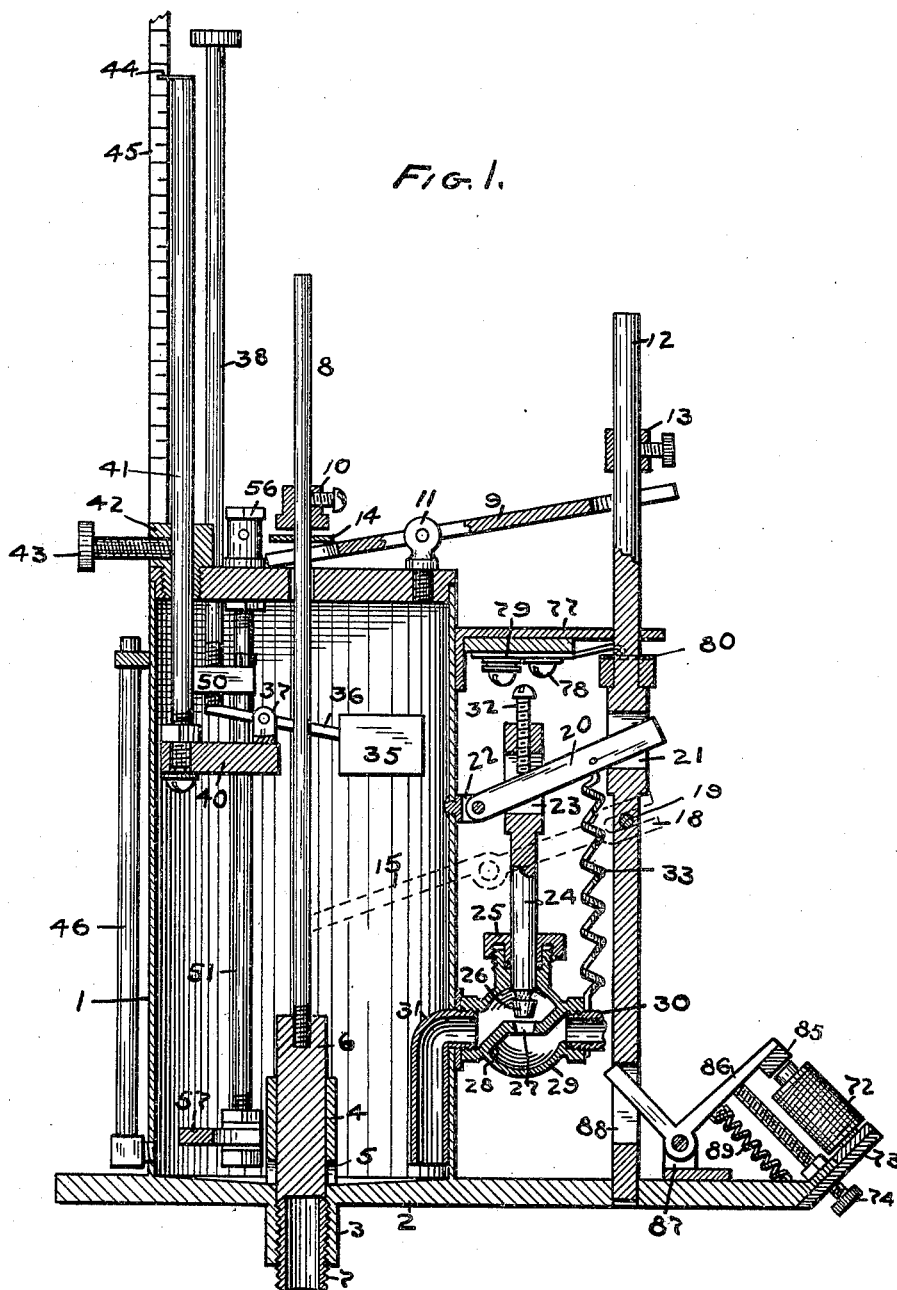


(Application filed Feb. 15, 1901.)

(No Model.)

3 Sheets—Sheet 1.



WITNESSES:

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No. 676,772.

Patented June 18, 1901.

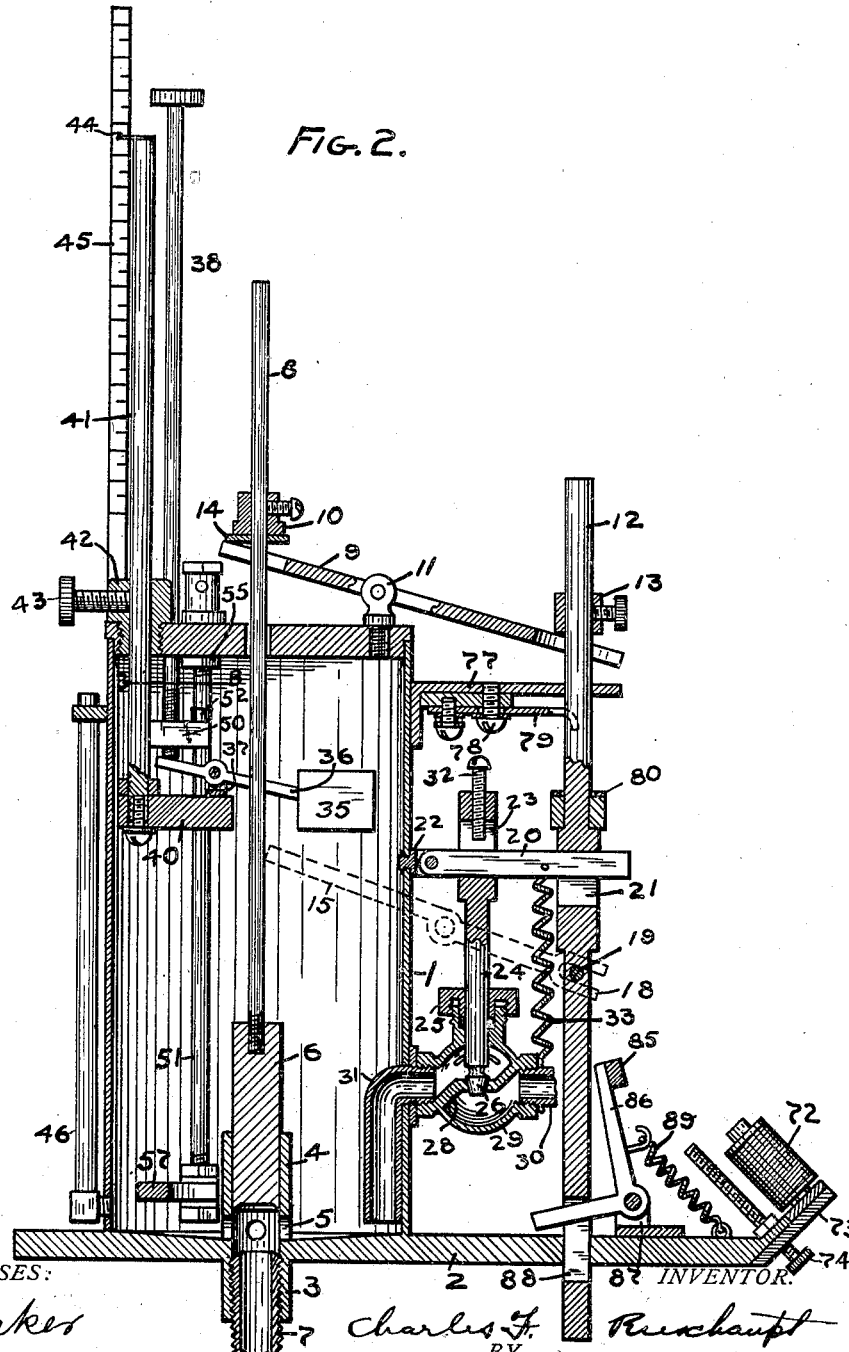
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FLUID PACKAGE FILLER.

(Application filed Feb. 15, 1901.)

(No Model.)

3 Sheets—Sheet 2.

FIG. 2.



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(Application filed Feb. 15, 1901.)

(No Model.)

3 Sheets—Sheet 3.

FIG. 3.

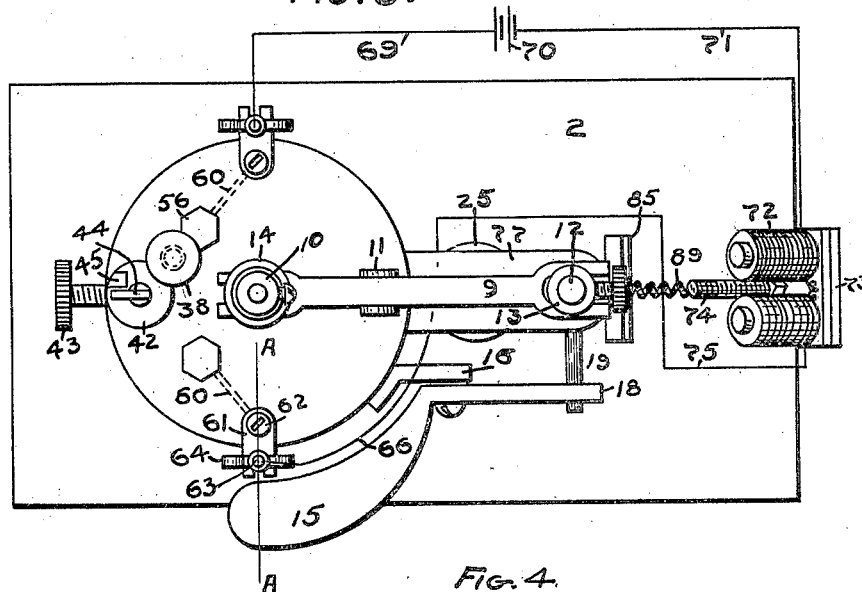


FIG. 4.

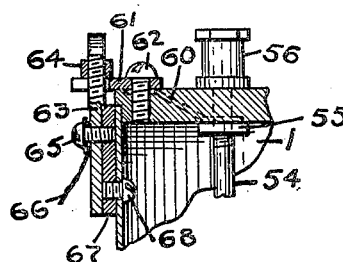


FIG. 5.

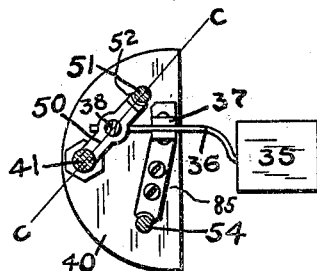
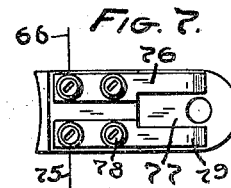
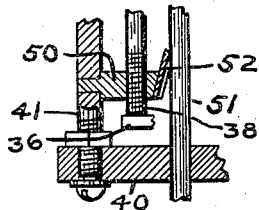


FIG. 6.



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UNITED STATES PATENT OFFICE.

CHARLES F. RUSCHAUP, OF INDIANAPOLIS, INDIANA.

FLUID-PACKAGE FILLER.

SPECIFICATION forming part of Letters Patent No. 676,772, dated June 18, 1901.

Application filed February 15, 1901. Serial No. 47,521. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. RUSCHAUP, of Indianapolis, county of Marion, and State of Indiana, have invented a certain new and useful Fluid-Package Filler; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which like numerals refer to like parts.

The object of my invention is to provide a mechanical means for filling vessels, such as bottles and the like, in which the quantity of fluid to be placed in the vessel is accurately measured in and by the machine and then is automatically discharged.

A feature of the invention consists in the use of an electric circuit, which is broken and closed by the float within the fluid-receptacle of the machine, and a means controlled by such electric circuit for stopping the inflow of liquid into the receptacle and opening the outlet to the vessel or bottle. This with the other features of my invention will more fully appear from the accompanying drawings and the following description and claims.

In the drawings, Figure 1 is a central vertical section of the machine with the liquid-receptacle therein closed and the liquid-inlet open. Fig. 2 is the same with the liquid-inlet closed and the outlet open for charging the vessel. Fig. 3 is a plan of the machine. Fig. 4 is a section of a portion of the machine on the line A A of Fig. 3. Fig. 5 is a horizontal section of parts of the machine on the line B B in Fig. 2. Fig. 6 is a vertical section on the line C C of Fig. 5. Fig. 7 is a bottom view of the contact-points of the switch mechanism.

In detail I show a receptacle 1, having the bottom or base 2, with the outlet-opening through the bottom. In the outlet there is a depending internally-threaded sleeve 3 and an upwardly-extending sleeve 4, through which above the bottom 2 there are outlet-ports 5. A gravity-actuating outlet-closure 6 operates in said sleeve 4 to close the ports 5. Its downward limit of movement is predetermined by the externally-threaded tube 7, screwed into the sleeve 3. The stem 8 of the closure 6 extends loosely through the top of the receptacle 1 and is supported on the lever 9 by the adjustable nut 10. The lever 9

is pivoted between its ends in the bearing-bracket 11, secured on top of the receptacle 1. Each end of it is slotted, so that through the slot at one end the stem 8 extends and through the slot at the other end the rod 12 extends. The rod 12 is depressed by gravity, and by reason of the adjustable nut 13 thereon above the lever 9 when the rod 12 is depressed it actuates the lever 9 and causes said lever 9 to elevate the stem 8 and closure 6 to open the outlet, as shown in Fig. 2. When the rod 12 is elevated so as to release the lever 9, the gravity of the closure 6 causes it to move down from the position shown in Fig. 2 to that shown in Fig. 1—that is, from an open to a closed position. There is a washer 14 between the nut 10 and the lever 9. The rod 12 is elevated by hand applied to the lever 15, centrally pivoted to the arm 16, which is secured on the outside of the receptacle 1. The other end of said lever 15 is forked at 18, and through said fork a pin 19, secured to the rod 12, extends. When it is desired to start the machine, the operator actuates said lever 15, which elevates the rod 12 and puts the parts in the position shown in Fig. 1. This causes the closure 6 to close the receptacle 1 and at the same time opens the fluid-inlet in said receptacle. This last effect results from the rod 12 elevating the lever 20, one end of which extends through the slot 21 in said rod, and the other end is pivoted to the bracket 22 on the side of the receptacle. The lever 20 extends loosely through a slot 23 in the valve-stem 24, which moves through the stuffing-box 25 and has the valve 26 on the lower end that enters the inlet-opening 27 in the partition 28 of the globe 29, through which the fluid passes from the pipe 30 from any suitable source of supply to the pipe 31, which enters the receptacle 1. When the rod 12 is elevated into the position shown in Fig. 1, the valve 26 is lifted out of the opening 27 in the fluid-inlet. The screw 32 in the upper end of the valve-stem 24 enables the position of the valve 26 to be adjusted. The lever 20 is held down by the spring 33, extending from said lever around the inlet-pipe 30. While the parts are in the position described, the fluid will continue to flow into the receptacle 1 until it reaches the float 35 and elevates said float, whereby the

float-lever 36, which is pivoted on the bracket 37, disengages the rod 38, extending through the top of the receptacle 1. The bracket 37 is mounted on the float-support 40, that is secured to the rod 41, extending through the top of the receptacle 1 and the sleeve 42, wherein it is adjustably held by the screw 43. The finger 44 is mounted on the upper end of the rod 41, that extends into close proximity to the gage 45, which is secured on the top of the receptacle 1 parallel with the rod 41. This enables one to gage the quantity of fluid required to fill the receptacle up to the float. The capacity, therefore, of the receptacle 1 can be adjusted by the screw 43 to suit the bottle or vessel to be filled. A glass gage 46 is also provided leading from the lower end of the receptacle and open to the outer air at its upper end, whereby one can see the height of the fluid in said receptacle. The rod 38 is also mounted to be adjustable by screwing it into the block 50, which at one end is secured to the rod 41 and at the other end presses against the rod 51, as appears in Fig. 6. I show a spring contact between the block 50 and rod 51 by means of the spring 52 to make an electrical conductor of the connection. The rod 51 extends through the float-support 40, and there is also a companion rod 54, that extends through said float and is electrically connected with the float-lever 36 by means of the plate 85 (seen in Fig. 5) and bearing-post 37. Both rods 51 and 54 are secured to the top of the receptacle 1 by the nuts 55 on the inner side and the binding-post 56 above. The top of the receptacle is made of hard rubber or other insulating material. The lower ends of the rods 51 and 54 are held in place by the connection 57, made of hard rubber or other insulating material.

While I show the binding-posts 56, whereby the electrical conductors could be connected with the rods 51 and 54, still I prefer to make a different connection in order that the top of the receptacle 1 may be readily removable. This different connection appears in Fig. 4. The conductor 60 (shown in dotted lines) extends from the rod 54 to the plate 61, held in place on the top of the receptacle 1 by the screw 62. The outer end of this plate is slotted, and through the slot a metallic bar 63 extends, with a nut 64 on its upper end to hold it in place and a binding-screw 65 to bind the conductor or wire 66 against said bar 63 and said bar 63 against the non-conducting plate 67. Said plate 67 is secured to the receptacle 1 by the screw 68. A similar arrangement is made for connecting the conductor or wire 69 electrically with the rod 51. As appears in Fig. 3, the conductor 69 leads directly from the rod 51 to a battery 70, and a wire 71 leads from the battery to the magnet 72, mounted on the plate 73, that is secured by the screw 74 to the base 2 of the machine. The wire 75 runs from the magnet to the contact-piece 76, forming a part of what may be called a "switch" mechanism. Said

contact-piece 76 is secured to the bracket 77 by the screw 78, which is insulated from the contact-piece 76. There is a companion contact-piece 79, from which the wire 66 leads to the binding-screw 65, as appears in Fig. 4. The circuit just described is closed by the elevation of the rod 12 bringing the washer 80 into contact with both of the contact-pieces 76 and 79.

The circuit just described is open when the machine is not in immediate use; but as soon as the hand-lever 15 is operated and the rod 12 is elevated the circuit is closed by the washer 80 coming in contact with the two contact-pieces 76 and 79. The circuit remains closed while the fluid is running into the receptacle 1 and until it reaches the float 35. As soon as the circuit is closed the magnet 72 is excited, so that it attracts the armature 85 on the bell-crank 86, which is pivoted to the post 87, with the arm of the bell-crank operating loosely in the slot 88 in the lower end of the rod 12. This bell-crank when thus actuated by the magnet continues to hold the rod 12 in its upward position after the hand-lever 15 is released, and thus to maintain the electrical circuit closed and the fluid-inlet passage-way open without the need of the hand-lever 15. Therefore in actual use the hand-lever is merely depressed until the electrical circuit is closed, and then it may be released and the workman may attend to some other duty. The bell-crank 86 is controlled by the spring 89 and is limited in its movements toward the magnet by the screw 74. The spring 89 is only strong enough to draw the bell-crank toward the magnet when the rod 12 is elevated by the hand-lever 15. When the hand-lever 15 is released, the magnet is the chief means for holding the bell-crank in position, (shown in Fig. 1,) although the spring assists, as the free end of the bell-crank 86 must then sustain the weight of the rod 12; but the spring 89 is so weak that when the magnet ceases to attract the weight of the rod 12 will depress it in spite of the spring 89, and it will change said rod 12 and bell-crank 86 from the position shown in Fig. 1 to that shown in Fig. 2. As soon as the float is elevated the float-lever 36 moves out of contact with the lower end of the rod 38, and thereby the electrical circuit is broken, as from the explanation heretofore made it appears that the circuit passes through the rods 51 and 54 and from one to the other through the intervening means shown in Fig. 5—namely, the plate 85, post 37, lever 36, lower end of rod 38, and block 50. As soon as the elevation of the float breaks the circuit, as described, the magnet ceases to attract the armature 85, and therefore the bell-crank 86 is unable to support the rod 12, whereupon the rod 12 drops down from the position shown in Fig. 1 to that shown in Fig. 2. This change causes the lever 9 to elevate the closure 6 and let the fluid flow out of the receptacle 1 into the vessel to be filled. It also closes the valve 26 and shuts off the

inflow of fluid in said receptacle. It also breaks the electrical circuit and places all the parts in what may be called the "normal" or "unoperated" position shown in Fig. 2.

5 When a vessel or bottle is filled, it is removed, another one placed under the machine, the hand-lever 15 thrown down, and the same automatic operation of the machine which has heretofore been described takes
10 place. It is understood, therefore, that in the operation of this machine everything is automatic excepting the starting of it. The machine receives the quantity of fluid with which the vessel or bottle is to be charged,
15 and when the exact amount is thus received it automatically shuts off the further inflow of fluid into the receiver and lets the quantity of fluid already received flow into the vessel or bottle. With this machine the quantity
20 desired to be introduced into the vessel or bottle can be accurately predetermined by adjustment of the parts, and after such adjustment the machine will automatically fill the vessel or bottle with such predetermined
25 quantity of fluid.

I am aware that an electrical circuit and magnet have been used for stopping the inflow of liquid into the vessel or bottle being filled where the conductors for closing the
30 circuit are inserted in the vessel or bottle so that the circuit will be closed when the fluid rises to a certain height in the vessel or bottle; but in such apparatus the quantity of fluid desired to be introduced into the vessel or
35 bottle is not previously measured. I am also aware of an electrical circuit and magnet where the circuit is opened and closed by a float in a receptacle in the machine that opens and closes the fluid-inlet into such receptacle;
40 but in such device the fluid-inlet opens as soon as the quantity of fluid in the receptacle is slightly lowered, so as to maintain the fluid at a uniform level. In my device I open and close an electrical circuit without introducing
45 any electrical conductors into the vessel or bottle, and the quantity of fluid to go into the bottle is not measured in the bottle or vessel, but in the receptacle in the machine before it enters the bottle or vessel. Also in
50 my machine when the float stops the inflow of fluid in the receptacle in the machine the fluid-inlet is not opened until all the fluid has run out of the receptacle in the machine into the vessel or bottle to be filled.

55 What I claim as my invention, and desire to secure by Letters Patent, is—

1. A fluid-package filler including a fluid-receptacle with an outlet, a closure for said outlet, a float in said receptacle, a magnet-
60 controlled means for moving said closure to open the outlet, and float-controlled electrical means for energizing the magnet.

2. A fluid-package filler including a fluid-receptacle with an outlet, a closure for closing
65 said outlet, a movable means for moving

said closure to open the outlet, a magnet-controlled means for resisting such opening movement of the closure, an electrical circuit for energizing said magnet, and a float in said receptacle for breaking said circuit.

3. A fluid-package filler including a fluid-receptacle with an outlet, a gravity-actuated closure for closing said outlet, a gravity-actuated rod for opening said closure, a lever
70 for holding said rod in its upward unoperated position, a magnet for holding said lever in such position, an electrical circuit for energizing the magnet, and a float in said receptacle for breaking such circuit whereby said
75 rod will move downward and elevate the closure.

4. A fluid-package filler including a fluid-receptacle with an outlet, a gravity-actuated closure for closing said outlet, a gravity-actuated rod for opening said closure, a valve
80 for closing the inlet in said receptacle that is moved into closing position by the downward movement of said rod, a lever for holding said rod in its upward unoperated position, a magnet for holding said lever in such position, an
85 electrical circuit for energizing the magnet, and a float in said receptacle for breaking such circuit whereby said rod will move downward and will open the outlet and close the inlet.

5. A fluid-package filler including a fluid-receptacle with an outlet, a gravity-actuated closure for closing said outlet, a gravity-actuated rod for opening said closure, a hand-lever
90 for elevating said rod and releasing said closure, a lever for holding said rod up after it has been elevated, a magnet for holding said lever in such position, an electrical circuit for energizing the magnet, and a float in said receptacle for breaking such circuit.

6. A fluid-package filler including a fluid-receptacle with an outlet, a gravity-actuated rod for opening said outlet, a hand-lever for elevating said rod and permitting the outlet-
95 opening to be closed, a lever for holding said rod up after it has been elevated, a magnet for holding said lever in such position, an electrical circuit for energizing the magnet that a pair of contact-pieces in said circuit, means moved by said rod for making an electrical
100 connection between said contact-pieces whereby the circuit is closed, and a float in said receptacle for breaking such circuit.

7. A fluid-package filler including a fluid-receptacle, a float therein to measure the fluid
105 in said receptacle, an adjustable support in said receptacle on which said float is mounted, a pair of electrical conductors extending into said receptacle, and a float-controlled means for establishing an electrical connection
110 between said conductors.

8. A fluid-package filler including a fluid-receptacle, a plate or block made of insulating material supported within said receptacle, a float in said receptacle, an electrically-
115

conducting lever pivoted on said plate or
block and connected at one end with said float,
a pair of electrically-conducting rods extend-
ing into said receptacle, a metallic plate ex-
5 tending from one of said rods to said float-le-
ver, a metallic block supported to engage the
other conducting-rod, and a metallic rod in
said block that engages the free end of said
float-lever, whereby when the float is elevated,

the float-lever will cease to contact with said 10
metallic rod.

In witness whereof I have hereunto affixed
my signature in the presence of the witnesses
herein named.

CHARLES F. RUSCHAUP.

Witnesses:

V. H. LOCKWOOD,
LAURA HITT.