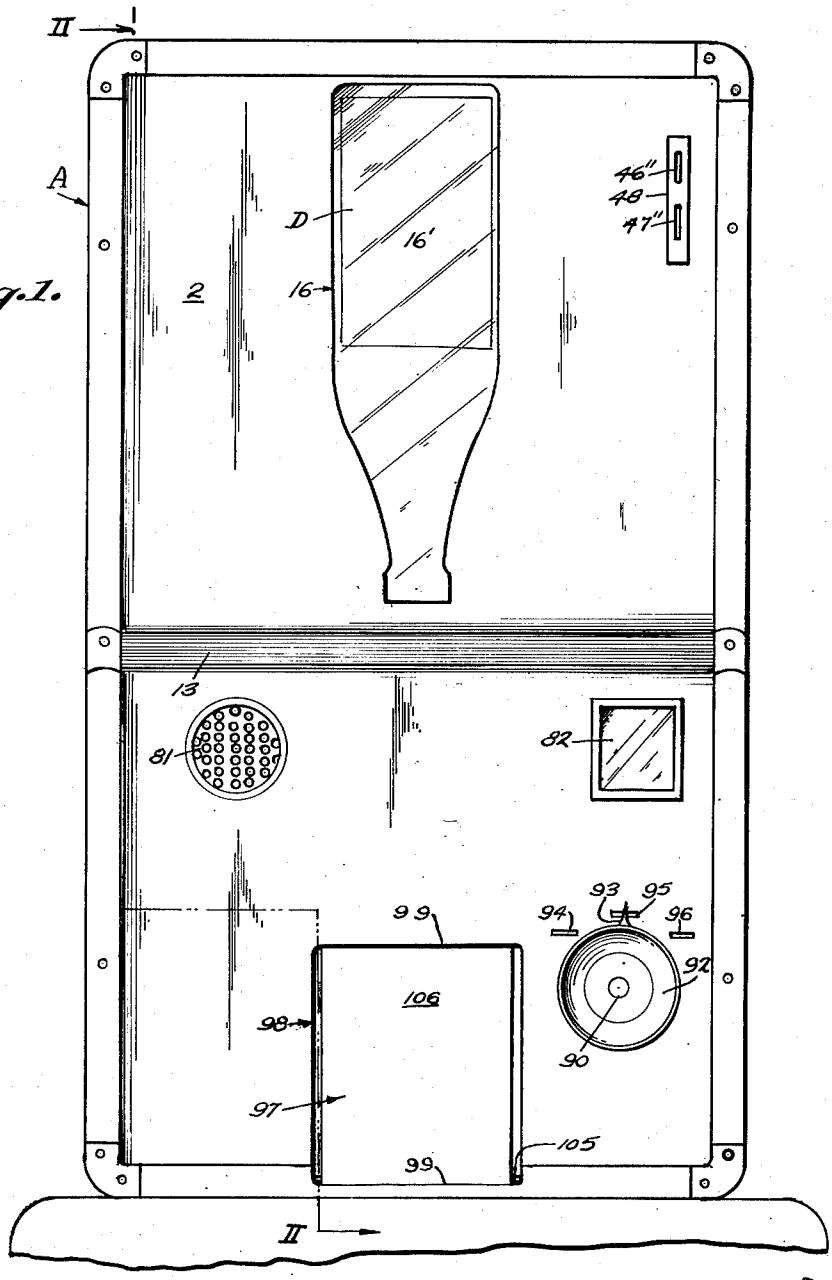
May 21, 1957 R. M. SUTPHEN ET AL 2,792,920

COMBINATION VENDING, FLUID DISPENSING AND ADVERTISING DEVICE

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Fig. 1.



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Fig. 4.

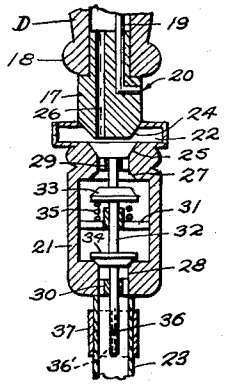


Fig. 5.

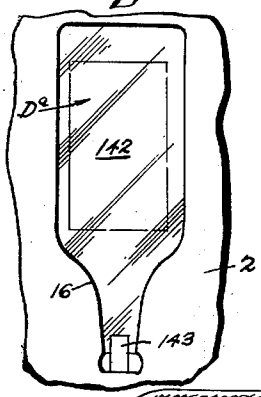


Fig. 2.

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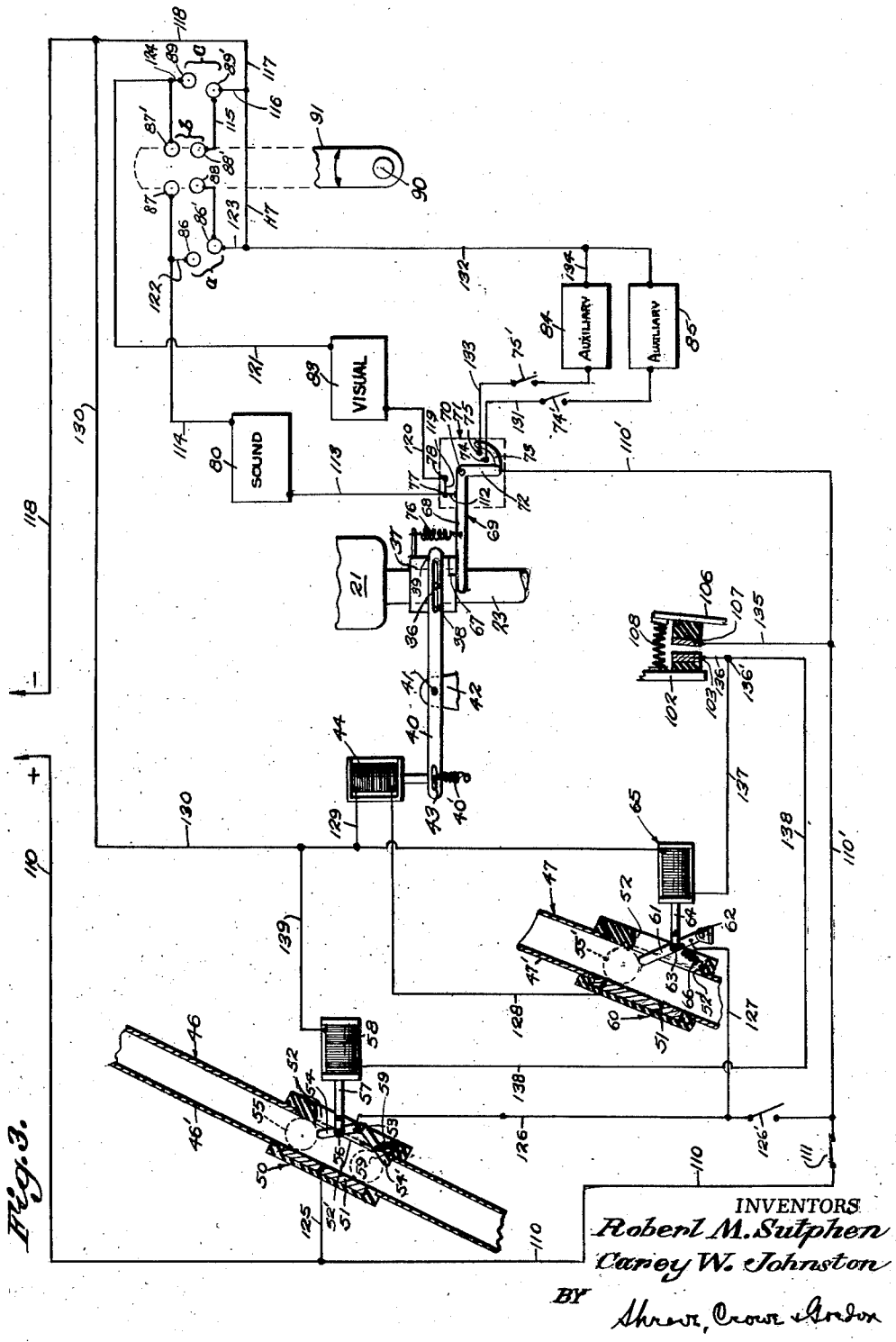


Fig. 3.

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2,792,920

COMBINATION VENDING, FLUID DISPENSING AND ADVERTISING DEVICE

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Application November 10, 1949, Serial No. 126,534

4 Claims. (Cl. 194—6)

Generically this invention relates to beverage vending and dispensing devices, but it is more particularly directed to a coin and electrically controlled combination fluid vending and advertising device.

In present devices it is the practice to employ a reservoir which is filled and refilled from time to time from an original container, whereas, in the instant device, one of the principal objects is the provision of a reservoir, which in every instance is an original container, purchased by the vending device proprietor and simply inserted in correct position in the device. Thus the consumer has absolute assurance that he is purchasing the original product and without possibility of adulteration, substitution or contamination thereof as vended.

An important object of this invention is the provision of a beverage dispensing apparatus, wherein the final step of depositing the actual drink in the consumer container does not occur during the normal cycle of operation, that is, the cycle is halted one step prior to the completion of the dispensing operation pending consummation of the final step.

A further object of this invention is the provision of a device of this character designed to be coin and electromechanically operated, but the final step of depositing the measured product in the consumer receptacle being at all times an independent operation, and not occurring in continuous sequence with respect to the above-referred-to initial dispensing operation. The first stage of the final step in the dispensing operation consists in placing the consumer receptacle in operative position to receive the beverage drink being dispensed, and the second stage of completion of said final step is the removal of the filled container which completes the vending operation.

There are certain types of beverages such as alcoholic liquors and the like, the sale of which is governed by law and subject to legal restrictions as to handling, etc., and therefore, a still further object of this invention is the provision of a vending device designed to effect the sale and dispensing of such beverages in compliance with all legal requirements; therefore the original container, if it bears a Government stamp or seal is adapted to be so held by the device that the required portion of the stamp or seal attached to the container is readily visible as well as the manufacturer's label and its contents. The device is adapted to be used by patrons of night-clubs, taverns and other places of entertainment or the like, wherein alcoholic beverages are sold. In cases where the device involves use by minors it is intended to be operated by means of special slugs, which are only obtainable by the procurer of the slugs satisfactorily proving to the operator that said procurer is of the legal age to obtain such alcoholic beverages.

Another important object of this invention is the provision of a device of this character designed to display advertising matter, visual and/or audible, occurring simultaneously with or at a predetermined time in connection with the normal operation of the device. In certain instances, an optical slogan or advertising matter may be

directed to the beverage being dispensed and displayed during the operation of the device. Further, an audible means is also provided whereby a slogan or advertising matter may be heard calling not only the consumer's attention to the product of the device, but others within hearing distance, thereby tending to attract patronage to the machine. The optical and display features may be operated independently or simultaneously with each other, and the dispensing operation, as desired.

An important object of this invention is the provision of a combination coin operated fluid dispensing and advertising device comprising one or more coin chutes wherein the deposited coins are momentarily retarded during their passage therethrough, said device including a fluid container, a measuring device in connection with the container, means for admitting flow of the container contents to the measuring device, said means being controlled by the coins during their period of retardation, and electro-magnetic means for releasing the coins and simultaneously discharging the contents of the measuring device to a beverage fluid-receiving container for consumption.

Another important object of this invention is the provision of a combination coin operated fluid dispensing and advertising device including fluid measuring and dispensing mechanism and audible and visual advertising apparatus, and including means for momentarily retarding passage of the coins through said chutes, said dispensing mechanism and advertising apparatus being controlled by the coins during their period of retardation, and additional means for releasing the coins and simultaneously discharging the measured fluid to a container for consumption.

A still further important object of this invention is the provision of a combined coin operated fluid dispensing and advertising device comprising dual coin chutes including means for momentarily retarding passage of the coins through said chutes, said device including a beverage fluid container and means for permitting flow of a portion of the contents of the container into a measuring device, and primary and auxiliary audible and visual advertising apparatus, said primary and said auxiliary advertising apparatus being controlled by the coins during their retardation, and additional means for releasing the coins, discharging the contents of the measuring device, and simultaneously rendering the auxiliary apparatus inoperative and the primary apparatus operative.

Another important object of this invention is the provision of a combination coin operated fluid dispensing and advertising device so designed, that the coins upon being deposited in the device will be momentarily retarded, and during the period of retardation, the dispensing mechanism will effect the flow of a predetermined portion of the fluid into a measuring device, and means for simultaneously projecting the audible and advertising matter, both of said means being controlled by said coins during their period of retardation, and additional means operable to effect release of the coins, discharge of the contents of the measuring device into a consumer container, and completion of the dispensing and advertising cycle, by positioning the container in beverage receiving position and removing it therefrom.

With these and other objects in view, which will become apparent as the description proceeds, the invention resides in the construction, combination, and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which like characters of reference indicate like parts throughout the several figures, of which:

Fig. 1 is a front view of the exterior of the machine or cabinet A.

Fig. 2 is a vertical sectional view taken on the line

II—II of Fig. 1 looking in the direction of the arrows.

Fig. 3 is a diagrammatic representation of the electric circuits employed in controlling the apparatus and operating connections.

Fig. 4 is a fragmentary vertical sectional view through the measuring chamber and connections with the valve members in elevation.

Fig. 5 is a fragmentary front view of the cabinet (Fig. 1), showing a modified original container for liquor and the like, and visibly displaying the brand label and government revenue strip stamp.

In the illustrated embodiment characterizing this invention there is shown a cabinet A formed with a top 1, a front wall 2, bottom 3, and a rear wall portion 4 extending upwardly from bottom 3 and horizontally inwardly to front wall 2 and formed with a downwardly extending flange 5 welded or otherwise secured to said front wall 2, and forming a top portion 6 of the base portion B, said portion B forming a lower compartment 7. Upper rear wall 8 terminates in a rearwardly extending flange 9 seating on and welded or othewise secured to portion 6. Said rear wall 8 is formed with an opening 10 closed by a door 11 having an operating handle 12 and hingedly or otherwise suitably mounted on said wall 8. Said front wall 2 is formed with an outwardly and downwardly offset section 13 whereby the lower portion of the upper compartment C is slightly wider than the upper part.

In the present instance an original beverage fluid container D is mounted in a pair of spring clip holders 14, the base portions 15 of which are welded, riveted, or otherwise suitably secured to the inner surface of wall 2 spaced downwardly from top 1.

Container D is preferably an original container for the beverage to be dispensed, and in order that it may be viewed by a prospective customer the front wall 2 is cut out as at 16 to conform to its configuration. Said cut out portion is suitably closed by a transparency 16', and which may if desired comprise the upper portion of wall 2.

Referring now to Figs. 2 and 4 it will be noted that a stopper like member 17 is inserted in the open end 18 of an inverted container D, the stopper member preferably being provided with a pipette 19 extending within the container to a point above the contents level when the container is approximately full, to permit normal air pressure to be maintained above the level of the contents, and at its lower end extending to the outer surface of the stopper as at 20. Frictionally engaging stopper 17 is a cylindrical measuring chamber 21 having at its upper end an expansion chamber 22, in which frictionally seats stopper 17, and at the lower end of chamber 21 is an outlet spout or tube 23. The lower end of stopper 17 is formed with a conical surface 24 adapted to be in communication with the complementally formed conical shaped opening 25 in the upper end of measuring chamber 21. The stopper 17 is also provided with a passage 26 effecting communication between the container D and the measuring chamber 21. The measuring chamber 21 is formed with inlet opening 27 and outlet opening 28 and mounted in the respective openings 27 and 28 are the bearing spiders 29 and 30 and mounted in said chamber is an intermediate spider 31. Reciprocally mounted in said spiders is a valve rod 32 carrying upper valve member 33 and lower valve member 34 adapted to seat respectively, against the upper end of the valve chamber to cut off the liquid flow from the container D and against the valve seat at the lower end to retain the fluid in the measuring chamber until it is to be discharged into the consumer container as will directly more fully appear.

The valve rod 32 is normally urged upward by a spring member 35 which is suitably mounted on said rod and seating on spider 31 beneath valve 33. The said valve rod at its upper end may be so constructed as to close the lower end of passage 26 when the upper valve 33 is in valve seating position, if desired. The lower end of valve rod 32 is provided with a horizontal pin 36 which extends through slots 36' in discharge tube 23, through collar 37 slidably mounted on said tube, and through slots 38 in arms 39 of yoke member 40 mounted on pin 41 extending through the upper end of a supporting standard 42 suitably supported on top 6 of compartment 7, which also constitutes bottom 6' of compartment C. The free end of yoke 40 is pivotally attached as at 43 to solenoid 44 supported by a supporting element 45 suitably secured to portion 6 adjacent standard 42.

Mounted in the cabinet A is a pair of coin chutes 46 and 47, respectively, their upper ends being in communication with the coin slots 46'' and 47'' formed in the cap plate 48 mounted on front wall 2. These chutes extend diagonally downward and discharge into coin box 49 in the lower compartment 7 (Fig. 2). Mounted on coin chute 46 is a collar 50 of insulation material having a metal insert 51 embedded therein and extending through and insulated from the wall 46' of chute 46, said collar and opposite wall portion being formed with registering slots 52 and 52', respectively, and in which slot 52 is pivotally mounted, as at 53, angle arm 54, the upper end of said arm normally projecting within the chute so as to momentarily arrest a coin 55, and connected to its upper portion as at 56 is a core or arm 57 of solenoid 58. Arm 54 is insulated from its shaft 53, core 57 and connection 56. After the coin has been momentarily held as shown in Fig. 3, operation of solenoid 58 pulls the upper arm portion out of its coin-supporting position and simultaneously positions the lower arm 54' into coin-retarding position where the coin is held, and upon deenergization of said solenoid 58 said lower arm is retracted by spring 59 permitting the coin to fall into coin box 49.

A similarly constructed insulation collar 60 has, similar to collar 50, a metal insert 51, and similarly registering slots 52 formed in collar 60 and 52' in the adjacent wall 47' of chute 47. A contact arm 61 pivoted as at 62 extends through said slots and is pivotally connected intermediate its length by pivot 63 to core or arm 64 of solenoid 65. Said arm 61 is anchored to said collar by spring 66 and is insulated from its slot and pivoted connections similar to arm 54. Said arm 61 normally projects within chute 47 to momentarily retard coin 55', and energization of solenoid 65 withdraws arm 61 permitting coin 55' to drop into coin box 49, spring 66 returning said arm to coin-obstructing position upon deenergization of said solenoid.

Solenoid 44 is energized by dropping the coins 55 and 55' into chute 46 and 47, which raises the free end of yoke 40 lowering collar 37 and valve 33, permitting flow of a portion of the fluid from container D into the measuring chamber 21 where it will be momentarily held. The spring 40' attached to yoke 40 returns said arm to its initial position, closing valve member 33 and opening valve 34 upon deenergization of solenoid 44, permitting said fluid, held in said measuring chamber 21 pending the consummation of this final step, to flow into the consumer receptacle E by placing said receptacle E in beverage fluid-receiving position, as will directly be more fully explained. Lowering of collar 37 causes its insulated lug 67 to engage and lower long arm 68 of switch 69 pivoted as at 70 and mounted in switch box 71. Instead of lug 67, long arm 68 beyond switch box 71, may be constructed of insulating material if desired. Switch 69 has a right angle short arm portion 72 engageable at all times with a segmental contact plate 73, and positioned above and adjacent the upper end of said plate are contacts 74 and 75 insulated from said segment plate and adapted to be bridged by arm 72 when collar 37 is in its lowermost position and has moved long arm 68 to its lowermost position. Spring 76 attached to arm 68 returns said arm to its horizontal and normal position upon deenergization of solenoid 44 and the return of collar 37 to its normal elevated and upper beverage valve clos-

ing position. Also mounted in the upper portion of said switch box are posts 77 and 78.

Mounted in compartment C on bracket 79 suitably secured to wall 2 is audible box 80 adapted to house the primary advertising sound projector apparatus including a wire recorder or the like, said box terminating in sound screen 81 in front wall 2. (Figs. 1 and 2.) Also suitably mounted in compartment C and viewable through window 82 is a primary moving picture and/or video visual advertising apparatus 83.

Auxiliary audible advertising and display apparatus 84 and auxiliary advertising visual display apparatus 85 are suitably mounted in compartment C; these instrumentalities are preferably adapted to operate during the vending operation. Said primary apparatus 80 and 83 are adapted to be automatically turned on upon completion of the vending cycle and will operate until cut off by the introduction of coins by a customer or by opening switch 111 intermediate the vending operations or cycles. Suitably mounted in compartment 7 and spaced from front wall 2 are a pair of contacts 86—86′ designated (*a*), and another pair 87—87′ and in downwardly spaced relation with respect thereto another pair 88—88′ both pairs designated as (*b*), and spaced therefrom is another pair 89—89′ designated (*c*), these three contact units *a*, *b*, and *c* being arranged in arcuate relation. Mounted on shaft 90 is a selector switch arm 91, said shaft extending through front wall 2, and having keyed or otherwise secured thereon an operating wheel 92 having a pointer 93 in superimposed alignment with respect to selector arm 91.

Affixed to the front wall or panel 2 and overlying the respective contact units *a*, *b*, and *c* are the card indicia bearing holders 94, 95 and 96 provided with appropriate lettering, holder 94 designating audible, holder 95 designating audible and visual, and holder 96 designating visual. In addition to said designations, announcement can be made of the nature of the display to be projected, so that a prospective customer can selectively move the arm 91 by the setting on wheel 92 to close the circuit of a selected card holder 94, 95 or 96. A recessed chamber or niche 97 is positioned centrally at the front of the cabinet A so that bottom 3 of compartment 7 also constitutes the bottom of the chamber or niche. An opening in front panel 2 of slightly less diameter than that of the niche proper is cut out so that the surrounding portion can be bent inwardly bordering the opening 98, so as to form a binding 99 for the edge and sides of the opening as shown in Fig. 2, and the top edge is bent inwardly to form a ledge 100 on which is seated one end of member 101 forming the top of the chamber or niche, and extending rearwardly and downwardly therefrom is a portion forming a contact support 102 on the inner surface of which is suitably mounted an insulated contact 103. Hingedly connected to ears 104 by pin 105, said ears being formed on or suitably secured to the bottom 3, is an upstanding switch member 106 which may if desired be a movable section of the rear wall of the niche. Mounted on the outer surface of member 106 adjacent its upper end is an insulated contact 107 adapted for engagement with contact 103, and suitably secured to members 102 and 106 is a spring 108 adapted to normally maintain contacts 103 and 107 separated or in circuit opening position, as will directly more fully appear. Extending through the top 101 is the lower end of the beverage fluid discharge tube 23 to which is secured washer 109, or the lower end of said tube may be crimped to maintain said top member 101 in position.

Primary advertising apparatus and circuits

It is desirable, between vending operations, from an advertising standpoint and to attract patronage to the device, that the primary audible advertising apparatus 80 and visual advertising apparatus 83 be in operation. Therefore, mounted in the positive line 110 is, what may be termed advertising switch 111, which when closed, permits current to flow through conductor 110′ to segment 73, through switch member 69, conductor 112 and to binding post 77, divided through 113 to audible or sound apparatus 80, conductor 114, contact unit (*b*), selector switch arm 91, conductor 115, contact 89′, conductors 116 and 117 to negative conductor 118, and at the same time from said binding post 77 through conductor 119, 120, visual and/or video apparatus 83, conductor 121, contact unit (*b*), selector switch arm 91, conductor 115, contact 89′, conductors 116 and 117 to negative conductor 118.

If an interested party or customer prefers the sound projection only and positions the selector switch member 91 in bridging position with respect to the contact unit (*a*) the current will flow as above described from 80 through conductors 114, 122, contact unit (*a*), switch arm 91, conductors 123 and 117 to negative conductor 118, and similarly when switch arm 91 is in bridging engagement with contact unit (*c*), unit (*a*) will be cut off and the circuit will be completed from 83 through conductors 121, 124, contact unit (*c*), selector arm 91, conductors 116 and 117 to negative conductor 118, and whereby the visual apparatus 83 only will be operated. It will thus be seen that the selector switch arm 91 may be selectively set to effect whatever primary type of advertising is preferred by the customer or the public during any time when the machine is not in actual vending and liquid beverage dispensing operation.

Vending and fluid dispensing operation

Assuming that a customer wishes to buy some of the merchandise offered in the vending phase of the device, either as a result of the activity of the advertising apparatus, or otherwise, and a coin is deposited in the chute 46. (The first coin may be deposited in chute 47 without any change in operation.) This coin in chute 46 is arrested by angle arms 54, Fig. 3, and completes the portion of the electro-magnetic vending circuit from positive line 110, through conductor 125, insert 51, coin 55, angle arm 54, conductor 126, conductor 127, to arm 61. Switch 126′ is open and switch 111 is closed, (switch 111 is always closed whenever automatic advertising precedes the vending operation). The current for the advertising flows to the segment plate 73 and is drawn from line 110 through switch 111, conductor 110′ to segment plate 73. Another coin 55′ is deposited in chute 47 and is arrested by arm 61. This completes the balance of the electromagnetic vending circuit including the above as follows: arm 61, coin 55′, insert 51, conductor 128, solenoid 44 which has become energized, conductor 129, conductor 130, to conductor 118. The flow of current through solenoid 44 causes an upward vertical movement of the free end of yoke member 40 and the downward movement of yoke arms 39 and collar or sleeve 37 with insulated lug 67 in engagement with the long arm 68 of switch 69, moving said arm downwardly about its pivot 70 and raising short arm 72 along segment plate 73, with which it is always in engagement, a bridging engagement with contacts 74 and 75 completing the circuit from contact 74 through conductor 131, closed switch 74′, through auxiliary apparatus 85, conductors 132 and 117 to negative side or conductor 118, and at the same time from contact 75 through conductor 133, closed switch 75′ auxiliary apparatus 84 and conductors 134, 132 and 117 to the negative side or conductor 118. Therefore, the said movement of short arm 72 to bridging engagement with said contacts simultaneously cuts off the primary sound and visual apparatus 80 and 83 respectively, and cuts on said auxiliary apparatus 84 and 85. Said auxiliary apparatus audible and visual, or either without the operation of the other, depending upon which of the switches 74′ or 75′ is closed, will continue to display advertising matter throughout the vending operation or cycle, which may be

directed to the particular beverage drink being dispensed, or other matter as desired.

Simultaneously with the downward movement of the collar or sleeve **37**, the lower seating valve member **34** (Fig. 4) is brought downwardly to valve seating engagement at the bottom of the measuring chamber **21**, and the upper valve member **33** is brought away from its valve closing engagement with the measuring chamber inlet opening **27**, against the action of spring **35**, thereby permitting the contents of container D to fill the measuring chamber with the portion of the fluid beverage to be dispensed. Said beverage portion is held in said measuring chamber pending completion of the fluid dispensing step of depositing the said portion in the consumer receptacle E, as will now be more fully described.

Completion of the vending and advertising operations

When a customer starts to place the glass or container E in fluid receiving position it engages the normally open switch member **106** which acts as a stop for the correct positioning of the container E directly beneath the outlet tube **23** of the measuring chamber **21**, and, also, effects engagement of contact **107** with contact **103** against the action of spring **108**, closing the circuit from the positive conductor **110**, through closed switch **111**, conductor **110'**, conductor **135**, contacts **107** and **103**, conductors **136** and **137**, solenoid **65**, conductor **130** to negative conductor **118**. In this operation solenoid **65** is energized and its arm **61** is retracted from its coin supporting position against the action of spring **66**, permitting the coin to drop into coin box **49**, thus opening the circuit through **128** to, and deenergizing solenoid **44**, and permitting the spring **40'** to pull arm **40** down raising yoke arm **39**, collar **37**, valve rod **32** and valve **34** (Fig. 4), to permit discharge of the measured contents from the measuring chamber **21** into the consumer container E, and simultaneously seating upper valve member **33** closing inlet **27** and preventing flow of the fluid contents from container D.

Simultaneously with the raising of valve members **33** and **34**, as above described, the upward movement of lug **67** permits arm **68**, under the action of spring **76**, to return to its initial position, and short arm **72** to its initial perpendicular position, closing the primary circuits to the sound and visual apparatus **80** and **83** and opening the circuits to the auxiliary apparatus **84** and **85**. It is to be understood that the operation of the primary advertising apparatus may be controlled as desired by proper timed devices to vary operating time periods.

Simultaneously with the closing of switch **106** the circuit from said switch through conductor **136**, binding post **136'**, conductor **138** to solenoid **58**, conductors **139** and **130** to the negative line **118**, is closed, energizing said solenoid and causing core **57** to retract arm **54** from its coin supporting position, projecting the lower portion **54'** inwardly into coin retarding position and maintaining the circuit closed.

The above operation takes place while the measured portion of the beverage fluid is being discharged from the measuring chamber into the consumer container, and prior to the latter's removal.

Removal of the filled consumer container breaks the circuit at switch **106** thus deenergizing solenoid **58** and causing arm **54** to return to its original position, and at the same time allowing the coin to drop into coin box **49**. Simultaneously, the solenoid **65** is deenergized causing spring tensioned arm **61** to be returned to its original coin retarding position. A complete cycle of advertising and vending has now taken place, and the device is ready for another customer.

Further, with reference to the coin chute structures, it should be noted that while dual chutes **46** and **47** are shown, and are normally operative over a wide beverage price range, it will also be observed, that as to a low price range, for instance, the use of only one chute would simplify the operation, and to this end, the structural and circuit arrangement is such that when the chutes are empty, and the main circuits **110** and **110'** are closed, switch **126'** being closed, chute **46** may be eliminated and remain inoperative during the vending and complete advertising operating cycle, effected simply by dropping a coin in chute **47**, as will now be more fully explained.

In a device where only one coin chute, or the like, is necessary for its operation, in the present instance chute **47**, the operation is as follows:

Switches **126'** and **111** are closed. As heretofore shown, with the closing of switch **111** the primary automatic advertising feature will normally operate, the circuit being through conductor **110**, switch **111**, conductor **110'** to arm **72** and the primary advertising circuits to negative conductor **118**, and will continue to so operate until a coin is placed in chute **47** by a prospective purchaser of the vended article. The vending action then takes place as heretofore described. Said coin rests against insert **51** and on arm **61**, closing the circuit from **110** through switch **111**, closed switch **126'**, conductor **127**, arm **61**, coin **55'**, insert **51**, conductor **128**, solenoid **44**, and conductors **129** and **130** to negative conductor **118**, as will be well understood.

With further reference to the switches **111** and **126'** (Fig. 3) it is apparent that they may be operated in any suitable manner, such as by push buttons or the like, and having associated therewith directional indicia as to their operation or setting as desired. The switches **74'** and **75'** are normally closed but may be operated, similar to the above referred to switches, by push buttons or in any suitable manner, to open position to cut off either one or both of the auxiliary apparatus **84** and **85** from operating, as previously described.

It is clearly understood that the positive or plus conductor **110** and the negative or minus conductor **118** are suitably connected to a source of electrical energy. However, in the present instance they are shown as connected in a plug-in cord **140** (Fig. 1), the conventional plug **141** of which is adapted to be inserted in any conventional wall outlet, completing the circuit to said source of electrical energy. Said cord **140** extends through an insulating thimble **140'** suitably mounted in wall **8**.

In the modification as illustrated in Fig. 5 there is shown an original liquor or the like container D^a, positioned similarly or in the place of container D in Fig. 1 and with the brand label **142** and Government revenue strip stamp **143** clearly visible to the public and prospective customers, as and for reasons hereinbefore referred to. It is apparent, without further discussion, that the content of the container D^a is dispensed in the same manner as that of container D.

It is to be understood, that if desired, any suitable cooling means such as coils, for instance, enclosing the original container D or the measuring chamber **21** may be provided in order to deliver the beverage cooled to the consumer receptacle E.

Likewise, if desired to effect carbonation of the fluid being delivered to the consumer container, suitable well known carbonating means may be employed as well as adding a flavoring fluid or substance to the fluid from the original container D during the dispensing operation, if it is desired to do so, without departing from the spirit or scope of this invention.

Further, while not shown, it is to be understood that any prevalent suitable coin return mechanism may be employed without departing from the spirit or scope of this invention.

From the above it is apparent that we have provided a combination vending, fluid dispensing and advertising apparatus comprising one or more coin chutes, a fluid container, a consumer fluid receiving receptacle, a fluid measuring device in connection with the container, and electro-mechanical and electro-magnetic or solenoid means controlled by the movement of the coins through said chutes, whereby to control by certain of the electro-

mechanical and electro-magnetic means the flow of fluid to the measuring device, and at the same time effect operation of the advertising sound and visual devices, and then by positioning the consumer receptacle in fluid receiving position effecting operation of certain of said electro-mechanical and electro-magnetic means to permit the flow of the fluid from said measuring device into said receptacle, and simultaneously and predeterminedly control said advertising apparatus, removal of said filled consumer receptacle effecting operation of certain other of the electro-magnetic or solenoid devices and certain of the electro-mechanical means to complete the return of the coins to the coin-box and return of operating parts to their initial positions completing the venting and advertising cycle, such apparatus being automatically operable, responsive to the introduction of coins in said chutes, to the manual movement of the consumer receptacle to fluid receiving position, and to the removal of the filled receptacle, said device being simple in construction, manufacturable at a reasonable cost, and efficient for the purposes intended.

Although in practice it has been found that the form of the invention illustrated in the accompanying drawings and referred to in the above description as the preferred embodiment is the most efficient and practical, yet realizing that conditions concurrent with the adoption of the invention will necessarily vary, it is well to emphasize that various minor changes in details of construction, proportion and arrangement of parts, may be resorted to within the scope of the appended claims without departing from or sacrificing any of the principles of the invention.

Having thus described the invention, what is desired protected by Letters Patent is as set forth in the following claims:

1. A coin-operated liquid dispensing machine comprising, in combination, a coin collecting means, coin chute means for receiving purchasing coins for liquid being sold and for passing the coins to the coin-collecting means, retractable mechanism in the chute means for temporarily arresting passage of a coin introduced into the chute means, electromagnetically-actuated means associated with the chute means and connected to the coin arresting means, the said machine including a chamber for receiving a dispensing container for liquid being sold, and a compartment for receiving a consumer's receptacle, liquid measuring means intermediate the said chamber and the compartment, a dispensing container in the said chamber, a liquid-conveying conduit connecting the dispensing container with the measuring means and a liquid passage connecting the measuring means and the consumer's receptacle compartment, a two-way liquid-control valve in the measuring means for simultaneously opening the conduit and closing the said passage when the valve is in a first position for filling the measuring means with liquid from the dispensing container, the said valve when in a second position opening the passage between the measuring means and the compartment for filling a consumer receptacle in the compartment, further electromagnetically operated actuating means for the valve, an operating arm for the valve mechanically connecting the said means with the said valve for operating the latter between its first and second positions, and contrarily, responsively to electrical energization and deenergization of the said means, a source of electric current for the machine, the current source having a positive and a negative side, a pair of normally open control contacts for the machine positioned at the said compartment and including a fixed contact and a movable contact, mounting means for the movable contact for moving it into electrical engagement with the fixed contact responsively to placement of a consumer receptacle in filling position in the compartment, and electrical conductors interconnecting, in a first series circuit, the positive side of the source of current, the coin chute means and the actuating means for the valve, and back to the negative side of the source of current, the said first circuit being completed through a coin in the coin chute means held in arrested position by the retractable coin-arresting mechanism, the said first circuit by-passing the electromagnetically actuated means for the coin chute means and the normally open control contacts in the said compartment and energizing the actuating means for the valve for shifting the valve into its first position, and additional electrical conductors interconnecting in a second series circuit including a positive side of the source of current, the said control contacts, and the electromagnetically-actuated means for the coin chute means, thence back to the negative side of the source of current, the said second circuit by-passing the coin in the chute means and the valve-actuating means, the said circuit being completed by closing the control contacts responsively to insertion of the consumer receptacle into its compartment, the closing of the second circuit releasing the coin through retraction of the coin arresting mechanism responsively to energizing the electromagnetically-actuated means for the chute means when the second circuit is closed, the valve-actuating means being de-energized by closing the second circuit, thereby shifting the valve into its second position for filling the consumer receptacle with liquid from the liquid-measuring means.

2. The machine as claimed in claim 1 wherein the coin chute means comprise a pair of coin chutes, one of which is a first coin chute and the other of which is a second coin chute, and the electromagnetically actuated means comprise a first solenoid for the first coin chute and a second solenoid for the second coin chute, the retractable mechanism in each chute being a retractable electrically conducting arm extending into the chute and pivotally mounted therein for arresting passage of a coin introduced into the respective chute, the first and second solenoids having a coil and a core retractable into its coil responsively to electrical energization of the coil, each core being connected mechanically to the coin-arresting arm in its coin chute for retracting its arm into coin-releasing position responsively to energization of the respective solenoid coils, the first series circuit being from the positive side of the source of current through a coin in the first coin chute, through the retractable arm in the said first chute, to the retractable arm in the second coin chute, through a coin in the second chute to a coil of the valve-actuating means, through this coil, and back to the negative side of the source of current, thereby energizing this coil and moving the valve into its first position, the second circuit being from the positive side of the source of current through the normally open control contacts, now closed however, by engagement of the consumer receptacle with the movable control contact, thence through the coils of the first and second solenoids, which coils are in parallel, thence back to the negative side of the source of current, thereby simultaneously energizing both solenoid coils, energization of the solenoid coils retracting the cores thereof and retracting the coin-arresting arms in the coin chutes until the coins are released, thereby breaking the first circuit and deenergizing the coil of the valve-actuating means for shifting the valve from its first position into its second position for filling the consumer receptacle with liquid from the liquid-measuring means.

3. The machine as claimed in claim 2, wherein the coin-arresting arm in the first coin chute is electrically connected both to the coin-arresting arm in the second coin chute and also to the positive side of the source of current, and a manually controlled switch in the connection between the coin arresting arm in the first coin chute and the positive side of the source of current, opening of the said manually controlled switch causing current to flow through the first circuit, while closing of the said switch causes the current to by-pass the

first chute and enables the machine to be operated with the second chute only.

4. A liquid dispensing and signaling machine comprising, in combination, a current source having a positive side and a negative side, coin chute means for receiving the purchasing coins for liquid to be dispensed, retractable coin arresting means in the chute means, liquid supplying instrumentalities and electromagnetic actuating mechanism for the said instrumentalities, a pair of normally open control contacts for the machine including a fixed contact and a movable contact, electromagnetic means for operating the retractable coin arresting means, a first series circuit connected to the positive side of the current source through coins in the chute means and the retractable coin arresting means, through the electromagnetic actuating mechanism for the liquid supplying instrumentalities to the negative side of the current source, thereby energizing the electromagnetic actuating mechanism for the liquid supplying instrumentalities, a second series circuit connecting the positive side of the current source to the negative side thereof through the electromagnetic means for operating the coin retracting means, the movable control contact and through the fixed control contact, the second series circuit being energized responsively to closing said control contacts responsively to engagement of the consumer receptacle against the movable control contact, the second circuit being shunted across the first circuit for energizing the electromagnetic means for the coin chute means, the said electromagnetic actuating mechanism for the liquid supplying instrumentalities being deenergized by dropping of the coins in the chute means for producing flow of liquid from the liquid supplying instrumentalities into the consumer receptacle, a switch box in the machine, a pair of signaling means connected in parallel circuits including contact means in the switch box, one of the signaling means being audible means, the other being visual means, a pivotally mounted switch arm normally connected electrically to the said parallel circuits and to the positive side of the current source, a selector switch in the parallel circuits for the audible and visual signaling means, the parallel circuits for the audible and visual signaling means being connected to the negative side of the current source, a pivot mounting for the selector switch, the selector switch effecting selective operation of the audible signaling means, the visual signaling means, and both the visual and audible means simultaneously in accordance with the position of the selector switch, and lever means mechanically connecting the pivotally mounted switch arm to the electromagnetic actuating mechanism for the liquid supplying instrumentalities for actuating the switch arm responsively to deenergization and energization of the electromagnetic actuating mechanism.

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