

Dec. 19, 1939.

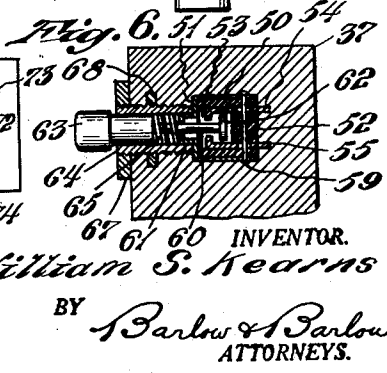
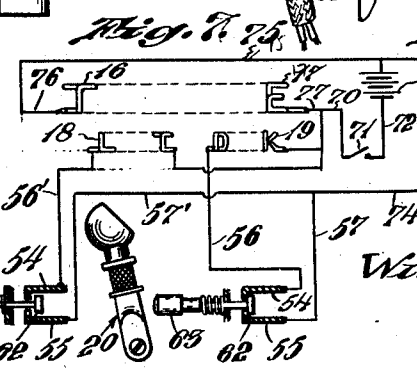
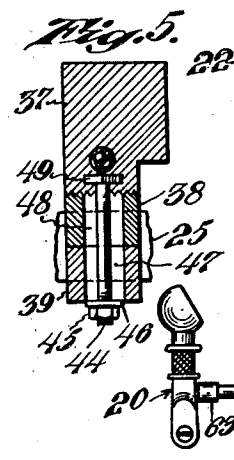
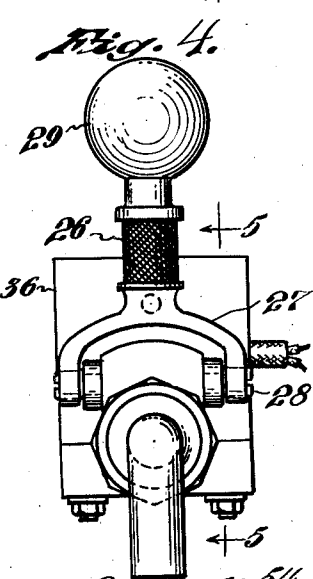
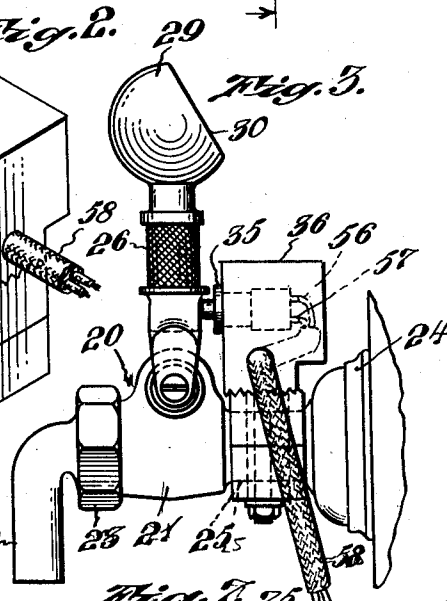
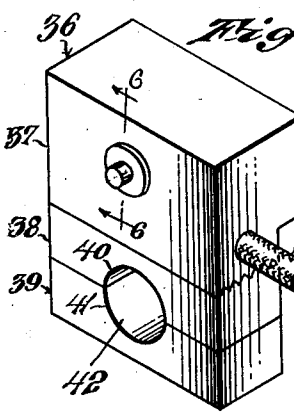
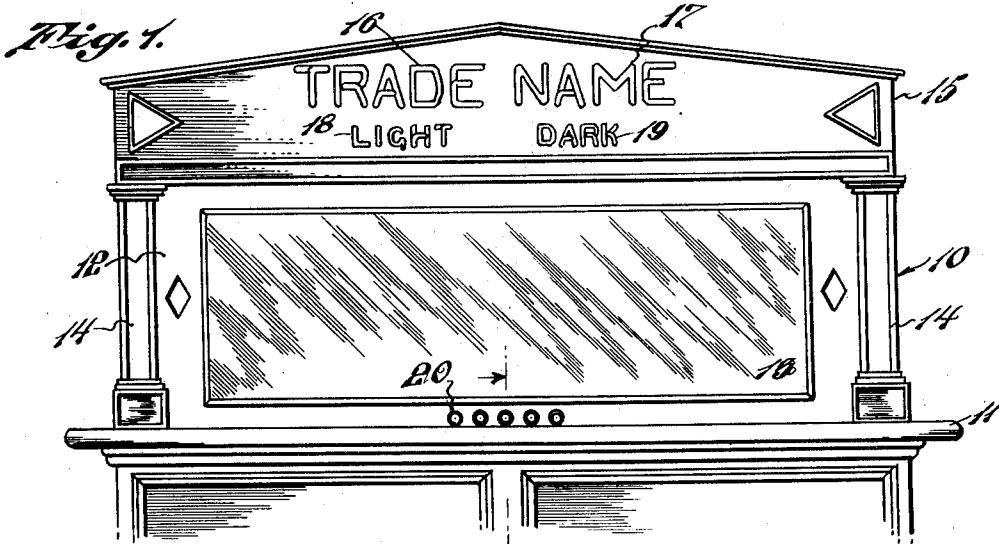
W. S. KEARNS

2,183,840

BEVERAGE DISPENSING SYSTEM WITH ELECTRICAL ADVERTISING DEVICE

Filed April 11, 1938

2 Sheets-Sheet 1



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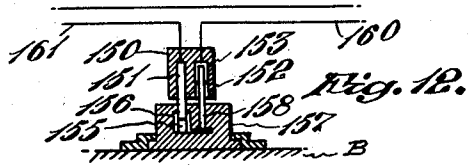
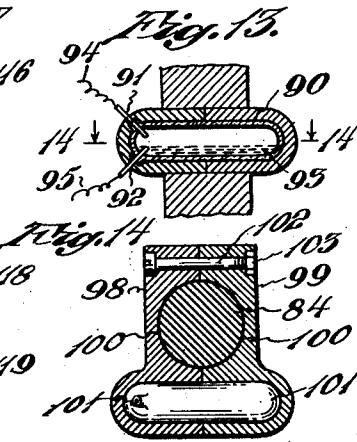
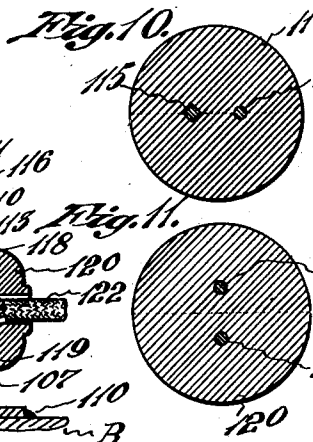
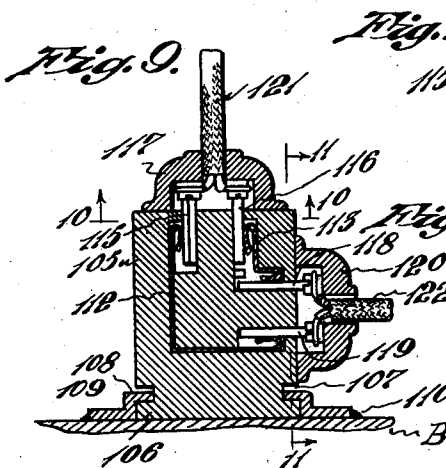
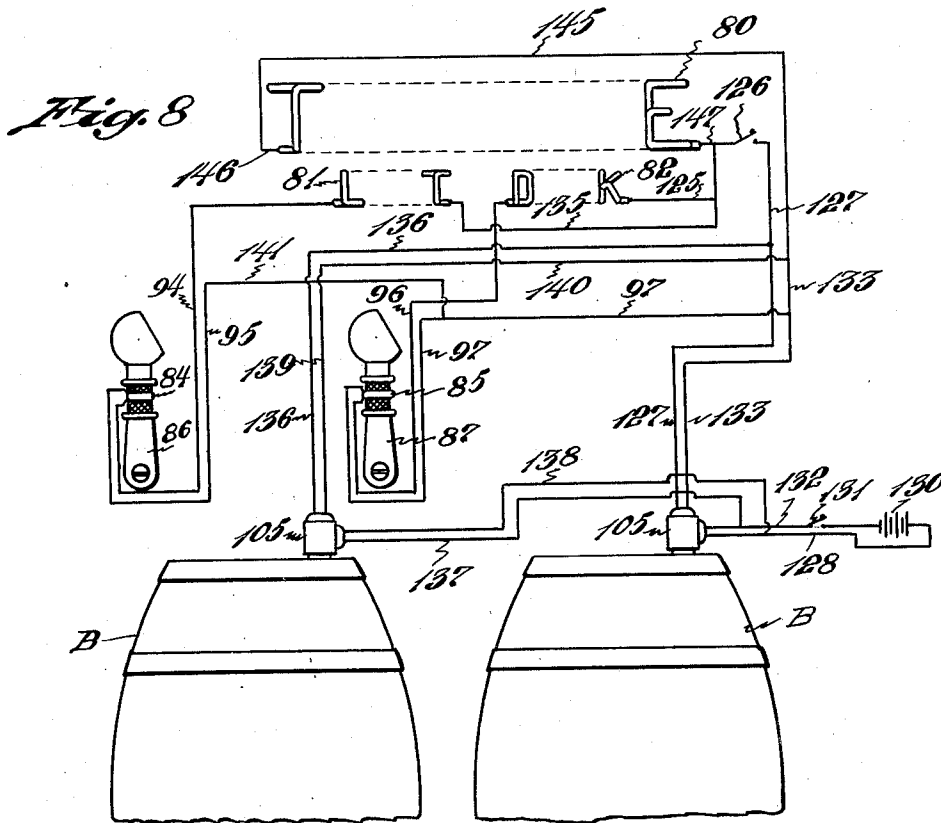
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BEVERAGE DISPENSING SYSTEM WITH ELECTRICAL ADVERTISING DEVICE

Filed April 11, 1938

2 Sheets-Sheet 2



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# UNITED STATES PATENT OFFICE

2,183,840

## BEVERAGE DISPENSING SYSTEM WITH ELECTRICAL ADVERTISING DEVICE

William Sylvester Kearns, Providence, R. I.

Application April 11, 1938, Serial No. 201,414

2 Claims. (Cl. 40—130)

This invention relates generally to fountains for dispensing beverages; and has for one of its objects the public display in a distinctive and conspicuous manner the name of each of the various brands or types of beverages obtainable at the fountain at the instant when the beverage is drawn from its respective tap.

Another object of the invention is the provision of a device whereby the opening of any selected beverage dispensing tap will insure the display of the name of the beverage drawn from the opened tap to protect the patron from substitution of a beverage other than the one ordered.

Another object of the invention is the provision of an electric advertising device including a control device therefor to be employed in association with each tap of a beverage dispensing apparatus whereby the name of each kind or type of beverage as it is drawn at its respective tap will be instantly announced in an effective and compelling manner and will be brought to the attention of the patrons in order to advertise the extent of its popularity or demand.

Another object of the invention is the simultaneous advertising or signaling, such as for example by turning on an electrically illuminated advertising sign, in which the name or names of the various beverages will be displayed in lights at the instant and for the duration that the individual taps or faucets for dispensing such products are turned on to draw the particular beverages called for by the patron.

Another object of the invention is the provision of a device in which means is included for controlling the circuit of an electric sign to operate the same during the turning on of one or more of the individual taps when drawing the beverages to simultaneously light the sign to display the name properly identifying the particular beverage being drawn, and to render the light inoperative after drawing of the beverage has stopped.

Another object of the invention is to provide a simple, reliable and efficient device which is coordinated with the movement of the handle of the dispensing tap to electrically control the operation of a light and to determine the duration of the lighting thereof.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described, and particularly pointed out in the appended claims.

In the accompanying drawings:

Fig. 1 is a front elevational view of a fountain

embodying the present invention and showing the usual back panel, bar counter and a few of the beverage dispensing taps positioned in their customary position at the rear of the bar counter;

Fig. 2 is an enlarged perspective view of a clamp member housing an electric control switch unit which is employed for controlling the operation of one of the electrical advertising devices;

Fig. 3 is a side elevational view, on an enlarged scale, of one of the beverage dispensing taps showing one of the electric control switch units mounted in a clamp member of the type shown in Fig. 2 and arranged in cooperating relation with the operating handle of one of the dispensing taps;

Fig. 4 is a front elevation of the faucet structure and electric control switch assembly shown in Fig. 3;

Fig. 5 is a vertical sectional view taken substantially on the line 5—5 of Fig. 4 looking in the direction of the arrows;

Fig. 6 is a fragmentary sectional view, on an enlarged scale, of a portion of the clamp member showing the structure of the electric control switch housed therein, and taken approximately on the line 6—6 of Fig. 2;

Fig. 7 is a diagrammatic view of the apparatus showing a pair of taps and their associated electric control switch units including their respective electrical circuits to the electrical advertising sign, in which one of the switches is represented in an open position while the other switch is indicated in closed position to cause illumination and display of one of the signs;

Fig. 8 is a diagrammatic view of the beverage dispensing apparatus showing a modified arrangement of electrical control mechanism involving the use of mercury tube switches associated with the individual dispensing taps, and also showing in the electric circuit for each sign a device associated with the beverage supply barrel for each faucet to render the apparatus tamper-proof and difficult of substitution of unauthorized beverage supply barrels;

Fig. 9 is a central longitudinal sectional view, on enlarged scale, of one of the electrical circuit connector devices associated with the beverage supply barrels;

Fig. 10 is an enlarged transverse sectional view taken on the line 10—10 of Fig. 9;

Fig. 11 is an enlarged vertical sectional view taken on the line 11—11 of Fig. 9;

Fig. 12 is a central longitudinal sectional view of a modified connector plug and socket construction;

Fig. 13 is a longitudinal sectional view through one of the mercury tube switches; and

Fig. 14 is a transverse sectional view taken on the line 14—14 of Fig. 13 showing the switch in mounted position on a control handle of a tap.

In the dispensing of beverages at a fountain or bar it is considered desirable to stimulate further sales of the various products by advertising the names, types or brands of each beverage in a compelling and prominent manner at the time that the individual beverages are being dispensed to the customer, so that the frequency with which sales of the product are made will be denoted to any patrons who may be in the vicinity of the bar so as to attract their attention to the apparent popularity and demand for each type of beverage being served in the establishment; and in order to obtain this desirable result I have provided an electrically controlled advertising device, preferably in the form of an illuminated electric sign, designed to be supported above the bar in a prominent position facing the customers and so constructed and arranged as to display at all times the trade name of the beverage in large letters and in a continuously illuminated manner, while associated with this constantly illuminated sign, I have provided a plurality of separate electric signs each designating the various individual kinds or types of beverages obtainable under the same trade name; and I have so arranged these last named signs that they will be intermittently illuminated when and only at such times that the particular beverage to be indicated by each sign is being drawn from the corresponding tap or faucet; and to this end, I have provided an electric control switch individual to each tap for controlling an electric circuit for switching the tap denoting sign on and off when the selected tap handle is moved; and the switch unit is so constructed as to be mounted in proximity to the tap or faucet in such a location that when the tap handle is operated in a direction to draw the beverage, simultaneous movement of a movable element of the switch unit will occur in response to such handle movement to close an electric circuit and cause the lighting of the proper sign denoting the name of the type of beverage then being drawn; and I have further provided a switch structure which is constructed so as to be moisture-proof; and also a novel mounting therefor is provided capable of being adjustably positioned on the tap in order to compensate for any irregularities or obstructions presented by the bar in the vicinity of the switch, in which the mounting member is of a sectional construction, the mating faces of two of the sections being provided with interfitting saw toothed surfaces to enable relative lateral adjustment of the parts; and the following is a more detailed description of the present embodiment of this invention, illustrating the preferred means by which these advantageous results may be accomplished:

With reference to Fig. 1 of the drawings, 10 designates generally one arrangement of a fountain or bar for dispensing beverages and comprises the usual counter 11, a back panel 12 having a mirror 13, with spaced uprights or pillars 14 positioned in front of the back panel opposite its end extremities for supporting at their top ends an elongated panel member 15 which extends across the uprights in the direction of the length of the back panel 12 and constitutes the main display body, as will presently be described. Mounted upon the front face portion of the dis-

play panel 15 are a plurality of electric sign units 16, 17, 18 and 19, each unit preferably comprising a neon sign of the conventional structure formed of a generally continuous length of glass tubing bent so that its outer contour will spell out a word or words denoting the name of the product being advertised, and filled with a gas which becomes luminous when an electrical discharge by high frequency current is passed through it. As shown in Fig. 1 the signs 16 and 17 preferably are given such external formation that they may spell out the "trade name" or "brand name" of the particular beverage product obtainable at that section of the fountain, and these signs 16 and 17 are intended to be illuminated constantly for the benefit of the customers, and the general height of the letters of the name preferably should be of sufficient size that they will stand out boldly against the background of the panel 15.

Disposed beneath the signs 16 and 17 are the separate illuminated signs 18 and 19, which as shown in Fig. 1 are of smaller size than the main signs 16 and 17, and the size of the letters are of a height sufficient to show prominently and attract attention upon being illuminated, which display will occur at the instant that the particular beverage corresponding to the name designated by the sign is drawn at the fountain upon pulling of one of the taps or faucets 20 which are disposed immediately behind the counter 11.

Since the taps 20 are of similar construction only one such structure need be described and this comprises a hollow body member 21 composed of metal, such as cast iron, brass or other metal commonly employed in the manufacture of pipe fittings, constructed of generally L-shaped formation and provided at one end with a removable spout portion 22 attached thereto by a nut 23 and depending downwardly for convenience in directing the flow of the beverage into a container. A flange 24 of suitable shape terminates the opposite end extremity of the tap 20 and serves to connect the same with the pipe for supplying the beverage from a source of supply in the basement of the establishment. The beverage may comprise a gas charged liquid under pressure, which liquid is capable of foaming after being drawn. A reduced neck portion 25 connects the flange 24 with the body member 21.

For operating the tap, there is provided an operating handle 26 having secured at one end thereof a yoke 27 which is pivotally mounted by means of a pivot pin 28 on the top portion of the body member 21 while at the other end of the handle 26 is secured a ball or other suitable grip member 29 provided with a portion 30 arranged at an angle and adapted to face the customer when the handle 26 is in a vertical or closed position. The inclined portion 30 may carry on its surface suitable insignia, symbols or name denoting the type or kind of beverage that may be drawn from that particular tap and thus provide a visual check by the customer in order that he may observe whether or not the correct tap is turned on to give him the beverage asked for.

In order to provide an electric control for operating the electrical signs 18 and 19 simultaneously during the drawing of the beverages corresponding to the name to be displayed by these signs, I have provided in one embodiment of the invention an electric switch unit 35 housed within a support member designated 36, which may be constructed of a suitable plastic molding

material common in the art, such as "Bakelite", and of a generally L-shaped, split structure formed in three separate sections 37, 38 and 39, the switch unit 35 being housed within the upper portion of the top section 37. The mating surfaces of the sections 38 and 39 are provided with oppositely disposed central semi-cylindrical recesses 40 and 41 which form in the assembled position of the sections 38 and 39 a circular opening 42 of a size adapted to receive the neck portion 25 of the tap 20 in the clamped position of the switch support member 36 about such section of the tap by means of elongated clamping bolts 44, nuts 45 and washers 46. Circular openings 47 and 48 are formed in the superposed support sections 39 and 38 respectively, and these openings extend vertically upwardly in aligned relation to provide an enlarged cylindrical bore the diameter of which is several times that of the bolt 44 which is accommodated therein. The bolts 44 are each fixed at their innermost end in the composition of the molded section 37 by reason of their flanged heads 49.

Referring specifically to the electric control switch units 25, each is of similar construction and consists of a hollow cylindrical shell 50 of generally cup-shaped formation struck out of sheet metal and having one end provided with a perforated wall 51 while the other end is closed by a cylindrical plug 52 composed of a suitable electrical insulating material, such as for example, rubber, "Bakelite" or other well known electrical non-conducting material. The inner end of the plug 51 is provided centrally thereof with a cylindrical recess 53 extending longitudinally into the body portion of the plug, and housed within this recess 52 are a pair of electric contact members 54 and 55 which comprise the fixed contacts of the respective circuit for controlling one of the electric signs 18 and 19. The contacts 54 and 55 are each formed preferably of flat strips of metal, the lower end portions of which are embedded at diametrically opposite positions in the body portion of the plug 52 in the act of molding the same and have their lower end extremities projecting outwardly beyond the bottom end face of the plug and connected respectively with either the circuit wires 56 and 57, or 56' and 57', see Figs. 3 and 7, of the cable 58 which is molded into the composition of the upper section 37. A rivet 59 is positioned crosswise of the lower portion of the plug 52 and passes through suitable holes which are formed in the embedded portion of the contacts 54 and 55 and are of larger diameter than the rivet so as to prevent the latter from short circuiting of the contacts.

As shown in Fig. 6, the upper ends of these contacts 54 and 55 are bent inwardly and radially of the recess 53 to form fixed contacts of generally L-shaped formation which are spaced apart at diametrically opposite sides of the slidable rod 60. This rod 60 extends through the opening in the neck portion 61 of the wall 51 of the shell 50 and carries on the end projecting within the recess 53, an annular head 62 formed of an electrical conducting material which is designed to be moved into bridging engagement with the contacts 54 and 55 to close the circuit to one of the electric signs 18 and 19 when the plunger head 63 carried on the opposite end of the rod 60 and slidable within a guide sleeve 64 is moved to the left of the showing in Fig. 6 by the spring 65 upon pulling downwardly of the faucet handle 20.

The spring 65 encircles the intermediate portion of the rod 60 with one end of the spring bearing against the inside end of the plunger head 63 and the other end bearing against an abutment 66 which forms the top of the neck portion 61 and extends inwardly into one end of the bore of the sleeve 64. This guide sleeve 64 may comprise a pipe nipple and is clamped in place by nuts 67 and 68 threaded on the exterior of the sleeve 64. The control switches 30 are normally open with the bridging head contact 62 disengaged from the contacts 54 and 55 when the cooperating faucet handle for each switch unit is in idle position, which preferably is in an upwardly extending direction when no beverage is being drawn from the tap.

One of these switch units 35 forms a control member of an electric circuit which, as indicated in Fig. 7, is traced from contact 54 over lead 56 to an electric sign 19, thence over lead 70, through auxiliary switch 71 and over lead 72 to the battery 73, then over lead wires 74 and 57 to the other contact 55 of the switch 35 shown to the right of Fig. 7. The terminals 54 and 56 of a second switch unit, shown at the left of Fig. 7, may be connected in parallel to the electric circuit of the first switch unit 35 so that the electric circuit of the second switch may be closed by pulling down a different tap handle 20 to cause electric current to pass from the battery 73 through the contacts 54 and 55, the bridging contact head 62, leads 56' and 57', thence to the electric sign 18 to light the same and display the name of a different beverage during drawing of the same from a different tap.

The signs 16 and 17, however, are continually lighted since they are connected in series with the battery 73, electric current passing from the battery over leads 75 and 76 to one end of the sign 16, thence through the sign 17 and over wire 77, through auxiliary switch 71, and over lead 72 to the battery. The switch 71 serves to provide a means to open circuit the signs 16 and 17 to render them inoperative along with the other signs 18 and 19.

It will be apparent that by pulling downwardly on any of the tap handles 20 when drawing the beverage, the switch contacts 54 and 55 will be readily engaged by movement of the contact head 62 into electric contact therewith by the action of the spring for closing the circuit to one or the other of the electric signs 18 and 19 and the duration of the lighting of these signs will of course be in response to the frequency or duration of the closings and openings of the electric circuit through the make and break connections with the contacts 34 and 35 by the movable bridging contact head 62.

It will also be observed that a moisture-proof switch assembly is provided since the various parts of the switch together with its operating members are effectively housed not only within the guide sleeve and the shell but that the entire unit is embedded into the composition of the top section at the time of molding of the same.

In Fig. 8 there is illustrated diagrammatically another embodiment of the invention in which the electrical control devices for operating the electric circuits of the respective electric signs 80, 81 and 82 when beverages denoted by the signs are dispensed from their respective taps comprise mercury tube switches as indicated at 84 and 85 respectively which are mounted in close proximity to the individual operating handles 86 and 87 of the beverage dispensing taps or faucets, 75

not shown, but which taps are of conventional construction and form no part of the present invention. Each of the switches 84 and 85 is actuated by movement of the respective valve operating handles 86 or 87 in a direction as to cause either making or breaking of the electric circuit to the signs and dependent upon the proper direction of movement of said handles to effect either open or closed circuit position of the switch elements.

The mercury tube switches 84 and 85 are each of similar construction and, as shown in Figs. 13 and 14, comprise a thin walled glass tube 93 closed at both ends having sealed in one end wall at oppositely disposed positions thereof a pair of metal contact members 91 and 92 respectively, which are disposed one above the other and converging inwardly in spaced relation, the tips of which upon being intermittently submerged by the mercury bath 93 upon displacement of the same by the motion of the operating handles 86 or 87 of the tap, thus causing the level of the mercury to alternately approach and recede from the top contact of the tube to effect making and breaking of the electric circuit connected by wires 94 and 95 or 96 and 97 to the particular signs 81 or 82 corresponding to the name given to that particular beverage during drawing of the same at the corresponding dispensing taps.

Suitable means are provided for movably mounting the mercury tube switches 84 and 85 respectively, and in my preferred construction, I have provided two clamp members 98 and 99 which preferably are formed of a suitable molded electrical insulating material, having on their inside faces complementary recesses 100 and 101, the recesses 99 being semi-cylindrical and in the clamped position of the members providing a cylindrical hole adapted to receive and embrace a portion of one of the operating handles 86 and 87 respectively, of the beverage dispensing taps when the members 98 and 99 are securely clamped thereto by means of the bolt 102 and nut 103. When mounted in this position on the operating handle the recesses 101, which consist of cylindrical bores extending inwardly from the mating surfaces of the members 98 and 99 and are closed at their inner ends, will be in registry and provide a housing for accommodating one of the tubular mercury switches.

The apparatus is further provided with a device associated with each beverage supply barrel and incorporated in the electric circuit of each of the faucet controlled electric signs, for rendering the electrical operating circuit substantially tamper-proof and to permit connection only to the designated sign and tap of the sealed beverage supply container of the type that is intended to be indicated by the sign, thus preventing substitution of either a different type of beverage or of a competitor's product. To this end, I provide each of the beverage supply containers with a device which is a permanent and integral part of the container structure and located in a convenient position thereon, the device being adapted to provide a plug-in main electrical connector for both the power circuit to the switch and the operating circuit for the respective sign. This protection device comprises an electrical connector member 105 having two plug outlets at different side positions and formed of a body of suitable molded electrical insulating material. The member 105 is provided with a flange 106 and an annular recess 107 at its base portion into which recess is inserted an annular lip 108 of

the metal flanged ring 109 secured by welding, as indicated at 110, to the head member of the beverage supply container or barrel B. Spring contact clips 112 and 113 respectively are incorporated within the body of the connector device and are bent so as to have their opposite ends disposed in one of the outlet openings of each side portion where they serve as the connectors for connecting the terminal prongs 115 and 116 of the extension plug 117, and the prongs 118 and 119 of the extension plug 120 which are carried by the cables 121 and 122 respectively which are connected to the electrical circuit of the sign and the power supply source.

The connector plug 120 may be of the usual type employed for common extension cords but the plug member 17 is of a special design in which the two prongs 115 and 116 carried thereby have a different cross-sectional shape or surface contour or are arranged in a different plane in order to prevent reversal or interchangeability of the plug prongs by insertion into the companion outlet portion of the same outlet of the connector device 105 in electrically coupling the cables 121 and 122 together to complete the electric circuit of the apparatus during installation of a beverage supply barrel.

The electric circuit employed for controlling the signs 80, 81 and 82 by operation of the mercury tube switches 84 and 85, is of the same general plan as that utilized in the embodiment shown in Fig. 7, where the plunger type switches 35 were used, and in Fig. 8 this circuit is traced from contact 91 of switch 85 over lead 96 to an electric sign 82, thence over lead 125 through auxiliary switch 126, and over lead 127 to the connector device 105, thence over prong 115, contact clip 112, prong 119, lead 129 to the battery 130, then through auxiliary switch 131, which is to be used to cut off the power during disconnection of each power cable 122 from the barrel, then over lead wire 132, to the connector device 105, through prong 118, contact clip 113, prong 116; and over wires 133 and 97 to the other contact 92 of the mercury switch. Similarly, the electric sign 81 is connected electrically with the contacts of the mercury switch 84 traced from contact 91 by wire 94, to the electric sign 81, thence over lead 135, through auxiliary switch 126, wires 127 and 136, connector device 105, over leads 137 and 123 to the battery 130, then through auxiliary switch 131, over wires 132 and 136, to connector device 105, thence over wires 139, 140, 138, 97 and 141 to the other contact 92 of the mercury switch 84.

The main sign 80, however, will be lighted continuously during operation of the fountain, in which instance, electric current is supplied from the battery to the sign 80 over wires 132, 133, 145 and 146 through the sign 80, thence over wire 147, through auxiliary switch 126, over wires 127 and 123 to the battery. The auxiliary switches 129 and 128 may each serve to cut out the signs when the fountain is idle.

In use, it will be seen that when either of the operating handles 84 and 85 are in idle position, as represented in Fig. 8, the mercury bath 93 will be in a substantially horizontal position and out of submerging relation or electrical contact with the tip of the contact 91 as is indicated in Fig. 13. When one or both of the operating handles 86 or 87 is separately pulled in a direction to cause discharge of beverage from the dispensing tap one of the respective mercury switches 84 or 85

will be moved bodily in the direction of movement of its respective support, viz., the operating handle, and thus cause displacement of the mercury bath toward and into electrical conducting relation with the upper contact 91 of the tubes to electrically connect the contact members 91 and 92 respectively, and close the electric circuit to the signs 81 or 82 to cause one or both to be lighted. This displacement of the mercury is very rapid so that operation of the electric sign connected to the electric circuit of the switch takes place almost at once when the operating handle of the valve is moved forwardly. Conversely, when either of the operating handles 86 and 87 are pushed back into its idle position there will be a recession of the mercury away from the tips of the electrical contacts 91 and 92 to a horizontal position corresponding to that shown in Fig. 13, thus extinguishing and rendering inoperative the faucet controlled electric sign connected to that circuit. It will also be seen that duration of the operation or the illumination of the electric signs 18, 19 and 81, 82 is determined entirely by the frequency and extent in which the beverage dispensing taps are in use.

In Fig. 12 I have shown a modified form of separable electrical connector device associated with the head of a barrel, and this comprises a plug member 150 provided at one end with a prong clip 151 and a recess 152 within which is a contact clip 153, the prong 151 being adapted to have interfitting engagement within a recess 155 carrying a contact clip 156 carried by a socket member 157, the clip 156 being connected with a prong 158 upstanding from the end of the socket member 157 and adapted to fit within the recess 152 of the plug 150 to connect electrically with the clip 153 therein. A wire 160 from the power supply line and a wire 161 from the sign circuit have connection with the inner ends of the clip 153 and the prong 151 respectively.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible, the invention being de-

finied and limited only by the terms of the appended claims.

I claim:

1. In a beverage dispensing system, in combination, a bar, a tap associated with said bar for dispensing a beverage, an electric sign adapted to be illuminated for display of the name of the beverage which is drawn from said tap when the same is turned on for dispensing the beverage, an electric switch movable into a position to cause illumination of the sign upon movement of said tap into a liquid dispensing position, an electric circuit connecting said switch and said sign, and electrical connector means in association with said circuit through which means electric current passes from a central source of supply to said electric circuit, said connector means being mounted directly on the supply barrel for serving said tap.

2. In a beverage dispensing system, in combination, a bar, a tap associated with said bar for dispensing a beverage, an electric sign adapted to be illuminated for display of the name of the beverage which is drawn from said tap when the same is turned on for dispensing the beverage, an electric switch movable into a position to cause illumination of the sign upon movement of said tap into a liquid dispensing position, an electric circuit connecting said switch and said sign, and electrical connector means in association with said circuit through which means electric current passes from a central source of supply to said electric circuit, said connector means being mounted directly on the supply barrel for serving said tap, and comprising an electrical receptacle having spaced metallic contact members so constructed and arranged that they can only serve for detachable connection with correspondingly spaced metallic contact pins of a plurality of electrical attachment plugs carried by the respective conductor wires of said electric circuit and the supply mains for permitting operation of said electrical circuit only when interchangeable supply barrels for the beverage carrying duplicate electrical receptacles are employed in the system.

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