June 27, 1961 E. C. MORRIS 2,989,994

APPARATUS FOR DISPENSING HOT BEVERAGES

Filed July 30, 1959 5 Sheets-Sheet 1

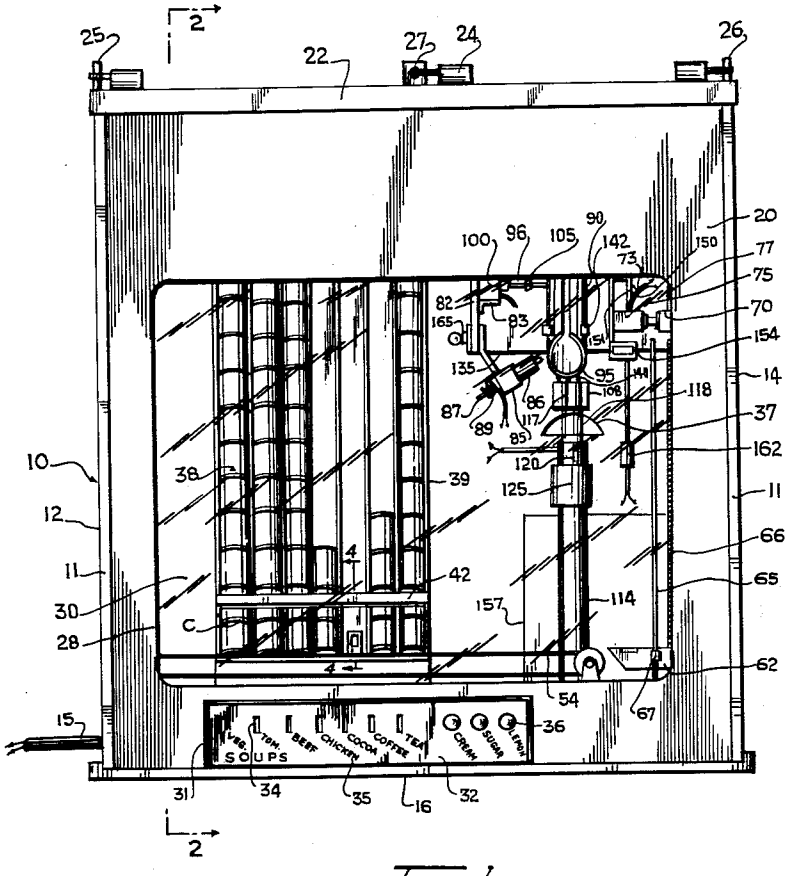


Fig. 1.

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APPARATUS FOR DISPENSING HOT BEVERAGES

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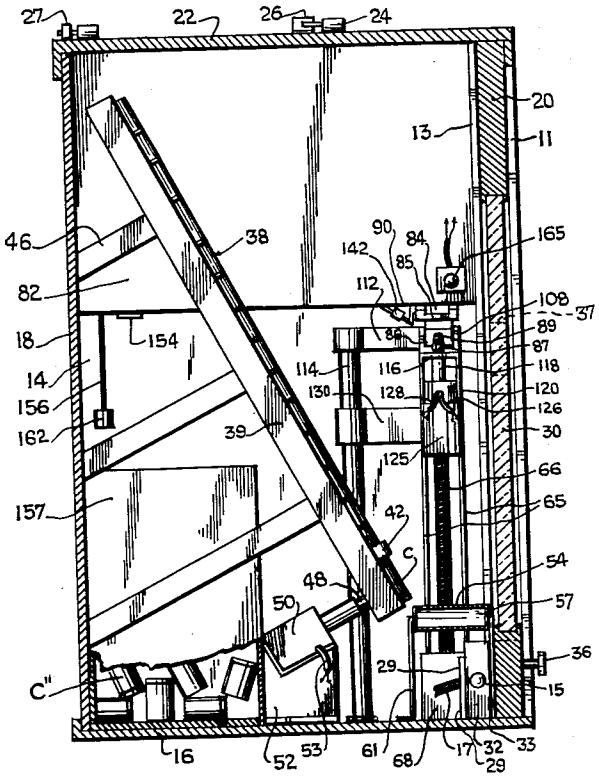


Fig. 2.

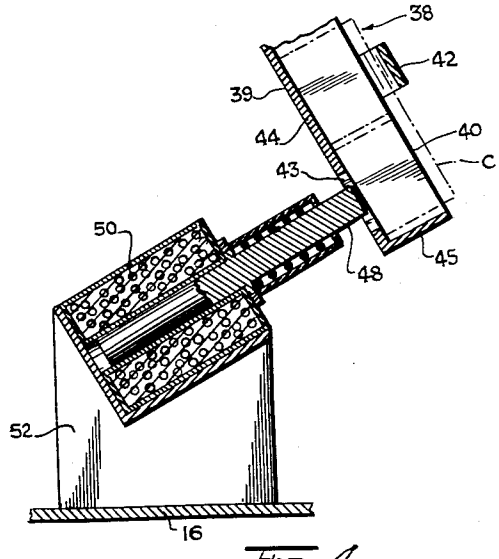


Fig. 4.

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APPARATUS FOR DISPENSING HOT BEVERAGES

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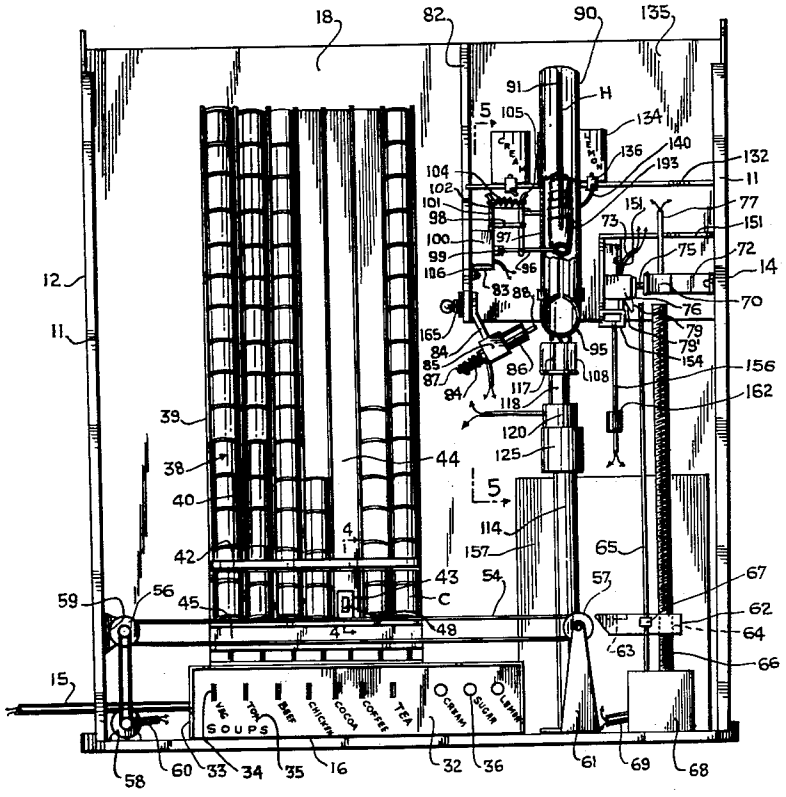


FIG. 3.

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APPARATUS FOR DISPENSING HOT BEVERAGES

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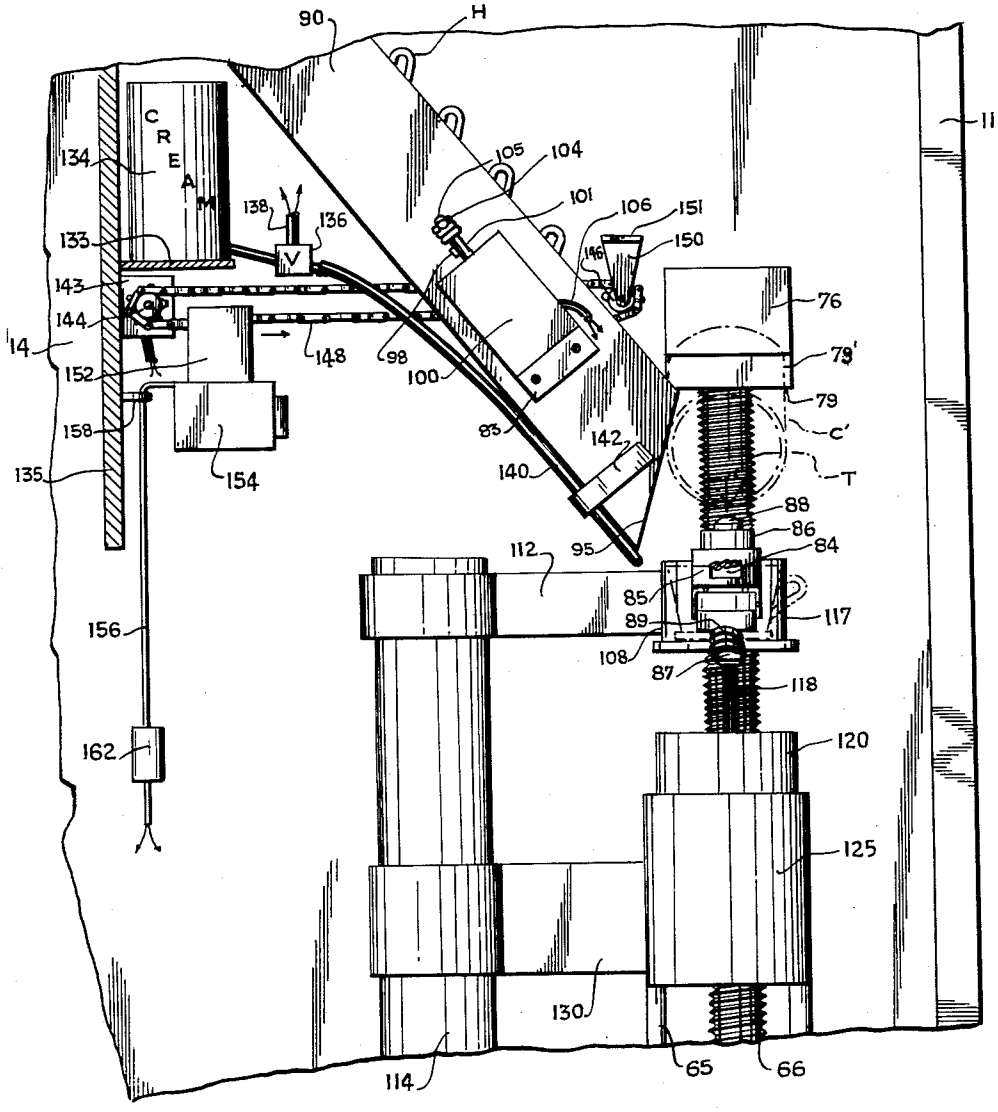


FIG. 5.

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APPARATUS FOR DISPENSING HOT BEVERAGES

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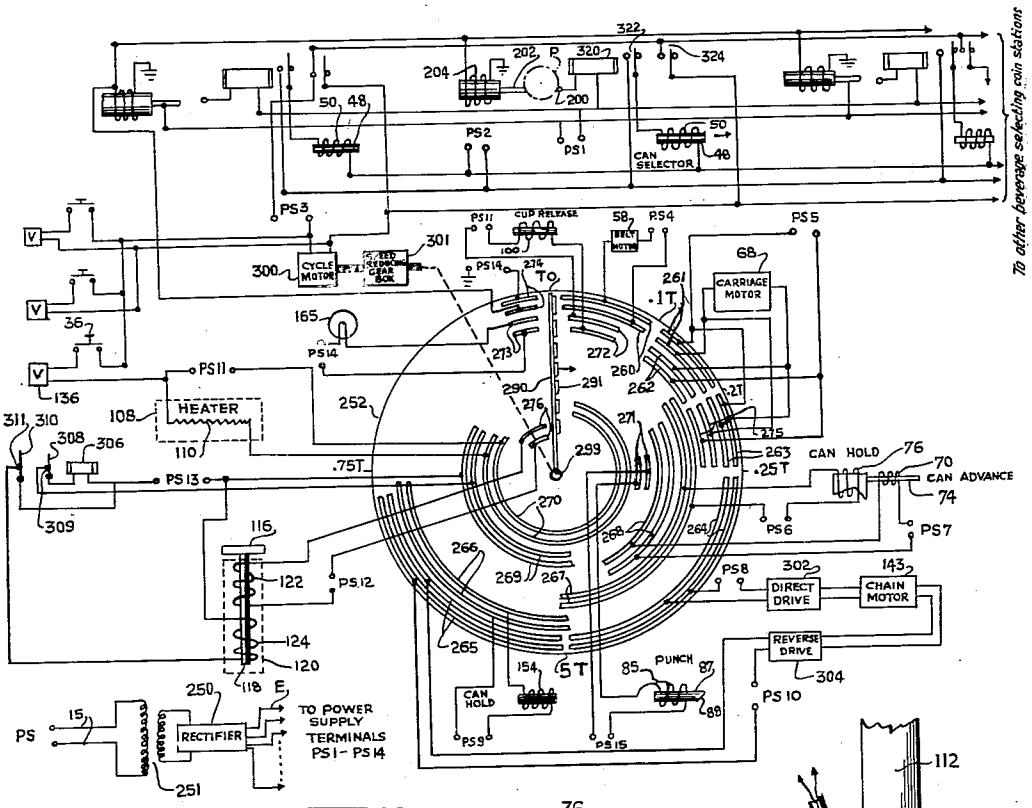


Fig. 11.

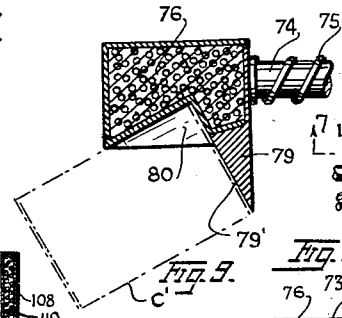

Fig. 9.

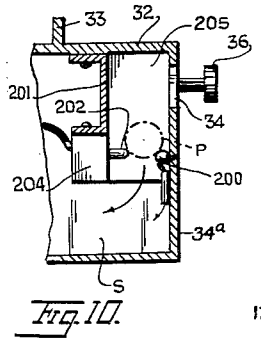

Fig. 10.

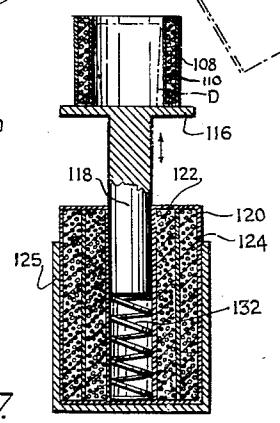

Fig. 7.

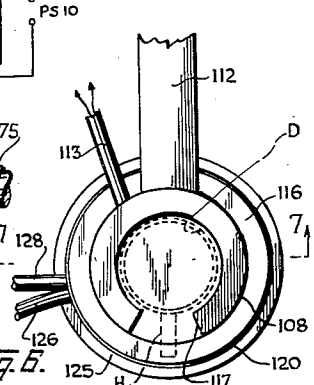

Fig. 6.

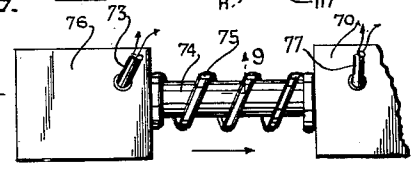

Fig. 8.

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United States Patent Office 2,989,994 Patented June 27, 1961



2,989,994

# APPARATUS FOR DISPENSING HOT BEVERAGES

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Filed July 30, 1959, Ser. No. 830,562
3 Claims. (Cl. 141—82)

This invention relates to apparatus for dispensing beverages or other edible fluids from cans or the like sealed containers made of metal or other suitable puncturable material and is especially adapted for coin actuation and pre-selection of one of a plurality of flavors or kinds of beverages or the like edible fluids.

Conventional beverage dispensers presently in wide use fall into three general classes:

(1) Those in which the ingredients (i.e. syrup and water) are stored in bulk and when dispensed are mixed in a cup.

(2) Those in which the beverages are sealed in cans and the cans are dispensed and the beverage is consumed from the cans.

(3) Those in which beverages are sealed in cans of relatively larger size (i.e. in bulk); the large cans being fed in register with a bulk reservoir tank into which the contents of the cans are successively emptied by opening successive cans as they reach the reservoir; and the beverage is dispensed from the storage tank or reservoir by means of a measuring valve.

In each of these types there are certain inherent disadvantages. In the first or bulk mix type the bulk containers for the syrup are opened to be filled and are therefore subject to contamination; and the water is usually supplied from the tap and hence depends upon the condition of the general water supply at the particular locality. In the second or canned beverage type the beverages tend to settle in such cans as remain in the storage space for an appreciable time and hence those flavors which do not move fast are often in an unpalatable state; the cans when delivered to the customer have to be opened by a separate manipulation; the contents are either drunk directly from the can or by means of a straw and the cans are carried away and hence their metallic constituent is not readily recoverable and is usually lost. In the third type or bulk-can type the open pouring from the bulk can to the storage reservoir or tank and the exposure of the beverage poured into the tank, due to the open top of the tank, subject the beverage to contamination. Additionally, this type has the inherent disadvantage of the measuring valve.

An object of the present invention is to provide a mechanism for opening a can automatically as part of a cycle of operation of dispensing a drink from a can directly into a drinking receptacle.

Another object is to provide a means for opening a can, pouring the contents into a cup of disposable type automatically supplied, heating the fluid contents in the cup and agitating the contents while being heated.

A further object is to provide means for automatically discarding the empty can after its contents are poured in a cup.

A further object is to provide an apparatus in which a large number of cans of each of a plurality of kinds of drinks or fluid foods are stored, a can of desired kind being selected, opened, poured, and the empty can discarded all automatically and sequentially as part of a cycle of operation.

Other objects are to provide an automatic timing means for electrically controlling the cycle of the apparatus; means to select and dispense one or more of a plurality of condiments which may be added to the fluid contents of the cup being heated and agitated; and to provide means actuatable by deposition of a coin in the apparatus for operating the apparatus.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.



In the accompanying drawings forming a material part of this disclosure:

FIG. 1 is a front elevational view of the apparatus enclosed in a cabinet.

FIG. 2 is an elevational sectional view taken on line 2—2 of FIG. 1.

FIG. 3 is a front elevational view of the apparatus with the top and front panels of the cabinet removed.

FIG. 4 is a sectional view on an enlarged scale taken on line 4—4 of FIG. 1, showing portions of a can selecting mechanism.

FIG. 5 is a sectional view on an enlarged scale taken on line 5—5 of FIG. 3 showing various details of the cup and can handling mechanism.

FIG. 6 is a top plan view on an enlarged scale of the cup heating and agitating means per se.

FIG. 7 is a sectional view taken on line 7—7 of FIG. 6.

FIG. 8 is a top plan view on an enlarged scale of a portion of the can handling mechanism.

FIG. 9 is a sectional view taken on line 9—9 of FIG 8.

FIG. 10 is a sectional view on an enlarged scale of a portion of a coin collection and control box employed in the apparatus.

FIG. 11 is an electrical diagram of the cycle control circuit of the apparatus.

Referring to FIGS. 1 and 2, there is shown a cabinet **10** including side walls or panels **12, 14**, a bottom panel **16** and rear panel **18** all secured together to form a unit. Front panel **20** is removably disposed in channels formed at the forward ends of the side walls by flanges **11** and **13**. A removable top panel **22** is disposed over the cabinet and is held thereon by padlocks **24** engaged in side lugs **25, 26** and rear lug **27** extending upwardly from the side and rear panels through openings in the top panel. When the top panel is removed, the front panel can be removed by sliding it vertically upward out of the channels **11, 13** in the side walls. FIG. 3 shows the apparatus with the top and front panels removed. The front panel **20** is formed with an opening **28** in which is set a transparent glass or plastic window pane **30**. Below the pane **30** is a rectangular cutout **31** in which is fitted a rectangular control box **32**. This box contains the electrical and timing controls of the apparatus. The box has a flange **33** which abuts the back of the panel at the cutout **31**.

In the front of the control box are coin slots **34** marked with indicia **35** whereby a patron may select one of the fluids or beverages to be dispensed by the apparatus. Condiments such as cream, sugar, lemon and the like may be dispensed with a selected fluid or beverage by push buttons **36** disposed on a line with the coin slots. The box has a removable back **29** providing access to the box for collecting coins and adjusting the controls.

An opening **37** is provided in the window **30** through which a patron can reach his hand and remove a cup of the selected beverage when it is ready for being dispensed by the apparatus. This opening may be covered by a door hinged to the window if desired. The several beverages are contained in cylindrical cans **38** disposed in columns in an inclined rack **39**, as best shown in FIGS. 2 and 3. The rack is divided into a plurality of compartments by partitions **40**. Each compartment contains a column of cans of the same kind or type of beverage. A bar **42** extends transversely across the rack over the second can from the bottom in each column. Holes **43** are formed in the bottom plate **44** of the rack. These holes are located near the lower end just above the lower end wall **45**. There is one hole **43** in each compartment behind the lowermost can C as best

shown in FIGS. 3 and 4. The rack 39 is supported by brace bars 46 on the back wall of the cabinet.

At each of the holes 43 is a plunger 48 of a solenoid 50. The solenoid is mounted on a bracket 52 on the bottom of the cabinet. The solenoid is connected in an electrical circuit via a cable 53 as will be described in connection with FIG. 11. In front of the lower end of the rack is an endless belt 54 entrained on rollers 56 and 57 at opposite sides of the cabinet. The belt is driven by a belt motor 58 energized via a cable 60 as will be described. Roller 56 is journaled in bracket 59 on side wall 12. Roller 57 is journaled in brackets 61 on the bottom of the cabinet.

At the right of roller 57 and closely disposed thereto is a carriage 62. This carriage has a recess 63 for receiving a can which has been discharged upon the belt, transported to the carriage and deposited thereon. The carriage 62 is a bar of rectangular cross section. A threaded hole 64 is formed in the bar. The bar is supported on a rotatable threaded shaft 66 which is vertically disposed and mounted on a motor 68 by which the shaft is driven. The shaft passes through the threaded hole 64 in the carriage bar. Two vertical guide rods 65 pass through eye members 67 secured to the side of the carriage bar. These rods are supported on the housing of motor 68. This motor is energized via a cable 69.

Just above the threaded shaft is a solenoid 70 supported by a bracket 72 on side wall 14. The solenoid has a plunger 74 supporting an electromagnet 76 which serves as a can grappling member. The solenoid has a spring 75 on plunger 74 for retracting the plunger when the solenoid is not energized. The solenoid is energized via a cable 77. The electromagnet 76 is energized via cable 73. The electromagnet has a shoe 79 depending therefrom as shown to best advantage in FIGS. 3 and 9. This shoe has an inclined side 79' which cooperates with a partially cylindrical recess 80 formed in the housing of the electromagnet for receiving a can C' delivered thereto by the carriage 62.

A vertical partition 82 extends forwardly from the rear wall and supports by a bracket 84 a clamp 85. The clamp carries a solenoid 86 provided with a plunger 87 having a triangular, sharp point 88 clearly shown in FIGS. 3 and 5. The plunger is disposed in an inclined position which is perpendicular to the inclined side 79' of shoe 79. A spring 89 normally retracts plunger 87 which is used to puncture or punch a large triangular hole in a selected can held on the grappling member 76.

In order to receive the fluid discharged from a punctured can there is provided an automatic cup dispensing device. This includes an inclined cylindrical tube 90. Part of this tube is broken away in FIG. 3 to show internal parts. The tube has a longitudinal slot 91 in which are slidably disposed handles H of a plurality of cups 93. The cups are carried in a nested condition in the tube. They are preferably lined with aluminum foil or the like and are prevented from dropping out of the open end 95 of the tube by a lever 96 which normally extends through a slot 97 in the side of the tube and engages under the lowermost cup. Lever 96 is the forward end of plunger 99 of a solenoid 100 supported on partition 82 by bracket 83. Pivotally attached to lever 96 and supported by arm 98 is another lever 105 carrying a forwardly extending finger 102. A spring 104 engaged between a post 101 on the solenoid and the upper free end of lever 105 normally retracts the finger 102. When the solenoid is actuated via cable 106 the lever 96 is retracted to release the lowermost cup. This cup falls into a cylindrical heater element 108 disposed below the tube 90.

Heater element 108 contains a resistance coil 110 which operates to heat a cup of a beverage as indicated at C'' in FIGS. 6 and 7. The heater is supported on a bracket arm 112 attached to a vertical post 114. The heater is open at the bottom and top thereof. The heater is energized via cable 113. Below the heater is a flange disk 116 formed at the top of a shaft 118. The shaft is a plunger of a double solenoid 120. This solenoid has first and second solenoid coils 122, 124 energized via cables 126, 128. The solenoid is a cylindrical member supported in a cup 125 by a bracket arm 130 on post 114.

A spring 132 in the solenoid normally holds the disk 116 in an elevated position. This disk serves as a platform for a cup C''. The solenoid 120 is arranged to vibrate the platform 116 in a manner to be explained in connection with FIG. 11. A vertical slot 117 in element 108 permits the handle H of the cup D to project therethrough.

A shelf 133 is horizontally disposed in the cabinet and supported between partition 82 and side wall 14 as shown in FIGS. 3 and 5. On this shelf are disposed a plurality of containers 134 of cream, sugar, lemon juice and other condiments or seasonings. Attached to each container at the lower end thereof is an outlet tube connected to and supporting a solenoid valve 136 which is energized via a cable 138. To the outlet end of the valve is connected a flexible tube 140. A plurality of such tubes 140 are held on the cup supply tube 90 by a removable spring clamp 142. The lower ends of the tubes 140 open just above the open upper end of heater element 108 and immediately below the open end 95 of the cup supply tube 90. Just below shelf 133 on a vertical partition 135 is supported a motor 143 operatively connected to a sprocket wheel 144, best shown in FIG. 5. Entrained on this sprocket wheel 144 and another sprocket wheel 146 is an endless chain 148. Wheel 146 is journaled on a bracket 150 carried on the side wall 14 of the cabinet. Suspended from the chain 148 are bracket plates 152 carrying an electromagnet 154. Attached to the electromagnet is a flexible power supply cable 156 which passes through an eye bolt 158 secured to the vertical partition 135 extending between partition 82 and side wall 14. A weight 162 is secured to the cable 156. A container 157 for empty cans C'' is located below the chain 148.

FIG. 10 shows a portion of the interior of the control box 32. A coin slot 34 is shown in the front wall of the box. Just below this slot and secured to the inner side of the front wall is an electrical contact 200. Horizontally spaced from contact 200 is a plunger 202 of a solenoid 204. The solenoid is supported by a bracket 201 on the top of the box. A plurality of partitions 205 are disposed on opposite sides of the slots 34 to define narrow chutes through which coins P may pass into the bottom of box 32 where they collect and are removable through the rear door 29 shown in FIG. 2. The plunger 202 is normally extended forwardly into each chute to prevent passage of the coin P deposited therein. When the plunger is retracted the coin falls into the collection space S below the chute.

A lamp 165 is mounted on partition 82 and is arranged to light when a cup of beverage is ready to be dispensed.

Before describing the electrical circuit of the apparatus it will be well at this point to describe the mechanical operation of the system. A patron selects a particular beverage to be dispensed by deposition of a coin in one of the slots 34. As soon as the coin is deposited, a fresh cup is discharged from the cup supply tube 90 into the heater element 108. At the same time, the heater element becomes energized and begins to heat up. The patron may press one or more of the condiment buttons 36 at this time or any subsequent time during the cycle to effect discharge of a quantity of the selected condiment into the cup in the heater. The spring 132 holds the platform 116 in abutment with the bottom of the heater to support the cup in the heater.

As soon as the coin is deposited in the coin slot, the solenoid 50 is actuated and plunger 48 advances to push can C at the bottom of a selected column of cans out

on to the belt 54 which has just started moving. Bar 42 holds the second can while the bottom can is being pushed out. The belt carries the selected can to the carriage bar 62 where the can is deposited in the recess 63. The motor 68 now starts turning the threaded shaft 66 and the carriage bar 62 is elevated until it reaches an upper position where electromagnet 76 engages the can. The electromagnet 76 becomes energized while the carriage is rising on shaft 66. As soon as the carriage reaches its upper position, the motor 68 is reversed and the carriage is brought down to its initial position at belt 54. The belt 54 has now stopped. As soon as electromagnet 76 engages the can of beverage, the solenoid 70 is energized and the can C' is advanced to a position over the heater as indicated in FIG. 5. The solenoid 86 is now energized and the plunger 87 is advanced to pnncture the can. The can C' is being held in an axially inclined position so that the triangular opening T formed in the can is lowermost. The contents of the can pours out into the hot cup D in the heater. While the cup is being held in the heater, the first solenoid coil section 124 of the solenoid 120 becomes energized by a periodically interrupted current supply as cup D is being filled from can C'. The platform vibrates at a rapid rate up and down. Soon thereafter when the contents of the cup become thoroughly heated and mixed, solenoid coil 124 is deenergized and coil 122 is energized. The platform 116 is lowered to rest on the top of the housing of solenoid 120. This places the cup in horizontal alignment with the opening 37 in the front of the cabinet. At the same time the lamp 165 lights. The patron is thus signaled that the cup is ready to be removed. The handle of the cup extends forward and can be grasped by the patron who removes the filled cup from the cabinet.

The empty can held by the electromagnet 76 is retracted after it is emptied. This can is now engaged by electromagnet 154 which has advanced by means of the driven chain 148 to a position adjacent to the retracted electromagnet. Electromagnet 76 becomes deenergized and the empty can is now withdrawn by electromagnet 154 which is carried back by chain 148 to a position over can container 157. The electromagnet 154 is now deenergized and the empty can drops into the container 157.

When the can is initially pushed out of the selected column or pile of cans, the entire pile descends gravitationally to fill up the space vacated by the lowermost can C.

In order to effect release of a cup from the pile of cups 93, the solenoid 100 is energized. This causes lever 96 to retract while finger 102 is advanced to engage the rim of the second cup from the bottom of the pile. The retraction of lever 96 causes release of the bottom cup which falls into the heater 108. The solenoid 100 is then deenergized which extends lever 96 and retracts finger 102 so that the entire pile of cups descends gravitationally and is supported by lever 96 as indicated in FIG. 3.

In order to perform this cycle of operations, there is provided the circuit shown in FIG. 11. This circuit includes a plurality of power supplies designated PS1–PS15. These power supplies may be taken as various taps E off of a rectifier 250 which is energized via cable 15 and transformer 251 from a suitable alternating current power supply PS. Cable 15 is connected to the control box 32 and terminates outside the cabinet as indicated in FIGS. 1–3. All the motors, solenoids and electromagnets of the apparatus are connected by wires to the control box. These wires enter the control box in a single cable of insulated conductors 17 as indicated in FIG. 2.

Within the control box is a timing or cycling disk 252 made of insulation material. This disk carries a plurality of arcuate electrical contacts 260–276 arranged in pairs, with the contacts in each pair spaced radially from each other. The disk carries a bar 290 made of insulation material and having spaced conductive shorting elements or contacts 291 thereon. The bar 290 is carried by a rotatable shaft 299 driven by a motor 300 via a suitable speed reducing gear box 302. Contacts 260 are connected to the belt motor 58 and power supply terminals PS4. One of the power supply terminals PS5 is connected to one of contacts 261 and to one of contacts 263. The other of terminals PS5 is connected to one of contacts 262 and one of contacts 275. One terminal of the carriage motor 68 is connected to the other of contacts 261 and to the other of contacts 275. The other terminal of the carriage motor is connected to the other of contacts 262 and to the other of contacts 263. Contacts 264 are connected to the terminals of PS8 and a direct drive control means 302 for the chain motor 143. Contacts 265 are connected to terminals of PS10 and a reverse drive control means 304 of motor 143. Contacts 266 are connected to electromagnet 154 and terminals of PS9. Contacts 267 are connected to electromagnet 76 and terminals of PS6. Contacts 268 are connected to the solenoid 70 and terminals of PS7. Contacts 269 are connected to terminals of PS13 and electromagnetic vibrator 306. This vibrator has two movable contacts 308 and 310 which coact with fixed contacts 309 and 311.

Solenoid coil 124 is connected to terminals of PS13 via contacts 311. Contacts 270 are connected to the resistance coil 110 of heater 108 and to terminals of PS11. Contacts 271 are connected to electromagnet 85 and terminals of PS15. Contacts 272 are connected to the solenoid 100 and terminals of PS11. Contacts 273 are connected to lamp 165 and terminals of PS14. Contacts 274 are connected to PS14 and to all of the solenoids 204 in parallel. Contacts 276 are connected to solenoid 122 and to PS12.

All of the contacts on the timing disk 252 are arranged to extend for a predetermined angular distance on the disk. The disk is marked at positions $T_0$, .1T, .2T, .25T, .5T, and .75T. The bar 290 makes one complete revolution to perform the full operation cycle of the apparatus. Suppose that a coin P is inserted in any one of the coin slots 34 and comes to rest as indicated in FIG. 11 on plunger 202 and contact 200. The power supply circuit of the relay 320 connected to contact 200 is closed via power supply terminals PS1. This relay becomes energized and its contacts 322 and 324 close.

The closing of contacts 322 energize the solenoid 50 of plunger 48 to eject the selected can C out on to the belt 54. The closing of contacts 324 closes the power supply circuit through PS3 and starts the motor 300. The bar 290 starts turning from its initial position $T_0$ and first encounters contacts 260 which starts the belt motor 58 as shorting element 290 closes contacts 260. Immediately thereafter the cup release solenoid 100 is energized as its contacts 272 are closed and a cup is discharged into the heater 108. Next the bar leaves contacts 260 about position .1T and the belt motor stops. Next contacts 261 and 262 are closed and the carriage motor becomes energized. By this time the carriage has received the can from the belt and is driven or elevated upwardly on shaft 66. Next contacts 267 are closed to energize the electromagnet 76 to await the arrival of the can being raised on the rising carriage. Next the contacts 261, 262 open at about position .2T and contacts 263, 275 close which reverses the direction of the carriage motor and the carriage bar 62 descends leaving the metal can held by magnetic attraction on the electromagnet 76. Immediately after the can is engaged by electromagnet 76 the solenoid 70 is energized and the can is advanced over the cup in the heater. The heater begins heating at the beginning of the cycle as its contacts 270 are closed. Contacts 263, 275 open at about position .25T as the carriage reaches belt 54.

After the can is advanced over the cup in the heater, the contacts 271 are closed and the solenoid 85 is energized so that plunger 87 punches a hole in the can. The solenoid is quickly deenergized and the plunger 87 retracts as the fluid pours out into the cup D. Soon there-

after about position .5T vibrator **306** becomes energized. Its contacts **308, 309** open the vibrator circuit to deenergize the vibrator, whereupon the contacts close. Thus the vibrator is caused periodically to open and close the associated contacts **310, 311** so that an interrupted current is applied to solenoid **124**. The spring **132** normally holds the filled cup elevated on the platform **116**. The interrupted current applied to the solenoid **124** causes the platform to vibrate since the magnetic force is applied to retract the shaft **118** downwards. Each time the solenoid's current supply is interrupted the spring restores platform **116** to abutment with the heater element. The excursion of movement of the platform is very small but the vibration is effective to cause the contents of the cup to become thoroughly agitated or mixed. When the bar reaches contacts **264**, the chain motor is energized to bring the electromagnet **154** up to the empty can held by the electromagnet **76**. The electromagnet **154** is energized when contacts **266** are reached just before electromagnet **76** is deenergized as contacts **267** are opened. Immediately after the electromagnet **154** reaches electromagnet **76** it receives the empty can and the chain motor is reversed as contacts **265** are reached. The empty can is carried to a position over the container **157** and at about position .75T of the bar **290**, the electromagnet **154** is deenergized so that the empty can is deposited into the container **157**.

As contacts **276** are reached by bar **290**, solenoid coil **122** is energized while solenoid **124** is deenergized. The steady current applied through coil **122** causes the shaft **118** to be retracted which lowers the heated cup down from the heater and it stops opposite the opening **37** in the window pane **30**. At this point contacts **273** are reached which lights lamp **165**. This lamp may be a red, green or other colored light which will serve as a signal that the cup is ready to be removed from the dispenser. Contacts **274** are also reached which causes solenoids **204** to be energized and the plungers **202** are retracted, whereupon the coin P is released and falls into the coin collection space S in the box **32**. If a second coin is deposited in the apparatus before completion of the cycle into the same or a different slot, it will not affect the cycle and will be collected when its supporting plunger **202** is retracted at the end of the cycle. When the coin is collected the relay **320** becomes deenergized and the cycle motor stops.

There has thus been described a system in which a patron may select a desired type of beverage by depositing a coin in a selected coin slot. The beverage will remain fresh and sanitary until the can is opened. Then the contents of the can will be deposited into a clean cup which will be immediately heated, stirred and delivered to the patron in a hot, palatable condition with selected seasoning. The empty can will be discarded automatically. The apparatus will be ready at once to deliver another cup of beverage after completion of a cycle.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and that various changes and modifications may be made within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new and desire to secure by United States Letters Patent is:

1. An apparatus for dispensing a cup of heated, mixed beverage, comprising a stationary hollow, cylindrical heating element disposed axially vertical, means for dropping one empty cup at a time into said element, means for discharging said beverage into the empty cup, valve controlled means disposed to discharge a selected quantity of condiment into the cup in addition to the beverage, means for energizing the heating element to heat the beverage and condiment in the cup, said heating element having an open bottom, a spring supported platform normally closing the open bottom of the heating element and supporting said cup therein, said platform being retractable downward in a vertical direction to remove the cup from said element, a solenoid operatively connected to the platform, a periodically interrupted current supply means, a steady current supply means, circuit means for applying the periodically interrupted current to the solenoid to vibrate the platform while the beverage is heating in the cup, and circuit means for cutting off the periodically interrupted current, for deenergizing the said heating element and for applying the steady current to the solenoid to lower the platform and remove the cup containing heated, mixed beverage and condiment from said heating element.

2. An apparatus for dispensing a cup of heated, mixed beverage, comprising a stationary hollow, cylindrical heating element disposed axially vertical, means for dropping one empty cup at a time into said element, means for discharging said beverage into the empty cup, valve controlled means disposed to discharge a selected quantity of condiment into the cup in addition to the beverage, means for energizing the heating element to heat the beverage and condiment in the cup, said heating element having an open bottom, a spring supported platform normally closing the open bottom of the heating element and supporting said cup therein, said platform being retractable downward in a vertical direction to remove the cup from said element, a solenoid operatively connected to the platform, a periodically interrupted current supply means, a steady current supply means, circuit means for applying the periodically interrupted current to the solenoid to vibrate the platform while the beverage is heating in the cup, and circuit means for cutting off the periodically interrupted current, for deenergizing the said heating element and for applying the steady current to the solenoid to lower the platform and remove the cup containing heated, mixed beverage and condiment from said heating element, there being circuit means to cut off the steady current applied to the solenoid after the cup is removed from the lowered platform, whereby said spring elevates the platform to close the open end of the heating element for receiving another empty cup.

3. An apparatus for dispensing a cup of heated, stirred beverage, comprising a stationary hollow cylindrical heating element disposed axially vertical for receiving said cup and heating the beverage therein, said heating element having an open bottom, a spring supported platform normally closing the open bottom of said heating element, said platform being retractable downwards in a vertical direction to remove the cup from said element, a solenoid operatively connected to the platform, a periodically interrupted current supply means, a steady current supply means, means for applying the periodically interrupted current to the solenoid to vibrate the platform while the beverage is heating in the cup, and circuit means for cutting off the periodically interrupted current and applying the steady current to the solenoid a predetermined time after heating and vibrating the beverage in the cup, to lower the platform and remove the cup from said element, said heating element being longitudinally slotted so that a handle on the cup is oriented in a predetermined direction as the platform lowers the cup out of the heating element.

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