Nov. 24, 1936. W. J. PETER 2,061,738

LIQUID DISPENSER

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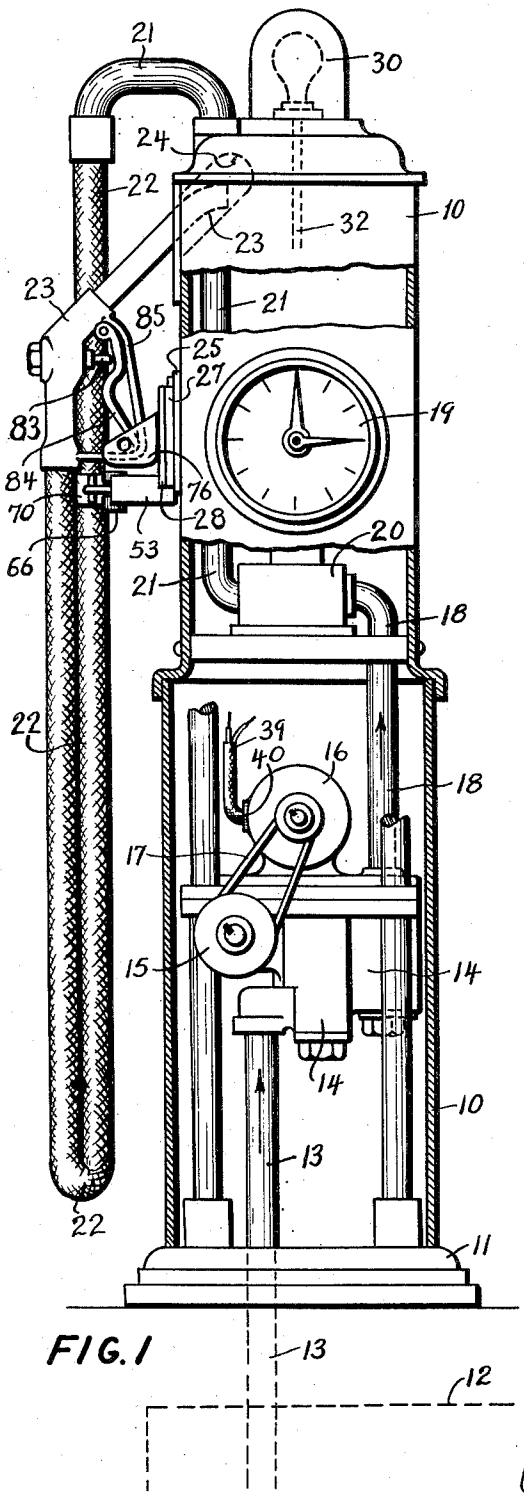
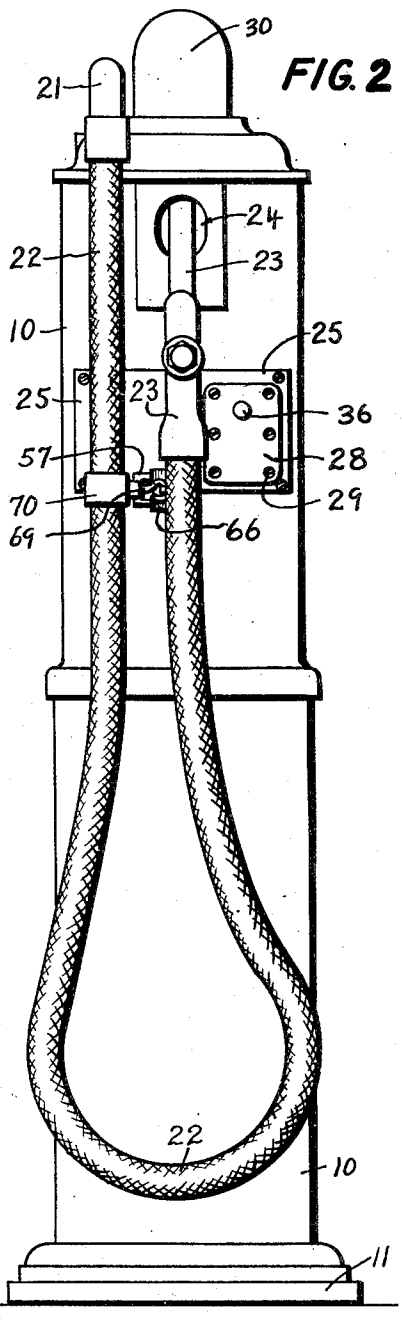


FIG. 1

FIG. 2



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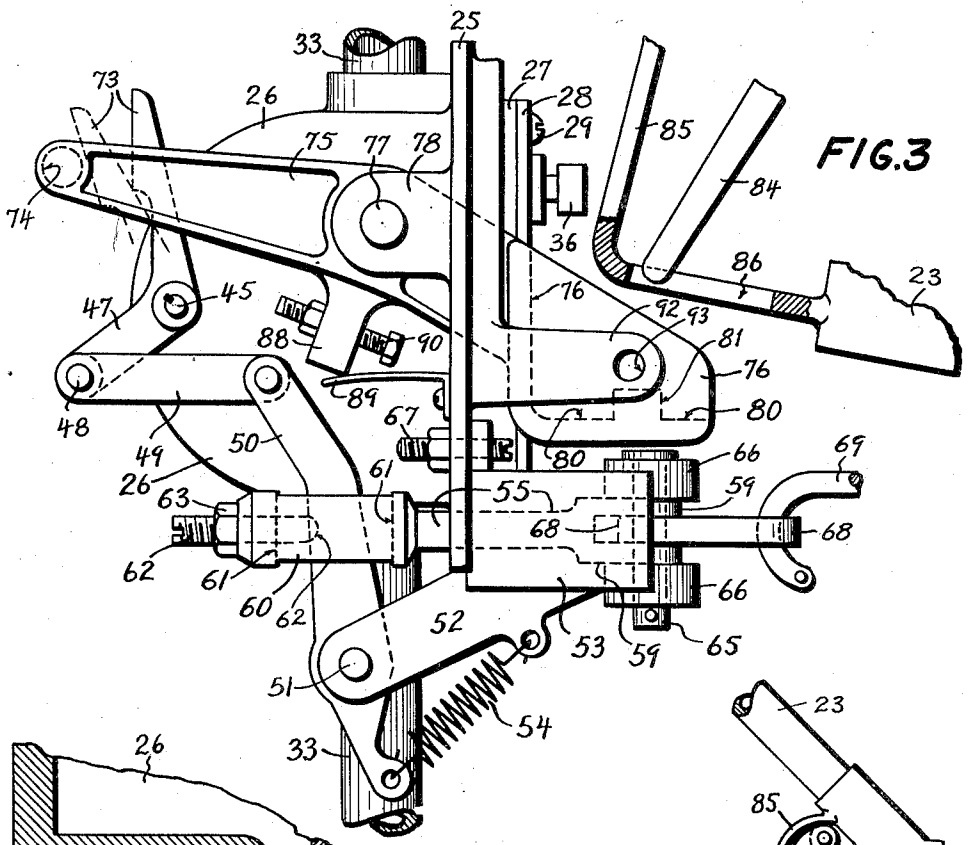


FIG. 3

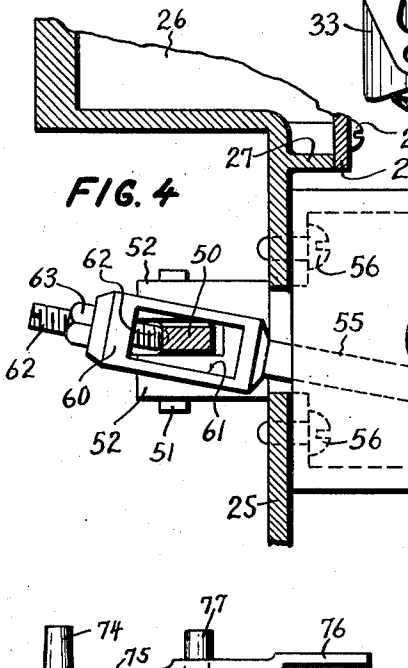


FIG. 4

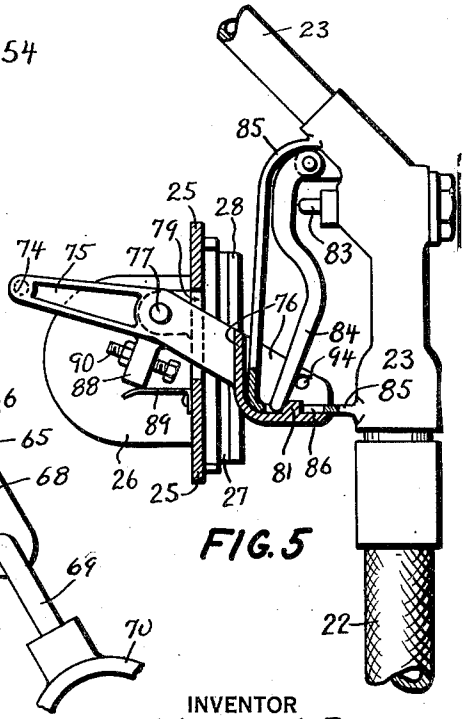


FIG. 5

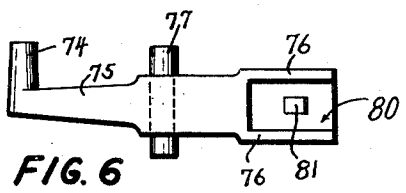


FIG. 6

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FIG. 7

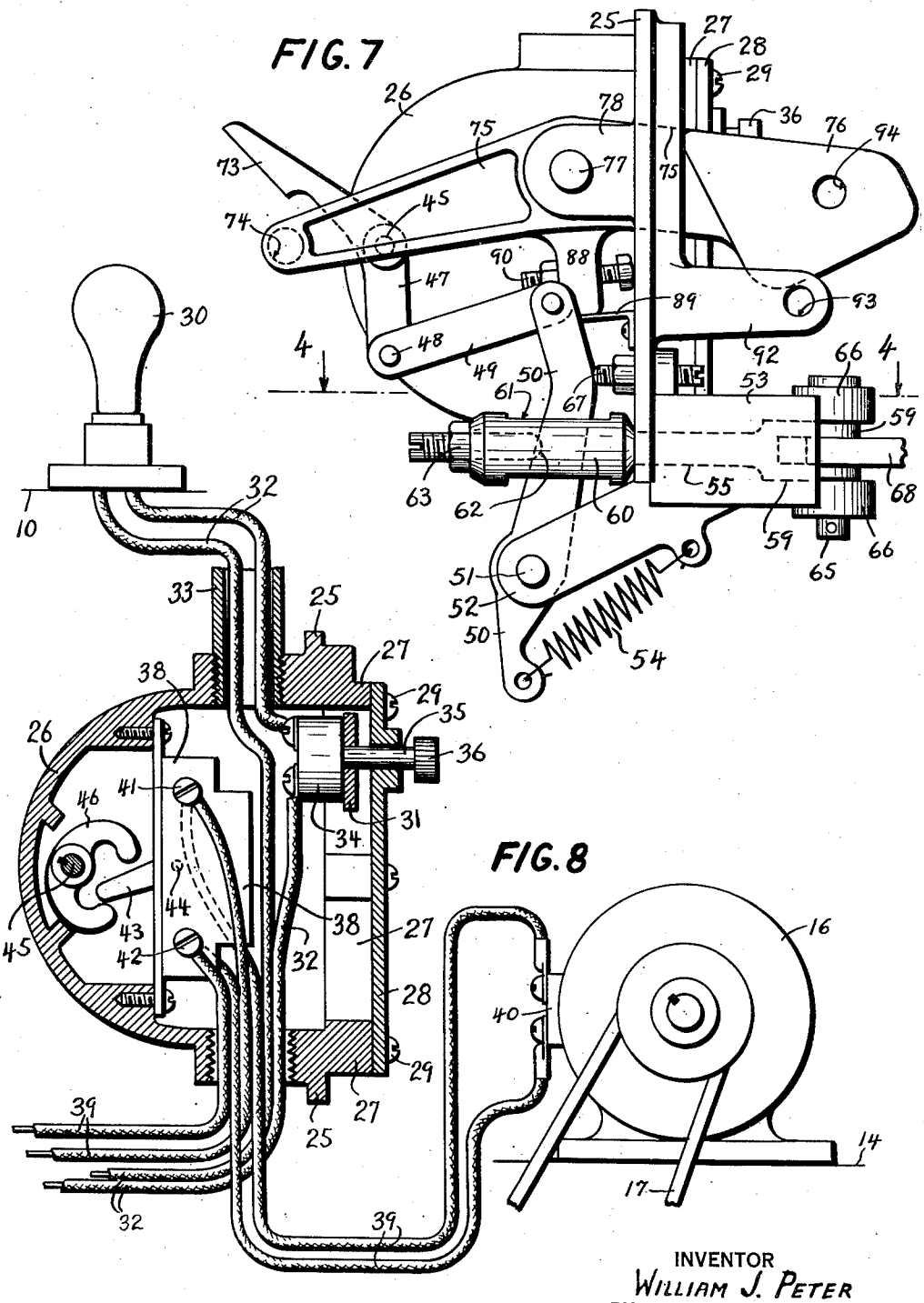


FIG. 8

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FIG. 9

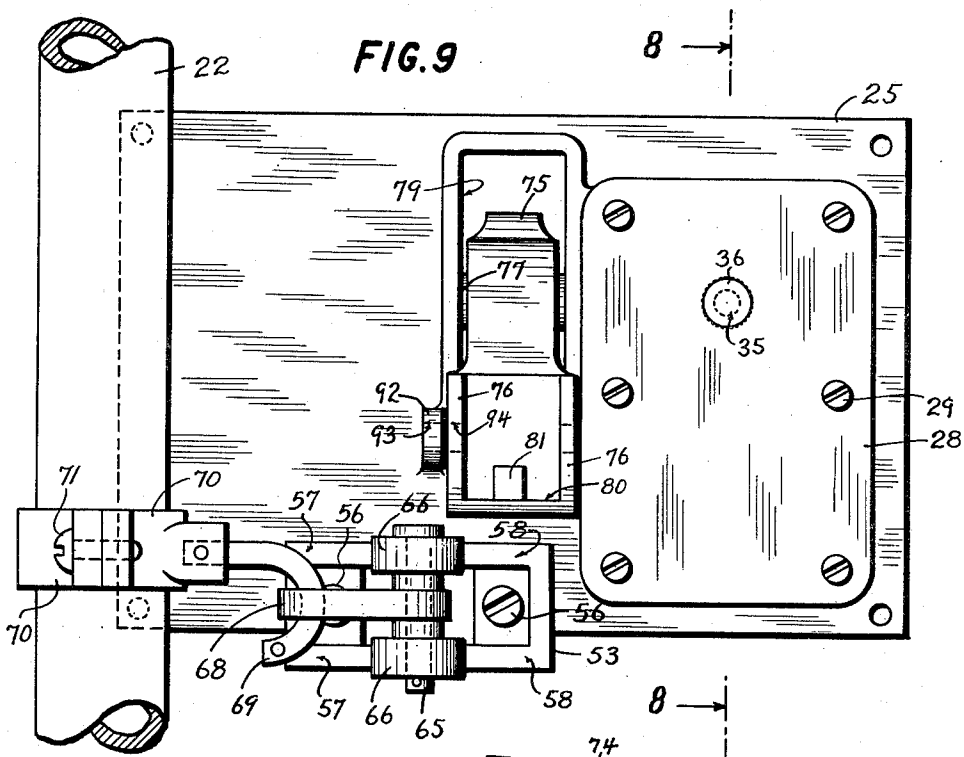
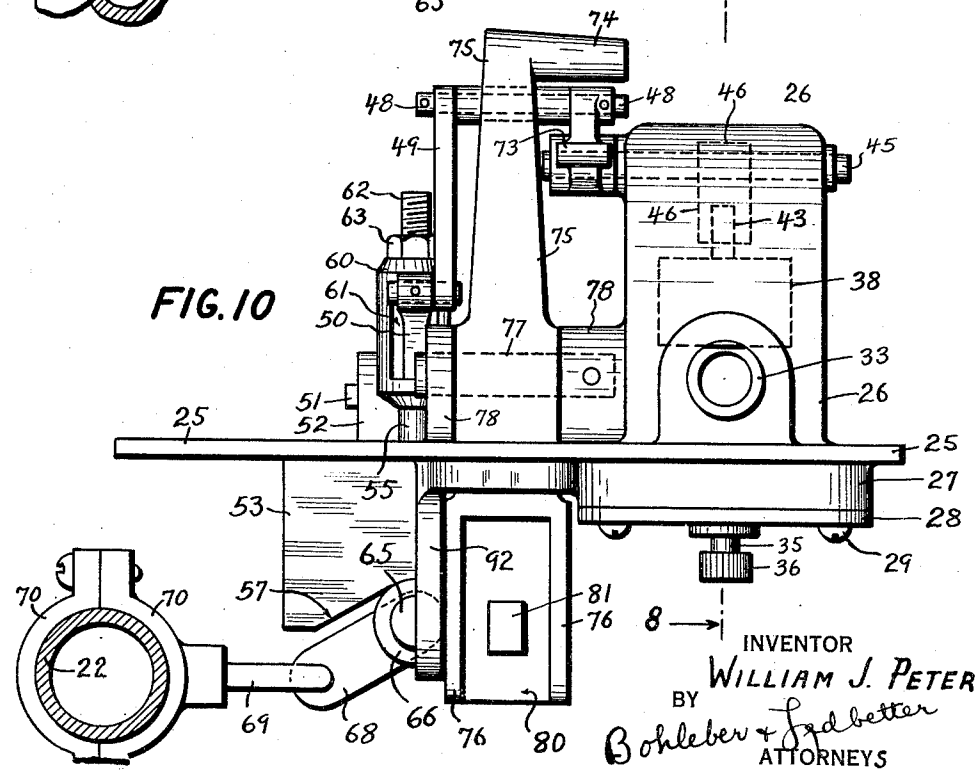


FIG. 10



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UNITED STATES PATENT OFFICE

2,061,738

LIQUID DISPENSER

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Application January 17, 1933, Serial No. 652,115

43 Claims. (Cl. 221—95)

This invention relates to liquid dispensing apparatus for gasoline, oil and the like, and more particularly to improvements in remote control nozzle means for stopping and starting the flow of gasoline thru the flexible delivery or service hose of a curb pump or wall panel dispenser used in filling stations and garages.

An object of the invention is to produce a novel remote control discharge nozzle means of the pull hose control type for actuating an electric switch, a valve, or other control instrumentalities to start and stop the operation of a hydraulic or pneumatic pumping system, a motor driven pump, or other flow producing means.

A further object is to produce a novel control unit for curb pumps, wall panel pumps, or service station pumps, and comprising a unit assembly and mounting means for the control of a flow producing means and a lighting circuit. This object is attained and the invention carried into effect by producing a unit base or frame means on which all mechanical and electrical control parts are grouped in combination for governing the operation of the flow producing means and for illuminating the pump or service station.

A further object is to produce a new curb pump combination of simple and rugged construction, whereby the pump stand housing can be erected and completed as one unit, the electrical and mechanical parts assembled and finally tested as another and separate unit, and finally the latter unit installed on the pump stand to complete the curb pump assembly.

With the above and other objects in view, the invention has relation to the features of construction, their use and new mode of operation, as disclosed in the accompanying drawings, which show one example of the invention as follows:

Figure 1 shows a front view of a gasoline dispensing unit or curb pump; and Figure 2 shows a side view thereof. In both views the service hose used for dispensing gasoline or other liquids is shown hung up out of the way on a locking nozzle support, whereby the pump is rendered positively inoperative.

Figure 3 is a side view of the control unit detached from the housing of a curb pump, the hose and nozzle having been omitted for clarity in illustration. The position of the operating parts is shown as obstructed or locked against operation, which is the position of the parts until the operator pushes up the nozzle support. The fragmentary dotted line position shows an attempted movement of the switch closing means to start or attempt to start the pump, but the operation of which is obstructed.

Figure 4 is a longitudinal section view on the line 4—4 of Figure 7 showing a novel two-way cam and roller means constituting the pull hose control for the operation of an electric switch. The view is downward, the hose has been tensioned sidewardly, and the roller has moved up one of its cam races or guides to close the switch and start the pump or other flow producing means.

Figure 5 is a side detail view of the hose discharge nozzle at inoperative or in non-use position resting in a pocket or cradle at the outer end of a manually releasable locking means in the form of a hose hook or nozzle support lever, the outer end of which is down in this view to obstruct and fix the pumping means control against being inadvertently actuated.

Figure 6 shows a detached plan view of the manually operable hose hook or nozzle support lever for obstructiong the operation of the pumping means control, as mentioned in the former paragraph.

Figure 7 shows a side view of the control unit in its position after the hose nozzle has been removed for use, the nozzle support manually moved upwardly at its outer end to release the switch actuating means whereby the latter is unlocked, the rollers have climbed one side of the cam due to a sidewardly pull on the hose, the power switch is closed, and the flow of liquid has started.

Figure 8 is a sectional view through a dual switch box in which is housed two control means comprising a pumping means switch and a lighting switch. A pump motor is shown connected to the power circuit and an electric light connected to the lighting circuit.

Figure 9 is a front or face view of the control unit, showing its panel or cast plate with switch box carried by the plate to render accessible the several switches in said box, showing the roller and cam means constituting the pull hose control, and a fragment of dispensing hose to the left.

Figure 10 is a top view projection of Figure 9 showing the electric switch box which contains two switches in the present example of the invention, showing the pumping means switch control parts at the rear of the assembly, and the pull hose control parts and lighting switch button at the front thereof.

Referring first to Figures 1 and 2 for a brief presentation of a conventional curb pump as a basis for illustrating the invention, there is

shown an upright or vertical curb pump stand casing or housing 10 erected on a cast iron base 11 and ordinarily installed on the curb or sidewalk by which to establish a pipe connection 13 with a supply or storage tank 12 containing any liquid, say gasoline, to be dispensed. The intake pipe 13 leads from the liquid source 12 to the pump stand 10 and the invention has to do with the safe and efficient dispensing and sale of gasoline from this storage 12 to motor vehicles and the like.

The gasoline is pumped upwardly through intake pipe 13, to a unit pipe connection housing 14, is forced therethrough by a pump 15 driven by a motor 16 thru a belt or other means 17, and then out through a discharge pipe 18. The liquid is passed through a metering or measuring means 19 carried in the usual way on the meter casing 20, thence continues through discharge pipe 21 connected to a flexible service hose line 22, and out through a normally closed discharge nozzle 23 to an automobile or other point of use. A drain pocket 24 is set into the pump stand 10 to protect the open end of the nozzle and more particularly to drain out on the ground any gasoline which might leak from the nozzle after it was set in place after use, as shown in Figures 1 and 2.

Any form of liquid flow producing means may be used in conjunction with this invention. Although well suited to the control of hydraulic or pneumatic pumping or flow producing systems, the invention is here shown adapted to actuate an electric switch in a power circuit to start and stop the electric motor 16 which drives the pump 15 shown for example as mounted on the pipe connection housing 14. Support standards inside the pump stand 10, or other suitable bracket means, may be used to rigidly mount the pipe connection housing 14 in service position. This member 14 is a hollow casting, it supports the motor and pump, and is a part of the conduit system 13, 18 and 21. The illustrated example of my invention is shown herewith in connection with dispensing apparatus ofttimes referred to as curb pumps, such as indicated generally at 10. However, the invention is applicable to any type of dispensing apparatus usually employing one form or another of metering means 19, 20 and the flexible service hose 22.

This invention more particularly relates to control means responsive to manual tensioning of the hose 22 and the releasing thereof for opening and closing an electric switch for starting and stopping the flow producing means represented by the pump and motor means 15, 16. My invention, among other things, comprises a compact unit assembly of all the control and related parts grouped on a single panel board, a base or mounting plate 25. This base or mounting frame 25 carries an electric power line switch for controlling the pumping apparatus and another switch for ordinary illumination purposes. In other words, all control including the mechanical and electrical parts of the apparatus is grouped on this single panel 25 so that these parts may be first assembled, inspected, tested and adjusted, whereupon the completed unit control panel 25 is then installed on the curb pump housing 10 or on any other dispensing base or apparatus, and the machine as a whole made complete and ready for shipment and use. The sheet metal pump stand 10 has an opening left therein for the reception of the completed control unit 25 which is secured by screws or other means to the housing 10 or to inside frame parts thereof.

The control panel or assembly plate 25 is generally rectangular in shape and carries a switch box 26, which may be formed by a curved rear wall, carried at the rear of said panel and inside of the pump stand casing 10. The panel 25 and box 26 are shown cast in one piece. The switch box 26 has an enlarged open front defined by a marginal flange or rib 27 which provides an open entrance thru the plate 25 into the switch box 26 from outside the pump stand. The switch box opening is closed by a removable cover plate 28 applied to the flange 27 and secured by screws 29 or other means. This box cover 28 is accessible on the face of the pump casing 10 and is easily removed from the switch box 26 to gain access thereinto for making electrical circuit connections to the motor 16 and an illuminating globe 30 carried on the upper end of the curb pump 10 or to make repair or adjustment of the switches within said box.

The switch box 26 houses a dual circuit and switch means for the light bulb or globe 30 for general illuminating and another control means represented by an automatic switch 38 for starting and stopping the electric motor 16 or for controlling any flow producing means. The pump lighting circuit will first be described and it is noted that the light globe 30 is fed by circuit wires 32 carried thru the switch box 26 and protected by cable or conduit means 33 attached to the box in the usual way. Any suitable form of hand actuated electric switch 34 is mounted on a cross support 31 and the latter has its ends secured to the walls of the box 26 behind the removable cover 28. One or both wires 32 are connected thru the lighting switch 34 and to the light globe 30. In the present construction, the lighting switch 34 has a spindle 35 extending rotatably thru the cover 28 and cross bracket 31 with a finger button or hand knob 36 fixed to the outer end of said spindle by which to manually actuate the switch 34 to open or close the latter and thus make or break the circuit 32 to light and extinguish the globe 30. The box 26, therefore, accommodates this lighting equipment, in addition to the power circuit layout for the pumping means.

A description will now be given of the power circuit for the flow producing means. Any suitable form of switch, as indicated generally at 38, may be employed to make and break the flow of current thru a power circuit 39 which in this instance furnishes power to the electric motor 16. The circuit 39 is shown carried thru or having terminals in the switch box 26 and is connected at 40 to the motor 16. This power circuit 39 for the motor 16 is connected at 41 and 42 with the double pole switch 38 which is preferably a snap or toggle operating switch of conventional design and accordingly has a switch actuating lever 43 operatively mounted on a pivot 44 carried within the switch body 38. By actuating the switch arm 43, the flow of current is controlled to start and stop the motor 16, the up position of switch arm 43 serving to close the switch 38 and start the motor 16, while down position of arm 43 breaks the circuit 39 to stop the motor, as in Figure 8.

An automatic operating connection is established between the flexible hose 22 and switch actuating lever 43, whereby the latter is swung upwardly to close the switch 38 and start the motor 16 when an operator pulls the hose 22 out-

wardly from the pump casing 10. This operating connection includes spring means for returning the switch arm 43 downwardly to cut off the motor 16 when the operator releases the hose 22 as a consequence of having completed the dispensing of a measured quantity of gasoline. A description will now be given of this operating means interconnected between the hose 22 and switch 38.

A shaft 45 is journalled in the switch box 26 and carries fixed thereon, inside said box, a double arm yoke 46 which overlies the outer free end of the switch actuating lever 43 and is adapted to engage the latter on the top and bottom side thereof when the shaft 45 is oscillated in either direction. One end of the shaft 45 projects thru the switch box 26 and carries a switch actuating lever having a lower arm 47 pivotally connected at 48 to a link 49 in turn connected to the upper end of a spring return lever 50. The lever 50 is pivoted at 51 on a bracket 52 rigidly projecting from the lower face of a tubular member 53 carrying a V-shaped two-direction cam at its outer end, as later described.

A spring 54 has one end fixed to some stationary part as the bracket 52 and its other end yieldingly attached to the lower extremity of the lever 50. This spring 54 maintains the upper end of lever 50 in a counter-clockwise limited position and, therefore, holds the switch actuating shaft 45 to its limited position in a clockwise direction with the result that the upper arm of yoke 46 in box 26 is urged downwardly to throw the toggle actuating switch arm 43 downwardly. Hence the spring 54 normally maintains the switch 38 open and the motor 16 de-energized. The foregoing operating linkage, comprising parts 47 thru 50, is disposed vertically and at the rear of the assembly plate 25 and consequently concealed within the upright curb pump housing 10.

The tubular member 53 has its inner end rigidly anchored by screws 56 to the outer face of the panel or assembly frame plate 25 and thus projects horizontally out from the face of the pump stand 10. The outer extremity of this tubular member 53 is finished in the form of a V-shaped two-direction double cam means. This cam is defined by a pair of spaced inclined planes 57 directed back towards the plate 25 and intersecting a like pair of similarly spaced inclined planes 58, the two sets of intersecting inclined planes 57 and 58 forming in effect a cam 57, 58 of two guides or races which intersect centrally at a vertical plane thru the tubular cam member 53. A roller traverses each upper and lower complete cam roll, as will be explained.

A universally swingable pull link 55 has free movement within the tubular cam member 53 and thru an enlarged opening in the plate 25, as shown in Figure 4. The link 55 has its front end forked at 59 and its rear end is headed at 60. The head 60 is provided with a vertical slot or opening 61 and the lever 50 has relatively free movement therein. The rear extremity 60 of the universal pull member 55 is provided with an adjustable screw 62 fixed in position by a lock nut 63. The inner end of screw 62 projects into the slot 61 and is rounded off as a bearing end and rests in a seat formed in the rear edge of the lever 50 so that an outward pull, either straight or angularly, on the forked end 59 will apply an operating force on the lever 50, thereby tensioning the spring 54 and rocking the shaft 45 clockwise to close the switch 38. The spring 54 maintains the lever 50 and screw 62 in bearing engagement and the lever 50 rocks on the bearing end of the screw 62 as said lever fulcrums on its pivot 51.

The outer forked end 59 of the universal movable pull link 55 carries a vertical bearing pin 65 with rollers 66 thereon resting against the cam 57, 58. The link 55 has its outer end 59 disposed between the two rollers 66 so that the upper roller rests on the upper cam race 57, 58 and the lower roller engages the lower cam race 57, 58. The spring 54 maintains a rearwardly directed tension on the link 55, by pulling thru the screw 62, and normally holds the rollers 66 down in the apex of the V-shaped cam 57, 58. A front end pull link 68 has its rear end pivotally mounted on the roller carrying pin 65 and its outer end engages a hook 69 attachable to the hose 22. This pull link 68 has free swiveling motion on the roller axis 65 between the cam follower roller pair 66.

The outer end of the hook 69 is attached to a split ring 70 embracing the hose 22 and anchored thereon by a clamp screw 71. The split ring 70 is secured to the hose 22 a short distance from its upper staticnary end where the latter is attached to the delivery pipe 21 leading from the pump housing 10. Consequently the hose 22 has a certain amount of universal swinging movement in relation to the pump stand 10 at the point of connection 70 with the pull link 55. If the hose 22 is pulled straight outwardly in the direction of the axis of the link 55, it follows that the rollers 66 are simply displaced from the face of the cam means 57, 58 and thus actuates the primary lever 50. On the other hand, if the hose 22 is swung sidewardly, in either direction transverse to the axis of the link 55, it likewise follows that the lever 50 is actuated because the rollers 66 climb the cam race, to either side of the apex thereof, and thus draw outwardly on link 55. The spring 54 is tensioned by displacing the pull link 55 and restores all parts to normal non-pumping position when the pull on the hose 22 is released.

According to the foregoing description of structural organization of parts, it follows that a gasoline station operator may conveniently pull the hose 22 in any direction, within an arc of 180°, and instantly draw the upper end of first or primary lever 50 toward the plate 25 with the result that the switch actuating lever 45 is rotated counter-clockwise to kick the toggle switch lever 43 upwardly, thus closing the switch 38 and starting the motor 16. The switch 38 remains closed, against the tension of the return spring 54, only so long as the operator maintains the hose 22 in outwardly tensioned position against the spring 54. An adjustable stop screw 67 is carried by the plate 25 to stop the lever 50 at the end of its forward movement and thus takes or catches the strain exerted by the operator on the hose 22 and which otherwise might be imparted to the switch lever 43. Instantly the operator releases the hose 22 at the end of the filling operation, all parts are returned to normal position by the spring 54, the switch 38 is opened, the motor 16 is stopped, and the hose 22 is drawn back to the pump housing 10.

A description will now be given of a safety locking means or switch obstructing device to positively prevent closing of the pump control switch 38 prior to a preliminarily manual setting of the control apparatus by the station operator. In other words, the switch actuating shaft 45 is locked in normal position against counter-clockwise movement even though the hose 22 is pulled,

this being the condition of the apparatus until said shaft 45 is unlocked. To this end, the lever 47 outside the box 26 has an upper locking arm 73 in line with a locking or obstructing pin 74 carried on the rear end 75 of a nozzle support 76 pivoted on a pin 77 fixed in ears 78 projecting from the rear surface of the assembly plate 25. When the pin 74 is up, the arm 73 and switch 38 are locked against movement.

The construction of the nozzle support lever 75, 76 is further shown in Figures 5, 6, 9, 10 and other views. It is to be noted that this nozzle support member has its outer end 76 cast in the form of an open ended deep receptacle or cradle-like pocket having a seat or bottom 80. This pocket means 76, 80 is defined by deep parallel side walls 76 and a bottom wall 80 with its outer end completely open. Rising from the seat 80 is a central vertical lug 81 midway between the two cradle walls 76. This lug 81 is adapted to interlock with a handle on the discharge nozzle 23 attached to the free end of the hose 22, as will now be described.

One type of discharge gasoline nozzle 23 in general use includes a normally closed valve means 83 and a hand or finger lever 84 to open the valve 83, whereby this normally closed valve within the nozzle 23, is pressed open manually to discharge liquid from the hose 22. A stationary guard 85 encircles the valve operating lever 84 and is made integral with the nozzle 23. The guard 85 is slotted at 86 which slot is adapted to receive the lug 81 of the hose hook support 76. After a dispensing operation, the pull on the hose 22 is released, the valve lever 84 is released, the nozzle 23 placed in its drain pocket 24, and the guard 85 is set into the support cradle 76, as in Figure 5. The operator having released his fingers from the valve lever 84 on the nozzle 23, the internal spring actuated valve plunger 83 kicks the lever 84 outwardly from nozzles 23, in the usual way, with the result that the lug 81 may now project up through the guard slot 86 at a point in front of the free lower end of lever 84. Consequently this lever 84 is now locked against movement and cannot be inadvertently or maliciously actuated so long as the nozzle 23 is in place on its support lever 75, as in Figure 5.

On the other hand, Figure 3 shows a fragment of the guard 85 and lever 84 of the discharge nozzle 23 being lifted out of engagement from the cradle 76, prior to manually pushing the end 76 up to disengage the locking means 73, 74. When the guard 85 is clear of the cradle 76, as in Figure 3, the operator thrusts the end 76 up and thus moves the obstructing pin 74 down out of the way of the locking arm 73 so that a manual pull on the hose 22 and link 55 will now actually and positively close the switch 38 and start the pump 15, and gasoline is then discharged from the nozzle by pressing the valve lever 84.

After the dispensing operation, the attendant releases the valve lever 84 to close the nozzle 23 and replaces the nozzle in its hook or support cradle 76. This latter action also tilts the switch locking pin 74 upwardly in obstructing alignment with arm 73. When the pin 74 is up, this arm 73 has such limited movement that the switch actuating shaft 45 cannot again be rocked sufficiently to completely throw the switch arm 43 to close the switch 38. Therefore, a station operator is compelled, as before stated, to manually thrust the lever end 76 upwardly in order to release the locking arm 73 and shaft 45 before a pulling action on the hose 22, the link 68, rollers 66, link 55 and other parts, becomes effective to actuate the control means represented by the switch 38 to start the flow of liquid through the discharge piping and hose 22.

The tiltable nozzle support 75 is provided with friction means to hold its rear end down as shown by Figure 7 so as to positively prevent its locking pin 74 from accidentally tilting upwardly into engagement with the lever 73 when the latter is down to its switch closing limit. For this purpose, a lug 88 is integral with the lever 75 proximate the pivot 77. A stationary leaf spring 89 has brushing engagement with the lower face of said lug 88 and frictionally holds the lever 75 when its outer end 76 is up. The lug 88 serves a further purpose of carrying an adjustable stop screw 90 which impinges the rear face of plate 25 and positively stops the upward tilting movement of the cradle end 76 at a convenient point for receiving the nozzle handle guard 85 after a dispensing operation.

A pad lock ear 92 projects integrally from the plate 25 and has an aperture 93 which registers with an aperture 94 in the pocket wall or walls 76 of the switch lockout arm 75. A lock pin or yoke may be inserted thru these registered locking holes 73 and 74 when the nozzle support pocket 76 is down. In this way, the apparatus is locked against use with the switch open.

From the foregoing it is observed that the assembly plate 25 carries all operating parts and that the entire mechanism, comprising the pump starting means and the switch interlock 73, 74 therefor, together with the hose pull means, are all mounted on one frame plate 25, and furthermore the same is true of the dual switch means carried in the switch box 26. The entire electrical and mechanical control mechanism for a gasoline meter pump is therefore assembled on one panel member 25 in compact form, its parts tested and adjusted for final operation on the assembly bench, whereupon the complete unit may be installed on the pump stand 10. In this way, the pump stand itself constitutes a simple structure made independently of the control mechanism, and thereafter the control unit is set in place on the housing 10 so that the control parts are centralized.

It is significant that in this construction I am able to employ a rigid pull link 55 made of bar stock and which is therefore more durable than other forms of pull hose operating connections. This member 55 has a universal movement, longitudinally and laterally sidewise, by reason of its operating connections at each extremity, one end being connected with the flexible hose 22 and the other end with the flow producing means control device 38. The lever and bearing screw means 50, 62 at one end and the roller and cam means 53, 66 at the other, provide the universal movement, as described, whereby a sidewise pull or tension on the hose 22 is converted or translated into a generally lengthwise pull on the link 55.

The lighting circuit 32 and the pumping circuit 39, with their respective control switches 34 and 38, are carried in one box 26 on one assembly plate 25. The pull hose control swivel link 68 transmits motion to the switch operating connections, through the part 55 to the switch lever 43, no matter what direction the operator swings or pulls the hose 22; but the power switch 38 is locked open against closing even though the operator does pull on the hose 22, and remains thus

locked until the nozzle support end 76 is thrust upwardly. This makes for safety and positiveness in operation. When the nozzle 23 is returned to resting position, as in Figures 1, 2, 3, 5, 9 and 10, the pumping apparatus is locked against dispensing operations. The switch button 34 is conveniently placed on the panel or switch box cover 28 to turn on and off the light 30 if desired when starting and completing a gasoline dispensing operation.

What is claimed is:

1. A curb pump comprising in combination, an upright pump stand, a pumping means and driving motor therefor mounted in the pump stand, inlet and discharge pipes connected with the pumping means, a meter mounted on the pump stand and through which the discharge pipe runs, a flexible service hose and nozzle having one end connected with the discharge pipe, a lighting globe on the pump stand, a switch box mounted in the pump stand and having a closed rear wall inside of said pump stand, the switch box being provided with an opening accessible through and from the outside of the pump stand, a lighting circuit extending through the switch box and connected with the lighting globe, a manually operable switch mounted in the switch box and connected with said lighting circuit, a power circuit extending through the switch box and connected with the driving motor, a motor control switch mounted in the switch box and connected with the power circuit, and manually operable means carried with the switch box and operatively connected with the motor control switch to actuate said switch to start and stop the driving motor and pumping means.

2. A curb pump comprising in combination, an upright pump stand, a pumping means and driving motor therefor installed within the pump stand, inlet and discharge pipes connected with the pumping means, a meter connected with the pipes, a flexible service hose having one end connected with the discharge pipe and a nozzle on the free end of said hose, a lighting globe on the pump stand, a switch box mounted on the pump stand and having a closed rear wall inside thereof, the switch box being provided with an opening accessible through the pump stand, a lighting circuit extending through the switch box and connected with the lighting globe, a manually operable switch mounted in the switch box and connected with said lighting circuit, a power circuit extending through the switch box and connected with the driving motor, a motor control switch mounted in the switch box and connected with the power circuit, and an operating connection between the flexible service hose and the motor control switch whereby the latter is actuated by movement of said hose.

3. A curb pump comprising in combination, a pump stand, a light globe thereon, a meter and discharge piping mounted in the stand, a pump and driving motor therefor, a hose attached to the piping, a mounting plate attached to the pump stand, a switch box integral with the mounting plate and disposed inside the pump stand, said switch box having an opening formed through said mounting plate whereby the inside of said switch box is accessible from the outside of the pump stand, a lighting circuit extending through the switch box and connected with the light globe, a manually operable lighting switch mounted in the switch box and connected with the lighting circuit, a power circuit extending through the switch box and connected with the motor, a motor control switch included in the power circuit; and an operating connection between the motor control switch and the hose, whereby the latter is pulled to close the motor control switch.

4. A curb pump comprising a pump stand, a liquid piping system therein and a discharge hose hanging free of the pump stand, a pump included in the piping system, a motor to drive the pump, a light globe on the pump stand, a switch box in the pump stand, two electrical circuits passed through the switch box, one circuit connected with the motor, the other circuit connected with the light globe; two switches, one for each circuit, mounted in the switch box; the switch box having an opening out through the pump stand; two switch control means on the switch box, one for each switch; and an operating connection from the hose to the control means for the motor circuit switch, whereby a pull on the hose starts the motor.

5. A curb pump comprising an upright stand, a liquid piping system therein and a service hose outside the stand and connected with the piping system, a pump connected with the piping system, a motor to drive the pump, a light on the upright stand, a mounting plate secured to the stand, a switch box carried on the plate and extending back into the stand and having an opening extending through the plate, a switch in the box and control means therefor, a circuit connected with the switch and light, a second switch mounted in the box and a control means therefor on the plate, and a circuit connecting the second switch and motor.

6. A dispensing pump comprising a pump stand, a discharge pipe therein, a pump connected with the pipe, a motor to drive the pump, a hose connected with the pipe, an assembly panel comprising a plate attached to the pump stand and carrying a switch box having an opening through said plate, a power circuit extending through the switch box and connected with the motor, a switch mounted in the switch box and connected with the power circuit, hose pull operating means installed on the plate and box for actuating the switch, and a connection between the hose and the operating means.

7. A dispensing pump comprising a pump stand, a discharge pipe therein, a pump connected with the pipe, a motor to drive the pump, a hose connected with the pipe, a discharge nozzle attached to the hose, a valve lever on the discharge nozzle to open the latter; an assembly panel including, a plate attached to the pump stand, and a switch box carried on the plate and having an opening through said plate; a power circuit extending through the switch box and connected with the motor, a switch mounted in the switch box and connected with the power circuit, operating means installed on the plate and box for actuating the switch, a support for the discharge nozzle carried on the plate, and means carried upon the plate adapted to lock the valve lever against movement.

8. A dispensing pump comprising a pump stand, a discharge pipe therein, a pump connected with the pipe, a motor to drive the pump, a hose connected with the pipe, an assembly plate attached to the pump stand carrying a switch box having an opening through said plate, a power circuit extending through the switch box and connected with the motor, a switch mounted in the switch box and connected with the power circuit, operating means installed on the plate

and box for actuating the switch, a nozzle having a normally closed valve attached to the hose, a lever pivoted on the plate and having a nozzle receiving pocket on one end, a lug in said pocket which locks said normally closed valve against being opened, and means on the other end of the lever for obstructing the operating means to lock the switch in open position.

9. A dispensing pump comprising a pump stand, a discharge pipe therein, a pump connected with the pipe, a motor to drive the pump, a hose and nozzle connected with the pipe, a valve and operating handle therefor on the nozzle, a guard around the operating handle, an assembly plate attached to the pump stand carrying a switch box having an opening thru said plate, a power circuit extending thru the switch box and connected with the motor, a switch mounted in the switch box and connected with the power circuit, operating means installed on the plate and box for actuating the switch, said assembly plate having a slot therein, a lever pivoted in the slot and having one end inside the pump stand and the other outside, a pocket made in the outer lever end to receive the guard, a lug and slot means to lock the operating handle, and a switch locking device on the inner end of said lever.

10. Liquid dispensing apparatus comprising a liquid conduit system having a flexible service hose, a nozzle and valve means on the hose, a pivoted hand lever on the nozzle to open the valve means, a support pocket having an upstanding lug therein to receive the nozzle and lock the pivoted hand lever, and flow producing means connected with the conduit system.

11. Liquid dispensing apparatus comprising a liquid conduit system having a flexible service hose, a nozzle and valve means on the hose, a pivoted hand lever on the nozzle to open the valve means, a guard carried on the nozzle and extending around the pivoted hand lever, said guard having a slot therein, a receiving pocket on the apparatus into which the guard is placed to support the nozzle and hose, a lug rising from the bottom of the receiving pocket and projecting into the slot of the guard and obstructing the movement of the pivoted hand lever, and flow producing means connected with the conduit system.

12. Liquid dispensing apparatus comprising flow producing means connected with a discharge nozzle having a valve and control handle, an assembly plate having a vertical slot, an ear integral with the plate on each side of the slot, a nozzle support pivoted in the ears and swingable in the slot, a control device pivoted on the assembly plate adjacent the nozzle support and adapted to start and stop the flow producing means, a cradle on the other end of the nozzle support to receive and hold the discharge nozzle, and an obstructing lug within the cradle to lock the valve and control handle.

13. Liquid dispensing apparatus comprising flow producing means connected with a discharge nozzle having a valve and control handle, a guard integral with the nozzle and enclosing the control handle, an assembly plate having a vertical slot, an ear integral with the plate on each side of the slot, a nozzle support pivoted in the ears and swingable in the slot, a control device pivoted on the assembly plate adjacent the nozzle support and adapted to start and stop the flow producing means, an obstructing pin on one end of the nozzle support to lock the control device, a cradle on the other end of the nozzle support to receive and hold the discharge nozzle, an obstructing lug within the cradle to lock the valve and control handle, an ear integral with and projecting from the assembly plate at the lower end of and adjacent the slot in said plate, said ear and said cradle having lock bolt holes formed therethrough and registering with each other when the nozzle support is down in the slot, said lock bolt holes being formed above the guard, whereby the nozzle support is adapted to be locked in down position and the discharge nozzle locked in the cradle by one lock means passed through the lock bolt holes.

14. Liquid dispensing apparatus comprising flow producing means, a discharge nozzle connected therewith, an assembly plate carrying a switch box integral on one side thereof, said switch box having an opening extending thru the assembly plate, said assembly plate having a vertical slot formed therein adjacent the switch box, ear means integral with the assembly plate adjacent the vertical slot, a discharge nozzle support lever pivoted on the ear means to operate up and down in the vertical slot, a switch concealed in the switch box to control the flow producing means, manually operable means carried on the assembly plate to actuate the switch, means on the support lever to receive and hold the discharge nozzle the weight of which actuates said support lever, and means operated by said support lever to obstruct the manually operable means against actuating the switch.

15. The apparatus defined in claim 14 but further characterized and limited by placing the vertical slot centrally of the assembly plate, the support lever having one end extending rearwardly from the plate and parallel with the walls of the switch box, a shaft journaled in the rear of the switch box, a switch lever fixed on the shaft, the switch being operatively connected with the shaft, an operating connection established between the switch lever and the manually operable means, and the means on said support lever to obstruct the manually operable means comprises a pin on the end of said support lever disposed in the path of the switch lever but retractible therefrom by manually pushing said pin out of said path.

16. Liquid dispensing apparatus comprising flow producing means, a hose and nozzle connected therewith, a control device to start and stop the operation of the flow producing means; and a rigid pull link, means mounting the pull link for longitudinal and lateral movements, an operating connection at one end thereof with the hose, means to force the pull link longitudinally upon a lateral pull being exerted thereon, and an operating connection at its other end with the control device.

17. Liquid dispensing apparatus comprising flow producing means, a hose connected therewith, a control device to cut off and start said flow producing means, a rigid pull link having one end connected with the hose, an operating lever for the control device, said lever and pull link being operatively disposed adjacent each other, a bearing member interposed between the operating lever and the pull link and affording a relative universal movement therebetween, and spring means applying resilient engagement between the pull link and operating lever whereby the bearing member is held in place.

18. Liquid dispensing apparatus comprising flow producing means, a hose connected therewith, a control device to cut off and start said

flow producing means, a rigid pull link having one end connected with the hose, a slot formed in the other end of said pull link, a lever disposed thru the slot, a bearing member in the slot and interposed between the lever and pull link, a spring resiliently holding the lever and pull link against the bearing member, and means operatively connecting the lever with the control device.

19. Liquid dispensing apparatus comprising flow producing means, a hose connected therewith, a control device to cut off and start said flow producing means, a rigid pull link having one end connected with the hose, a head on the other end of said pull link, said head formed with an enlarged opening therethrough, operating means for the control device including a member disposed thru the enlarged opening and having a loose universal movement therein, a screw mounted in the head and having a bearing end extending into the opening and engaging the member, and spring means applying a resilient force to the member to maintain it in engagement with said screw bearing end and to hold the control device in normal cut off position.

20. Liquid dispensing apparatus comprising flow producing means, a hose connected therewith, a control device for the flow producing means, a rigid pull link having one end operatively connected with the control device, a ring mounted on the hose, a hook carried by the ring, a swivel link interconnected between the hook and the rigid pull link, and cam and roller means cooperating with the rigid pull link to impart longitudinal movement to the latter when the hose is pulled sidewardly.

21. Liquid dispensing apparatus comprising flow producing means, a hose connected therewith, a control device for the flow producing means, a rigid pull link having one end operatively connected with the control device, roller means mounted on the other end of said pull link, a cam engaged by the roller means, and a swivel connection between the hose and pull link.

22. Liquid dispensing apparatus comprising flow producing means, a hose connected therewith, a control device for the flow producing means, a rigid pull link having one end operatively connected with the control device, a stationary cam including a V-shaped race, roller means normally remaining down in the apex of the cam race and journaled on the end of the pull link, and a connection between the pull link and hose.

23. Liquid dispensing apparatus comprising pumping means, a hose connected thereto, a control device for the pumping means, an operating connection between the control device and hose, and roller means mounted outside the apparatus and cooperating with the operating connection to translate a side pull on the hose into a longitudinal pull on the operating connection.

24. Liquid dispensing apparatus comprising pumping means, a hose connected thereto, a control device for the pumping means, an operating connection between the control device and hose, a pair of spaced rollers on the outside of the apparatus, one roller on each side of the operating connection, and means attached to the apparatus for holding the rollers in spaced operating relation therefrom.

25. Liquid dispensing apparatus comprising pumping means, a hose connected thereto, a control device for the pumping means, an operating connection between the control device and hose, a tubular member fixed on the apparatus and projecting horizontally therefrom, said operating connection extending thru the tubular member, and roller means at the outer end of said tubular member and cooperating with the operating connection to translate a side pull on the hose into a lengthwise movement of the operating connection.

26. Liquid dispensing apparatus comprising a hose and flow producing means connected therewith, a control device, an operating connection between the hose and control device, a tubular member thru which the operating connection extends, a cam provided at the end of the tubular member; and roller means carried by the operating connection and engaging the cam, whereby a straight pull on the hose tensions the operating connection and disengages the roller means from the cam, but a side pull engages the roller means with cam and also imparts tension to said operating connection.

27. Liquid dispensing apparatus comprising a hose and flow producing means connected therewith, a control device, an operating connection between the hose and control device, a cam member having one end fixed on the apparatus and a V-shaped cam race formed on the other end, and a roller attached to the operating connection and engaging the cam means.

28. Liquid dispensing apparatus comprising a hose and flow producing means connected therewith, a control device, an operating connection between the hose and control device; a tubular member which is rectangular in cross section, with one end thereof secured to the apparatus, projecting horizontally therefrom, and having a V-shaped two-direction cam means on the outer end, and thru which the operating connection extends; a pair of spaced rollers engaging the cam means, and the operating connection being disposed between and attached to the spaced rollers.

29. Liquid dispensing apparatus comprising a hose and flow producing means attached thereto, control means to start and stop the flow producing means, an operating link having a slotted head at one end, a lever operatively disposed thru the slotted head and connected with the control device, a fork made on the other end of said operating link, a swivel having one end disposed between the fork and the other end attached to the hose, a bearing pin projecting thru the fork and swivel, a pair of spaced rollers mounted on the bearing pin with the fork and swivel placed between said rollers, and spaced cam means between which the operating link is confined and on which the rollers rest, said cam means formed of inclined planes extending outwardly from a normal position of the rollers, and a spring holding said rollers normally down in the lowest part of the cam means.

30. Liquid dispensing apparatus comprising an assembly plate, a box on one side of the plate, a control device in the box, a V-shaped two-direction cam means on the other side of the plate, roller means engaging the cam, a pull link having one end attached to the roller means and extending back thru the assembly plate, means operatively connecting the other end of said pull link with the control device, flow producing means governed by the control device, a hose connected with the flow producing means, and a connection from the roller means and pull link to the hose.

31. Liquid dispensing apparatus comprising an assembly plate, a box on one side of the plate, a control device in the box, a V-shaped two-di-

rection cam means on the other side of the plate, roller means engaging the cam, a pull link having one end attached to the roller means and extending back thru the assembly plate, a lever and operating linkage on the same side of the assembly plate as the box and connecting the control device with the pull link, flow producing means governed by the control device, a hose connected with the flow producing means, a swivel connection between the roller means and the hose; and a spring applying a yielding force to the foregoing parts, normally holding the control device in position to stop operation of the flow producing means, retaining the hose adjacent the assembly plate, and the roller means against the cam means.

32. Liquid dispensing apparatus comprising a service hose and flow producing means connected therewith, an assembly unit including a plate having a box on the rear side and roller means on the front side thereof, a control device in the box to start and stop the flow producing means, a shaft journaled in the box and operatively connected with the control device, lever means connected with the shaft, said plate having a slot therethru, a lever pivoted on the plate in the slot and having means on its rear end to obstruct the movement of the lever means and having a hose support on its front end, a pull link operatively projecting thru the plate and having its rear end operatively connected with the lever means aforesaid, the front end of said pull link being connected with roller means, a V-shaped cam carried on the front of said plate between the latter and the roller means, a flexible connection between the hose and the roller means.

33. Liquid dispensing apparatus comprising a flow producing means, a hose attached thereto, a control unit including an assembly panel having a box, a control device in the box, a tubular member having cam means carried on the plate, a universally movable pull link mounted at right angles thru the plate and confined in the tubular member, a roller carried on the outer end of the pull link and engaging the cam means, a swivel connection between the hose and the roller, a slot provided in the rear end of the pull link, a vertically disposed lever extending thru the slot, a bracket extending rearwardly of the plate and on which the lower end of the vertical lever is pivoted, an operating connection between the upper end of the vertical lever and the control device, a bearing point in the slot and engaging the vertical lever and pull link, spring means urging the vertical lever against the bearing point and holding the control device to cut off position, and a hose supporting lever pivoted on the plate above the pull link and locking the control device against movement.

34. Liquid dispensing apparatus comprising flow producing means, a hose connected therewith, a control device for the flow producing means, pull means having one end operatively connected with the control device, including roller means cooperating with the other end of the pull means and enabling a pull on the hose in any direction to operate the control device, and means returning the pull means to initial position.

35. Liquid dispensing apparatus comprising an enclosing pump stand, flow producing means, a hose connected therewith, a control device for the flow producing means, pull means having one end operatively connected with the control device, including roller means mounted outside of the pump stand and cooperating with the other end of the pull means, the roller means enabling a pull on the hose in any direction to operate the control device, and means returning the pull means to initial position.

36. Liquid dispensing apparatus comprising flow producing means, a hose connected therewith, a control device for the flow producing means, a rigid pull link having one end operatively connected with the control device; cam and roller mechanism, including roller means and a cam one of which is mounted on the other end of said pull link and cooperating together so that a pull on the hose in any direction operates the control device, and means returning the rigid pull link to initial position.

37. Liquid dispensing apparatus comprising flow producing means, a hose connected therewith, a control device for the flow producing means, a rigid pull link having one end operatively connected with the control device; cam and roller mechanism, including roller means and a cam one of which is mounted on the other end of the pull link and cooperating together so that a pull on the hose in any direction operates the control device, means returning the rigid pull link to initial position, and a swivel connection between the hose and pull link.

38. A dispensing pump comprising a pump stand, a discharge pipe therein, a pump connected with the pipe, a motor to drive the pump, a hose connected with the pipe, an assembly plate attached to the pump stand carrying a switch box, a power circuit extending through the switch box and connected with the motor, a switch mounted in the switch box and connected with the power circuit, hose pull operating means carried on the plate and box for actuating the switch, and a connection between the hose and the operating means.

39. A dispensing pump comprising a pump stand, a discharge pipe therein, a pump connected with the pipe, a motor to drive the pump, a hose connected with the pipe, an assembly plate attached to the pump stand carrying a switch box, a power circuit extending through the switch box and connected with the motor, a switch mounted in the switch box and connected with the power circuit, operating means carried on the plate and box for actuating the switch, a nozzle attached to the hose, a nozzle support carried on the plate, and means controlled by the nozzle on the support for obstructing the operating means to lock the switch in open position.

40. A dispensing pump comprising a pump stand, a discharge pipe therein, a pump connected with the pipe, a motor to drive the pump, a hose connected with the pipe, an assembly plate attached to the pump stand carrying a switch box, a power circuit extending through the switch box and connected with the motor, a switch mounted in the switch box and connected with the power circuit, hose pull operating means installed on the plate and box for actuating the switch, a connection between the hose and the operating means, a nozzle attached to the hose, a nozzle support carried on the plate, and means controlled by the nozzle on the support for obstructing the operating means to lock the switch in open position.

41. A dispensing pump comprising a pump stand, a discharge pipe therein, a pump connected with the pipe, a motor to drive the pump, a hose connected with the pipe, an assembly plate attached to the pump stand carrying a switch

box, a power circuit extending through the switch box and connected with the motor, a switch mounted in the switch box and connected with the power circuit, operating means installed on the plate and box for actuating the switch, a nozzle having a normally closed valve attached to the hose, a lever pivoted on the plate and having a nozzle receiving means on one end, a lug included with said nozzle receiving means which locks said normally closed valve against being opened, and means on the other end of the lever for obstructing the operating means to lock the switch in open position.

42. A dispensing pump comprising a pump stand; a discharge pipe therein; a pump connected with the pipe; a motor to drive the pump; a hose connected with the pipe; an assembly plate attached to the pump stand; a switch box; a power circuit extending through the switch box and connected with the motor; a switch mounted in the switch box and connected with the power circuit; hose pull operating means connected with the switch for actuating the same; the assembly plate carrying the switch box, the switch and the hose pull operating means; and a connection between the hose and the hose pull operating means.

43. A dispensing pump comprising a pump stand; a discharge pipe therein; a pump connected with the pipe; a motor to drive the pump; a hose connected with the pipe; an assembly plate attached to the pump stand; a switch box; a power circuit extending through the switch box and connected with the motor; a switch mounted in the switch box and connected with the power circuit; operating means connected with the switch for actuating the same; a nozzle attached to the hose; a nozzle support; means controlled by the nozzle on the support for obstructing the operating means to lock the switch in open position; and the assembly plate carrying the switch box, the switch, the switch operating means, and the switch locking means.

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