038] However, in an alternate embodiment, a warmer could be provided, such as for use with a glass coffee mug. In the embodiment shown, the water reservoir 14 is removably connected to one side of the bottom housing section 28. In an alternate embodiment, the water reservoir might not be removably connected to the frame 12. The water reservoir 14 generally comprises a container 38 and a lid 40. The bottom of the container 38 has a water outlet with a seal 42. The water outlet and seal 42 are connected to a water inlet 44 in the bottom housing section 28. The lid 40 comprises a first housing piece 46 and a movable cover 48 connected to the first housing piece 46 by a hinge 50.

[0039] In alternate embodiments, the water reservoir could be comprised of any suitable type or number of components. In one type of alternate embodiment, the coffee maker 10 could comprise a sensor for sensing the water level in the water reservoir 14, such as a float valve. One such type of water level sensor could comprise a magnet connected to a float inside the container 38, and a reed switch connected to the frame 12 outside of the container 38. The reed switch could be connected to the controller 24. In an alternate embodiment, any suitable type of a water level sensor could be provided. In another alternate embodiment, the coffee maker could be connectable to a supply of water, such as a hose connected to a building's water supply system.

[0040] Referring also to FIG. 3, an exploded perspective view of the pump and motor assembly 16 is shown. The assembly 16 generally comprises a motor 52, a pump 54, a transmission 56, and a connecting housing 58. The motor 52 is preferably a DC high voltage constant speed motor. However, in alternate embodiments, any suitable type of motor could be used. For example, the motor could be an AC constant speed motor or a variable speed motor. The controller can control the motor speed. The motor 52 is connected to the electrical cord and electrical outlet plug 60 (see FIG. 1). The motor 52 is also connected to the controller 24. The controller 24 controls activation, deactivation, and the speed of the motor 52.

[0041] The connecting housing 58 generally comprises a first member 62, a second member 64, and a third member 66. The first member 62 comprises a first clamshell section 68 for the motor 52. The first member 62 also comprises a second section 70. The second section 70 forms a housing for components of the transmission 56.

[0042] The second member 64 is connected to a top side of the first member 62. The second member 64 comprises a first clamshell section 72 and a second section 74. The two clamshell sections 68, 72 capture the motor 52 therebetween. The second section 74 of the second member 64 covers the second section 70. Second section 74 has an aperture 76 therethrough. The second section 74 also comprises a mount 78 on its top side. A sensor 80 is connected to the mount 78. The sensor 80 in the embodiment shown is an optical sensor. However, in alternate embodiments, any suitable type of sensor could be provided, such as a Hall effect sensor for example. The optical sensor 80 is adapted

The present invention may also allow a user to select certain features, such as small or large, or mild or strong.

[0060] Referring also to FIG. 5, the diverter 20 is connected to a user actuatable selector 158. The selector 158 extends through an aperture 160 in a top member 162 of the frame 12. Referring also to FIGS. 6, 6A and 6B, the diverter 20 generally comprises a frame comprising a container 164 and a cap 166, a cam member 168, flexible protectors 170, and water conduit tubes 172, 174. The tubes 172, 174 are respectively connected to the outlet sections 154, 156 of the T shaped splitter tube 152. The container 164 comprises apertures for the tubes 172, 174 to extend into and out of an interior area of the container 164. The flexible protectors 170 are mounted in the interior area of the container 164. The protectors 170 are preferably comprised of sheet metal. However, in alternate embodiments, any suitable material could be used. The protectors 170 are located against sides of the tubes 172, 174 facing the center of the container 164. The protectors 170 are adapted to resiliently flex outward to press the tubes 172, 174 against the interior side 176 of the container 164. This can crimp the tubes 172, 174 closed to stop or reduce the flow rate of water flowing through the tubes.

[0061] The cam member 168 generally comprises two cam sections 178, 180 and a control shaft 182. The control shaft 182 extends through an aperture 184 in the cap 166. The control shaft 182 is connected to the selector 158. The selector 158 can be axially rotated to rotate the cam member 168 in the container 164. In an alternate embodiment, any suitable type of user actuatable selector for controlling or moving the diverter 20 could be provided. For example, in an alternate embodiment, the manual selector 158 could be replaced by an automatic selector connected to the controller 24. In another alternate embodiment a feedback from the selector 158 or the tubes 172, 174 to the controller could be provided to adjust the heater temperature or the pump operation for additional control or monitoring, such as based upon a mild or medium or strong setting selected by a user, or any other user selected setting.

[0062] In alternate embodiments, more or less than two cam sections could be provided. In addition, the cam sections could be offset from each other at any suitable angle, or could be orientated relative to each other in any suitable offset orientation. In the embodiment shown, each cam section 178, 180 is substantially circular shaped or round disk shaped except at recessed areas 186, 178, 188.

[0063] In the embodiment shown, the cam member 168 is movable between the two positions shown in FIGS. 6A, 6B. In the first position shown in FIG. 6A, the recessed area 186 of the bottom cam section 178 is spaced from the bottom protector 170. Also in the first position, the recessed area 187 of the top cam section 180 is spaced from the top protector 170. However, the recessed area 188 is located against the top protector 170. In this position, the bottom cam 178 presses the bottom protectors 170 outward to crimp or close the bottom tube 174. The top cam 180 does not press the top protector 170 outward. Therefore, the top tube 172 is substantially open. Thus, in this first position, hot water from the heater 18 is allowed to flow through the top tube 172, but is not allowed to flow through the bottom tube 174.

[0064] In the second position shown in FIG. 6B, the recessed area 186 of the bottom cam section 178 is located

at the bottom protector 170. The recessed area 188 of the top cam section 180 is spaced from the top protector 170. However, the recessed area 187 is located at the top protector 170. In this embodiment, the recessed area 186 is slightly deeper than the recessed area 187. The cam sections 178, 180 cam the protectors 170 outward, but only partially. In the embodiment shown, the top tube 172 is closed about 60% and the bottom tube 174 is closed about 40%. However, in alternate embodiments, any suitable type of percentages or related percentages could be provided. For example, ratios such as 50%/50% or 75%/25% could be provided.

[0065] With the configuration noted above, 40% of the hot water from the heater 18 can flow through the top tube 172 and 60% of the hot water from the heater can flow through the bottom tube 174. The diverter 20 can be switched between the first and second positions by the user merely rotating the selector 158. The protectors 170 protect the tubes 172, 174 from friction of the cam member 168 as the cam member is rotated between the first and second positions. This prevents the cam member 168 from wearing a hole through the tubes 172, 174.

[0066] In one type of preferred embodiment, the selector 158 is only adapted to provide two settings; a 100%/0% ratio at a first setting, and a 50%/50% ratio at a second setting. With this embodiment, only one tube 172 or 174 needs to be crimped and, the crimp at the 100%/0% first setting is a total crimp closure of one tube to stop the flow of water in that tube.

[0067] Referring back to FIG. 5, the coffee pod section 22 generally comprises a drawer 190, a sensor 192, an actuator 194 and a piercing assembly 196. The drawer 190 is slidably connected to two housing members 198, 199 of the frame 12. However, in an alternate embodiment, any suitable movable connection of the drawer to the frame 12 could be provided. In the embodiment shown, the drawer 190 generally comprises a first member 200 and a tray 202 connected to the first member 200. The first member 200 comprises rails which are slightly mounted with the housing members 198, 199. The tray 202 comprises two apertures 204. The tray 202 is removably connected to the first member 200 such that the tray 202 can be cleaned. However, in an alternate embodiment, the tray 202 could be integrally formed with the first member 200.

[0068] The apertures 204 are suitably sized and shaped to respectively receive a coffee grounds containing pod P therein.

[0069] The pods P are coffee delivery vehicles which can contain any suitable type of ground coffee beans, such as flavored coffees. One or more of the pods P can also comprise other components, such as a nondairy creamer, sugar, artificial sweetener, or any other suitable coffee related condiment. Alternatively, a pod could be provided with ground tea leaves. Of course, these are only examples of different items which could be provided in the pods. In alternate embodiments, any suitable material, intended to be mixed or brewed with hot water, could be provided in a pod.

[0070] Lips located on the top side of the pods P can rest against the top side of the tray 202. Thus, the pods P can be relatively easily inserted into and removed from the apertures 204. However, in alternate embodiments, the tray could have any suitable type of shape for removably receiving

ing one or more pods. The pods P preferably comprise a molded plastic cup-shaped base and a foil top. The bottom of the molded plastic cup-shaped base preferably has a hole therethrough with a screen or filter across the hole. In an alternate embodiment, the appliance could be configured to puncture a hole in the bottom of the pod. However, in alternate embodiments, the coffee maker 10 could be suitably configured to be used with any suitable type of pod. The pods are preferably sized to provide single individual servings. However, the pods could have sizes for large and small size cups. Alternatively, the pods could be sized for multiple cups, such as when features of the present invention are used in a coffee maker for use with a coffee pod.

[0071] The piercing assembly 196 forms a piercing platform which comprises a support member 206, a spring 208, and two piercers 210, 211. The support member 206 has a rear end 212 which is pivotally mounted between the two housing members 198, 199. A front end of the support member 206 has latches 214. The piercers 210, 211 are stationarily connected to the support member 206 at apertures 216. In an alternate embodiment, the piercing assembly could have more or less than two piercers. The piercers 210, 211 have top ends which are respectively connected to the tubes 172, 174. The piercers have bottom ends with pointed shapes. The bottom ends are adapted to pierce through the foil tops of the pods P when the support member 206 is rotated downward. The spring 208 normally keeps the support member 206 in an upward position. The piercers have channels between their top and bottom ends for allowing water from the tubes 172, 174 to pass through the piercers. In an alternate embodiment, the system could comprise a magnetic latch with an automatic release.

[0072] In an alternate embodiment, the piercing assembly 196 could include a bypass water tube outlet 213 and the diverter 20 could be a three way diverter with a third water conducting tube extending therethrough. The diverter could send water to the outlet 213 to bypass the pods P. Thus, a first percentage of hot water could flow into a coffee cup through a pod and a second percentage of hot water could bypass around the pod and into the coffee cup for a mixed mild cup of coffee. This could also occur without a bypass water tube outlet by placing only one pod in the tray 202, but having the diverter set to deliver water to both piercers 210, 211. The water and coffee could combine in a coffee cup or combine into a single stream before delivery into the coffee cup. The bypass might not be provided. A coffee strength control might or might not be provided.

[0073] The actuator 194 is located at a front end of the top member 162 of the frame 12. An actuator support 218 is pivotally mounted between the housing members 198, 199 beneath the actuator 194. The actuator 194 rests against the top of the actuator support 218. A spring 220 is provided to bias the actuator support 218 in an up position. Thus, the actuator 194 is normally biased in an up position. The actuator support 218 comprises a pressing section 222 and an arm 224.

[0074] A user can press the actuator 194 downward. This results in the actuator support 218 being rotated downward with the pressing section 222 pressing downward on the front end of the support member 206. This causes the front end of the support member 206 to rotate downward. As the front end of the support member 206 rotates downward, the piercers 210, 211 are moved downward to pierce through the top foil of the pods P. The latches 214 can latch with the latch member 226 to retain the support member 206 in its down-

ward position with the piercers 210, 211 projecting inside the pods P. When the user releases the actuator 194, the spring 220 biases the actuator support 218 in an upward direction to move the actuator 194 back to an up position.

[0075] The latch member 226 is pivotally connected to the front end of the first member 200 of the drawer 190. The latch member 226 comprises upwardly extending latches 228 and a finger contact section 230. The latch member 226 can retain the support member 206 in its downward position. A user can release the support member 206 from its downward position by pulling forward on the finger contacts section 230. A user usually pulls forward on the finger contact section 230 when the user starts to pull the drawer 190 to an open position.

[0076] In an alternate embodiment, the latch member 226 (or movement of the support member 206 back to an up position) could be controlled by a solenoid or a solenoid and spring combination. The solenoid could move the support member 206 to an up position immediately after the controller 24 signals an end of the brewing cycle. This can ensure that the piercers 210, 211 are moved out of the pods P to help prevent bacteria from growing in the piercers when the user does not open the drawer to remove the pods P a long time after brewing has completed (i.e., over a weekend or while away on vacation for a week or more). In alternate embodiments, any suitable type of latch system could be provided, such as a magnetic latch system. A magnetic release could function as a failsafe. If power goes out, the magnetic release could open automatically and lift the piercers from the pod(s).

[0077] The sensor 192 generally comprises a printed circuit 232, and three microswitches 234, 235, 236. The sensor 190 is physically connected to the support member 206. The sensor 192 is operably connected to the controller 24. The first microswitch 234 is adapted to be contacted and moved by the arm 224 of the actuator support 218 when the actuator 194 is depressed. Thus, the first microswitch 234 is adapted to signal the controller 24 when a user has depressed the actuator 194. In an alternate embodiment, any suitable type of sensor for sensing when a user has actuated the actuator 194 (or its equivalent) could be provided. The other two microswitches 235, 236 are adapted to be contacted and moved by rear ends of the pods P when the drawer 190 is moved to a closed position.

[0078] The rear ends of the pods P (or another suitable section of the pod) preferably have different shapes based upon what is contained inside the pod. For example, a pod having one type of flavored coffee could have one type of rear end shape and a pod having another type of flavored coffee or coffee and artificial sweetener or nondairy creamer could have a different rear end shape. The second and third microswitches 235, 236 are adapted to send a signal to the controller 24 based upon the type of shape of pod rear end which the microswitches sense. This signal is used by the controller 24 to determine what type of pod is present. The controller 24, based upon this determination, can select a predetermined coffee brewing setting for delivery of the water to the pod(s).

[0079] In an alternate embodiment, the sensor could be used to merely sense the presence or absence of a pod at a location; not for determining the type of pod present. In alternate embodiments, any suitable type of sensor for sensing the presence or absence of one or more pods in the pod receiving section of the coffee maker could be provided. Alternatively, an alternate embodiment could be provided which did not comprise a pod presence sensor.

[0080] The coffee brewing settings are preferably preset in a memory of the controller. The coffee maker would preferably be programmed with multiple coffee brewing settings, such as one for each different type of coffee pod that required different rates of water delivery or different temperatures of water for brewing. Based upon the number or type of pod(s) recognized, the controller would control the volume of water pumped by the pump 54. For the embodiment shown, the controller 24 could do the following:

Sensed Pod(s)	Quantity of water to be pumped
A	Q1
B	Q1
C	Q1
A and A	Q2
A and D	Q2

[0081] Of course, these are only examples. Any suitable variables could be controlled by the controller. In an alternate embodiment, the controller 24 could control the temperature of the heater 18 based upon pod recognition. For example,

Sensed Pod(s)	Quantity of water to be pumped	Temperature
A	Q1	T1
B	Q1	T1
C	Q1	T3
A and A	Q2	T1
A and D	Q2	T4

[0082] The controller could also be programmed to variably control water quantity delivered, and/or speed of the pump and/or temperature of the heater based upon pod recognition. For example:

Sensed Pod(s)	Quantity of water to be pumped	Speed of pump	Temperature
A	Q1	S1	T1
B	Q1	S2	T2
C	Q1	S3	T3
A and A	Q2	S1	T1
A and D	Q2	S4	T4

or

Sensed Pod(s)	Quantity of water to be pumped	Speed of pump
A	Q1	S1
B	Q1	S2
C	Q1	S3
A and A	Q2	S1
A and D	Q2	S4

[0083] In an alternate embodiment, control could be programmed by a user for individualized results. The pods P

could be all the same size and shape, or could include different sizes and shapes. For example, a dual pod could be provided which has two sections; one section being received in each of the apertures 204. The apertures 204 could be reconfigurable to receive different size or shape pods.

[0084] Referring also to FIG. 7, a block diagram of the control system for the coffee maker 10 is shown. In the embodiment shown, the coffee maker 10 includes a start button 238 and a stop button 239 (see FIG. 1). However, in alternate embodiments, any suitable number or type of user interaction controls could be provided. The buttons 238, 239 are operably connected to the controller 24. The controller 24 generally comprises a printed circuit board having a microprocessor and a memory. However, in alternate embodiments, any suitable type of controller could be provided. The pump motor 52, pump sensor 80, heating elements 142, heater sensor 128, actuator sensor 234, and pods sensors 235, 236 are operably connected to the controller 24. A sensor 240, for sensing the state or position of the diverter 20, could be connected to the controller 24. The coffee maker 10 could also comprise a reservoir sensor 242 for sensing the level of the water in the reservoir 14. The reservoir sensor 242 would be operably connected to the controller 24. The coffee maker 10 could also comprise a mover 244 for moving the diverter 20. The diverter mover 244 would be operably connected to the controller 24 such that the controller could control movement of the diverter. All features could be controlled by the controller.

[0085] Referring now also to FIG. 8, an alternate embodiment of the coffee pod support tray is shown. The tray 250 in this embodiment comprises two coffee pod receiving seats 252. The receiving seats 252 each comprise sidewalls 254 which extend downward from the tray 250. The sidewalls 254 function as supports for the lateral sides of the coffee pods P. The sidewalls 254 can help substantially maintain the pods P in their original shape even though the relatively hot water might otherwise cause the pods P to warp or bend. The bottoms 256 of the receiving seats 252 are substantially open. However, in an alternate embodiment, the bottoms 256 could be partially closed. The tray 250 could also comprise channels from the bottoms 256 to combine streams of coffee from the two seats 252 into a single stream of coffee into a coffee cup.

[0086] Referring now to FIG. 9, there is shown a cross sectional view of a top front of an alternate embodiment of a coffeemaker incorporating features of the present invention. In this embodiment, the coffeemaker 300 generally comprises a frame with a pivotably movable lid 302, a multi pod holding system 304 for receiving adjacent coffee pods or condiment pods 306 (only one of which is shown), a coffee pod piercing system 308, a system 310 for preventing a user from contacting needles of the coffee pod piercing system when the coffee pod holding system is in an open position, and a sensing system 312.

[0087] The piercing system 308 generally comprises a needle carriage 314 and two needles 316 (only one of which is shown) fixedly mounted to the needle carriage. The needle carriage 314 is pivotably mounted to the lid 302 at pivot point 318. The two needles 316 are attached to the fluid conduit system 320 from the heater and solenoid actuated fluid diverter of the coffee maker.

[0088] The preventing system 310 generally comprises a shield plate 322 fixedly attached to the lid 302. The shield

plate 322 generally comprises a pair of apertures 324 therethrough. The apertures 324 are sized and shaped to allow the needles 316 to respectively extend and retract therethrough. The shield plate 322 forms a bottom of the lid 302 to enclose the components inside the lid except when the bottom ends of the needles 316 extend through the apertures 324 as shown in FIG. 10.

[0089] The sensing system 312 generally comprises a pair of mechanical lever arms 326 (only one of which is shown), one for each of the pods 306, pivotally mounted to the needle carriage 314. The sensing system 312 also comprises two switches 328 (only one of which is shown) attached to the needle carriage 314. The needle carriage 314 comprises apertures 330. The lever arms 326 each comprise a first end 332 and a second end 334. The first ends 332 are adapted to extend through the apertures 330. The second ends 334 are adapted to contact the switches 328. The shield plate 322 also comprises apertures 336. The apertures 336 are adapted to allow the first ends 332 of the lever arms 326 to extend therethrough.

[0090] Referring also to FIG. 10, the coffee maker is shown with the piercing system 308 located in a downward position such that the needles 316 pierce into the pods 306. In order to obtain this position, the needle carriage 314 is rotated downward against the top side of the shield plate 322. The needles 316 extend through the apertures 324 to pierce through the top sides of the pods 306. The first ends 332 of the lever arms 326 extend through the apertures 336. If one or both pods 306 are present, one or both of the first ends 332 are pushed upward. The lever arms 326 can rotate and actuate one or both of the switches 328. Thus, the sensing system 312 can send signals via the switches 328 to indicate whether or not the pod(s) 306 are present or not in the holder 304.

[0091] The embodiment described above uses the two mechanical lever arms which are designed to interfere with the pods when the needle carriage is lowered into its down position. This interference causes the levers to actuate the electrical switches, thereby notifying the unit that one or both of the pods are present or absent. If no pod is present, the lever arm will not actuate the switch. The sensing system can be used to allow the unit to distinguish which pods are present (black only, black and creamy, or creamy only). The sensing system can be used to allow the controller to automatically determine which brew cycle to run (black beverage, creamy beverage, or none if the pods are not installed properly). The sensing system can be used to prevent the unit from running without properly installed pods. The sensing system can also be used to prevent the unit from running with the lid open.

[0092] In an alternate embodiment, the electrical switch could be actuated directly by the pod without use of a lever arm. In another alternate embodiment, the shield plate can be designed to act as a mechanical lever arm. The shield can be designed so that it interferes with the pods. This interference would cause the plate to move when a pod is present and actuate the electrical switch.

[0093] Referring now to FIG. 11, an alternate embodiment of the present invention will be described. This embodiment is substantially similar to the embodiment shown in FIG. 9. The coffee maker 340 generally comprises a frame with a pivotably movable lid 302, a multi-pod holding system 306

for receiving adjacent coffee pods or condiment pods 306 (only one of which is shown), a coffee pod piercing system 346, and a system 348 for preventing a user from contacting needles of the coffee pod piercing system when the coffee pod holding system is in an open position.

[0094] The piercing system 346 generally comprises a needle carriage 342 and two needles 316 (only one of which is shown) fixedly mounted to the needle carriage. The needle carriage 314 is pivotably mounted to the lid at pivot point 318. The two needles 316 are attached to the fluid conduit system 320 from the diverter and the heater of the coffee maker. The piercing system 346 also comprises a magnetic latch 350 attached to the needle carriage 342 and the spring 352 which biases the needle carriage 342 in the upward position as shown in FIG. 11.

[0095] The preventing system 348 generally comprises a shield plate 344 fixedly attached to the lid 302. The shield plate 344 generally comprises a pair of apertures 324 therethrough. The apertures 324 are sized and shaped to allow the needles 316 to respectively extend and retract therethrough. The shield plate 344 forms a bottom of the lid 302 to enclose the components inside the lid except when the bottom ends of the needles 316 extend through the apertures 324 as shown in FIG. 12.

[0096] When the piercing system 346 is moved to the downward position shown in FIG. 12, the needles 316 can extend through the apertures 324 to pierce into the pods 306. The magnetic latch 350 is actuated to magnetically retain the needle carriage 342 against the shield plate 344 in the downward position as shown. When the magnetic latch 350 is disengaged, the spring 352 can bias the needle carriage 342 back to its up position as shown in FIG. 11. Alternatively, if a user opens the lid 302 as shown in FIG. 13, the magnetic latch 350 can also be disengaged such that the piercing system 346 is automatically moved to move the needles 316 out of the apertures 324. This moves the needles 316 into an enclosed position inside the lid 302 such that a user cannot touch the needles 316.

[0097] The system as described above can prevent access to the sharp piercing needles 316. The system can allow the lid to be opened adequately for a user to have access to the pod area, but without risk of the user contacting the needles. The system is able to hold the pods in place during both the brewing cycle and also while the needles are retracted.

[0098] Referring also to FIG. 14, an alternate embodiment of the present invention is shown. In this embodiment, the lid 354 comprises a track 356. A portion of the needle carriage 358, at the front of the needle carriage, is adapted to ride in the track 356. In the embodiment shown in FIG. 11, the needle carriage 342 was pivotably attached to the lid 302. In the embodiment shown in FIG. 14, the needle carriage 358 is pivotably attached to the frame at a different location 318 than the pivotal attachment 360 of the lid 354 to the frame. Thus, the needle carriage 358 is automatically moved relative to the lid 354 when the lid is moved between its open and close positions. As the needle carriage 358 moves from its lid closed position to the lid open position, the needles 316 can be moved behind the shield plate and out of alignment with the apertures 324.

[0099] Referring now to FIG. 15, another alternate embodiment of the present invention will be described. In

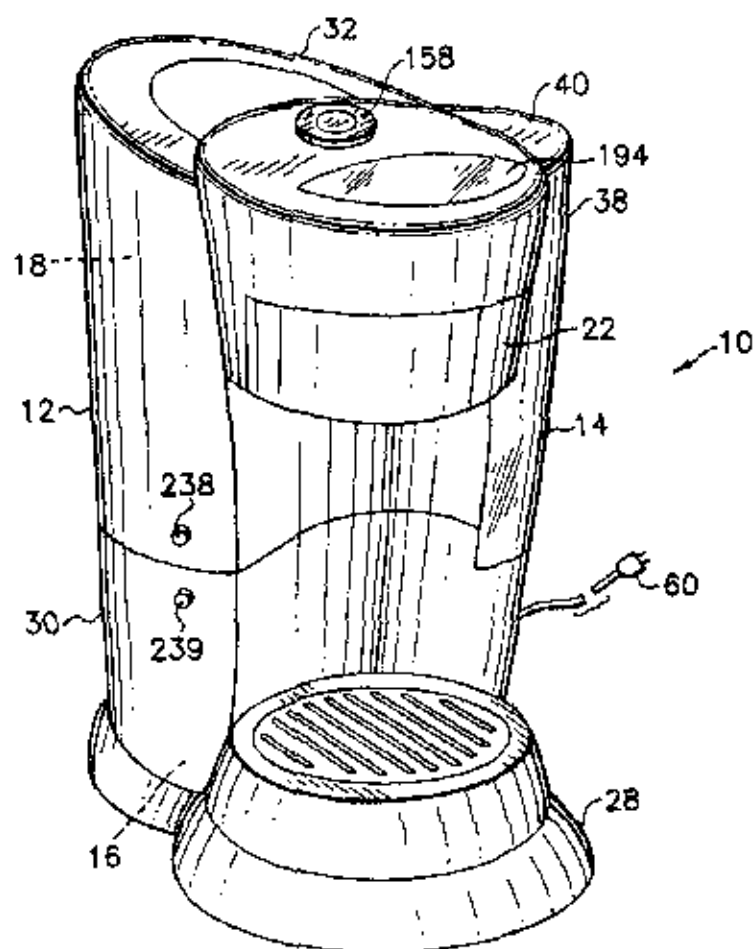


FIG. 1

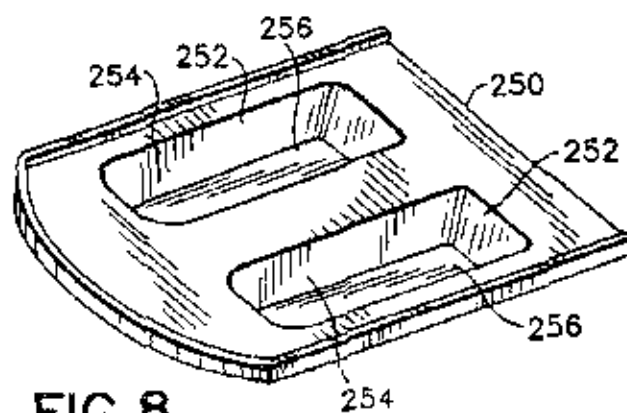
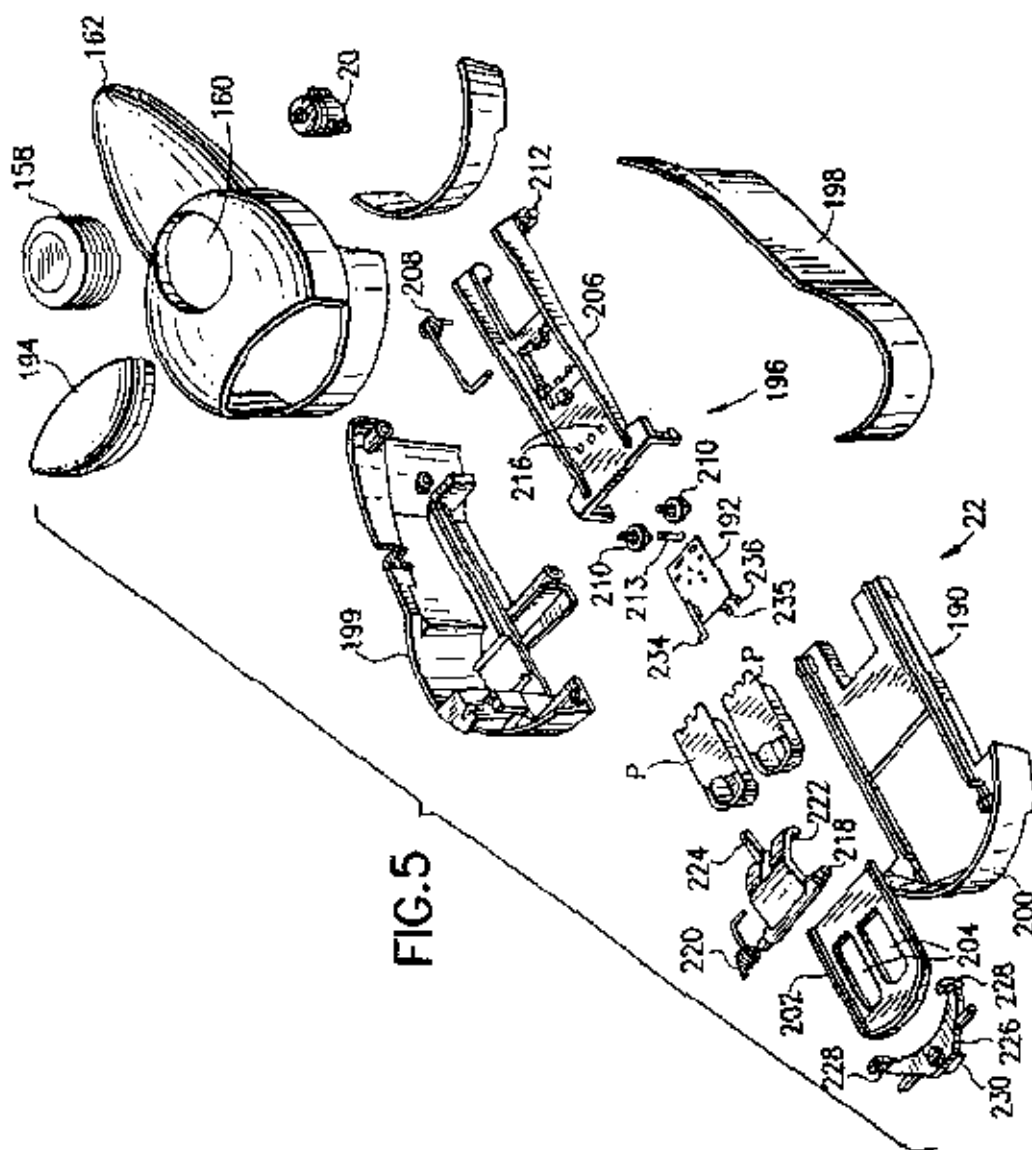


FIG. 8



SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIRECCIÓN DE NUEVAS CREACIONES

2020
 Bogotá, D.C.,

Abogada
ALICIA LLOREDA RICAURTE

ASUNTO	Radicación	07-086524
	Trámite	011
	Evento	001
	Actuación	430
	Oficio	100731
	Folios	013

Patente de Invención	☒	Patente de Modelo de Utilidad	☐
Vía Nacional	☐		
Vía PCT (fase nacional)	☒	Cap. I	☒ Cap. II ☐
No. Sol. Internacional	PCT / EP2006/ 000944		
Fecha de Presentación Internal.	2006-02-03		

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

- 1.1. Descripción: Folios: 64 a 130 como se radicó inicialmente.
- 1.2. Reivindicaciones: Folios: 131 a 141 como se radicó inicialmente.
 Folios: 178 a 188 modificado.
- 1.3. Dibujos: Folios: 142 a 163 como se radicó inicialmente.
- 1.4. Prioridad: 2005-02-07, EP 05100839.9

2. Objeto de la invención

Título de la solicitud: "Dispositivo para preparar una bebida a partir de una cápsula por inyección de un fluido presurizado, y contenedor de cápsula adaptado para ello".

El objeto de la presente solicitud de patente de invención se refiere a un dispositivo que usa una cápsula que contiene uno o más ingredientes de alimento para la preparación de un líquido. La invención también se refiere a un dispensador de líquido que usa ese dispositivo.

El problema planteado en esta solicitud se relaciona con la desventaja que existe en los sistemas conocidos en el estado de la técnica para la preparación de bebidas a

partir de una cápsula, y del hecho que usualmente no están diseñados para recibir cápsulas de diferentes formas y tamaños, o requieren adaptaciones particulares asociadas, por ejemplo, con el método de inyección del fluido en la capsula.

También se sabe que las condiciones de inyección de líquido influyen considerablemente en la calidad de la bebida producida. Los dispositivos conocidos usualmente no están diseñados para adaptar o modificar las condiciones de inyección de acuerdo con los tipos de bebidas que se vayan a producir.

Para solucionar este problema técnico, la solicitud en estudio proporciona un dispositivo para la preparación de una bebida a partir de una sustancia de alimento contenida en una cápsula, que comprende medios de suministro del fluido y un contenedor de cápsula configurado para recibir una cápsula, donde el contenedor de la capsula es removible de la unidad de suministro del fluido.

El objeto de la invención definido anteriormente se clasificó de acuerdo con el IPC así: A47J 31/40; A47J 31/06.

3. De la solicitud de Patente

3.1. Reivindicaciones (artículo 30 D 486)

Estudiado el capítulo reivindicatorio que obra del folio 178 al folio 188, se observo que dicho capítulo reivindicatorio contiene más de una reivindicación independiente por categoría.

La reivindicación 23 reivindica un *contenedor de cápsula*, observándose que el contenedor de capsula hace parte característica del dispositivo para la preparación de una bebida definido en la reivindicación 1. Por lo tanto, se sugiere definir el contenedor de capsula en una reivindicación dependiente de la reivindicación 1, que tenga como preámbulo el *dispositivo para la preparación de una bebida*, caracterizado por un *contenedor de cápsula*, definido por las características técnicas según la reivindicación 23.

Las reivindicaciones 1 y 40, se relacionan al mismo objeto y las diferencias entre una y otra se limitan a la definición de la materia que se trata de proteger, por esta razón el pliego no es conciso, por lo que se podría omitir la reivindicación 40, agrupando en la reivindicación 1 todas las características técnicas que se consideren hacen novedosa la invención.

Se sugiere presentar un nuevo capítulo reivindicatorio, evitando múltiples reivindicaciones independientes por categoría de producto y definir la materia a proteger mediante una sola reivindicación independiente.

Por otra parte se sugiere separar en forma clara el preámbulo de la parte característica de la invención. De acuerdo a esto, se sugiere utilizar en la reivindicación independiente 1 y las reivindicaciones dependientes, el término "*caracterizado porque*" para efectos de mayor claridad y definición de las características novedosas de la invención.

La presente solicitud no cumple con los requisitos de concisión de acuerdo al art. 30 de la Decisión 486.

4. Determinación del Estado de la Técnica

La fecha que se ha tenido en cuenta para determinar el Estado de la Técnica es:

Fecha de presentación de la solicitud prioritaria, 2005-02-07.

Teniendo en cuenta la fecha indicada se realizó la búsqueda en el estado de la técnica de documentos relacionados con la solicitud, encontrándose los siguientes documentos más relevantes:

Nº	Documento	Título	Fecha de publicación*
D1	US2003066431	"Coffee maker"	2003-04-10

El documento D1 enseña un dispositivo (10) para la preparación de bebidas a partir de una sustancia contenida en una cápsula, que comprende:

Una unidad de suministro de fluido (14) que contiene un medio (16) de suministro del fluido;

Un contenedor de cápsula (22) configurado para recibir una cápsula; donde el contenedor de la cápsula es removible de la unidad de suministro de fluido;

Medios de unión complementarios (22) de la unidad de suministro de fluido y del contenedor de la cápsula (22).

Ver de D1: los párrafos 36-37; figuras 1, 5, en los folios 202, 207, 208.

5. Análisis de patentabilidad (artículo 14 D486)

5.1. Novedad (artículo 16 D486)

5.1.1. Respecto a la solicitud en estudio:

La reivindicación independiente número 1 enseña:

"Dispositivo para la preparación de una bebida a partir de una sustancia de alimento contenida en una cápsula, que comprende:

-una unidad de suministro de fluido que comprende un medio de suministro del fluido,

-un contenedor de cápsula configurado para recibir una cápsula; donde el contenedor de la cápsula (...) (...).

-medios de unión complementarios de la unidad de suministro (...) (...). Ver folio 178.

5.1.2. Respecto al estado de la Técnica:

El documento D1 enseña un dispositivo (10) para la preparación de bebidas a partir de una sustancia contenida en una cápsula, que comprende:

Una unidad de suministro de fluido (14) que comprende un medio de suministro del fluido (16),

Un contenedor de cápsula (22) configurado para recibir una cápsula; donde el contenedor de la cápsula es removible de la unidad de suministro de fluido;

Medios de unión complementarios (22) de la unidad de suministro de fluido y del contenedor de la cápsula (22); que además:

Los medios de unión complementarios (22) están configurados para permitir la inserción del contenedor de la cápsula (202) en la unidad de suministro de fluido (14)

a lo largo de una primera dirección en la cual el contenedor de la cápsula (202) es previamente posicionado en la unidad de suministro de fluido (14) en una posición de referencia en la que los medios de suministro del fluido están relativamente distantes del contenedor de cápsula.

Donde la unidad de suministro de fluido comprende también medios de cierre (20) configurados para mover a los medios de suministro del fluido relativamente más cerca del contenedor de la cápsula de una manera que los medios de suministro del fluido queden posicionados en la posición de distribución del fluido para que sean capaces de distribuir el fluido en la capsula.

Ver de D1: los párrafos 36-37; figuras 1, 5, en los folios 202, 207, 208.

Figura 1 del documento D1 US2003066431

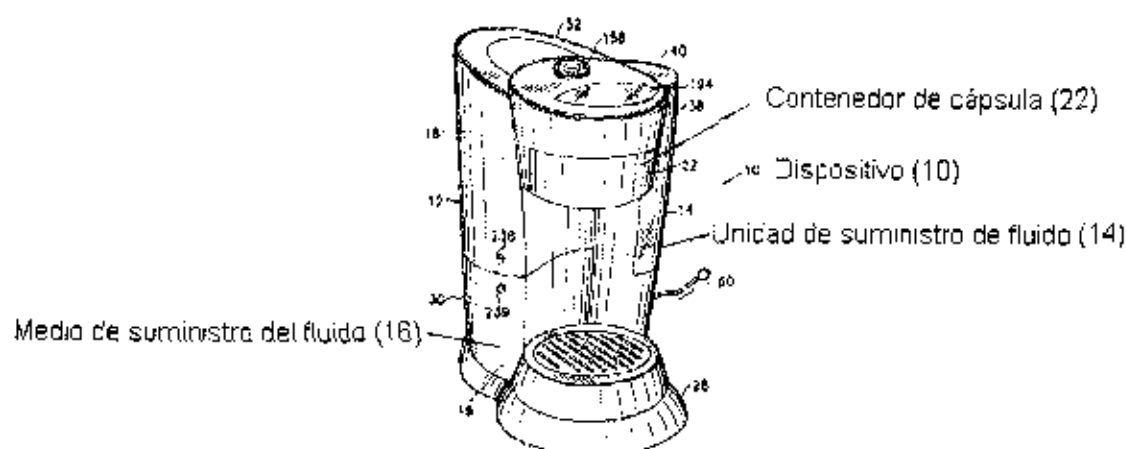
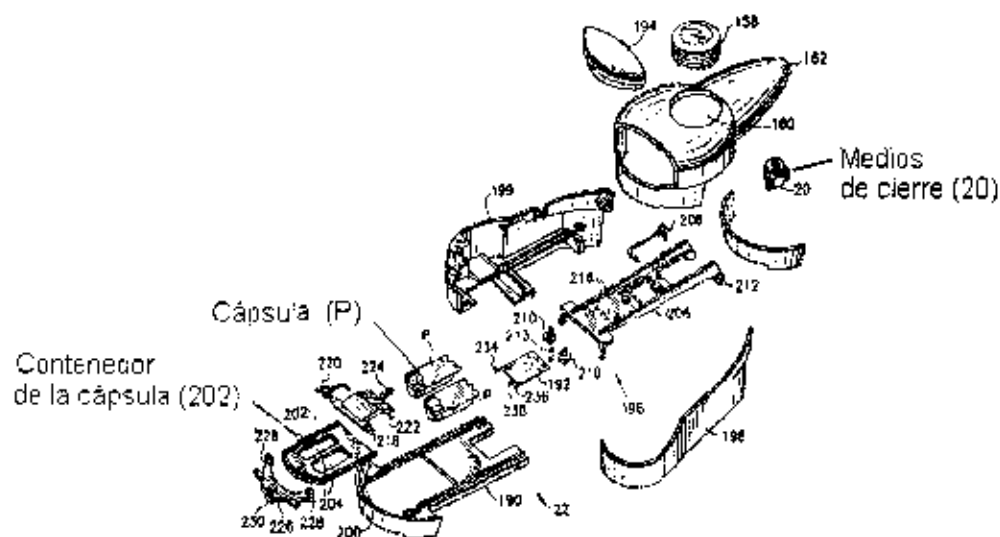


Figura 5 del documento D1 US2003066431



5.1.3. Al comparar elemento por elemento de la invención, tal como está definida en la reivindicación independiente 1, con las enseñanzas del documento D1, se observa que todas las características de dicha reivindicación, fueron anticipadas por el documento D1. Por lo tanto, la reivindicaciones 1, tal y como está reivindicada, así como sus dependientes, podrían verse afectadas por falta de novedad.

6. Conclusión:

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

Nº	Documento Nº	Reivindicaciones afectadas	Requisito que afecta
D1	US2003066431	1	Novedad

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única Nº 10 de 2001.


JOSÉ LUIS SALAZAR LÓPEZ
 Director de Nuevas Creaciones (E)

El anterior requerimiento fue notificado por fijación en lista, de fecha _____.

CONCEPTO TÉCNICO No. 4388	EXAMINADOR TÉCNICO Código No. 202065
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LLOREDA & CIA. S. A.

A B O G A D O S

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 07-086524- -00004-0000

Fecha: 2008-10-22 16:03:35 Dep. 2020 NUECREACIONE
 Tra. 11 PATENTEIYII Eve: 378 FASENACIONALI
 Act. 538 PETICION Folios: 2

Señor

SUPERINTENDENTE DE INDUSTRIA Y COMERCIO

DIVISION DE NUEVAS CREACIONES

E. _____ S. _____ D. _____

CABLES: LLOREDA
 CALLE 72 No. 5-83 5º. PISO
 www.lloredacamacho.com
 jllico@lloredacamacho.com

Re: P1.-NESTEC S.A.-Solicitud de Patente de Invención en Fase Nacional PCT para "DISPOSITIVO PARA PREPARAR UNA BEBIDA A PARTIR DE UNA CAPSULA POR INYECCION DE UN FLUIDO PRESURIZADO, Y CONTENEDOR DE CAPSULA ADAPTADO PARA ELLO".-Clase A47J 31/40; A47J 31/06.- Expediente número 07-086.524.-

1. Me refiero a mi memorial de 31 de Octubre de 2007.
2. De conformidad con lo dispuesto en el Artículo 5.2.12 de la Circular Externa No. 03 de 28 de Abril de 2003, y estando dentro del plazo de seis meses contados desde la fecha de la publicación de la solicitud en la Gaceta de la Propiedad Industrial número **591** de 30 de Abril de 2008, solicito a ese Despacho proceder a realizar el examen de patentabilidad de la presente invención.
3. Me permito recordar a usted, que tal como se informó en el Petitorio de la invención, la presente solicitud corresponde a Capítulo I.
4. Anexo me permito acompañar recibo número 08-79.754, expedido por la Superintendencia de Industria y Comercio, que acredita el pago de la tasa que dicho examen causa.

Señor Superintendente,


 ALICIA LLOREDA RICAURTE

T.P. 53.215

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

MIT : 800176089-2

RECIBO OFICIAL DE CAJA : 08 - 79,754
FECHA : OCTUBRE 7 DE 2008

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No. 07-086524- -00004-0000

Fecha: 2008-10-22 16:03:35 Dep. 2020 NUECREACIONE
Tra. 11 PATENTEIYII Eve: 378 FASENACIONALI
Act. 538 PETICION Folios: 2

***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	No. PAGO	FECHA PGO	Vr. PAGO
LLOREDA Y CIA S. A	CONSIGNACION	BANCO DE BOGOTA	062754387	4891946	07/10/2008	11,020,000.00

***** CONCEPTO *****

CANT. RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1 50005-01-01 SOLICITUDES	85 EXAMEN DE PATENTABILIDAD DE INVEN	420,000.00
	TOTAL :	\$ 420,000.00

SON: CUATROCIENTOS VEINTE MIL PESOS

RESPONSABLE : _____

RECIBO DE CAJA APLICADO AL EXPEDIENTE No. _____

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 07-86524

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **591** DE

FECHA **30 DE ABRIL DE 2008** EL TÉRMINO HÁBIL SEÑALADO POR LA LEY

EXPIRA EL **30 DE JULIO DE 2008**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____

NO X

(19) **United States**

(12) **Patent Application Publication**
Fanzutti et al.

(10) **Pub. No.: US 2003/0066431 A1**

(43) Pub. Date: **Apr. 10, 2003**

(54) COFFEE MAKER

(22) Filed: Sep. 30, 2002

(75) Inventors: **Robert F. Fanzutti**, Naugatuck, CT (US); **Paul F. Garneau**, East Haven, CT (US); **Joseph Gelb JR.**, Milford, CT (US); **Peter Hohlfeld**, Oxford, CT (US); **Bradford Mitchell**, Hallandale, FL (US); **Marc P. Ortins**, Woburn, MA (US); **Scott J. Duplantis**, Miramar, FL (US); **Steven L. Hecker**, Ft. Lauderdale, FL (US)

Related U.S. Application Data

(60) Provisional application No. 60/327,538, filed on Oct. 5, 2001.

Publication Classification

(51) Int. Cl.⁷ A23F 3/00

(52) U.S. Cl. 99/279

(57) **ABSTRACT**

A coffee maker including a frame; a water reservoir connected to the frame; a peristaltic pump connected to the water reservoir; and a heater connected to the peristaltic pump. The frame comprises a coffee pod holder for removably holding a coffee grounds containing pod. Hot water can be received from the heater into the coffee grounds containing pod and liquid coffee can pass out of the coffee grounds containing pod.

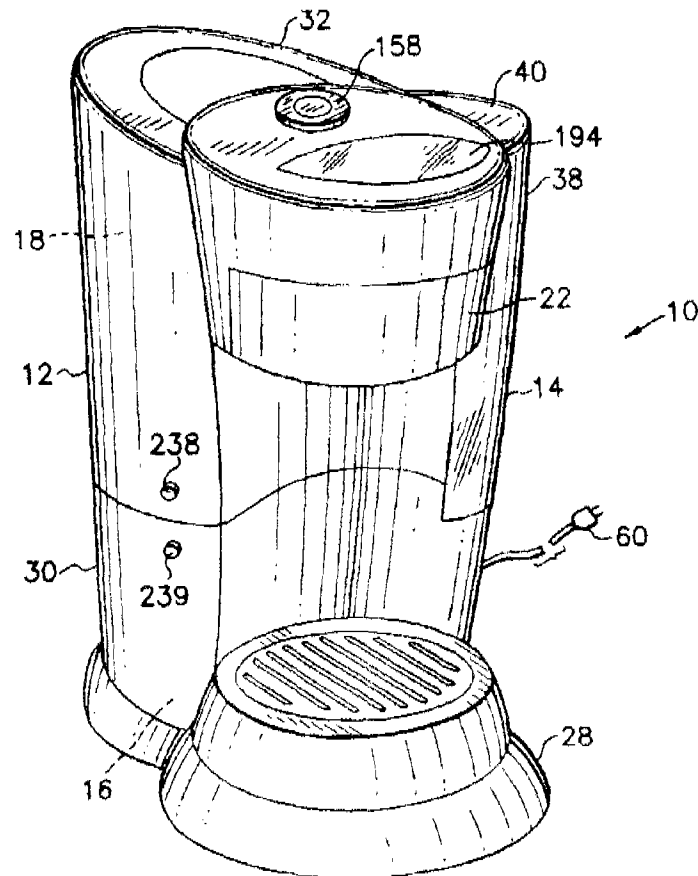
Correspondence Address:

Barry E. Deutsch, Esq.
Suite 104

35 Thorpe Avenue
Wallingford, CT 06492 (US)

(73) Assignee: Attention: Mr. John P. Garniewski

(21) Appl. No.: 10/260,045



[0022] FIG. 7 is a block diagram of the control system of the coffee maker shown in FIG. 1;

[0023] FIG. 8 is a perspective view of an alternate embodiment of the tray shown in FIG. 5;

[0024] FIG. 9 is a cross sectional view of a top front end of an alternate embodiment of a coffee maker incorporating features of the present invention;

[0025] FIG. 10 is a cross sectional view of the top front end of the coffee maker shown in FIG. 9 with the needle carriage and needles in a down position;

[0026] FIG. 11 is a cross sectional view of a top front end of another alternate embodiment of a coffee maker incorporating features of the present invention;

[0027] FIG. 12 is a cross sectional view of the top front end of the coffee maker shown in FIG. 11 with the needle carriage and needles in a down position;

[0028] FIG. 13 is a cross sectional view of the top front end of the coffee maker shown in FIG. 11 with the needle carriage and lid in an up position;

[0029] FIG. 14 is a cross sectional view of a top front end of another alternate embodiment of a coffee maker incorporating features of the present invention with the lid in an up position;

[0030] FIG. 15 is a perspective view of an alternate embodiment of the present invention;

[0031] FIG. 16 is a perspective view of the front top end of another alternate embodiment of the present invention;

[0032] FIG. 17 is a diagrammatic view of a water flow path through a coffee maker incorporating features of the present invention;

[0033] FIG. 18 is an operational flow chart of one method of a main routine which can be used in operating a coffee maker incorporating features of the present invention;

[0034] FIG. 19 is an operational flow chart of one method when brewing black coffee with a coffee maker incorporating features of the present invention; and

[0035] FIG. 20 is an operational flow chart of one method when brewing creamy coffee with a coffee maker incorporating features of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0036] Referring to FIG. 1, there is shown a perspective view of a coffee maker 10 incorporating features of the present invention. Although the present invention will be described with reference to the embodiments shown in the drawings, it should be understood that the present invention can be embodied in many alternate forms of embodiments. In addition, any suitable size, shape or type of elements or materials could be used.

[0037] Referring also to FIGS. 2 and 5, the coffee maker 10 generally comprises a frame or housing 12, a water reservoir 14, a motor and pump assembly 16, a heater 18, a diverter 20, a coffee pod section 22, and a controller 24. The frame 12 generally comprises a base 26, a bottom housing section 28, a middle housing section 30 and a top housing section 32. However, in alternate embodiments, the frame

could be comprised of any suitable number or type of members. In the embodiment shown, the frame 12 also comprises a coffee cup stand. The coffee cup stand comprises a standoff member 34 and a spill grate 36. In the embodiment shown, the coffee maker 10 does not comprise a warmer for a coffee pot or coffee cup.

[0038] However, in an alternate embodiment, a warmer could be provided, such as for use with a glass coffee mug. In the embodiment shown, the water reservoir 14 is removably connected to one side of the bottom housing section 28. In an alternate embodiment, the water reservoir might not be removably connected to the frame 12. The water reservoir 14 generally comprises a container 38 and a lid 40. The bottom of the container 38 has a water outlet with a seal 42. The water outlet and seal 42 are connected to a water inlet 44 in the bottom housing section 28. The lid 40 comprises a first housing piece 46 and a movable cover 48 connected to the first housing piece 46 by a hinge 50.

[0039] In alternate embodiments, the water reservoir could be comprised of any suitable type or number of components. In one type of alternate embodiment, the coffee maker 10 could comprise a sensor for sensing the water level in the water reservoir 14, such as a float valve. One such type of water level sensor could comprise a magnet connected to a float inside the container 38, and a reed switch connected to the frame 12 outside of the container 38. The reed switch could be connected to the controller 24. In an alternate embodiment, any suitable type of a water level sensor could be provided. In another alternate embodiment, the coffee maker could be connectable to a supply of water, such as a hose connected to a building's water supply system.

[0040] Referring also to FIG. 3, an exploded perspective view of the pump and motor assembly 16 is shown. The assembly 16 generally comprises a motor 52, a pump 54, a transmission 56, and a connecting housing 58. The motor 52 is preferably a DC high voltage constant speed motor. However, in alternate embodiments, any suitable type of motor could be used. For example, the motor could be an AC constant speed motor or a variable speed motor. The controller can control the motor speed. The motor 52 is connected to the electrical cord and electrical outlet plug 60 (see FIG. 1). The motor 52 is also connected to the controller 24. The controller 24 controls activation, deactivation, and the speed of the motor 52.

[0041] The connecting housing 58 generally comprises a first member 62, a second member 64, and a third member 66. The first member 62 comprises a first clamshell section 68 for the motor 52. The first member 62 also comprises a second section 70. The second section 70 forms a housing for components of the transmission 56.

[0042] The second member 64 is connected to a top side of the first member 62. The second member 64 comprises a first clamshell section 72 and a second section 74. The two clamshell sections 68, 72 capture the motor 52 therebetween. The second section 74 of the second member 64 covers the second section 70. Second section 74 has an aperture 76 therethrough. The second section 74 also comprises a mount 78 on its top side. A sensor 80 is connected to the mount 78. The sensor 80 in the embodiment shown is an optical sensor. However, in alternate embodiments, any suitable type of sensor could be provided, such as a Hall effect sensor for example. The optical sensor 80 is adapted

The present invention may also allow a user to select certain features, such as small or large, or mild or strong.

[0060] Referring also to FIG. 5, the diverter 20 is connected to a user actuatable selector 158. The selector 158 extends through an aperture 160 in a top member 162 of the frame 12. Referring also to FIGS. 6, 6A and 6B, the diverter 20 generally comprises a frame comprising a container 164 and a cap 166, a cam member 168, flexible protectors 170, and water conduit tubes 172, 174. The tubes 172, 174 are respectively connected to the outlet sections 154, 156 of the T shaped splitter tube 152. The container 164 comprises apertures for the tubes 172, 174 to extend into and out of an interior area of the container 164. The flexible protectors 170 are mounted in the interior area of the container 164. The protectors 170 are preferably comprised of sheet metal. However, in alternate embodiments, any suitable material could be used. The protectors 170 are located against sides of the tubes 172, 174 facing the center of the container 164. The protectors 170 are adapted to resiliently flex outward to press the tubes 172, 174 against the interior side 176 of the container 164. This can crimp the tubes 172, 174 closed to stop or reduce the flow rate of water flowing through the tubes.

[0061] The cam member 168 generally comprises two cam sections 178, 180 and a control shaft 182. The control shaft 182 extends through an aperture 184 in the cap 166. The control shaft 182 is connected to the selector 158. The selector 158 can be axially rotated to rotate the cam member 168 in the container 164. In an alternate embodiment, any suitable type of user actuatable selector for controlling or moving the diverter 20 could be provided. For example, in an alternate embodiment, the manual selector 158 could be replaced by an automatic selector connected to the controller 24. In another alternate embodiment a feedback from the selector 158 or the tubes 172, 174 to the controller could be provided to adjust the heater temperature or the pump operation for additional control or monitoring, such as based upon a mild or medium or strong setting selected by a user, or any other user selected setting.

[0062] In alternate embodiments, more or less than two cam sections could be provided. In addition, the cam sections could be offset from each other at any suitable angle, or could be orientated relative to each other in any suitable offset orientation. In the embodiment shown, each cam section 178, 180 is substantially circular shaped or round disk shaped except at recessed areas 186, 178, 188.

[0063] In the embodiment shown, the cam member 168 is movable between the two positions shown in FIGS. 6A, 6B. In the first position shown in FIG. 6A, the recessed area 186 of the bottom cam section 178 is spaced from the bottom protector 170. Also in the first position, the recessed area 187 of the top cam section 18 is spaced from the top protector 170. However, the recessed area 188 is located against the top protector 170. In this position, the bottom cam 178 presses the bottom protectors 170 outward to crimp or close the bottom tube 174. The top cam 180 does not press the top protector 170 outward. Therefore, the top tube 172 is substantially open. Thus, in this first position, hot water from the heater 18 is allowed to flow through the top tube 172, but is not allowed to flow through the bottom tube 174.

[0064] In the second position shown in FIG. 6B, the recessed area 186 of the bottom cam section 178 is located

at the bottom protector 170. The recessed area 188 of the top cam section 180 is spaced from the top protector 170. However, the recessed area 187 is located at the top protector 170. In this embodiment, the recessed area 186 is slightly deeper than the recessed area 187. The cam sections 178, 180 cam the protectors 170 outward, but only partially. In the embodiment shown, the top tube 172 is closed about 60% and the bottom tube 174 is closed about 40%. However, in alternate embodiments, any suitable type of percentages or related percentages could be provided. For example, ratios such as 50%/50% or 75%/25% could be provided.

[0065] With the configuration noted above, 40% of the hot water from the heater 18 can flow through the top tube 172 and 60% of the hot water from the heater can flow through the bottom tube 174. The diverter 20 can be switched between the first and second positions by the user merely rotating the selector 158. The protectors 170 protect the tubes 172, 174 from friction of the cam member 168 as the cam member is rotated between the first and second positions. This prevents the cam member 168 from wearing a hole through the tubes 172, 174.

[0066] In one type of preferred embodiment, the selector 158 is only adapted to provide two settings; a 100%/0% ratio at a first setting, and a 50%/50% ratio at a second setting. With this embodiment, only one tube 172 or 174 needs to be crimped and, the crimp at the 100%/0% first setting is a total crimp closure of one tube to stop the flow of water in that tube.

[0067] Referring back to FIG. 5, the coffee pod section 22 generally comprises a drawer 190, a sensor 192, an actuator 194 and a piercing assembly 196. The drawer 190 is slidably connected to two housing members 198, 199 of the frame 12. However, in an alternate embodiment, any suitable movable connection of the drawer to the frame 12 could be provided. In the embodiment shown, the drawer 190 generally comprises a first member 200 and a tray 202 connected to the first member 200. The first member 200 comprises rails which are slightly mounted with the housing members 198, 199. The tray 202 comprises two apertures 204. The tray 202 is removably connected to the first member 200 such that the tray 202 can be cleaned. However, in an alternate embodiment, the tray 202 could be integrally formed with the first member 200.

[0068] The apertures 204 are suitably sized and shaped to respectively receive a coffee grounds containing pod P therein.

[0069] The pods P are coffee delivery vehicles which can contain any suitable type of ground coffee beans, such as flavored coffees. One or more of the pods P can also comprise other components, such as a nondairy creamer, sugar, artificial sweetener, or any other suitable coffee related condiment. Alternatively, a pod could be provided with ground tea leaves. Of course, these are only examples of different items which could be provided in the pods. In alternate embodiments, any suitable material, intended to be mixed or brewed with hot water, could be provided in a pod.

[0070] Lips located on the top side of the pods P can rest against the top side of the tray 202. Thus, the pods P can be relatively easily inserted into and removed from the apertures 204. However, in alternate embodiments, the tray could have any suitable type of shape for removably receiving

ing one or more pods. The pods P preferably comprise a molded plastic cup-shaped base and a foil top. The bottom of the molded plastic cup-shaped base preferably has a hole therethrough with a screen or filter across the hole. In an alternate embodiment, the appliance could be configured to puncture a hole in the bottom of the pod. However, in alternate embodiments, the coffee maker 10 could be suitably configured to be used with any suitable type of pod. The pods are preferably sized to provide single individual servings. However, the pods could have sizes for large and small size cups. Alternatively, the pods could be sized for multiple cups, such as when features of the present invention are used in a coffee maker for use with a coffee pod.

[0071] The piercing assembly 196 forms a piercing platform which comprises a support member 206, a spring 208, and two piercers 210, 211. The support member 206 has a rear end 212 which is pivotably mounted between the two housing members 198, 199. A front end of the support member 206 has latches 214. The piercers 210, 211 are stationarily connected to the support member 206 at apertures 216. In an alternate embodiment, the piercing assembly could have more or less than two piercers. The piercers 210, 211 have top ends which are respectively connected to the tubes 172, 174. The piercers have bottom ends with pointed shapes. The bottom ends are adapted to pierce through the foil tops of the pods P when the support member 206 is rotated downward. The spring 208 normally keeps the support member 206 in an upward position. The piercers have channels between their top and bottom ends for allowing water from the tubes 172, 174 to pass through the piercers. In an alternate embodiment, the system could comprise a magnetic latch with an automatic release.

[0072] In an alternate embodiment, the piercing assembly 196 could include a bypass water tube outlet 213 and the diverter 20 could be a three way diverter with a third water conduiting tube extending therethrough. The diverter could send water to the outlet 213 to bypass the pods P. Thus, a first percentage of hot water could flow into a coffee cup through a pod and a second percentage of hot water could bypass around the pod and into the coffee cup for a mixed mild cup of coffee. This could also occur without a bypass water tube outlet by placing only one pod in the tray 202, but having the diverter set to deliver water to both piercers 210, 211. The water and coffee could combine in a coffee cup or combine into a single stream before delivery into the coffee cup. The bypass might not be provided. A coffee strength control might or might not be provided.

[0073] The actuator 194 is located at a front end of the top member 162 of the frame 12. An actuator support 218 is pivotably mounted between the housing members 198, 199 beneath the actuator 194. The actuator 194 rests against the top of the actuator support 218. A spring 220 is provided to bias the actuator support 218 in an up position. Thus, the actuator 194 is normally biased in an up position. The actuator support 218 comprises a pressing section 222 and an arm 224.

[0074] A user can press the actuator 194 downward. This results in the actuator support 218 being rotated downward with the pressing section 222 pressing downward on the front end of the support member 206. This causes the front end of the support member 206 to rotate downward. As the front end of the support member 206 rotates downward, the piercers 210, 211 are moved downward to pierce through the top foil of the pods P. The latches 214 can latch with the latch member 226 to retain the support member 206 in its down-

ward position with the piercers 210, 211 projecting inside the pods P. When the user releases the actuator 194, the spring 220 biases the actuator support 218 in an upward direction to move the actuator 194 back to an up position.

[0075] The latch member 226 is pivotably connected to the front end of the first member 200 of the drawer 190. The latch member 226 comprises upwardly extending latches 228 and a finger contact section 230. The latch member 226 can retain the support member 206 in its downward position. A user can release the support member 206 from its downward position by pulling forward on the finger contacts section 230. A user usually pulls forward on the finger contact section 230 when the user starts to pull the drawer 190 to an open position.

[0076] In an alternate embodiment, the latch member 226 (or movement of the support member 206 back to an up position) could be controlled by a solenoid or a solenoid and spring combination. The solenoid could move the support member 206 to an up position immediately after the controller 24 signals an end of the brewing cycle. This can ensure that the piercers 210, 211 are moved out of the pods P to help prevent bacteria from growing in the piercers when the user does not open the drawer to remove the pods P a long time after brewing has completed (i.e., over a weekend or while away on vacation for a week or more). In alternate embodiments, any suitable type of latch system could be provided, such as a magnetic latch system. A magnetic release could function as a failsafe. If power goes out, the magnetic release could open automatically and lift the piercers from the pod(s).

[0077] The sensor 192 generally comprises a printed circuit 232, and three microswitches 234, 235, 236. The sensor 190 is physically connected to the support member 206. The sensor 192 is operably connected to the controller 24. The first microswitch 234 is adapted to be contacted and moved by the arm 224 of the actuator support 218 when the actuator 194 is depressed. Thus, the first microswitch 234 is adapted to signal the controller 24 when a user has depressed the actuator 194. In an alternate embodiment, any suitable type of sensor for sensing when a user has actuated the actuator 194 (or its equivalent) could be provided. The other two microswitches 235, 236 are adapted to be contacted and moved by rear ends of the pods P when the drawer 190 is moved to a closed position.

[0078] The rear ends of the pods P (or another suitable section of the pod) preferably have different shapes based upon what is contained inside the pod. For example, a pod having one type of flavored coffee could have one type of rear end shape and a pod having another type of flavored coffee or coffee and artificial sweetener or nondairy creamer could have a different rear end shape. The second and third microswitches 235, 236 are adapted to send a signal to the controller 24 based upon the type of shape of pod rear end which the microswitches sense. This signal is used by the controller 24 to determine what type of pod is present. The controller 24, based upon this determination, can select a predetermined coffee brewing setting for delivery of the water to the pod(s).

[0079] In an alternate embodiment, the sensor could be used to merely sense the presence or absence of a pod at a location; not for determining the type of pod present. In alternate embodiments, any suitable type of sensor for sensing the presence or absence of one or more pods in the pod receiving section of the coffee maker could be provided. Alternatively, an alternate embodiment could be provided which did not comprise a pod presence sensor.

[0080] The coffee brewing settings are preferably preset in a memory of the controller. The coffee maker would preferably be programmed with multiple coffee brewing setting; such as one for each different type of coffee pod that required different rates of water delivery or different temperatures of water for brewing. Based upon the number or type of pod(s) recognized, the controller would control the volume of water pumped by the pump 54. For the embodiment shown, the controller 24 could do the following:

Sensed Pod(s)	Quantity of water to be pumped
A	Q1
B	Q1
C	Q1
A and A	Q2
A and D	Q2

[0081] Of course, these are only examples. Any suitable variables could be controlled by the controller. In an alternate embodiment, the controller 24 could control the temperature of the heater 18 based upon pod recognition. For example,

Sensed Pod(s)	Quantity of water to be pumped	Temperature
A	Q1	T1
B	Q1	T2
C	Q1	T3
A and A	Q2	T1
A and D	Q2	T4

[0082] The controller could also be programmed to variably control water quantity delivered, and/or speed of the pump and/or temperature of the heater based upon pod recognition. For example:

Sensed Pod(s)	Quantity of water to be pumped	Speed of pump	Temperature
A	Q1	S1	T1
B	Q1	S2	T2
C	Q1	S3	T3
A and A	Q2	S1	T1
A and D	Q3	S4	T4
or			
Sensed Pod(s)	Quantity of water to be pumped	Speed of pump	
A	Q1	S1	
B	Q1	S2	
C	Q1	S3	
A and A	Q2	S1	
A and D	Q3	S4	

[0083] In an alternate embodiment, control could be programmed by a user for individualized results. The pods P

could be all the same size and shape, or could include different sizes and shapes. For example, a dual pod could be provided which has two sections; one section being received in each of the apertures 204. The apertures 204 could be reconfigurable to receive different size or shape pods.

[0084] Referring also to FIG. 7, a block diagram of the control system for the coffee maker 10 is shown. In the embodiment shown, the coffee maker 10 includes a start button 238 and a stop button 239 (see FIG. 1). However, in alternate embodiments, any suitable number or type of user interaction controls could be provided. The buttons 238, 239 are operably connected to the controller 24. The controller 24 generally comprises a printed circuit board having a microprocessor and a memory. However, in alternate embodiments, any suitable type of controller could be provided. The pump motor 52, pump sensor 80, heating elements 142, heater sensor 128, actuator sensor 234, and pods sensors 235, 236 are operably connected to the controller 24. A sensor 240, for sensing the state or position of the diverter 20, could be connected to the controller 24. The coffee maker 10 could also comprise a reservoir sensor 242 for sensing the level of the water in the reservoir 14. The reservoir sensor 242 would be operably connected to the controller 24. The coffee maker 10 could also comprise a mover 244 for moving the diverter 20. The diverter mover 244 would be operably connected to the controller 24 such that the controller could control movement of the diverter. All features could be controlled by the controller.

[0085] Referring now also to FIG. 8, an alternate embodiment of the coffee pod support tray is shown. The tray 250 in this embodiment comprises two coffee pod receiving seats 252. The receiving seats 252 each comprise sidewalls 254 which extend downward from the tray 250. The sidewalls 254 function as supports for the lateral sides of the coffee pods P. The sidewalls 254 can help substantially maintain the pods P in their original shape even though the relatively hot water might otherwise cause the pods P to warp or bend. The bottom 256 of the receiving seats 252 are substantially open. However, in an alternate embodiment, the bottoms 256 could be partially closed. The tray 250 could also comprise channels from the bottoms 256 to combine streams of coffee from the two seats 252 into a single stream of coffee into a coffee cup.

[0086] Referring now to FIG. 9, there is shown a cross sectional view of a top front of an alternate embodiment of a coffeemaker incorporating features of the present invention. In this embodiment, the coffeemaker 300 generally comprises a frame with a pivotably movable lid 302, a multi pod holding system 304 for receiving adjacent coffee pods or condiment pods 306 (only one of which is shown), a coffee pod piercing system 308, a system 310 for preventing a user from contacting needles of the coffee pod piercing system when the coffee pod holding system is in an open position, and a sensing system 312.

[0087] The piercing system 308 generally comprises a needle carriage 314 and two needles 316 (only one of which is shown) fixedly mounted to the needle carriage. The needle carriage 314 is pivotably mounted to the lid 302 at pivot point 318. The two needles 316 are attached to the fluid conduit system 320 from the heater and solenoid actuated fluid diverter of the coffee maker.

[0088] The preventing system 310 generally comprises a shield plate 322 fixedly attached to the lid 302. The shield

plate 322 generally comprises a pair of apertures 324 therethrough. The apertures 324 are sized and shaped to allow the needles 316 to respectively extend and retract therethrough. The shield plate 322 forms a bottom of the lid 302 to enclose the components inside the lid except when the bottom ends of the needles 316 extend through the apertures 324 as shown in FIG. 10.

[0089] The sensing system 312 generally comprises a pair of mechanical lever arms 326 (only one of which is shown), one for each of the pods 306, pivotably mounted to the needle carriage 314. The sensing system 312 also comprises two switches 328 (only one of which is shown) attached to the needle carriage 314. The needle carriage 314 comprises apertures 330. The lever arms 326 each comprise a first end 332 and a second end 334. The first ends 332 are adapted to extend through the apertures 330. The second ends 334 are adapted to contact the switches 328. The shield plate 322 also comprises apertures 336. The apertures 336 are adapted to allow the first ends 332 of the lever arms 326 to extend therethrough.

[0090] Referring also to FIG. 10, the coffee maker is shown with the piercing system 308 located in a downward position such that the needles 316 pierce into the pods 306. In order to obtain this position, the needle carriage 314 is rotated downward against the top side of the shield plate 322. The needles 316 extend through the apertures 324 to pierce through the top sides of the pods 306. The first ends 332 of the lever arms 326 extend through the apertures 336. If one or both pods 306 are present, one or both of the first ends 332 are pushed upward. The lever arms 326 can rotate and actuate one or both of the switches 328. Thus, the sensing system 312 can send signals via the switches 328 to indicate whether or not the pod(s) 306 are present or not in the holder 304.

[0091] The embodiment described above uses the two mechanical lever arms which are designed to interfere with the pods when the needle carriage is lowered into its down position. This interference causes the levers to actuate the electrical switches, thereby notifying the unit that one or both of the pods are present or absent. If no pod is present, the lever arm will not actuate the switch. The sensing system can be used to allow the unit to distinguish which pods are present (black only, black and creamy, or creamy only). The sensing system can be used to allow the controller to automatically determine which brew cycle to run (black beverage, creamy beverage, or none if the pods are not installed properly). The sensing system can be used to prevent the unit from running without properly installed pods. The sensing system can also be used to prevent the unit from running with the lid open.

[0092] In an alternate embodiment, the electrical switch could be actuated directly by the pod without use of a lever arm. In another alternate embodiment, the shield plate can be designed to act as a mechanical lever arm. The shield can be designed so that it interferes with the pods. This interference would cause the plate to move when a pod is present and actuate the electrical switch.

[0093] Referring now to FIG. 11, an alternate embodiment of the present invention will be described. This embodiment is substantially similar to the embodiment shown in FIG. 9. The coffee maker 340 generally comprises a frame with a pivotably movable lid 302, a multi-pod holding system 304

for receiving adjacent coffee pods or condiment pods 306 (only one of which is shown), a coffee pod piercing system 346, and a system 348 for preventing a user from contacting needles of the coffee pod piercing system when the coffee pod holding system is in an open position.

[0094] The piercing system 346 generally comprises a needle carriage 342 and two needles 316 (only one of which is shown) fixedly mounted to the needle carriage. The needle carriage 314 is pivotably mounted to the lid at pivot point 318. The two needles 316 are attached to the fluid conduit system 320 from the diverter and the heater of the coffee maker. The piercing system 346 also comprises a magnetic latch 350 attached to the needle carriage 342 and the spring 352 which biases the needle carriage 342 in the upward position as shown in FIG. 11.

[0095] The preventing system 348 generally comprises a shield plate 344 fixedly attached to the lid 302. The shield plate 344 generally comprises a pair of apertures 324 therethrough. The apertures 324 are sized and shaped to allow the needles 316 to respectively extend and retract therethrough. The shield plate 344 forms a bottom of the lid 302 to enclose the components inside the lid except when the bottom ends of the needles 316 extend through the apertures 324 as shown in FIG. 12.

[0096] When the piercing system 346 is moved to the downward position shown in FIG. 12, the needles 316 can extend through the apertures 324 to pierce into the pods 306. The magnetic latch 350 is actuated to magnetically retain the needle carriage 342 against the shield plate 344 in the downward position as shown. When the magnetic latch 350 is disengaged, the spring 352 can bias the needle carriage 342 back to its up position as shown in FIG. 11. Alternatively, if a user opens the lid 302 as shown in FIG. 13, the magnetic latch 350 can also be disengaged such that the piercing system 346 is automatically moved to move the needles 316 out of the apertures 324. This moves the needles 316 into an enclosed position inside the lid 302 such that a user cannot touch the needles 316.

[0097] The system as described above can prevent access to the sharp piercing needles 316. The system can allow the lid to be opened adequately for a user to have access to the pod area, but without risk of the user contacting the needles. The system is able to hold the pods in place during both the brewing cycle and also while the needles are retracted.

[0098] Referring also to FIG. 14, an alternate embodiment of the present invention is shown. In this embodiment, the lid 354 comprises a track 356. A portion of the needle carriage 358, at the front of the needle carriage, is adapted to ride in the track 356. In the embodiment shown in FIG. 11, the needle carriage 342 was pivotably attached to the lid 302. In the embodiment shown in FIG. 14, the needle carriage 358 is pivotably attached to the frame at a different location 318 than the pivotal attachment 360 of the lid 354 to the frame. Thus, the needle carriage 358 is automatically moved relative to the lid 354 when the lid is moved between its open and close positions. As the needle carriage 358 moves from its lid closed position to the lid open position, the needles 316 can be moved behind the shield plate and out of alignment with the apertures 324.

[0099] Referring now to FIG. 15, another alternate embodiment of the present invention will be described. In

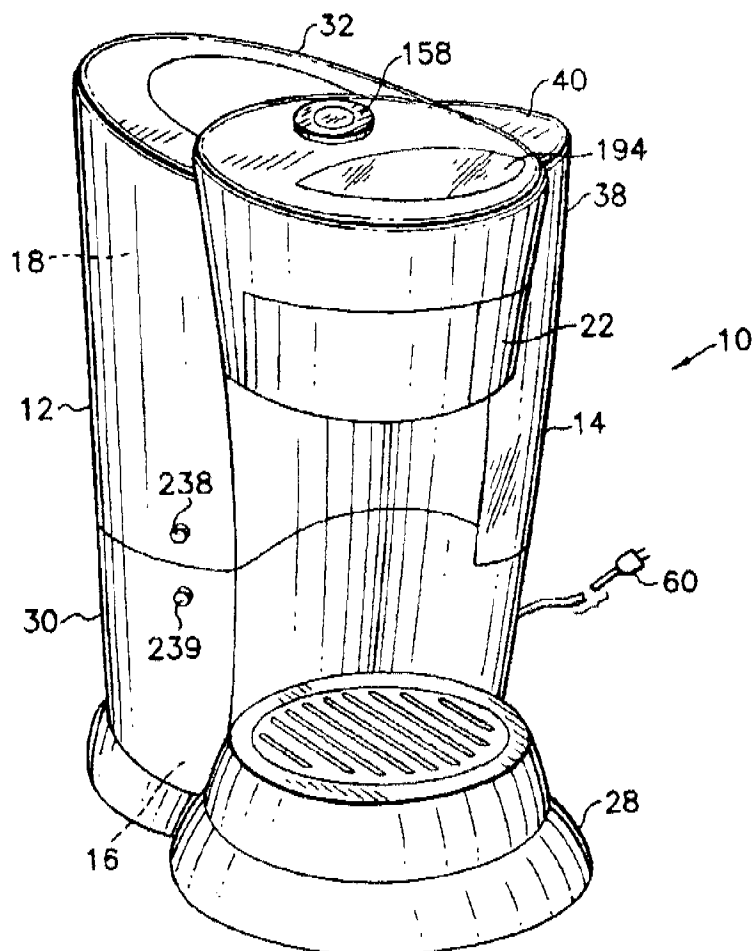


FIG. 1

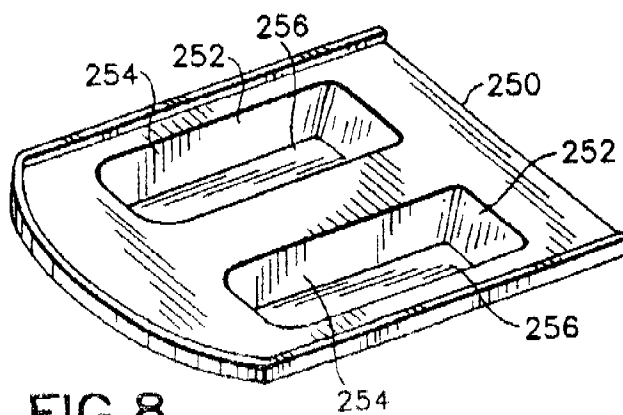
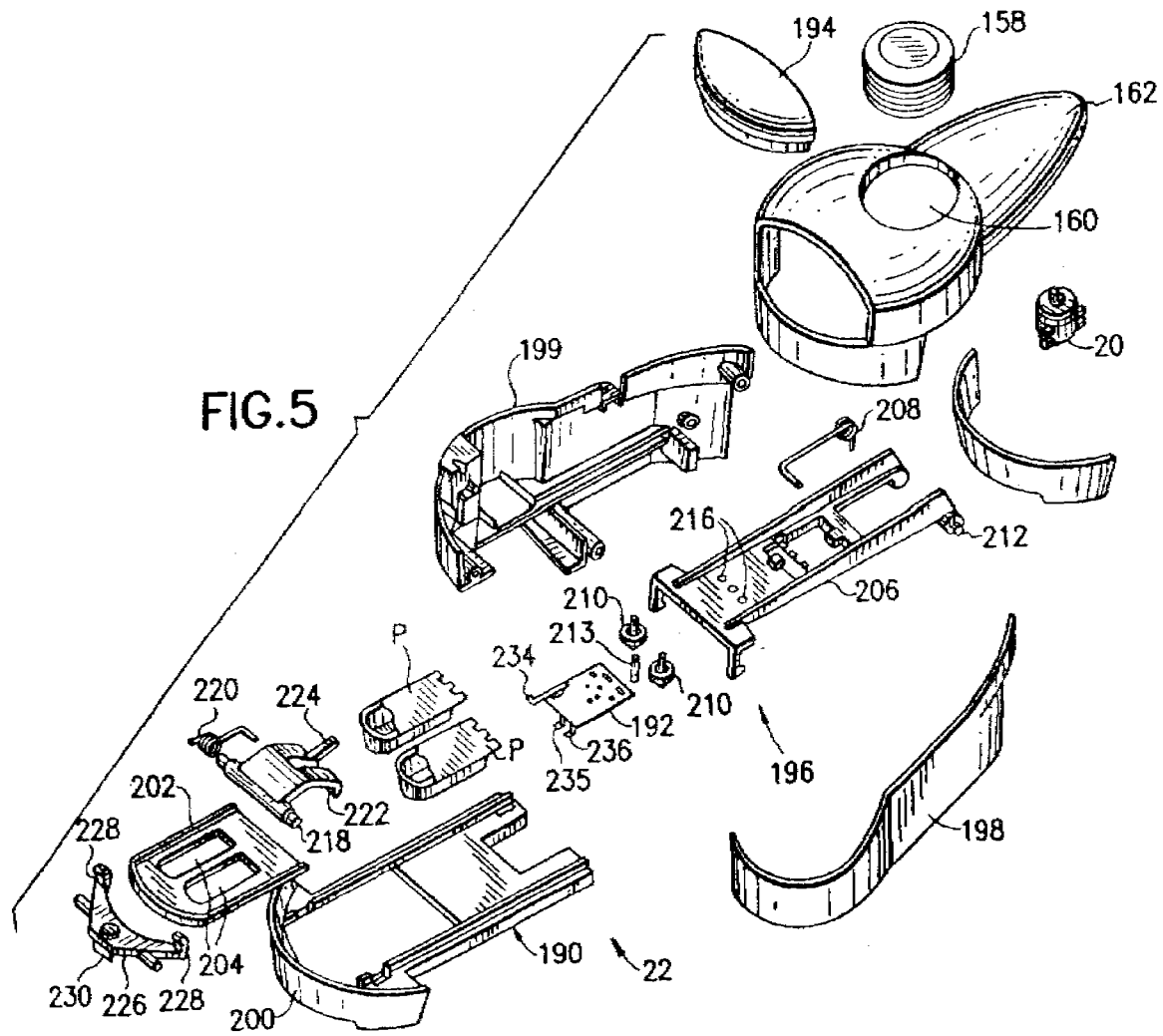


FIG. 8



SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIRECCIÓN DE NUEVAS CREACIONES

2020
 Bogotá, D.C.,

Abogada
ALICIA LLOREDA RICAURTE

ASUNTO	Radicación	07-086524
	Trámite	011
	Evento	001
	Actuación	430
	Oficio	303
	Folios	013

Patente de Invención	☒	Patente de Modelo de Utilidad	☐
Vía Nacional	☐		
Vía PCT (fase nacional)	☒	Cap. I	☒ Cap. II ☐
No. Sol. Internacional	PCT / EP2006/ 000944		
Fecha de Presentación Internal.	2006-02-03		

Como resultado del examen de fondo, realizado con fundamento en el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

- 1.1. Descripción: Folios: 64 a 130 como se radicó inicialmente.
- 1.2. Reivindicaciones: Folios: 131 a 141 como se radicó inicialmente.
 Folios: 178 a 188 modificado.
- 1.3. Dibujos: Folios: 142 a 163 como se radicó inicialmente.
- 1.4. Prioridad: 2005-02-07, EP 05100839.9

2. Objeto de la invención

Título de la solicitud: "Dispositivo para preparar una bebida a partir de una cápsula por inyección de un fluido presurizado, y contenedor de cápsula adaptado para ello".

El objeto de la presente solicitud de patente de invención se refiere a un dispositivo que usa una cápsula que contiene uno o más ingredientes de alimento para la preparación de un líquido. La invención también se refiere a un dispensador de líquido que usa ese dispositivo.

El problema planteado en esta solicitud se relaciona con la desventaja que existe en los sistemas conocidos en el estado de la técnica para la preparación de bebidas a

partir de una cápsula, y del hecho que usualmente no están diseñados para recibir cápsulas de diferentes formas y tamaños, o requieren adaptaciones particulares asociadas, por ejemplo, con el método de inyección del fluido en la capsula.

También se sabe que las condiciones de inyección de líquido influyen considerablemente en la calidad de la bebida producida. Los dispositivos conocidos usualmente no están diseñados para adaptar o modificar las condiciones de inyección de acuerdo con los tipos de bebidas que se vayan a producir.

Para solucionar este problema técnico, la solicitud en estudio proporciona un dispositivo para la preparación de una bebida a partir de una sustancia de alimento contenida en una cápsula, que comprende medios de suministro del fluido y un contenedor de cápsula configurado para recibir una cápsula, donde el contenedor de la capsula es removible de la unidad de suministro del fluido.

El objeto de la invención definido anteriormente se clasificó de acuerdo con el IPC así: A47J 31/40; A47J 31/06.

3. De la solicitud de Patente

3.1. Reivindicaciones (artículo 30 D 486)

Estudiado el capítulo reivindicatorio que obra del folio 178 al folio 188, se observo que dicho capítulo reivindicatorio contiene más de una reivindicación independiente por categoría.

La reivindicación 23 reivindica un *contenedor de cápsula*, observándose que el contenedor de capsula hace parte característica del dispositivo para la preparación de una bebida definido en la reivindicación 1. Por lo tanto, se sugiere definir el contenedor de capsula en una reivindicación dependiente de la reivindicación 1, que tenga como preámbulo el *dispositivo para la preparación de una bebida*, caracterizado por un *contenedor de cápsula*, definido por las características técnicas según la reivindicación 23.

Las reivindicaciones 1 y 40, se relacionan al mismo objeto y las diferencias entre una y otra se limitan a la definición de la materia que se trata de proteger, por esta razón el pliego no es conciso, por lo que se podría omitir la reivindicación 40, agrupando en la reivindicación 1 todas las características técnicas que se consideren hacen novedosa la invención.

Se sugiere presentar un nuevo capítulo reivindicatorio, evitando múltiples reivindicaciones independientes por categoría de producto y definir la materia a proteger mediante una sola reivindicación independiente.

Por otra parte se sugiere separar en forma clara el preámbulo de la parte característica de la invención. De acuerdo a esto, se sugiere utilizar en la reivindicación independiente 1 y las reivindicaciones dependientes, el término "*caracterizado porque*" para efectos de mayor claridad y definición de las características novedosas de la invención.

La presente solicitud no cumple con los requisitos de concisión de acuerdo al art. 30 de la Decisión 486.

4. Determinación del Estado de la Técnica

La fecha que se ha tenido en cuenta para determinar el Estado de la Técnica es:

Fecha de presentación de la solicitud prioritaria, 2005-02-07.

Teniendo en cuenta la fecha indicada se realizó la búsqueda en el estado de la técnica de documentos relacionados con la solicitud, encontrándose los siguientes documentos más relevantes:

Nº	Documento	Título	Fecha de publicación*
D1	US2003066431	"Coffee maker"	2003-04-10

El documento D1 enseña un dispositivo (10) para la preparación de bebidas a partir de una sustancia contenida en una cápsula, que comprende:

Una unidad de suministro de fluido (14) que contiene un medio (16) de suministro del fluido;
Un contenedor de cápsula (22) configurado para recibir una cápsula; donde el contenedor de la cápsula es removible de la unidad de suministro de fluido;
Medios de unión complementarios (22) de la unidad de suministro de fluido y del contenedor de la cápsula (22).
Ver de D1: los párrafos 36-37; figuras 1, 5, en los folios 202, 207, 208.

5. Análisis de patentabilidad (artículo 14 D486)

5.1. Novedad (artículo 16 D486)

5.1.1. Respecto a la solicitud en estudio:

La reivindicación independiente número 1 enseña:

"Dispositivo para la preparación de una bebida a partir de una sustancia de alimento contenida en una cápsula, que comprende:
-una unidad de suministro de fluido que comprende un medio de suministro del fluido,
-un contenedor de cápsula configurado para recibir una cápsula; donde el contenedor de la cápsula (...) (...).
-medios de unión complementarios de la unidad de suministro (...) (...). Ver folio 178.

5.1.2. Respecto al estado de la Técnica:

El documento D1 enseña un dispositivo (10) para la preparación de bebidas a partir de una sustancia contenida en una cápsula, que comprende:

Una unidad de suministro de fluido (14) que comprende un medio de suministro del fluido (16),
Un contenedor de cápsula (22) configurado para recibir una cápsula; donde el contenedor de la cápsula es removible de la unidad de suministro de fluido;
Medios de unión complementarios (22) de la unidad de suministro de fluido y del contenedor de la cápsula (22); que además:

Los medios de unión complementarios (22) están configurados para permitir la inserción del contenedor de la cápsula (202) en la unidad de suministro de fluido (14)

a lo largo de una primera dirección en la cual el contenedor de la cápsula (202) es previamente posicionado en la unidad de suministro de fluido (14) en una posición de referencia en la que los medios de suministro del fluido están relativamente distantes del contenedor de cápsula.

Donde la unidad de suministro de fluido comprende también medios de cierre (20) configurados para mover a los medios de suministro del fluido relativamente más cerca del contenedor de la cápsula de una manera que los medios de suministro del fluido queden posicionados en la posición de distribución del fluido para que sean capaces de distribuir el fluido en la capsula.

Ver de D1: los párrafos 36-37; figuras 1, 5, en los folios 202, 207, 208.

Figura 1 del documento D1 US2003066431

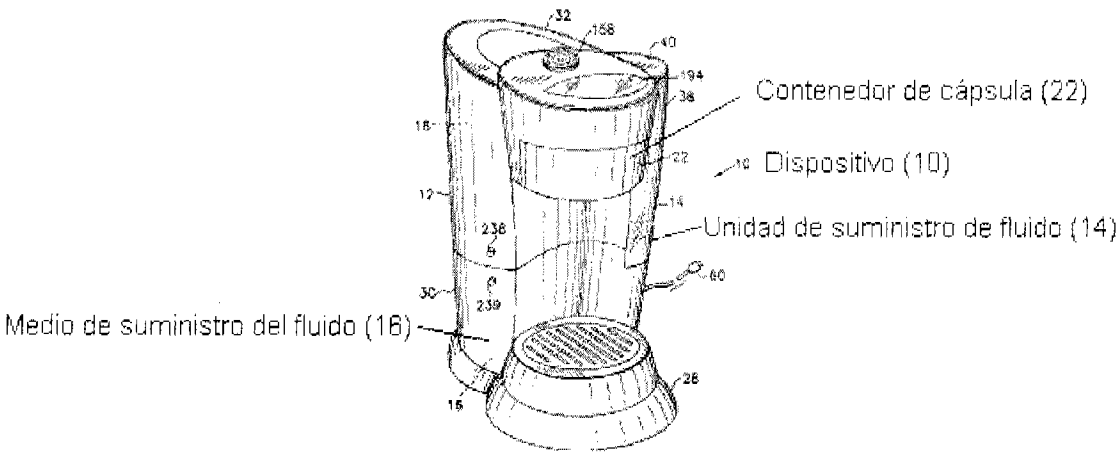
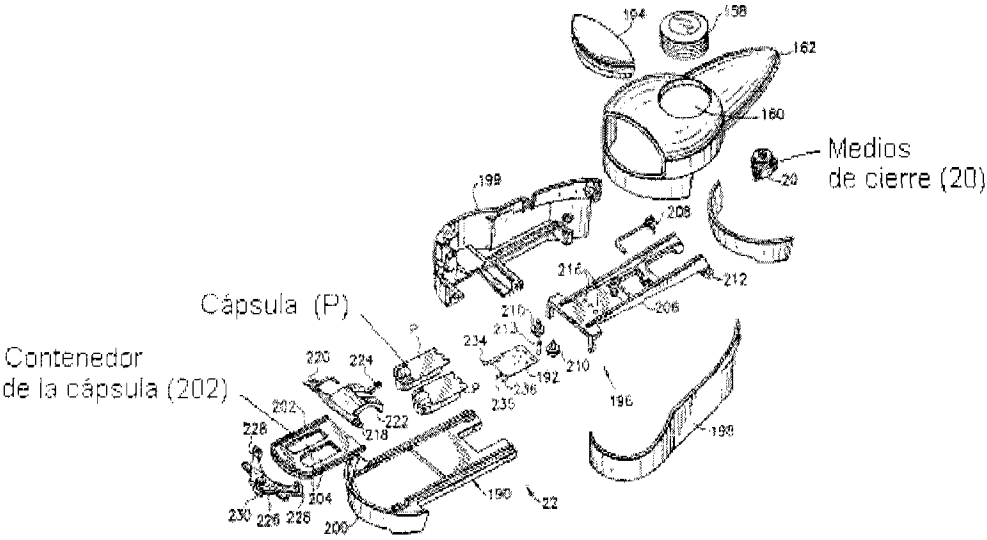


Figura 5 del documento D1 US2003066431



5.1.3. Al comparar elemento por elemento de la invención, tal como está definida en la reivindicación independiente 1, con las enseñanzas del documento D1, se observa que todas las características de dicha reivindicación, fueron anticipadas por el documento D1. Por lo tanto, la reivindicaciones 1, tal y como está reivindicada, así como sus dependientes, podrían verse afectadas por falta de novedad.

6. Conclusión:

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

N°	Documento N°	Reivindicaciones afectadas	Requisito que afecta
D1	US2003066431	1	Novedad

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única N° 10 de 2001.



JOSÉ LUIS SALAZAR LÓPEZ
Director de Nuevas Creaciones (E)

El anterior requerimiento fue notificado por fijación en lista, de fecha

CONCEPTO TÉCNICO No. 4388	EXAMINADOR TÉCNICO Código No. 202065
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