

Jan. 26, 1943.

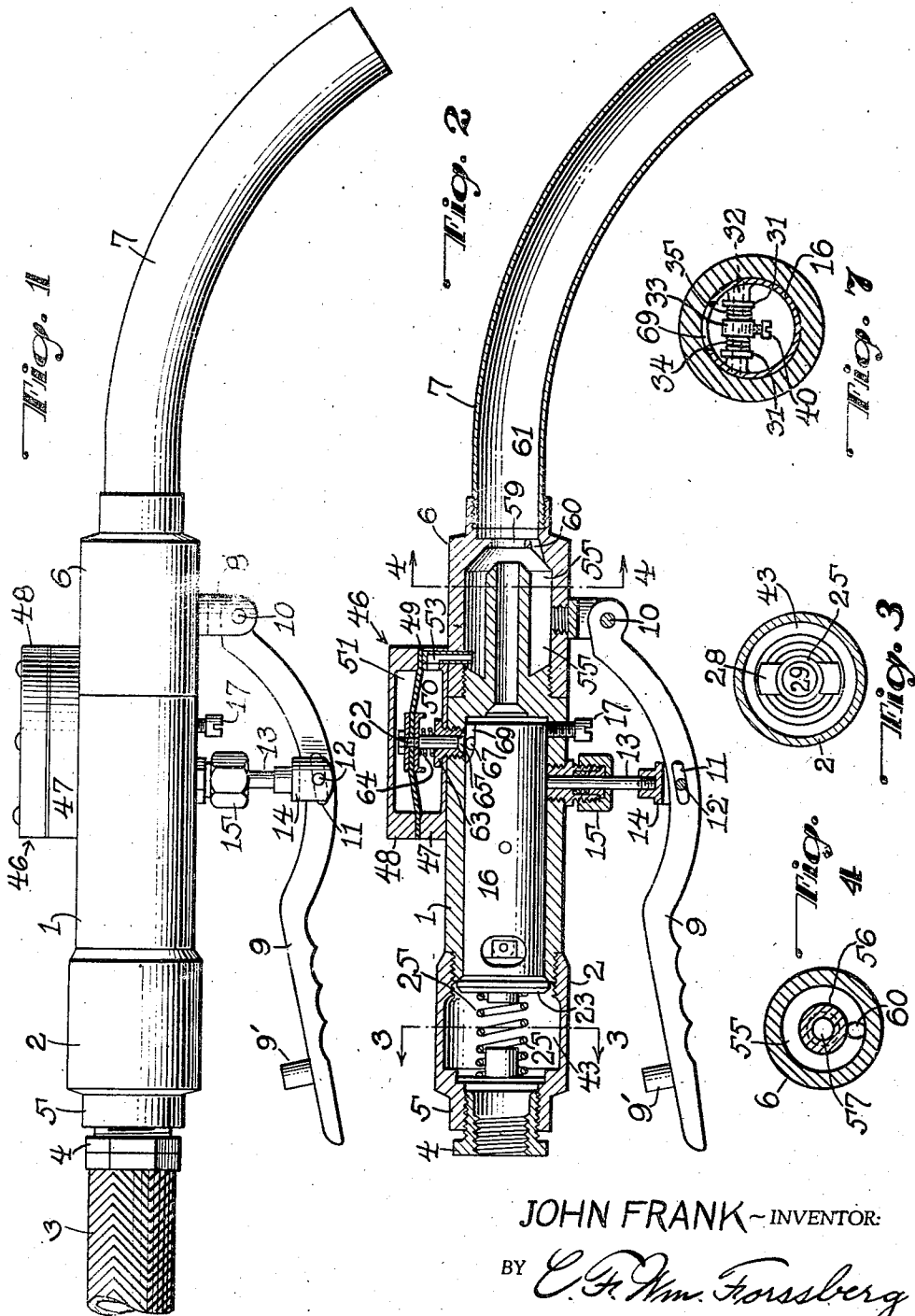
J. FRANK

2,309,503

AUTOMATIC DISPENSING NOZZLE

Filed Nov. 4, 1939

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

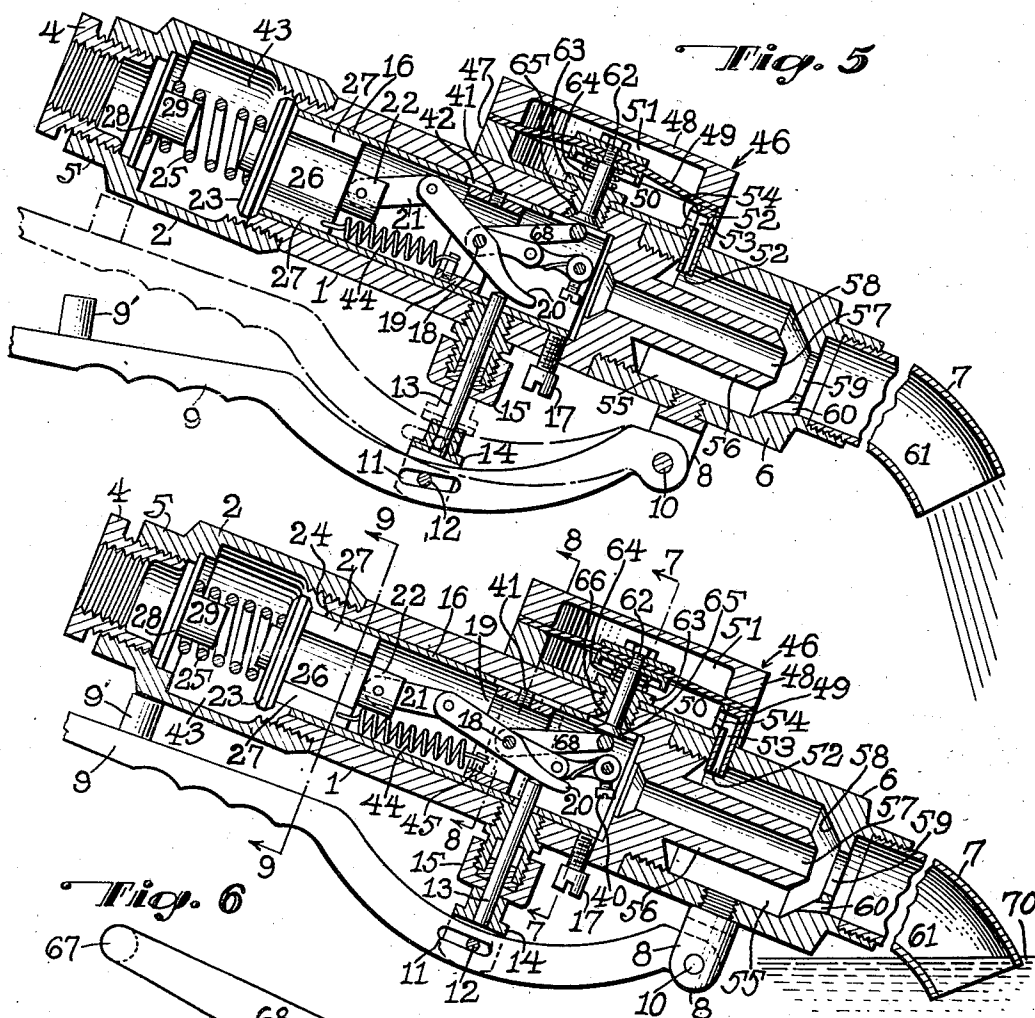
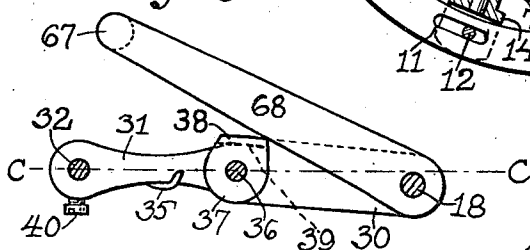


Fig. 11

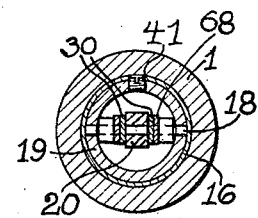


Fig. 8

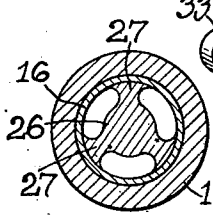


Fig. 9

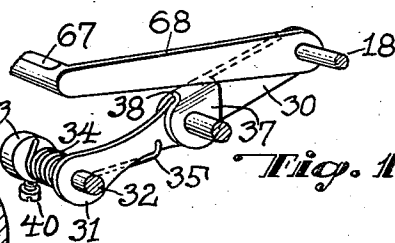


Fig. 10

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UNITED STATES PATENT OFFICE

2,309,503

AUTOMATIC DISPENSING NOZZLE

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17 Claims. (Cl. 226—127)

This invention relates to liquid dispensing nozzles, such as, for example, gasoline dispensing and filling nozzles for use at public gasoline filling stations and private filling stations in garages of large enterprises for supplying fuel to fleets of busses, cars or trucks, etc., and refers particularly to manually operated, automatic nozzles capable of shutting off the stream of liquid fuel issuing from the nozzle.

The main object of my invention is to have an automatic nozzle of the character indicated which, when inserted into a gasoline tank on a car or truck, or into a can or container, will automatically shut off the liquid issuing from the nozzle when the level of the dispensed liquid in the tank or container reaches the end of said nozzle.

Another object is to provide a nozzle of this character which has a manually operated control lever for opening a valve which is directly reset for opening again after having been automatically closed, by merely releasing the control lever momentarily, when manually pressing the same will again effect opening of the valve to cause a fresh flow of liquid.

A further object is to have such a nozzle which is very compact and reasonably simple in construction, and certain in operation.

It is also an object herein to make the interior operating parts into a relatively small operating unit capable of being inserted into a hollow portion of the nozzle casing for convenience in assembling and removal therefrom when worn parts must be replaced, or parts readjusted for perfect operation.

It is likewise an object to have an interior valve in a device of the indicated character, which is normally opened by pressing upon an exteriorly located control lever, but in which the opening of the same valve may be neutralized by predetermined automatic operation of other parts within the nozzle, so that the valve closes even if the control lever remains depressed and unaltered.

Other objects and the several advantages of my invention and its construction and actual use will appear more fully in detail as this specification proceeds.

In order to facilitate ready comprehension of the invention with its features and operation, the same is illustrated in the accompanying drawings, in which—

Fig. 1 is a side elevation of a complete, manually controlled and automatic closing nozzle for dispensing liquids, made according to my in-

vention and embodying the salient features of the same in practical form.

Fig. 2 is a longitudinal section of the outer casing and dispensing tube of the same, revealing an interior or second casing shown in elevation.

Fig. 3 is a transverse section taken on line 3—3 in Fig. 2.

Fig. 4 is another transverse section taken on line 4—4 in said Fig. 2.

Fig. 5 is a longitudinal section of the entire device of Fig. 1 in normally closed position of the valve and idle position of the various parts, ready to operate.

Fig. 6 is a similar section showing a control handle in operated position and the valve proper in initial closing position.

Fig. 7 is a transverse section of the device as taken on line 7—7 in Fig. 6.

Fig. 8 is another section of said device taken on line 8—8 in said Fig. 6.

Fig. 9 is a further section of the same device taken on line 9—9 in the same Fig. 6.

Fig. 10 is an enlarged fragmentary perspective view of certain operating detail.

Finally, Fig. 11 is another view of the same. Throughout the views the same references indicate the same or like parts and features.

In the practice of my invention, a nozzle valve casing 1 has a rear casing portion 2 to which a hose or flexible tube 3 may be secured by screwing the threaded end portion 4 thereof into the interiorly threaded end 5 of said rear casing portion, or the hose or tube may be connected in any other way desired. The casing 1 also has a hollow front casing portion 6 secured thereto, and to this front casing portion is screwed, brazed or welded, a nozzle proper 7 which is of such length and downwardly arched form as to enter readily into a gasoline tank on an automobile or truck, etc. Upon the lower portion of the casing assembly is a pivot mounting 8 in which one end of a handle or manual lever 9 is pivoted upon a pin or the like 10. In an intermediate portion of the manual lever is a slot 11 through which a pin 12 of an operating plunger 13 extends, the plunger exteriorly having a bifurcated head 14 in which the pin is secured and between the bifurcations of which the slotted portion of the lever passes. The slot 11 allows pin 12 to slide a short distance in the same while the lever 9 is swung about its pivot pin 10 during operation, the plunger preferably passing through a stuffing box 15 into the casing, there to engage against a lever which opens the valve proper, as will shortly be explained.

In order to facilitate manufacture, assembly and repairs, the interior mechanism that actuates the valve is housed in an inner shell 16 (Fig. 2) which fits snugly within the casing 1 and is firmly held in place by a screw 17, or by any other practical means. A pivot pin 18 is located transversely within the shell, being supported in a hollow block 19 and serves as a fulcrum for a valve lever 20 whose free end is engaged by the plunger 13 (Figs. 5 and 6) while the other end is pivotally connected to a link 21 which in turn is pivotally connected to the inner end 22 of a valve 23 reciprocable in the shell 16 and normally held against a valve seat 24 in casing 1 by a spring 25. The valve has a body portion 26 with projecting guide portions or ribs 27, 27 slidable against the interior walls of the shell and retaining the valve centered with respect to its seat in both open and closed positions, the valve spring 25 being preferably centered upon the valve and confined in place by a cross member 28 having a spring center 29 within rear casing member.

The lever 20 and link 21 virtually form a toggle which normally is quite bent at the joint as shown in Fig. 5, wherein the valve is in closed position against its seat, the plunger 13 in idle withdrawn position, and the lever 9 in inactive extended position. If this lever is brought in toward the valve casing as indicated in broken lines in Fig. 5 or in full lines in Fig. 6, the plunger will be projected into casing 1 and shell 16 and swing valve lever 20 counterclockwise about its pivot pin 18, tending to partly straighten the toggle, which at once forces valve 23 to open toward the left. Complete straightening of the toggle mentioned is intentionally prevented by having the plunger head 14 stopped by the stuffing box 15 before such straightening can occur, in order that when the hand lever 9 is released, the valve spring 25 will be able to bend the toggle to its initial bent position and thereby close the valve against its seat.

The foregoing description presupposes that the fulcrum or pivot pin 18 is stationary within the shell 16, and it is thus held during the early part of each operating cycle when filling a tank or container by means of the invention. For this purpose, the fulcrum block 19 is slidable within the shell, but a further link member 30 is mounted at one end upon the pin 18 and at the other end is connected to a pair of links 31 having in turn their other ends pivoted upon a pin 32 transversely fixed in the shell 16. Between these links is mounted an adjusting ring 33 through which a spring extends having two branch coils 34, 34, each coil having an extension 35 or hook beneath the respectively adjacent link 31, tending to raise the same and straighten the front toggle formed of links 31 and 30 connected by a pin 36. Each of the links 30 has a bent over end or doubled portion 37 directly connected to the link by the upper stop portion 38 which serves as a stop for the square or angular corner 39 of the link 31 located between link 30 and its bent over portion 37 just described. In order to increase the tension of the spring 34, an adjusting screw 40 may be released and the ring 33 turned to a new position and the screw tightened again upon pin 32, and the spring arms 35 will exert a stronger toggle straightening effect so as to bring the corners 39 of the links 31 up against their stops 38 on links 30.

As may be seen in Fig. 11, the front toggle in straightened condition is actually a little past

center so that the three pivot pins 32, 36 and 18 are out of line, the last being below the broken line C—C. Obviously, this toggle will remain rigid as a firm backing for the slidable block 19 so as to determine a fixed normal operating position for the same as shown in full lines in Figs. 5 and 6, when the block forms a purchase point by its pin 18 for the rear or valve operating toggle consisting of the lever 20 and link 21, so that operation of the lever by manual lever 9 through the plunger 13 will cause positive opening of the valve 23 or closure of the same by spring 25 upon release of lever 9. In order to prevent the block 19 from rotating in the shell and yet allow the same to slide a limited distance through said shell, a pin or screw 41 is fixed on the block and extends up into a longitudinal slot 42 in shell 19.

The construction thus involves two toggles connected in series and having an ultimate fixed pivot point in pin 32, and midway, connecting the two toggles, a pin 18 is located in a block which is initially in fixed position so as to allow opening of the valve to be effected by manipulation of hand lever 9. If then some force or action should cause the front toggle 30—31 to collapse against the tension of the spring 34, the block 19 will be drawn forward toward the right as indicated in broken lines in Fig. 6 so as to nullify and cancel the effect of the partial straightening of the valve operating toggle 20—21 and allow the valve to close under the two-fold influence of the stream of fluid indicated by the arrow in Fig. 6 entering the valve chamber 43 within casing 2 from the supply hose 3, and of the spring 25, which would no longer meet with any resistance in closing the valve against its seat as the front toggle will bend or collapse to any extent necessary to close the valve. While closing the lever 9 may remain in operated position, the toggle lever 20 sliding along the upper end of the plunger during this operation. If the handle 9 is again released to its initial position shown in full in Fig. 5, a spring 44 connected at 45 to the toggle block 19 and to the valve body 26 will again buckle the toggle 20—21 by its tension as the same is never quite straightened, so as to restore the toggle block to original position and also allow the front toggle 30, 31 to straighten up under the influence of the spring 34 to original position.

Surmounting the casing 1 is a diaphragm casing generally indicated by 46, consisting of a lower box member 47 and a cover 48 and having a flexible diaphragm 49 dividing the interior of the casing into a lower chamber 50 and an upper chamber 51. In the wall of the lower box member 47 is a tubular member 52 which communicates by means of a duct 53 through an aperture 54 with the interior of the lower chamber beneath the diaphragm and connects the same with a vacuum or nozzle chamber 55 surrounding an inner nozzle 56 within casing portion 6. The hole 57 in this nozzle connects directly with the interior of the shell 16 and terminates within the end 58 of nozzle chamber 55, so as to be spaced from the nozzle aperture 59 thereof. In this end also is a smaller side aperture 60 which is a shunt connection between nozzle chamber 55 and the interior 61 of the nozzle proper or spout 7. Instead of a single aperture 60, a group or row of smaller holes may be used as shunt communication means between the vacuum chamber 55 and said interior 61 of the spout, or all such aperture means may be omitted altogether, as will shortly be explained.

Referring again to the diaphragm, the same has an operated plunger 62 secured thereto so as to be reciprocable through a thimble 63. In normal or idle position of the diaphragm, a spring 64 beneath the same rests upon the thimble and maintains the diaphragm in raised position in which position also a valve head 65 upon the lower end of the plunger 62 engages against a valve seat 66 in the bottom of thimble 63. The head 65 is provided in order to prevent fluid from creeping up past member 62 into the lower diaphragm chamber 50 during the flow of fluid through the whole device. Of course, this head can be omitted, and the device will operate just as effectively, the head or lower end of the plunger 62 through a clearance 69 in sleeve 16 upon operation abutting and depressing an arm 67 on a lever 68 pivoted on the same pin 18 which connects the two toggles and extending over the bent over stop 38 on the lever 30. If the plunger is depressed by the diaphragm, the same will depress arm 67 of lever 68 and the latter will in turn depress stop 38 and cause the pin 36 to be lowered so as to collapse the toggle consisting of levers 30 and 31.

If the operation of the device is now considered, it is of course intended to have the supply hose 3 connected to the valve casing by the rear nipple 4 supplying a fluid such as gasoline or any other desired, under pressure, to the device embodying the invention. The normal idle position of hand lever 9 being that shown in full lines in Figs. 1, 2 and 5, with the valve 23 closed as shown in Fig. 5, and the valve casing held in the hand of an operator with the spout 7 held in position inserted in the opening of a gasoline tank on an automobile, for example, it is but necessary to clasp the fingers about the lever 9 and thereby draw the same up into the position indicated in broken lines in Fig. 5 and in full lines in Fig. 6, and the fluid will flow through the entire length of the casing, past the valve, toggles, inner nozzle and spout and thence into the tank. The lever may have a stop 9' or a stop may be fixed upon the casing to determine a proper operated position of said lever, or the lever and casing may simply have such mutual contact portions that such a position is ensured.

While the fluid is flowing freely through the device, there is to some extent a Venturi effect present in the fluid stream as it emerges from the end of the inner nozzle and leaps the gap between the same and the aperture 59 in the end of vacuum chamber 55, and especially is this true as the stream enters the spout chamber 61 from aperture 59, which is preferably larger than the interior diameter of the channel 57 in the inner nozzle 56. The result is first that the fluid does not fill out the chamber 61 in the spout, but passes down toward the end of this spout and tends to allow air to enter the nozzle and pass through 60 into the venturi until the nozzle is blocked by rising fluid so as to concentrate the suction on the diaphragm. As the width of the stream of fluid passing down through the spout is such as to allow the air to enter past said stream in the manner described, the suction passes through aperture 60 to the diaphragm chamber 50 by way of chamber 55 and duct 52, 53, but even when this aperture 60 is omitted altogether, a measurable suction will still be produced.

However, the lever having been operated by the hand, the plunger 13 has been raised against the free end of lever 20 so that the same has

been swung counterclockwise about pin 18 and thereby swung link 21 down almost in line with the lever 20, so that the partial straightening of this toggle pair has forced the valve 23 open at the rear in opposition to the return spring 25 and the pressure of the fluid arriving from the hose. The forcible opening is made possible in this manner due to the rigid position of pin 18 which serves as the purchase point or anchorage of the toggle couple, this rigidity being solely based upon the longitudinal support given said pin 18 by the toggle couple 30 and 31 while the same remain in line or preferably slightly off center. As shown in Fig. 5, and in enlarged form and turned about in Fig. 11, the pins 18, 36 and 32 are not in line, for the line C—C when passed through the pins 32 and 36 will pass higher up on or over pin 18, and as the pin 36 is thus at the apex of an obtuse angle and is definitely stopped in that position by the side 39 of link 31 engaging the stop 38 on lever 30, the toggle couple will remain locked rigidly in this nearly aligned position when pressure is applied at one end by pin 18.

When the level of the liquid dispensed has risen to the level 70 of the outer end of the spout as indicated in Fig. 6, a powerful but momentary vacuum is produced as already outlined, in the upper part of spout chamber 61 around the aperture 59 and the same effect is even more powerfully produced within the end 58 of nozzle vacuum chamber 55. This powerful suction lasts but a passing moment, but is so sharp or abrupt, and also powerful, that it is immediately communicated through channel 52, 53 and aperture 54 to chamber 50 below the diaphragm, and immediately overcomes the inertia of said diaphragm and the spring 64, and draws the diaphragm down from the position shown in Fig. 5 to a depressed position approximating that shown in Fig. 6. By the descent of the diaphragm, and therewith also the plunger 62, the lever 68 through its arm 67 being depressed by said plunger, will leave the position shown in Fig. 5 for that in Fig. 6, and thereby the stop 38 will be pressed past center from the position illustrated in Fig. 11 to that shown in Fig. 10.

As soon as the front toggle couple 30, 31 is no longer locked, but their connected ends thus pushed past center, they no longer form an unyielding support for the first or rear toggle to keep valve 23 open or away from its seat 43. The pressure of the liquid flowing in the direction of the arrow at the rear and the urge of compression spring 25 will then succeed in pushing valve 23 to its seat to close the same, without bending the toggle couple 20, 21 because the lever 9 still remains in operated position with plunger 13 yet in raised position, so that the lever 20 will slide upon the upper end of the plunger to a new position in which the valve is closed, and the toggle couple 30, 31 collapsed downward. The fulcrum ring 19 shifted toward the right, as indicated in broken lines in Fig. 6, while the screw or pin 41 in said ring travels in the longitudinal slot 42 in sleeve or shell 16 and prevents rotation of said sleeve.

In view of the instantaneous operation of the closure means of the apparatus, all danger of overflow of gasoline or other liquid is prevented, and no thought need be given to the closing of the valve at any time. Of course, if an open container is merely to be partly filled without the dispensed liquid reaching the spout, merely releasing the lever 9 so that it may drop to idle po-

sition, as shown in Figs. 1 and 2, will return the valve to closed position, but even a momentary dipping of the end of the spout in the liquid will promptly effect closure as above described.

The spout may be lifted from contact with the dispensed liquid while the hand lever remains in operated position close to the casing, but whenever it is desired to dispense liquid to another container or into another tank, it will suffice to release the lever 9 to original idle position, when the spring 34 by its hook 35 will again straighten the front toggle couple 30, 31, while the spring 44 attached rearwardly to one of the wings 27 of the valve body 26 and forwardly to the stud 45 on fulcrum ring 19 will assist in restoring the same toward the left to original position. At the same time, the toggle couple 20, 21 is again buckled to initial operative position as shown in Fig. 5, when the device is again ready for a new cycle of operation which will immediately commence upon again drawing the lever 9 up toward the valve casing.

It is obvious that the various parts within and without in the device may be made of steel, brass, bronze, aluminum, or any alloy, and some parts made of one metal or alloy, while others are made of other metals or alloys, as may be found most practical.

Manifestly, other variations may be resorted to, and parts modified or used without others, within the scope of the appended claims.

Having now fully described my invention, I claim:

1. An automatic fluid dispensing nozzle, including a valve casing containing a valve seat and a valve shiftable to and from said seat to control a passage through said casing, a manual lever pivotally mounted upon the casing, a shiftable means within the casing, an interior lever pivotally connected to said shiftable means in said casing having a link pivoted thereto and connected directly to the valve, said lever being capable of swinging upon its pivotal mounting and of opening said valve, means for communicating operation of said manual lever to said interior lever so as to open the valve, one portion of the casing being conditioned for connection to a source of fluid supply, there being a spout upon another portion of said casing connecting with said passage, and means operable upon contact of said spout with the level of dispensed fluid to shift said interior lever and allow the valve to close against its seat while the manual and interior levers both remain in operated positions.

2. An automatic fluid dispensing nozzle, including a valve casing containing a valve seat and a valve shiftable to and from said seat to control a passage through said casing, a manual lever pivotally mounted upon the casing, an interior lever pivotally mounted in said casing and capable of opening said valve, means including a plunger extending into the casing and abutting a portion of the interior lever for communicating operation of said manual lever to said interior lever so as to open the valve, one portion of the casing being conditioned for connection to a source of fluid supply, a spout upon another portion of said casing connecting with said passage, and means operable upon contact of said spout with the level of dispensed fluid to shift said interior lever and allow the valve to close against its seat while the manual and interior levers both remain in operated positions.

3. An automatic fluid dispensing nozzle, including a valve casing containing a valve seat

and a valve shiftable to and from said seat to control a passage through said casing, a manual lever pivotally mounted upon the casing, a shiftable member within said casing, an interior operating lever pivotally mounted on said shiftable member and capable upon movement of opening said valve, means including a plunger extending in through the wall of the valve casing for communicating operation of said manual lever to said interior operating lever while the shiftable member remains stationary so as to swing said interior operating lever about its pivotal mounting and open the valve, one portion of the casing being conditioned for connection to a source of fluid supply, there being a spout upon another portion of said casing connecting with said passage, and means operable upon contact of said spout with the level of dispensed fluid to shift said shiftable member and with the same said interior operating member and allow the valve to close against its seat while the manual lever and interior operating member both remain in operated positions.

4. An automatic fluid dispensing nozzle, including a valve casing containing a valve seat and a valve shiftable to and from said seat to control a passage through said casing, a slidable sleeve inserted in the casing, a manual lever pivotally mounted upon the casing, an interior lever pivotally mounted within the sleeve in said casing and capable of opening said valve in one position of said sleeve, means for communicating operation of said manual lever to said interior lever so as to open the valve, one portion of the casing being conditioned for connection to a source of fluid supply, a spout upon another portion of said casing connecting with said passage, and means operable upon contact of said spout with the level of dispensed fluid to shift said interior lever and allow the sleeve to slide within the casing and the valve to close against its seat while the manual and interior levers both remain in operated positions.

5. An automatic fluid dispensing nozzle, including a valve casing containing a valve seat and a valve shiftable to and from said seat to control a passage through said casing, a manual lever pivotally mounted upon the casing, an interior lever pivotally mounted in said casing and capable of opening said valve, means for communicating operation of said manual lever to said interior lever so as to open the valve, one portion of the casing being conditioned for connection to a source of fluid supply, a spout upon another portion of said casing connecting with said passage, a vacuum operated member enclosed upon a portion of the casing, an inner nozzle within said casing spaced from the side wall thereof to form a chamber between said inner nozzle and said side wall, channel means connecting the interior of said chamber with the interior of the enclosure upon one side of said vacuum operated member, a normally locked movable backing support for the pivotal mounting of the interior lever, and means for communicating movement of said vacuum operated member to said backing support so as to release the same and allow the valve to close against its seat while the manual and interior levers both remain in operated positions.

6. An automatic fluid dispensing nozzle, including a valve casing containing a valve seat and a valve shiftable to and from said seat to control a passage through said casing, a manual lever pivotally mounted upon the casing, an in-

terior lever pivotally mounted in said casing and capable of opening said valve, means for communicating operation of said manual lever to said interior lever so as to open the valve, one portion of the casing being conditioned for connection to a source of fluid supply, a spout upon another portion of said casing connecting with said passage, a vacuum or suction operated member enclosed upon a portion of the casing and having an operating space upon one side thereof, a break in one portion of the passage through said casing communicating with a chamber located to one side of said passage, channel means connecting the interior of said chamber with said operating space, a normally locked movable backing support for the pivotal mounting of the interior lever, and means for communicating movement of said vacuum operated member to said backing support so as to release the same and allow the valve to close against its seat while the manual and interior levers both remain in operated positions.

7. An automatic nozzle according to claim 6, wherein the movable backing support includes a slidable member within the casing carrying the pivotal mounting of the interior lever, a pair of links forming a toggle pivotally connected directly to said slidable member at one end and having a fixed point in the casing to which the toggle is connected at the other end, and means for communicating movement of said suction operated member to an intermediate portion of said toggle so as to buckle the same and allow the valve to close against its seat while the manual and interior levers both remain in operated positions.

8. An automatic nozzle according to claim 6, wherein the movable backing support includes a slidable member within the casing carrying the pivotal mounting of the interior lever, a releasable backing support means pivotally mounted in said casing capable in one position to rigidly retain the pivotal mounting of the interior lever at a fixed point and in another position allowing said mounting and lever to shift with the flow of the fluid within the casing and thereby allow the valve to close against its seat while the manual and interior levers both remain in operated positions.

9. An automatic nozzle according to claim 5, wherein an interior plunger communicates the movement of the vacuum operated member to the backing support so as to release the latter, said plunger extending into the chamber on one side of said vacuum operated member and also into the wall of the valve casing toward said backing support.

10. An automatic nozzle according to claim 5, wherein an interior plunger communicates the movement of the vacuum operated member to the backing support so as to release the latter, said plunger extending into the chamber on one side of said vacuum operated member and also into the wall of the valve casing toward said backing support and wherein said plunger has a valve head upon the end extending toward the backing support, and the valve casing has a valve seat in the wall thereof for said valve head.

11. An automatic nozzle according to claim 6, wherein an interior plunger communicates the movement of the vacuum operated member to the backing support so as to release the latter, said plunger extending into the chamber on one side of said vacuum operated member and also into

the wall of the valve casing toward said backing support.

12. An automatic nozzle according to claim 6, wherein an interior plunger communicates the movement of the vacuum operated member to the backing support, so as to release the latter, said plunger extending into the chamber on one side of said vacuum operated member and also into the wall of the valve casing toward said backing support and wherein said plunger has a valve head upon the end extending toward the backing support, and the valve casing has a valve seat in the wall thereof for said valve head.

13. An automatic nozzle according to claim 6, wherein the movable backing support includes a slidable member within the casing carrying the pivotal mounting of the interior lever, a pair of links forming a toggle pivotally connected directly to said slidable member at one end and having a fixed point in the casing to which the toggle is connected at the other end, and means for communicating movement of said suction operated member to an intermediate portion of said toggle so as to buckle the same and allow the valve to close against its seat while the manual and interior levers both remain in operated positions, including a releasing lever pivoted on the pivotal mounting of the interior lever and extending over the intermediate portion of the toggle so as to buckle the latter when operated, and a plunger member engaging against the end of said releasing lever and extending to the vacuum operated member.

14. An automatic nozzle according to claim 6, wherein the interior lever has a link connected thereto at one end to form a toggle therewith and at the other end is connected to the valve so as to be capable of positively opening the same upon partial straightening of said toggle, wherein the movable backing support includes a slidable member within the casing carrying the pivotal mounting of the interior lever, a pair of links forming a toggle pivotally connected directly to said slidable member at one end and having a fixed point in the casing to which the toggle is connected at the other end, and means for communicating movement of said suction operated member to an intermediate portion of said toggle so as to buckle the same and allow the valve to close against its seat while the manual and interior levers both remain in operated positions.

15. An automatic nozzle according to claim 1, wherein a movable member supports the pivotal mounting of the interior lever so as to provide an unyielding backing for the same when opening the valve, and wherein the means operable upon contact of the spout with the surface level of the dispensed fluid will allow said movable member to shift from supporting position when caused to operate from such contact of the spout, and a restoring spring is included which is connected to said movable member and a portion within the valve casing, while a spring is disposed against the valve tending to close the same in the direction of the flow of the fluid through the device as a whole.

16. An automatic nozzle according to claim 6, wherein the movable backing support includes a slidable member within the casing carrying the pivotal mounting of the interior lever, a pair of links forming a toggle pivotally connected directly to said slidable member at one end and having a fixed point in the casing to which the toggle is connected at the other end, and means for communicating movement of said suction

operated member to an intermediate portion of said toggle so as to buckle the same and allow the valve to close against its seat while the manual and interior levers both remain in operated positions, and wherein a restoring spring is associated in contact with at least one of the links of the toggle tending to restore and straighten the same after the toggle has been buckled, and a rigid stop is disposed on one link preventing over-operation of the spring or buckling far past alignment of said levers in said toggle.

17. An automatic dispensing nozzle for fluid, including a valve casing containing a valve seat and a valve shiftable to and from said seat to control a passage through said casing, a manual lever pivotally mounted on the casing, an interior lever pivotally mounted in said casing and capable of opening said valve, a movable means supporting the pivotal mounting of said interior

lever so as to provide an unyielding backing for the same when opening the valve, shiftable backing means for maintaining the position of said movable means and thereby the position of the pivotal mounting just mentioned, means for communicating operation of said manual lever to said interior lever in order to open the valve, one portion of the casing being conditioned for connection to a source of fluid supply, there being a spout upon another portion of said casing connecting with said passage, and means operable upon contact of said spout with the level of dispensed fluid to shift said interior lever so as to alter said shiftable backing means and allow the movable means to shift from supporting position and also allow the valve to close against its seat while the manual and interior levers both remain in operated positions.

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