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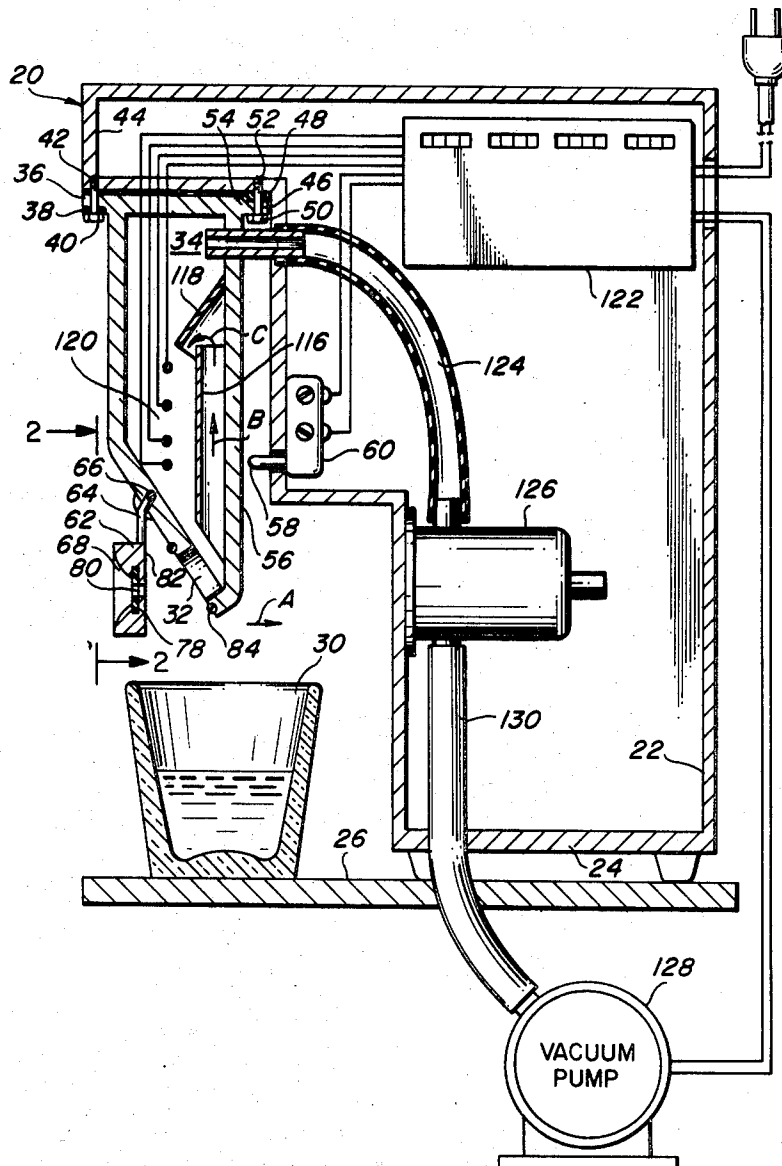
[54] **LIQUID DISPENSER AND RECORDER MEANS**
 26 Claims, 18 Drawing Figs.

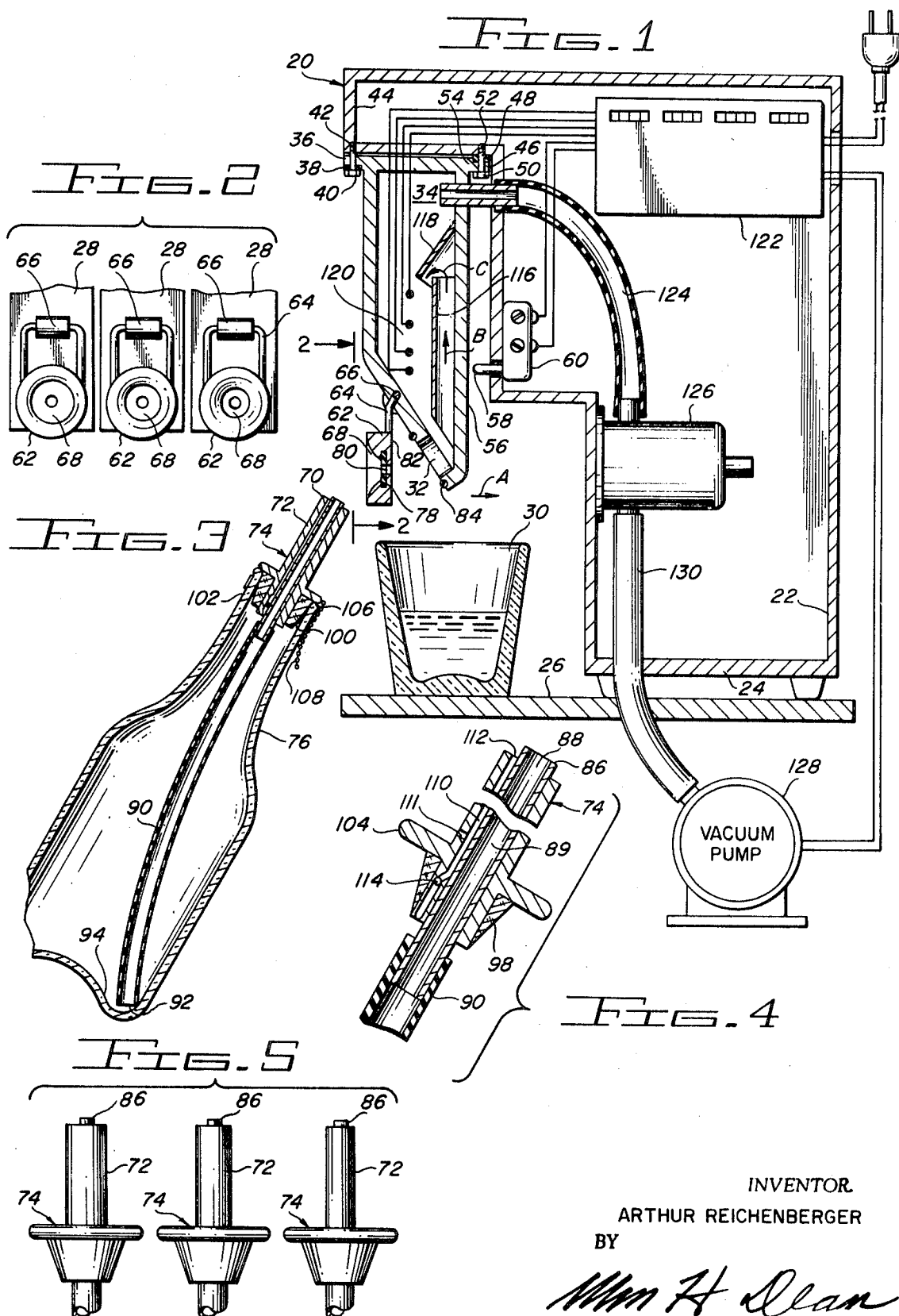
[52] U.S. Cl. 222/23,
 222/27, 222/129.1
 [51] Int. Cl. B67d 5/08
 [50] Field of Search 222/23, 42,
 36, 27, 325, 129.1, 129.3

[56] **References Cited**
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ABSTRACT: A liquor dispenser and recorder means particularly adapted for use in dispensing liquors in public barrooms, wherein a plurality of containers holding various priced liquors are provided with outlet fixtures cooperable with a stationary fixture engaging means, such that each outlet fixture of each container is physically distinctively cooperable with the engaging fixture so as to individually energize means for dispensing liquor from the respective container and for energizing a counter with respect to the value of the liquor in the respective container.





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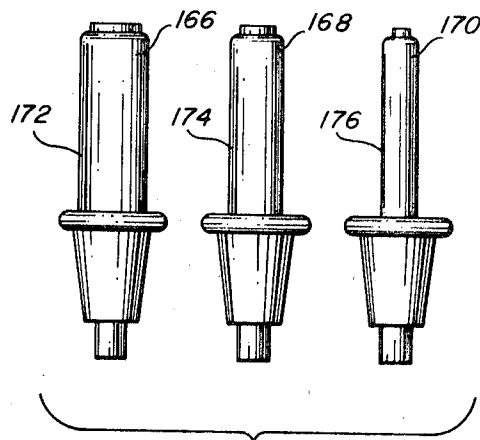
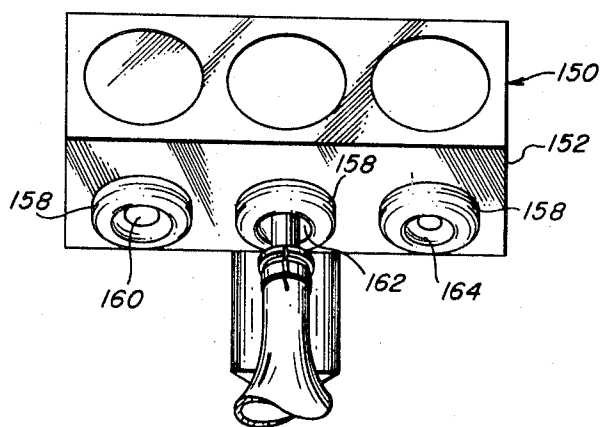
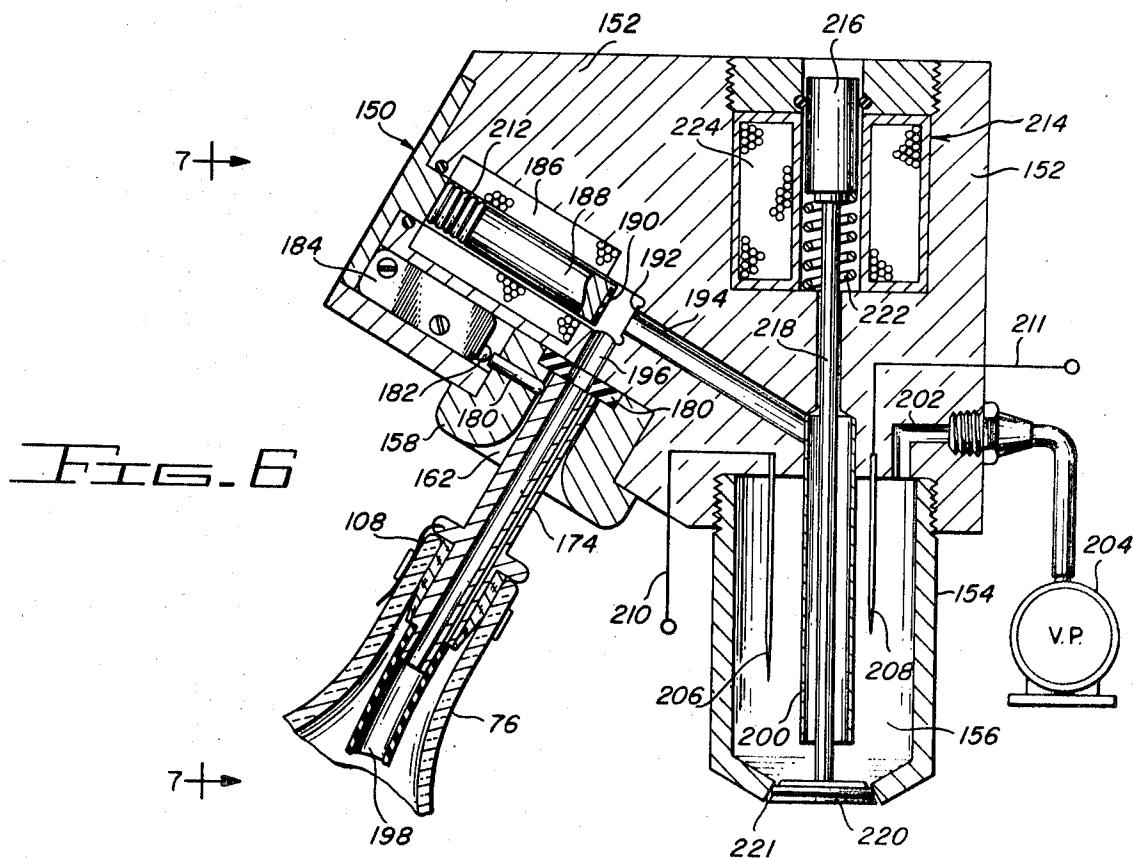


FIG. 8

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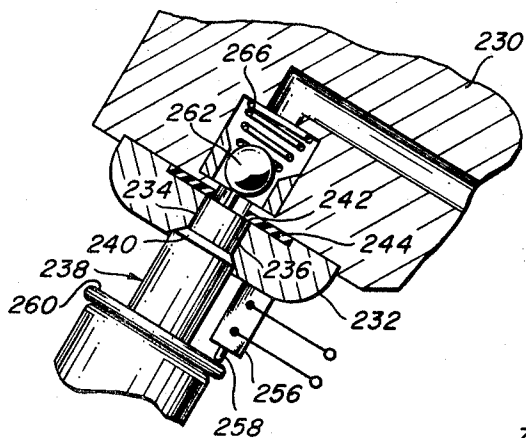


FIG. 9

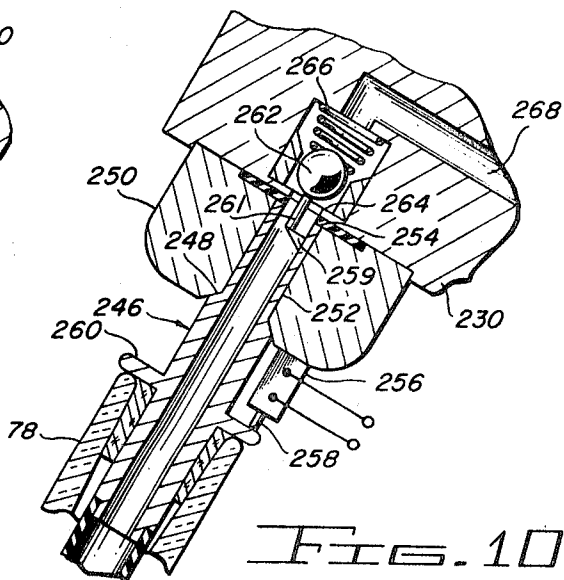


FIG. 10

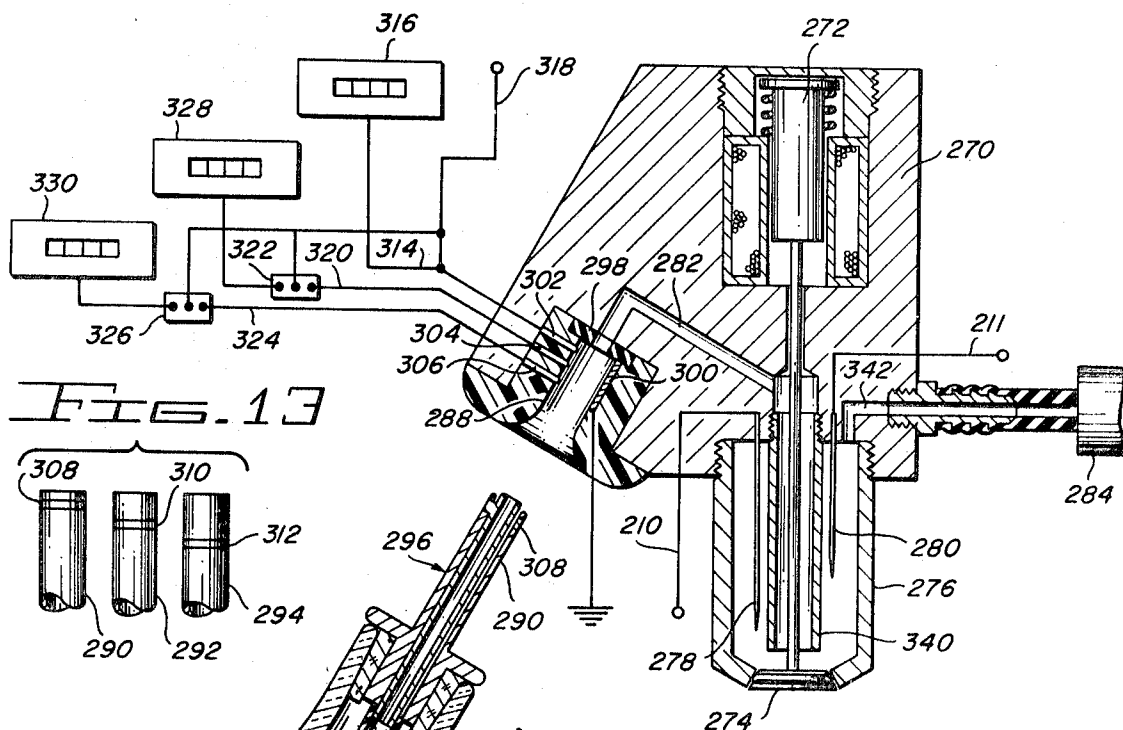


FIG. 11

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FIG. 13

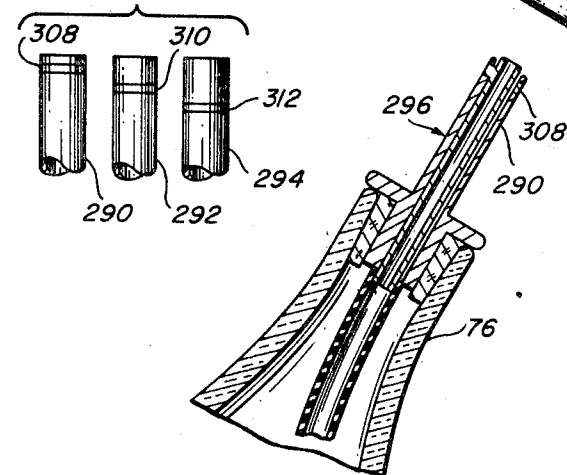


FIG. 12

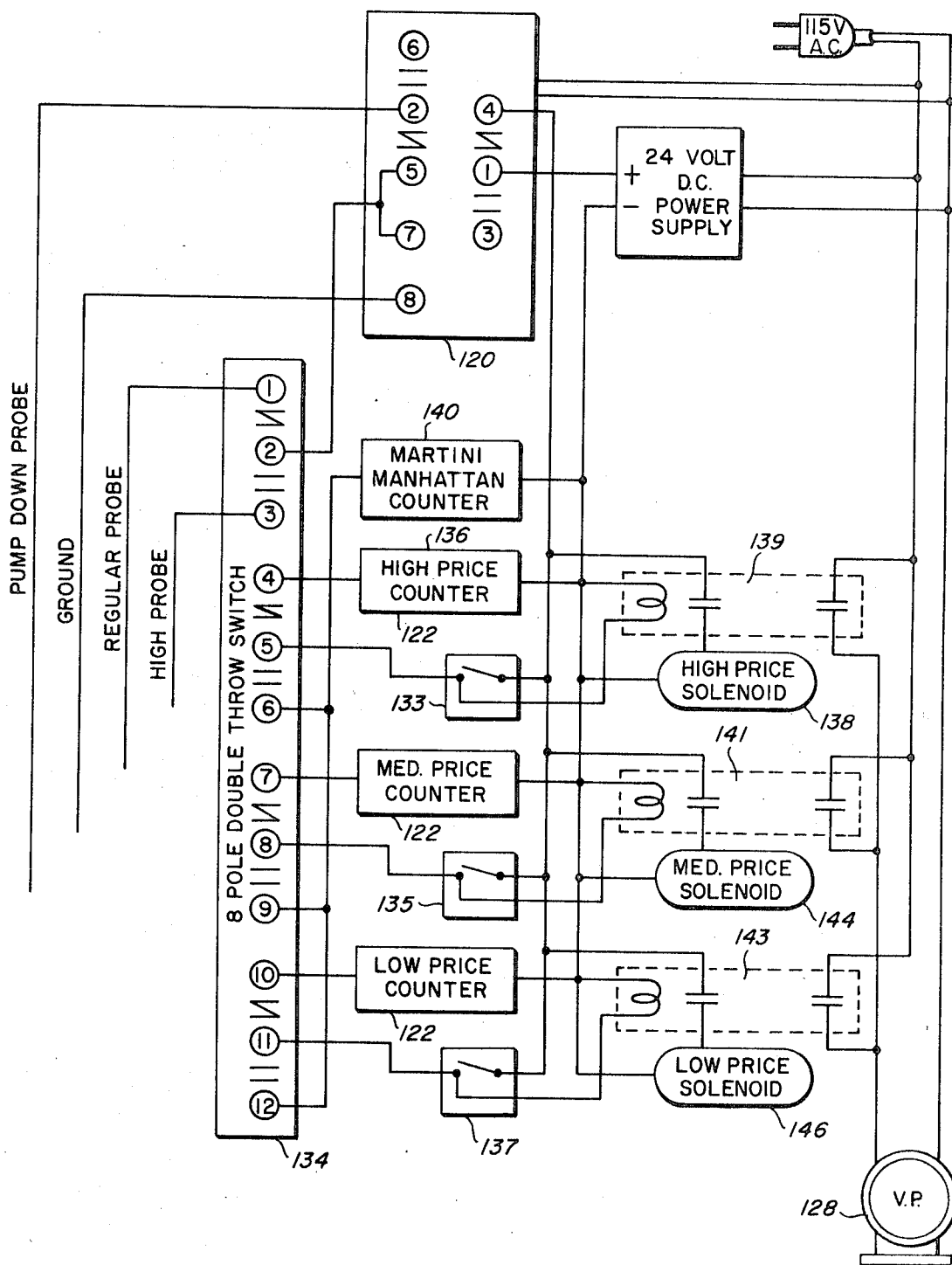


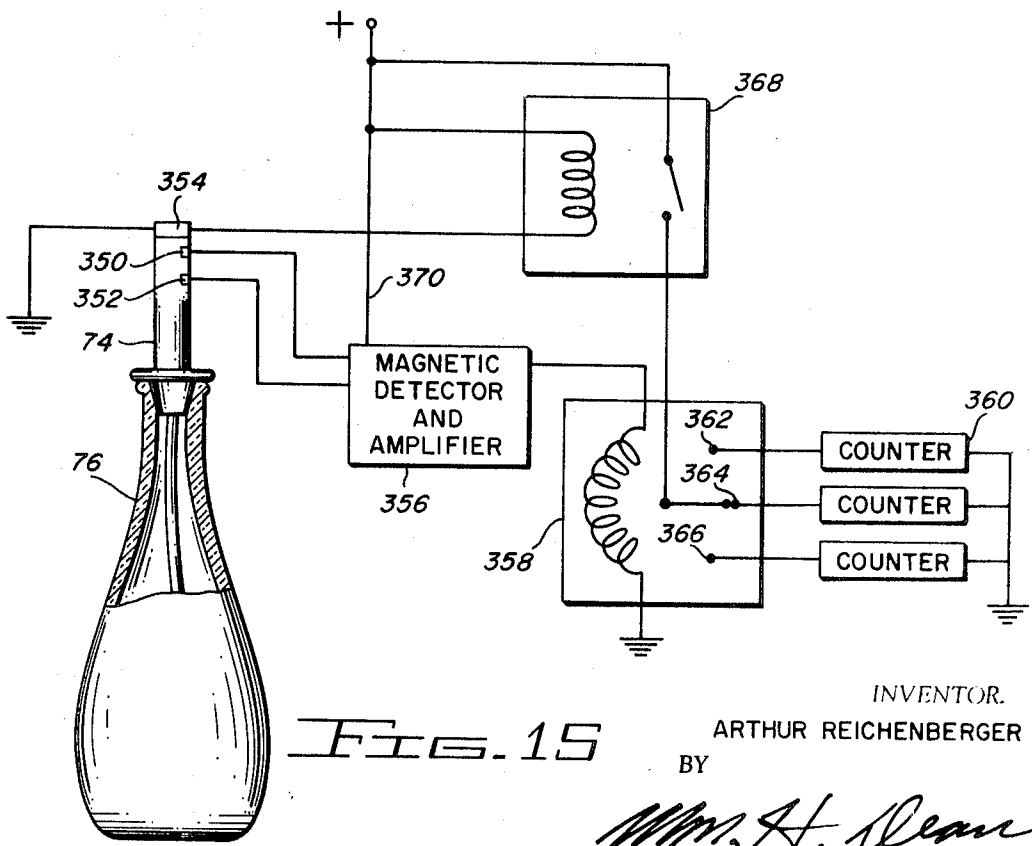
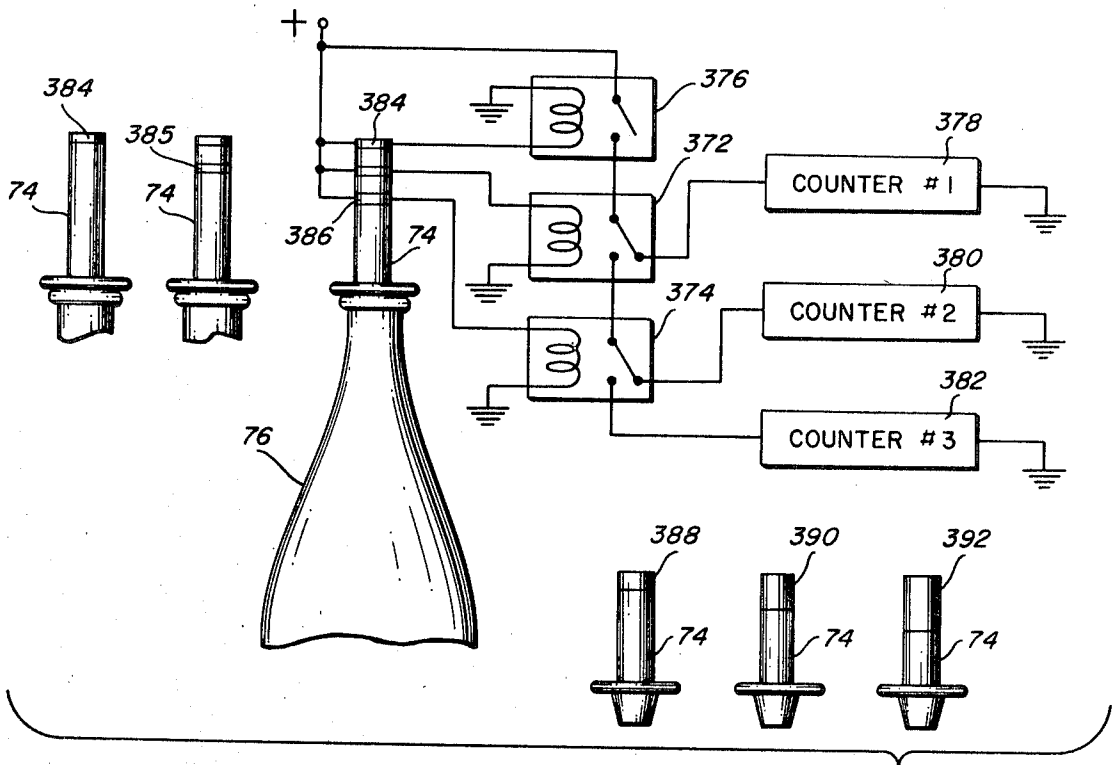
FIG. 14

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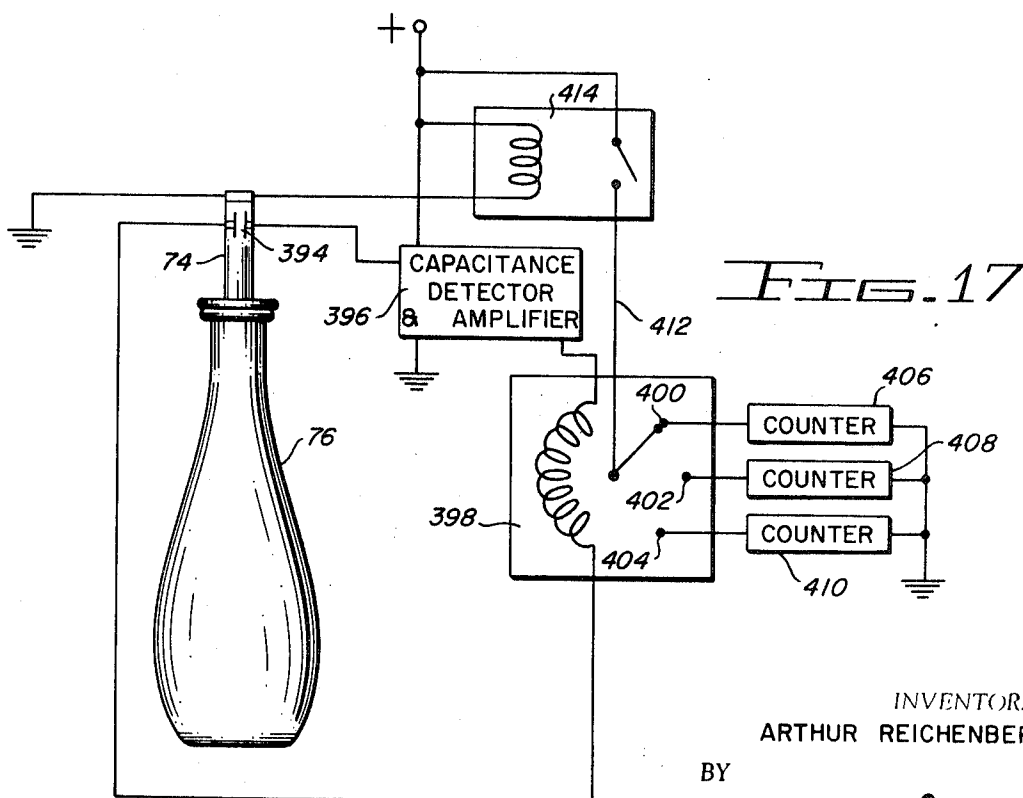
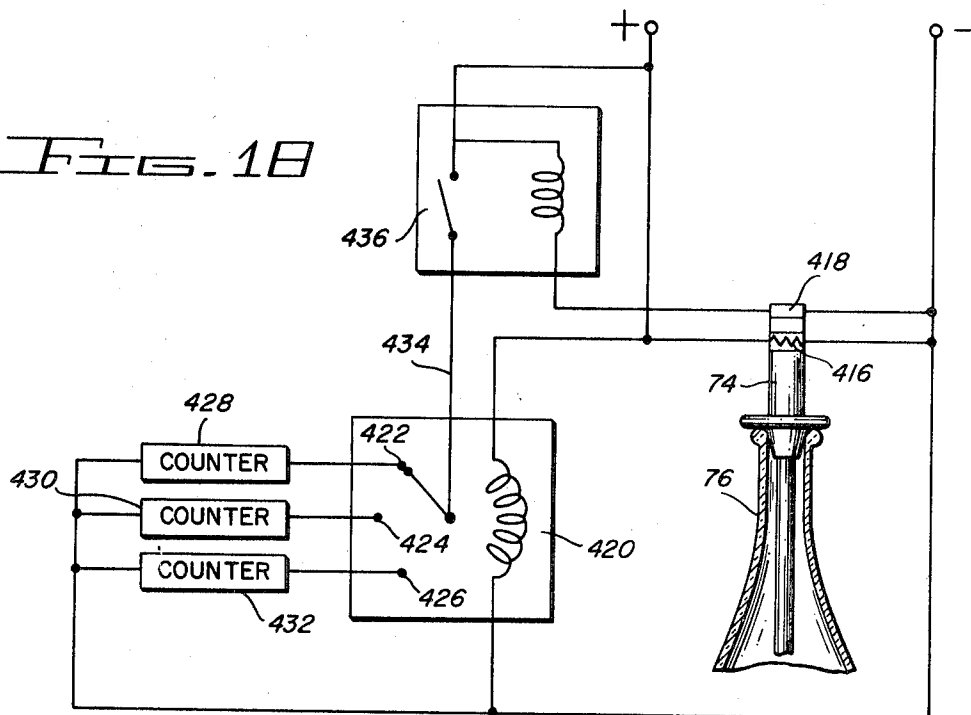
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FIG. 16



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LIQUID DISPENSER AND RECORDER MEANS

BACKGROUND OF THE INVENTION

The management of liquor dispensing and corresponding receipts relative to the operation of a barroom has posed many problems, one of which involves the attainment of a reasonable correspondence between the number of drinks poured and the cash received.

In many barrooms, liquor is liberally poured and many drinks are on the house, so to speak, and it has therefore been difficult for management to keep an accurate relationship between the amount of liquor used relative to the net income of the establishment.

While conventional shots of liquor are relatively inexpensive to the operator of a barroom, the overall expenses, including labor and overhead, necessitate a substantial charge for each mixed drink. Accordingly, the profits involved in the operation of a barroom depend upon accurate charging and maintenance of receipts relative to the corresponding drinks poured, mixed and served to customers.

It has been a great problem for the management of barrooms to maintain control of the number of drinks which are on the house, those which are inadvertently served without collecting the proper amounts of monies for such drinks.

Heretofore, the management of barrooms has had difficulty in checking the efficiency of bartenders or other persons who mix drinks, serve them and collect the usual receipts therefor. There is a tendency for bartenders to overpour.

SUMMARY OF THE INVENTION

The present invention comprises a novel liquid dispenser and recorder means particularly adapted for use in barrooms for dispensing and recording shots of liquor or other beverages normally sold to customers. The invention comprises a novel combination of elements, including a plurality of containers which hold variously priced liquors or beverages, said containers having outlet fixtures including physically distinctive elements which cooperate with respective stationary fixture engaging means so as to record each shot of liquor or drink of beverages, as well as the price thereof in accordance with the various liquors or beverages held in various ones of said containers.

The invention also comprises a novel combination of elements, including means for vacuummatically removing measured amounts of liquor or beverages from anyone of a plurality of containers, the combination including outlet fixtures on the containers, each having a spout provided with physically distinctive characteristics engageable with a stationary fixture engaging means having switch means thereon for energizing a vacuum source for vacuummatically withdrawing a given amount of liquor or beverage material from the interior of the respective container, the stationary fixture engaging means also holding measuring means, as well as recording means, adapted to record the amount of liquid being dispensed, and the relative prices thereof in accordance with the distinctive characteristics of each container outlet fixture and its spout portion.

The invention also comprises a novel combination of solenoid valve and vacuum source mechanism responsive to electrical switch means for withdrawing liquor or other beverages from the interior of various containers when spout portions of outlet fixtures in connection therewith are engaged with stationary fixture engaging means of the invention; said containers having dip tubes extending to the bottom portions thereof, and novel air vent means all adapted to prevent pouring from the containers, as well as siphoning liquid therefrom when not engaged with the stationary fixture engaging means of the invention.

Other features of the invention include novel modifications of the outlet fixtures coupled to the various containers of the invention; said outlet fixtures having physically distinctive identification means which may include various diameters and

lengths of spout portions, as well as various means for operating electrical switches, such as mechanical switch actuating means or means including elements on the spout portions of said outlet fixtures which provide for distinctive resistance magnetism or capacitance adapted to identify various prices of various beverages in respective ones of said plurality of containers.

The invention also comprises novel means for measuring and dispensing liquors or beverages into glasses or other drinking receptacles automatically in response to vacuummatic or pressure differential withdrawal of such liquors or dispensers from anyone of a plurality of containers having distinctive identifications means thereon which automatically cause operation means for withdrawing the contents and which also respond to record the withdrawal of the liquor or other contents from the respective containers of the invention.

Accordingly, it is an object of the present invention to provide a very simple and reliable liquid dispenser and recorder means which may be very economically installed in connection with liquor or beverage containers, and in relation to a stationary fixture engaging means of the invention for convenient use in barrooms or other establishments where liquors or other beverages are dispensed from anyone of a plurality of individual containers.

Another object of the invention is to provide a liquid dispenser and recorder means which is particularly adapted for use in the dispensing and recording of liquors in barrooms in order to attain an accurate check with respect to the number of drinks poured and the relative receipts collected by bartenders or other employees who serve drinks to the general public.

Another object of the invention is to provide a novel liquid dispenser and recorder means having novel means for withdrawing liquor from anyone of a plurality of individual containers having fixtures provided with novel and physically distinct spout portions to which a recorder of the invention responds in relation to a price or brand, and amounts of liquids dispensed from the containers.

Another object of the invention is to provide a novel liquid dispenser and recorder having novel vacuummatic, electrical and recording means which greatly facilitates rapid and accurate dispensation of liquors or other beverages and the accurate recording thereof.

Another object of the invention is to provide a liquid dispenser and recorder having a variety of novel identification devices adapted distinctively and individually to identify the price or brand of contents in anyone of a plurality of containers for automatically recording dispensation therefrom in relation to a stationary fixture engaging means adapted to create a pressure differential in anyone of said containers to thereby dispense liquid from the container into a beverage glass or other container.

Other objects and advantages of the invention may be apparent from the following specification, appended claims, and accompanying drawings:

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a vertical sectional view of a liquid dispenser and recorder of the invention showing mechanical features of the invention in section, and parts and portions in elevation to facilitate the illustration, and showing diagrammatically electrical wiring in connection therewith and in relation to electrical switches, liquid level sensing means, and recording means adapted to record the dispensation of liquids by the invention;

FIG. 2 is a fragmentary elevational view taken from the line 1-2 of FIG. 1;

FIG. 3 is an axial sectional view of one of the containers of the invention showing an outlet fixture and dip tube structure in connection with the container and disposed therein;

FIG. 4 is a view similar to FIG. 3 and taken as an axial sectional view, and showing portions of the structure fragmentarily and on enlarged scale to illustrate the details of the outlet fixture in connection with each container of the invention;

FIG. 5 is a view of a plurality of related container outlet fixtures showing a variety of physical identification means thereof which are related directly to the relative prices of liquors to be held in a plurality of the containers of the invention;

FIG. 6 is a view similar to FIG. 1, but showing a modification of the invention which comprises different operating switch structure, as well as modified liquor measuring and dispensing mechanism;

FIG. 7 is a fragmentary elevational view taken from the line 7-7 of FIG. 6, and showing the structure disclosed therein on reduced scale;

FIG. 8 is a view of a plurality of container outlet fixtures showing a variety of physically distinctive identification means of said outlet fixtures which are respectively related to the value of the respective contents of a plurality of containers of the invention;

FIG. 9 is a fragmentary sectional view of a modification of the invention illustrating a further modified outlet fixture identification means involving the relative length of a spout portion of an outlet fixture of a container of the invention;

FIG. 10 is a view similar to FIG. 9, but showing a relatively longer spout portion of an outlet fixture in connection with a container of the invention;

FIG. 11 is another view similar to FIGS. 1 and 6, but showing an additional modification of the invention, wherein still further modified identification means is disclosed in relation to spout portions of the outlet fixtures of the containers of the invention so as to provide for switching and controlling of the recorder of the invention to indicate price of liquor or beverages being dispensed relative to different ones of a plurality of containers;

FIG. 12 is an axial sectional view of a container and an outlet fixture having identification means corresponding with a stationary fixture engaging means, as shown in FIG. 11 of the drawings;

FIG. 13 is a fragmentary view of a plurality of spout portions of outlet fixtures having individual and distinctive identification means and being similar to the structure shown in FIG. 12;

FIG. 14 is a diagrammatic view of the electrical wiring of the invention which generally discloses switch structure, as well as dispensing sensors and recorders, in accordance with the present invention;

FIG. 15 is a diagrammatic view of a modification of the invention employing magnetically operable price or brand identification means;

FIG. 16 is a diagrammatic view of another modification of the invention employing a modified electrical identification means utilized to identify brand or price of liquid in one of the containers of the invention;

FIG. 17 is a diagrammatic view similar to FIG. 15 and FIG. 16, showing an additional modification of the invention, wherein capacitance is utilized as an identification means for price or brand of liquids or liquors in a container of the invention; and

FIG. 18 is another diagrammatic view similar to FIGS. 15, 16, and 17 showing a still further modification of the invention, wherein resistance is utilized as an identification means to identify price or brand of liquor or other liquid in one of the containers of the invention. DESCRIPTION OF THE PREFERRED EMBODIMENTS

As shown in FIG. 1 of the drawings, a stationary fixture engaging means generally indicated at 20 is provided with a frame 22 having a base 24 adapted to rest or be supported on a conventional bar or counter top 26. The frame 22 suspends a pivoted dispensing chamber 28 adapted to receive and dispense liquor into a glass 30 which may be placed on the counter top 26 directly below an outlet opening 32 in the dispensing chamber 28.

The dispensing chamber 28 is a hollow chamber member having a cavity 34 therein.

An upper flange 36 at the front of the dispensing chamber 28 is supported at its bottom portion by a compressible gasket

38 and a bolt 40 extends through the compressible gasket 38, the flange 36, and is threaded at one end 42 thereof into a portion 44 of the frame 22 which overhangs the dispensing chamber 28.

A second flange 46 similar to the flange 36 is supported at its upper side by a compressible gasket 48 and a bolt 50 extends through the flange 46, the compressible gasket 48 and a bolt 50 extends through the flange 46, the compressible gasket 48, and is provided with a screw-threaded portion 52 screw threaded in an overhanging portion 54 of the frame 22. Thus, the dispensing chamber 28 is capable of being pivotally moved at its normally lower end in a direction of an arrow A so as to force a sidewall portion 56 of the dispensing chamber 28 against an actuating plunger 58 of a microswitch 60, the operation of which will be hereinafter described in detail.

A pivoted fixture engaging member 62 is provided with a bale 64 pivotally mounted at 66 in connection with a frontal portion of the dispensing chamber member 28.

The engaging fixture member 62, as shown in FIG. 2 of the drawings, is generally circular in shape and is provided with a frontal portion 68 adapted to receive an end 70 of a neck portion 72 of an outlet fixture 74 in connection with a liquor or beverage container 76, as shown in FIG. 3 of the drawings.

The fixture engaging member 62 at an inner central portion of the frontal portion 68 thereof is provided with a resilient gasket 78 having a central opening 80 therein. A rear face 82 of the fixture engaging member 62 is adapted to be forced into sealing engagement with an O-ring 84 surrounding the dispensing chamber outlet opening 32, all as will be hereinafter described in detail. It will be appreciated that the O-ring 84 completely surrounds the opening 32 and engages a rear surface 82 of each pivoted fixture engaging member 62, as will be hereinafter described in detail.

Referring to FIG. 4, it will be seen that the outlet fixture 74 is shown on enlarged scale, and that it is provided with a hollow tubular end structure 86 adapted to engage the resilient gasket 78 and to register with the opening 80 therein so that when the end 86 is pressed against the gasket 78 and the fixture engaging member 62 is pivoted into sealed relationship with the O-ring 84, that vacuum may be applied to a hollow bore 88 inwardly of the open end 86, hereinbefore described.

The outlet fixture 74 is provided with a tubular portion extending from said end 86 and surrounding this tubular portion and sealingly engaged therewith is a dip tube 90 which is provided with an open end 92 disposed in a normally lower inner end portion 94 of the container 76, as shown best in FIG. 3 of the drawings.

The tubular portion 89 is surrounded by a container neck fitting 72 which supports a cylindrical cork or other gasket 98 adapted to fit sealingly the interior portion 100 of the neck 102 of the container 76, shown in FIG. 3 of the drawings. The container 76 may be a conventional liquor or other beverage bottle, and the fitting 96 is provided with an abutment flange 104 adapted to be abutted to or adjacent the end 106 of the respective neck portion 102, as shown best in FIG. 3 of the drawings.

Secured to the flange 104 is a flexible strap 108 which may be sealed by a peripheral band around the neck 102 to prevent unauthorized or unnoticed removal of the outlet fixture 74 from the neck 102 of the container 76.

Disposed between the tubular portion 89 and the fitting 74 is a vent passage 110 having an open end 112 slightly spaced from the end 86 of the tubular portion 89 to allow venting of the interior of the container 76 when vacuum is drawn through the bore of the tubular portion 89 to create a pressure differential on the liquor or other beverage material to force the liquid from the interior of the container 76, as will be hereinafter described in detail. The vent passage 110 is also provided with a plurality of side ports 111 which are spaced from the end of the spout to allow said end to be sealed against the gasket 78 without closing the vent passage during initial dispensing from a full container 76 in which there is nominal airspace or displacement.

The vent passage 110 is provided with a ball check valve 114 therein which is arranged to be seated in a direction to prevent liquor from being poured from the container 76 when the neck portion 72 is disposed downwardly, and this check valve 114 is disposed to open to allow air to pass through the passage 110 when a vacuum is drawn in the container 76 by vacuummatic removal of liquid therefrom, as will be hereinafter described in detail.

Disposed in the cavity 34 of the dispensing chamber 28 is a first generally vertically disposed baffle 116 adapted to direct liquid in the direction of an arrow B and an arrow C to a position below a downwardly declining baffle 118 so as to withdraw liquid from one of the containers 76 and into the cavity 34 in cooperative relation with a liquid level control 120 in order to effect proper operation thereof.

The liquid level control 120 is a conventional liquid level sensor manufactured by Instruments Incorporated which is a division of the Industrial Tank Company of Tulsa, Oklahoma, the particular instrument 120 being identified as Model 5401, and entitled Level Tronic Relay.

This instrument 120 is adapted to sense a level of liquor or other beverages drawn into the cavity 34 from anyone of the containers 76, as will be hereinafter described, and this instrument 120 is coupled to a Veeder Roots counter 122 generally contained in the frame 22, as shown in FIG. 1 of the drawings.

Communicating with an upper interior portion of the chamber 34 is a vacuum conduit 124 of flexible characteristics, and this vacuum conduit 124 is coupled to a three-way solenoid valve 126, the operation of which will be hereinafter described in detail. This solenoid valve 126 communicates with a vacuum pump 128 via a conduit 130, and thus a source of vacuum communicates with the cavity 34 of the dispensing chamber 28.

As shown in FIG. 2 of the drawings, several fixture engaging members 62 are pivotally connected to several respective dispensing chambers 28, and the cavities 68 of each fixture engaging member 62 may be of distinctive diameter relative to each other corresponding to a plurality of neck portions 72 of a plurality of outlet fixtures 74. Thus, a plurality of containers 76 may be coupled to the plurality of outlet fixtures 74, shown in FIG. 5 of the drawings, and these outlet fixtures 74 at their neck portions 72 all vary in diameter, and fittingly or cooperatively converging cavities 68 in the fixture engaging members 62, shown in FIGS. 1 and 2 of the drawings.

With reference to FIGS. 2 and 5 of the drawings, it will be seen that the diameters of the neck portions 72 vary, and accordingly, these are related to the prices of the liquors or beverages in the respective containers 76. It will be appreciated that the largest diameter neck portion 72 will fit only the respective fixture engaging member 62, and this large diameter structure may identify only the high-priced liquor or beverage in a respective container 76. The other containers 76 having outlet fixtures 74 with relatively smaller spout portions 72 may also be utilized in the larger diameter fixture engaging members 62, but would record on correspondingly high-priced counters, as hereinafter described, and there would be no reason for a bartender or operator to utilize such methods in view of the fact that his inventory must be reconciled with receipts at the cash register in relation to the period of time which he attends bar.

Referring to FIGS. 1 to 5, and FIG. 14, the operation of the preferred form of the invention is, as follows:

The end 86 of a tubular portion 89 of one of the outlet fixtures 74 is pressed against a gasket 78 in a respective fixture engaging member 62 which causes it to be pivoted into engagement with its respective O-ring 84, and such pressure causes the dispensing chamber 28, due to the resilience of the compressive gaskets 38 and 48, to pivot backwardly and to engage the plunger 58 of the microswitch 60. This initiates operation of the solenoid valve 126 and the vacuum pump 128. Thus, vacuum is drawn in the cavity 34 and in the tubular portion 89 and dip tube 90 causing liquor to flow from the interior of the container 76 into and through the central opening

80 in the gasket 78 and in the direction of the arrows B and C in FIG. 1 of the drawings causing the cavity 34 to fill to a predetermined level in accordance with the level control instrument 120 which automatically breaks a circuit, as the liquid rises to a certain level, and the instrument 120 being coupled to the recorder 122 causes a recording of the measurement of the liquor in the cavity 34. At this time, the container 76 is withdrawn from its position relative to the fixture engaging member 62, and it is allowed to pivot downward into the position, shown in FIG. 1, and to release liquor or a beverage into a glass 30 via the outlet 32 of the cavity 34.

It will be understood that in this position, the three-way solenoid valve 126 is vented to atmosphere to vent the cavity 34.

The foregoing mode of operation is accompanied by the electrical equipment of the invention, as disclosed in FIG. 14.

As shown in FIG. 14, the electrical equipment of the invention consists of three starting switches 133, 135, and 137, which correspond with the switches 60, as shown in FIG. 1 of the drawings. Three solenoid valves 139, 141 and 143 correspond to the solenoid valve 126, disclosed in FIG. 1 of the drawings.

A commercially available and conventional level control 120, and an eight pole throw toggle switch 134 comprise components of the invention, as shown in FIG. 14 of the drawings.

As an example of operation, it may be supposed that a high priced drink is to be dispensed from one of the containers 76. As an example, the outlet fixture 72, as disclosed in FIG. 5, is inserted in the respective engaging fixture 62, shown in FIG. 2 of the drawings, operating switch 133, shown in FIG. 14. This switch is thus closed, allowing current to flow from the power supply through contacts 1 and 4 of the level control 120, thence through points 5 and 4 of the eight pole double throw toggle switch 134 to energize the high priced counter 136. Current also flows through the relay 139 to energize the high-priced solenoid 138 and vacuum pump 138.

Under normal operation, the vacuum pump 128 and the high-price solenoid remain energized until the liquid level control completes a circuit between connections 5 and 7 thereof, and thence through points 1 and 2 of the eight pole double throw switch 134, and the regular probe to No. 8 of the level control 120 to ground.

When this circuit is completed, contacts 1 and 4 of the level control 120 open to deenergize the high price counter 136, the high price solenoid 138, and the vacuum pump 128.

Operation of the medium priced and low-priced switches 135 or 137 is similar to the function of the operation of the corresponding high-priced switch 133, hereinbefore described.

It will be understood that, as disclosed in FIG. 1 of the drawings, a solenoid valve 126 is coupled to each of the dispensing chambers 28, and that the respective solenoid 126 may correspond to the diagrammatically disclosed solenoid 138, as shown in FIG. 14 of the drawings, and that other similar solenoids 144 and 146 may correspond with solenoids 126 of additional dispensing chambers 28, and that all of these solenoids may be operable in connection with the vacuum pump 128, hereinbefore described.

From the foregoing, it will be appreciated that a plurality of individual containers are provided with outlet fixtures having distinctive physical identification means directly cooperable with a plurality of fixture engaging means adapted to identify relative prices or brands of the liquors or beverages contained in the individual ones of a plurality of containers, such as the liquor bottles 76, shown in FIG. 3 of the drawings.

It will further be appreciated that the fixture engaging means 20 employs switch mechanism and counter responsive means for recording each individual amount of liquor vacuummatically drawn from the respective container 76 and dispensed from the dispensing chamber 28 of a fixture engaging means 20 generally supported on a counter top 26 of a bar or other stationary object which serves as a central dispensing and drink preparation location situated in a barroom for convenient service to customers.

In the modification of the invention, as shown in FIG. 6 of the drawings, a stationary fixture engaging means 150 is provided with a housing 152 supporting a dispensing chamber 154 having a liquid receiving cavity 156 therein. Additionally, this housing 152 supports a plurality of fixture engaging members 158 which are also shown in FIG. 7 of the drawings. One of the fixture engaging members 158 is provided with a large diameter socket 160. Another of the fixture engaging members 158 is provided with a medium diameter socket 162, and another of the fixture engaging members 158 is provided with a small diameter socket 164. These sockets 160, 162 and 164 correspond with large, medium and small diameter spout portions 166, 168 and 170 of respective outlet fixtures 172, 174 and 176, as shown in FIG. 8 of the drawings. These outlet fixtures 172, 174 and 176 may be constructed substantially, as shown in FIG. 4, and as hereinbefore described.

Disposed in each fixture engaging member 158 is a resilient gasket 180, as shown in FIG. 6, for the purpose of effecting a seal so that vacuum may be applied to the interior of a container 76, as hereinbefore described.

Disposed in a sidewall of each fixture engaging member 158 is a plunger 180 operable to actuate a plunger 182 of a microswitch 184. The microswitch 184 may correspond to the operation of the microswitch 60, hereinbefore described, for the purpose of energizing a solenoid 186 having a plunger 188 therein. This plunger 188 is provided with a gasket 190 adapted to engage a valve seat 192 for establishing and shutting off communication between a vacuum passage 194 and a passage 196 of the housing 152; said passage 196 communicating with a central opening in the gasket 180, hereinbefore described, and with a respective spout portion of the outlet fixture 174 and its corresponding dip tube 198.

The passage 194, as shown in FIG. 6 of the drawings, communicates with a hollow tubular member 200 extending downwardly into the interior of the dispensing chamber 154.

The housing 152 is provided with a passage 202 communicating with a vacuum pump 204 which is similar to the vacuum pump 128, hereinbefore described.

Disposed in the dispensing chamber 154 are two electrically operable probes 206 and 208 disposed at different elevations so as to sense a predetermined level of liquid in the dispensing chamber cavity 156, and these probes are coupled to respective conductors 210 and 211, and operate in a similar manner to the operation of the hereinbefore described liquid level control 120.

The plunger 188 of the solenoid valve 186 is provided with a spring 212 tending normally to maintain the gasket 190 seated on the seal 192 so that the valve is normally closed until the microswitch 184 is operated by one of the respective spout portions 166, 168 and 170. Accordingly, it will be appreciated that the housing 152 encloses a solenoid valve 186 and the respective microswitch 184 corresponding with each of the fixture engaging members 158.

A solenoid valve 214 is disposed in the housing 152 and is provided with a plunger 216 having a stem 218 carrying a poppet valve 220 which seats in an outlet opening 221 from which the liquid may be delivered from the chamber 156 to a glass, such as the glass 30, shown in FIG. 1 of the drawings.

A spring 222 tends to hold the poppet valve member 220 seated in the opening 221 and energization of a solenoid coil 224 causes the poppet valve 220 to open relative to the outlet opening 221 and to dispense a drink from the cavity 156 of the dispensing chamber 154.

The operation of the modification, as shown in FIG. 6, is similar to that described in connection with FIG. 1, except that the valve 220 is utilized to dispense a drink from the cavity 156 by operation of the solenoid 224 at the end of each operating cycle of the invention.

It will be appreciated that a single dispensing chamber 154 may be utilized in connection with several fixture engaging members 158, and that each of the passages 194 may communicate with the hollow cylindrical member 200 which extends downwardly into the cavity 156.

The spout portion 166, as shown in FIG. 8 of the drawings, will be related to a container 76 which holds high-priced liquors, while the remaining spout portions 168 and 170 will be related to containers hold relatively lesser valuable liquors or drinks therein, all as hereinbefore described in connection with the operation of the invention, as disclosed in connection with FIG. 1 of the drawings.

In the modification of the invention, as shown in FIGS. 9 and 10 of the drawings, a housing 230 may be similar to the housing 152, and may support a plurality of fixture engaging members 232 which are each provided with a central bore 234 adapted to receive a corresponding spout portion 236 of an outlet fixture 238 similar to the hereinbefore described outlet fixture 74, shown in FIG. 4 of the drawings.

The outlet fixture 238, however, is provided with a diametrically increased shoulder portion 240 spaced from an end 242 of the outlet fixture 238; said end 242 corresponding with the end of the hereinbefore described outlet fixtures, such as those disclosed in FIG. 4 and FIG. 8 of the drawings. These ends engage a sealing gasket 244.

The length of the portions 236 from the respective end 242 to the shoulder 240 may vary, particularly as may be noted when comparing the disclosures of FIGS. 9 and 10 of the drawings.

In FIG. 10, an outlet fixture 246 is provided with a shoulder 248 which seats in a relatively long fixture engaging member 250 which extends a greater distance from the housing 230 than does the fixture engaging member 232, as shown in FIG. 9 of the drawings. Consequently, the respective spout portion 252 of the outlet fixture 246 is relatively long from its shoulder portion 248 to its inner end portion 254 which corresponds with the inner end portion 242 of the outlet fixture 238, described in FIG. 9 of the drawings.

Disposed at an outer end of each of the fixture engaging members 232 and 250 is a microswitch 256 having a plunger 258 engageable by a flange 260 on each of the outlet fixtures 238 and 246. Thus, the microswitch 256 corresponds in operation with the previously described microswitch 60 and 184 for initiating operation of the invention for the dispensation of liquid, such as liquor or other beverages.

Each of the spout portions of the outlet fixtures 238 and 246, as shown in FIGS. 9 and 10 of the drawings, is provided with an internally disposed buttress portion 258 adapted to engage a pin 260 of a ball check valve 262 which normally engages a seat 264 in the housing 230. A spring 266 is adapted to hold the ball 262 on the seat 264 against vacuum applied in a passage 268, said passage 268 communicating with a vacuum pump, such as the pump 128 or the pump 204, hereinbefore described.

It will be understood that the microswitch 256 is adapted to initiate operation of said vacuum pump and that insertion of one of the spout portions of the outlet fixtures 238 or 246 forces the ball valve 262 off its seat 264 and allows vacuum to communicate between the passage 268 and the interior of the respective outlet fixture 238 or 264, the general construction of which is similar to that as shown in FIG. 4 of the drawings, except that the variable disposition of the shoulders 240 and 248 control the respective cooperation of said outlet fixtures with the fixture engaging members 232 and 250 in order to identify the relative value of liquors or beverages in containers connected with the outlet fixtures 238 or 246.

It will be noted that several different outlet fixtures, such as those disclosed in FIGS. 9 and 10, may vary in length from the shoulder portions 240 and 248 to the respective ends 242 and 254 so that several containers, such as the containers 76 may be utilized in connection with a plurality of respective fixture engaging members, such as the fixture engaging members 232 and 250 which vary in length and which carry the respective microswitches 256.

In the modification, as shown in FIG. 11 of the drawings, a housing 270 may be similar to the housings 214 and 230, contained in the housing 270 is a solenoid 272 similar to the solenoid 224, hereinbefore described, and this solenoid controls a

valve 274 similar to the valve 220, hereinbefore described in connection with FIG. 6 of the drawings.

A dispensing chamber 276 is similar to the hereinbefore described dispensing chamber 154, and measuring probes 278 and 280 are similar to the hereinbefore described probes 206 and 208 described in connection with FIG. 6 of the drawings.

A vacuum passage 282 is similar to the hereinbefore described passage 194, however, a three-way solenoid valve 284 is utilized in this system in a manner similar to the solenoid valve 126, hereinbefore described in connection with FIG. 1 of the drawings.

The housing 270 carries a fixture engaging member 286 having spout receiving bore portion 288. This fixture engaging member 286 may be provided for receiving a plurality of corresponding spout portions 290, 292 and 294, as shown in FIG. 13 of the drawings. These spout portions 290, 292 and 294 may extend from anyone of a plurality of outlet fixtures 296 constructed similarly to that, as described in connection with FIG. 4 of the drawings, and these outlet fixtures 296 at their spout ends are adapted to engage a sealing gasket 298 at the inner end of a respective bore 288 of the corresponding fixture engaging member 286.

A ground conductor 300 is located in the bore 288 on one side and a high-priced indicating contact 302 is located in communication with the bore 288. Spaced from this contact 302 is a medium priced indicating contact 304 and spaced from the contact 304 is a contact 306 adapted to indicate a low-priced liquor. These contacts 302, 304 and 306 correspond with respective contacts or electrically operable members 308, 310 and 312 on the respective spout portions 290, 292 and 294, shown in FIG. 13 of the drawings.

Connected to the contact 302 is a conductor 314 and connected with the conductor 314 is a counter 316, and also a conductor 318 which initiates the circuitry to the vacuum pump and the respective solenoid valve 272.

Coupled to the contact 304 is a conductor 320 communicating with a time delay relay 322, and connected with the contact 306 is a conductor 324 coupled with a time delay relay 326.

The time delay relays 322 and 326 are coupled to respective counters 328 and 330, and also coupled to the conductor 318 so that when the spout 290, for example, is inserted in the bore 288, the electrically responsive member 308 may preliminarily contact the contacts 304 and 306, but the time delay relays 322 and 326 delay operation of the respective counters 328 and 330, and also energization of the respective conductor 318 through the ground conductor 300 which is common. Thus, the time delay relays 322 and 326 do not energize the respective counters or the conductor 318 for a given period of time so that the respective electrically responsive portion 308, 310 or 312 may reach its proper position before operation of the invention is initiated.

Should the electrically responsive member 310 or 312 be inserted, the respective time delay relay 322 or 326 will eventually energize the respective counter 328 or 330 and the conductor 318 for completing operation of the invention to dispense a given amount of liquor or other liquid from the dispensing chamber 276.

It will be understood by those skilled in the art that the electrically responsive contacts or members 308, 310 or 312, shown in FIG. 13 of the drawings, may operate on a basis of resistance or capacitance, such that the resistance or capacitance of the electrically responsive members 308, 310 or 312 vary with respect to each other for indicating the relative price of liquors in a respective container 76, and that a plurality of such containers may be utilized for delivering liquid through the respective passage 282 and into the cavity of the dispensing chamber 276.

It will be understood that the tubular member 200, as shown in FIG. 6 of the drawings, and a corresponding tubular member 340, shown in FIG. 11 of the drawings, conducts liquid to the bottom of the interior of the dispensing chamber 276 so that it does not communicate directly with either the

passage 202, shown in FIG. 6 of the drawings, or a corresponding passage 342, shown in FIG. 11 of the drawings, and thus the liquid fills only to the level as controlled by the respective probes 206 and 208 disclosed in FIG. 6 of the drawings, or the respective probes 278 and 280, shown in FIG. 11 of the drawings.

Provision is made for dispensing a greater quantity of liquor, and for this purpose, a toggle switch of the eight pole double throw switch 134 is moved or actuated before the outlet fixture 72 of the respective container 76 is engaged with the respective fixture engaging member 62. Accordingly, if the high-priced drink were being dispensed, current would flow through contacts 5 and 6 of the eight pole double throw switch 134 to energize the martini counter 140 instead of the high-priced container 136.

The high-priced solenoid 138 and vacuum pump 138 would be energized, as hereinbefore described, but the liquid level control 120 would not complete the circuit between contacts 5 and 7, and the ground 8 of the liquid level control 120 until the liquid would reach the high-priced probe since contacts 1 and 2 of the eight pole double throw switch 134 would be open, and contacts 2 and 3 would be closed.

When this circuit is completed, contacts No. 1 and 4 of the liquid level control 120 will open to deenergize the entire system of the invention, as shown in FIG. 14.

The toggle switch 134 would then be returned to its normal position, as described and the system would be ready for the next liquid dispensing operation.

As shown in FIG. 15 of the drawings, a container 76 is provided with a modified outlet fixture 74 having magnets 350 and 352 in addition to a grounding contact 354. A magnetic detector 356 is adapted to sense the position or feel strength of the magnets 350 and 352. This magnetic detector and amplifier 356 is adapted to energize a control switch 358 to energize a counter 360 through anyone of three contacts 362, 364 or 366 before a relay 368 is energized in accordance with a time delay of the relay 368 so that the relay 368 may energize one of the respective counters through conductor 370 after one of the contacts 362, 364 or 366 have been energized by the switch 358 and its respective controlling magnetic detector and amplifier 356.

In the modification, as shown in FIG. 16, the container 76 is provided with an outlet fixture 74. This fixture 74 may have one or more electrical contacts adapted to energize respective relay switches 372 and/or 374. The energization of these relays 372 and 374 being adapted to occur before energization of a relay 376 so that a count may be recorded with respect to one of the counters 378, 380 or 382. The operation of this modification of the invention depends upon complete insertion of the outlet fixture 74 and its respective contacts 384, 385 and/or 386. It will be understood that each respective outlet fixture 74 may have one, two or three of the contacts, namely, contacts 384, 385 and/or 386.

It will be obvious that the outlet fixtures 74 may also have contacts 388, 390 and 392 of varying lengths to accomplish the foregoing functions.

In the modification, as shown in FIG. 17, a container 76 is provided with an outlet fixture 74 provided with capacitance means 394 which serves as the identification means. This capacitance may vary with respect to various ones of the outlet fixtures 74, and the capacitance may be sensed by a capacitance detector and amplifier 396 disposed to control a multiposition switch 398 having a plurality of contacts 400, 402 and 404 related directly to respective counters 406, 408 and 410. The switches or contacts 400, 402 and 404 are energized through a conductor 421 by means of a relay 414 having a time delay so that complete contact of the outlet fixture 74 with the circuitry of the fixture engaging means may be completed before electrical impulse is conducted through the conductor 412 to energize a respective counter 406, 408 or 410.

In the modification, as shown in FIG. 18, a container 76 is provided with an outlet fixture 74 and an identification means

comprising a resistance element 416 and a conductor 418 so that when the conductor and resistance element 416 are in circuit in the respective fixture engaging means, a resistance responsive control switch 420 may properly energize anyone of a plurality of conductors 422, 424, or 426 coupled respectively to individual counters 428, 430 and 432.

The switch 420 is energized through a conductor 434 by means of a time delay relay 436 to insure complete insertion of the outlet fixture 74 with respect to a respective fixture engaging means of the invention. Accordingly, it will be seen that the price or brand identification means disclosed in the modification, as shown in FIGS. 15 to 18, inclusive, may include magnetic means, electrical switch means, varying capacitance or varying resistance.

It will be obvious to those skilled in the art that applicant has disclosed a broad range of equivalence, and that other modifications may be resorted to without departing from the spirit of the invention.

I claim:

1. In a recorder means, the combination of: a plurality of portable containers; an outlet fixture coupled to each of said containers; each of said outlet fixtures having a delivery spout extending away from a respective one of said containers; a stationary fixture having outlet fixture engaging means sealingly engageable by respective spouts of said outlet fixture; each outlet fixture having first identification means carried by each of said outlet fixtures and adapted to identify contents of respective containers; said fixture engaging means having second identification means corresponding to and cooperable with said first identification means and adapted to cooperate in identification of said contents; said fixture identification means being individually distinctive with respect to each container of said plurality of containers; and a recorder means coupled to said second identification means and responsive to cooperation of said first identification means with said second identification means, all of said portable containers each being manually selectively and individually movable and engageable with said stationary fixture to accomplish identification and dispensation of material from each respective portable container.

2. The invention as defined in claim 1, wherein: a means is disposed and adapted to create a pressure differential with respect to the liquid contents of one of said containers, when a respective outlet fixture is engaged with said fixture engaging means, whereby liquid material is forced outwardly from said one of said containers.

3. In a liquid dispenser and recorder, the combination of: a plurality of portable containers; a dip tube coupled to each of said outlet fixtures and disposed in a respective one of said containers; each dip tube having an open end disposed to receive liquid at a normally lower interior area of a respective one of said containers; each of said outlet fixtures having a delivery spout extending away from a respective one of said containers; each delivery spout communicating with a respective one of said dip tubes; a stationary fixture having an outlet fixture engaging means sealingly engageable by respective spouts of said outlet fixtures; each outlet fixture having first identification means carried by each of said outlet fixtures and adapted to identify contents of respective containers; said fixture engaging means having second identification means physically corresponding to and cooperable with said first identification means and adapted to cooperate in identification of said contents; said first identification means being individually distinctive with respect to each container of said plurality of containers; all of said portable containers each being manually selectively and individually movable and engageable relative to said stationary fixture to accomplish identification and dispensation of material from each respective portable container; a source of vacuum communicating with said fixture engaging means; valve control means operable by engagement of said outlet fixture with said fixture engaging means; a shutoff valve coupled with said control means and operable thereby; said shutoff valve disposed to establish

and shutoff communication of said source of vacuum with said fixture engaging means; and a dispensing cavity communicating with said fixture engaging means and having a liquid outlet at its lower portion, whereby liquid is drawn from said container via said dip tube and into said dispensing cavity by said source of vacuum when said valve control means is operated upon engagement of a spout of one of said outlet fixtures with said fixture engaging means; and a recorder means coupled to said second identification means and responsive to cooperation of said first identification means with said second identification means for recording the operation thereof and resultant dispensation of respective liquid from said liquid dispenser.

4. The invention, as defined in claim 3, wherein: measuring means in said dispensing cavity is operable and coupled to said shutoff valve for shutting off said source of vacuum when a predetermined amount of liquid is drawn from one of said containers and into said dispensing cavity.

5. The invention, as defined in claim 4, wherein: said shutoff valve is provided with vent means operable to vent said cavity and allow liquid to drain therefrom via said liquid outlet when said source of vacuum is shutoff by said shutoff valve.

6. The invention, as defined in claim 4, wherein: recording means is responsive to the operation of said spout and said fixture engaging means for recording liquid drawn into said dispensing cavity and the dispensation of said liquid from said dispensing cavity.

7. The invention, as defined in claim 3, wherein: measuring means in said dispensing cavity is operable and coupled to said shutoff valve for shutting off said source of vacuum when a predetermined amount of liquid is drawn from one of said containers and into said dispensing cavity; and recording means responsive to engagement of said spout relative to said fixture engaging means and to the disposition of liquid in said dispensing cavity and the dispensation of liquid therefrom.

8. The invention, as defined in claim 7, wherein: said measuring means is provided with a plurality of electrically responsive sensors therein, said shutoff valve being solenoid operated and coupled to said sensors; said recording means also coupled to said sensors, whereby each unitary quantity of liquid dispensed from said cavity is measured and recorded before being released from said dispensing cavity.

9. The invention, as defined in claim 8, wherein: a second solenoid valve in circuit with said sensors is disposed for controlling the flow of liquid from said outlet of said dispensing cavity.

10. In a liquid dispenser and recorder, the combination of: a plurality of portable containers; an outlet fixture coupled to each of said containers; a dip tube coupled to each of said outlet fixtures; each dip tube having an open end disposed to receive liquid at a normally lower interior area of a respective one of said containers; each of said outlet fixtures having a delivery spout extending away from a respective one of said containers; each delivery spout communicating with a respective one of said dip tubes; a stationary fixture having a plurality of outlet fixture engaging means sealingly engageable with respective spouts of said outlet fixtures; each outlet fixture having first identification means carried by each of said outlet fixtures; and adapted to identify contents of respective containers; said fixture engaging means having second identification means physically corresponding to and cooperable with said first identification means and adapted to cooperate in identification of said contents; said first identification means being individually distinctive with respect to each container of said plurality of containers; all of said portable containers each being manually selectively and individually movable and engageable relative to said stationary fixture to accomplish identification and dispensation of material from each respective portable container; a source of vacuum communicating with said fixture engaging means; electrical switch means operable by engagement of said spout of a respective outlet fixture with said fixture engaging means; a solenoid shutoff valve in circuit with said switch means and operable thereby; said solenoid valve disposed to establish and shutoff communi-

cation of said source of vacuum with said fixture engaging means; and a dispensing cavity communicating with said fixture engaging means and having a liquid outlet at its lower portion; whereby liquid is drawn from said container via said dip tube and into said dispensing cavity by said source of vacuum when said switch means is operable upon engagement of said first identification means with said fixture engaging means; and recording means coupled to said second identification means and means responsive to operation of the foregoing liquid dispenser for recording the dispensation of liquid therefrom.

11. The invention, as defined in claim 2, wherein: each of said outlet fixtures is provided with a vent passage therein disposed to allow a substantial pressure differential from occurring relative to dispensation of liquid from a respective container.

12. The invention, as defined in claim 2, wherein: a seal means is disposed to effect a seal between anyone of said outlet fixtures and said stationary fixture.

13. The invention, as defined in claim 10, wherein: measuring means is disposed in said dispensing cavity, said measuring means operable relative to said shutoff valve for shutting off said source of vacuum when a predetermined amount of liquid is drawn from one of said containers and into said dispensing cavity; said recording means is responsive to charging of said dispensing cavity; said measuring means being provided with a plurality of electrically responsive sensors therein, said shutoff valve being solenoid operated and coupled to sensors; said recording means also coupled to said sensors, whereby each unitary quantity of liquid dispensed from said cavity is measured and recorded before being released from said dispensing cavity.

14. The invention, as defined in claim 1, wherein: said fixture identification means comprises a portion of distinctive longitudinal disposition relative to each respective outlet fixture and switch means on said respective outlet fixture corresponding in position relative to the disposition of said portion.

15. The invention, as defined in claim 1, wherein: said fixture identification means comprises a portion of distinctive longitudinal disposition relative to each respective outlet fixture.

16. The invention, as defined in claim 1, wherein: said fixture identification means comprises an electrical switch means located on said fixture engaging means at a distinctive position relative to a respective switch operating means on said outlet fixture.

17. The invention, as defined in claim 1, wherein: said fixture identification means comprises an electrically operable means including an electrical capacitor having distinctive capacitance relative to each respective outlet fixture.

18. The invention, as defined in claim 1, wherein: said fixture identification means comprises magnetic means of distinctive character.

19. The invention, as defined in claim 1, wherein: said fixture identification means comprises electrically operable means including an electrical resistor having distinctive resistance relative to each respective outlet fixture.

20. The invention, as defined in claim 1, wherein: said fixture identification means comprises a spout portion of distinctive diameter relative to each respective outlet fixture.

21. The invention, as defined in claim 10, wherein: measuring means is disposed in said dispensing cavity; said measuring means disposed to be electrically operable and coupled to said solenoid valve for energizing said solenoid valve, and thereby shutting off said source of vacuum when a predetermined amount of liquid is drawn from one of said containers and into said dispensing cavity.

22. The invention, as defined in claim 21, wherein: said solenoid valve is provided with vent means operable to vent said cavity and allow liquid to drain therefrom via said liquid outlet when said source of vacuum is shutoff by said shutoff valve.

23. The invention, as defined in claim 10, wherein: measuring means in said dispensing cavity is disposed and operable electrically and coupled to said solenoid valve for energizing said solenoid valve and shutting off said source of vacuum when a predetermined amount of liquid is drawn from one of said containers and into said dispensing cavity; said measuring means having a plurality of electrically responsive sensors therein; said solenoid valve being coupled to said sensors and said recording means also coupled to said sensors, whereby each unitary quantity of liquid dispensed from said cavity is measured and recorded before being released from said dispensing cavity.

24. The invention, as defined in claim 23, wherein: a second solenoid valve is disposed in circuit with said sensors and disposed for controlling the flow of liquid from said outlet of said dispensing cavity.

25. The invention, as defined in claim 11, wherein: said vent passage is provided with a check valve normally open when the respective container is normally upright; said check valve being normally closed when said container is inverted to prevent the loss of material through said vent passage when the respective container is inverted.

26. The invention, as defined in claim 1, wherein: each of said outlet fixtures is provided with a vent port spaced from a delivery end of said outlet fixture, said vent port communicating with a respective outlet fixture, said vent port communicating with a respective outlet fixture at said delivery end of said vent port located externally of said respective containers.