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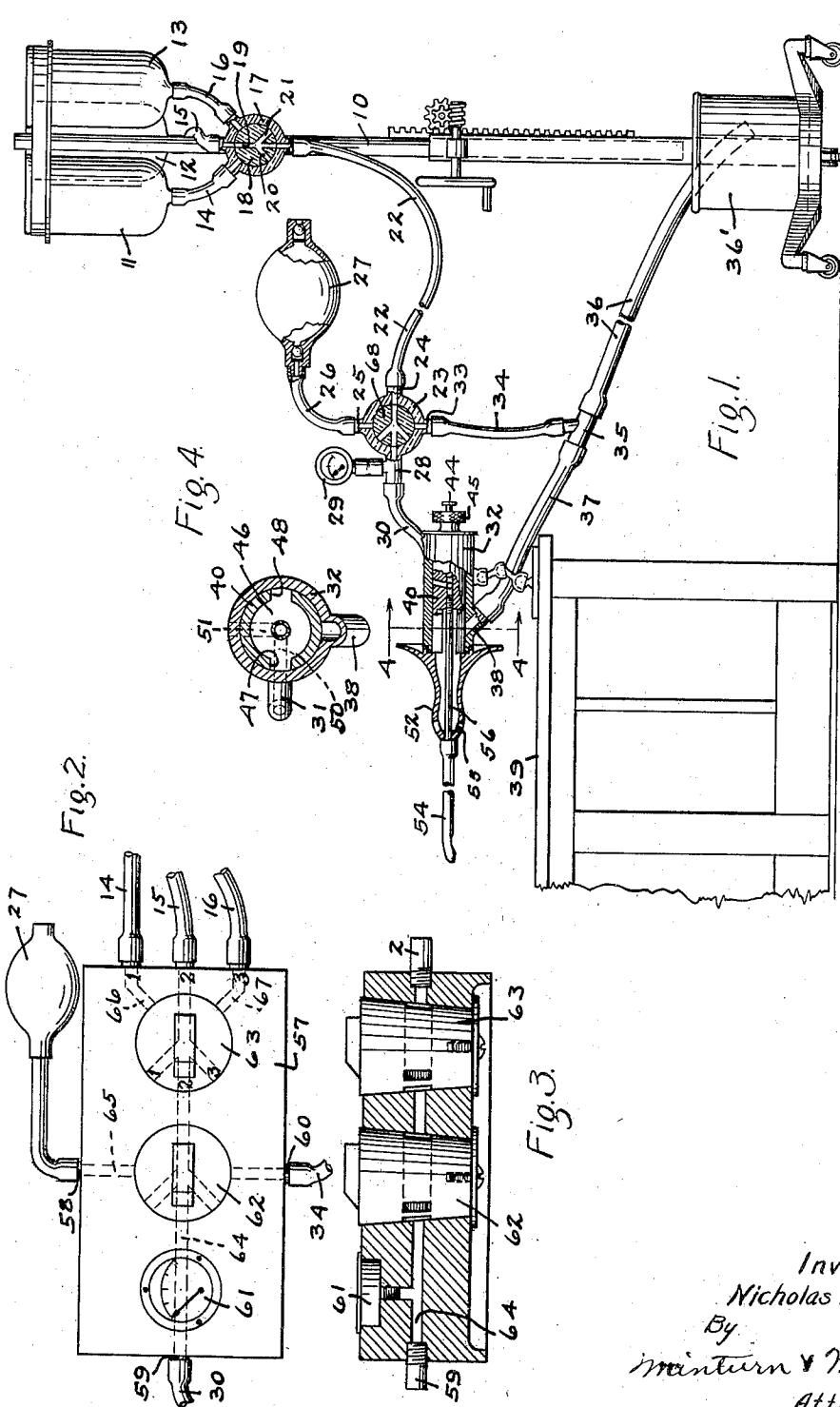
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HIGH COLONIC THERAPY APPARATUS

Filed Jan. 12, 1931

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

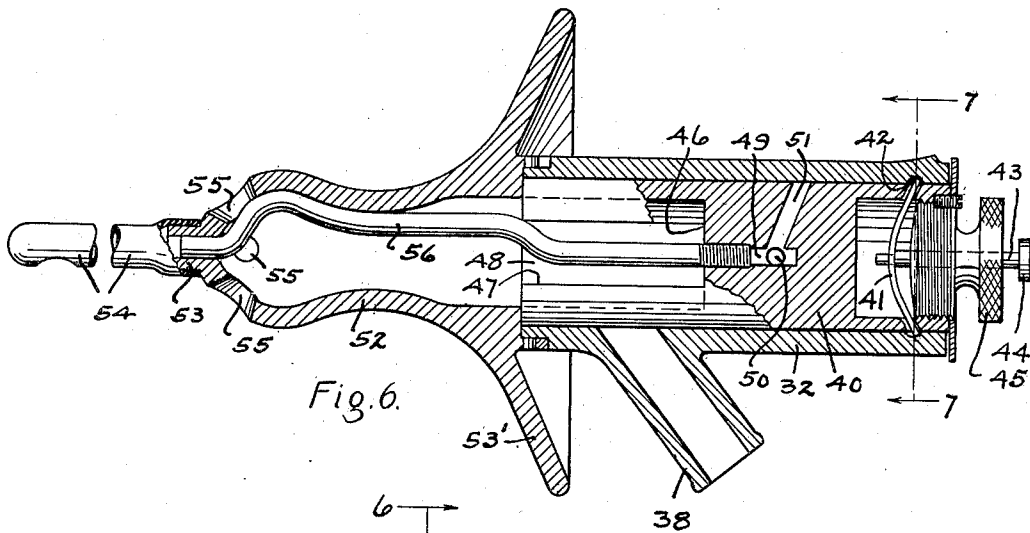


Fig. 6.

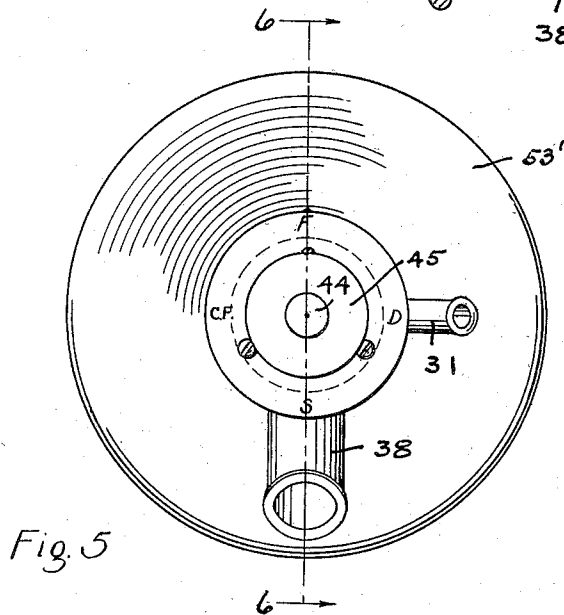


Fig. 5

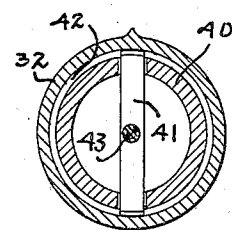


Fig. 7.

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UNITED STATES PATENT OFFICE

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HIGH COLONIC THERAPY APPARATUS

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19 Claims. (Cl. 128—227)

This invention relates to the art of irrigation and medical treatment of internal tracts of the human body, the embodiment herein described and shown being adapted for use in high colonic therapy.

An important object is to provide means for inflating the colon with air for diagnostic purposes and to open passages in case of stoppage.

An important object of the invention is to provide apparatus to permit the introduction selectively or in common of a number of fluids to within the tract to be treated.

An important object is to provide means for checking the results of medication applied within the tract from time to time to indicate a return to normal condition.

An important object is to provide a nozzle for insertion within the entrance of the tract to be treated which can readily be freed of obstructions without having to remove the nozzle.

Other important objects reside in the new and useful combination of the various elements which permit the operator to have under control at all times the flow and drainage of fluids.

Reference is made to the drawings in which Fig. 1 is a fragmentary elevation of apparatus embodying my invention;

Fig. 2, a top plan view of a modified form of fluid control valve;

Fig. 3, a longitudinal vertical section through the valve block shown in Fig. 2;

Fig. 4, a transverse vertical section through the nozzle;

Fig. 5, a rear elevation of the nozzle on an enlarged scale;

Fig. 6, a vertical longitudinal section through the nozzle; and

Fig. 7, a vertical transverse section on the line 7—7 in Fig. 6.

Like characters of reference indicate like parts throughout the several views in the drawings.

Referring first to Fig. 1, I provide a standard 10 which may be raised and lowered and mount on the top end thereof, fluid receptacles, here shown as three in number, 11, 12, and 13. From the under side of each of these receptacles extends a tube 14, 15, and 16 respectively to cover nipples projecting from the valve body 17 which carries the valve plug 18 preferably made of glass whereby the passages 19, 20, and 21 there-through may be visible from without. A fourth nipple projects from the valve body 17 diametrically opposite to that nipple over which the tube 15 is fitted.

A tube 22 leads from this fourth nipple to a valve body 23 where its end is fitted over the nipple 24. Ninety degrees around from the nipple 24 is a second nipple 25 over which is slipped the tube 26 which leads from the bulb 27 which is of the usual syringe type having check valves in each end whereby contraction and release of the bulb will cause air to be delivered into the tube 26 under pressure. Ninety degrees around from the nipple 25 is a third nipple 28 which has a side outlet to which is fitted a pressure gauge 29. Over the end of the nipple 28 is fitted a tube 30 which leads to and fits over the intake nipple 31, Fig. 4, of the nozzle body 32. Ninety degrees around the valve body 23 from the nipple 28 is a fourth nipple 33, from which leads a tube 34 to a Y-connection 35, one end of which connects with a tube 36 leading to the drain vessel 36', and the other end of which connects with a tube 37 leading thereto from the outlet nipple 38 on the nozzle body 32. It is to be noted that the tubes 36 and 37 are of much larger diameter than that of the nozzle intake tube 30.

The nozzle body 32 is preferably adjustably supported by a table 39 on which the patient to be treated lies. The nozzle body 32 is substantially a hollow cylindrical shell having a rotatable plug 40 carried therein and secured against accidental longitudinal displacement by a spring bar 41, the ends of which extend through holes in the side walls of the plug to enter into an annular groove 42 in the nozzle body bore, the bar 41 being bent inwardly by the rod 43 under the button 44, when the plug is to be removed for cleaning, to flex the bar to the extent that its ends are withdrawn from the groove. A knob 45 is fixed in the outer end of the plug 40 as a means of rotating the plug and to slidably support the rod 43.

The inner end of the plug 40 has a counter-bore 46 which is slotted across to provide the lateral openings 47 and 48. A central passage 49 leads back from the bore 46 and is intercepted by the lateral passages 50 and 51 at right angles one to the other, the outer orifices of which are positioned to register selectively upon rotation of the plug with a passage leading through the body 32 out the nipple 31. A passage out through the discharge nipple 38, is adapted to receive fluids from through either slot openings 47 or 48 as the plug may be turned.

A removable nozzle tip 52 fits over the front end of the nozzle body 32 and preferably has an outwardly extending flange 53' therearound. The tip 52 extends forwardly to have a nipple 53

on its front end over which may be secured a tract penetrating tube 54, here shown as a colon tube. Around the base of the nipple 53, to the rear thereof, is provided a plurality of relatively large drainage holes 55 through the tip, and a relatively large bore is provided within the tip to be in reality a continuation of the counter-bore 46 in the plug end.

A metallic tube or pipe 56 of small diameter as compared to that of the bore of the tip 52 is fixed in the end of the passage 49, here shown as by screw threads and extends forwardly to have its other end slidably and rotatively fitted within the internal bore of the nipple 53 with a fluid tight fit. In Fig. 1, this tube 56 is shown as extending in a straight axial line from the plug through the tip, while in Fig. 6, the tube is bent to follow closely around the inner side of the tip wall. Upon rotation of the plug by the knob 45, the bent tube will scrape around the tip wall and across the holes 55 so as to break up and loosen any mass that may have a tendency to clog up the passageways and prevent drainage through the tip. The tube 56 being of small diameter occupies but a very small percentage of the space in the tip and thus permits the tip to afford the greatest possible area for drainage and at the same time to carry an intake fluid passage.

Referring to Figs. 2 and 3, a valve block 57 may be employed in place of the valves 17 and 23, in which case, the tubes 14, 15 and 16 are connected directly to the nipples numbered 1, 2, and 3 respectively, the bulb 27 to the side nipple 53, the intake tube 30 over the end nipple 53, and the tube 34 to the other side nipple 50. Here the pressure gauge 61 is incorporated in the block, and two plugs 62 and 63 are rotatively carried in the block to intercept the various passageways therethrough as indicated, a passage 64 extending longitudinally through the block, a passage 65 extending transversely through the block on a line intercepting the passage 54 at right angles to have the plug 62 at this intersection, and two passages 66 and 67 extending from the nipples 1 and 3 on lines to intersect the passage 64, at which intersection the plug 63 is located.

The gauge 61 is in communication with the passage 64 back of the plug 62. Each plug 62 and 63 has a straight line, horizontal passage therethrough and two angular passages communicating therewith, the outer orifices of the angular passages each being spaced around forty-five degrees from an orifice of the straight line passage.

In practice, the receptacles 11, 12 and 13 are supplied with the desired fluids and the plug 13 is adjusted to permit any one or a mixture of the fluids to flow down the tube 22. The valve plug 63, in the body 23 preferably made of glass having a straight through passage and two angular passages branching from the straight passage, is turned to allow flow therethrough to the nozzle. The tube 54 is inserted well up into the colon and the tip carried in place to be held by the sphincter muscle of the anus or slight pressure from a support. The knob 45 is then rotated to carry the plug 40 around to have the passage 50 brought into communication with the passage through the nipple 31 so that fluid may then flow through the tube 56 and the colon tube 54 into the colon. Drainage may be had back through the colon tube 54 and tube 56, as is often necessary in inserting the colon tube, by rotating

the valve plug 68 to have the angular passages communicate with the passages through the nipples 28 and 33.

With the nozzle plug 40 in the position as indicated, the outlet passage through the discharge nipple 38 is covered over so that the fluid entering the colon is retained as long as the valve plug 68 remains in the position indicated in Fig. 1. The plug 40 may be revolved 180 degrees to shut off both the inflow of the fluid and the discharge.

For a continuous flow of fluid into the colon and a discharge therefrom, the plug 40 is revolved ninety degrees to bring the other transverse passage 51 into communication with the nipple 31 passage and to have one of the slotted openings in the plug 40 over the discharge opening through the nipple 38, whereby fluid may flow back from the colon through the holes 55 into the tip 52 and out the nipple 38 to the vessel 36'. Complete retention of the fluid in the colon without inflow is had by revolving the plug on around ninety degrees from this position to have neither passage 50 nor 51 in communication with the intake nipple passage. Now in case the tube 56 becomes clogged, the plug 68 may be revolved to close off the passage through the nipple 28 and the bulb 27 manipulated to create sufficient pressure to blow out the tube contents. Also, in the same manner, pressure may be created in the colon up to the point of noticeable pain at which point the pressure is noted. At subsequent treatments, if the medication is having effect, a higher pressure should be borne by the colon without any more effect, so that by comparison of pressures from one treatment to another, progress of the case may be readily indicated.

In the same manner air pressure may be created in the colon to inflate the colon for diagnostic purposes and to move obstructions in the colon.

Also, the pressure gauge is employed as a means to determine the height the receptacles 11, 12, and 13 are to be raised for each patient in comparison to previous pressure readings so that in each treatment the pressure of the liquid is known, and by locating the gauge as shown, between the control valve 58 and the nozzle the internal colonic pressure may be determined.

While I have here shown and described my invention in the one best form as now known to me, it is obvious that structural changes may be made therein without departing from the spirit of the invention, and I, therefore, do not desire to be limited to that precise form, nor any more than may be required by the following claims.

I claim:

1. In a high colonic therapy device, a plurality of fluid supply vessels, a single valve selectively controlling the flow from each of said vessels, a tube from said valve, a second valve connected to said tube, means for creating an air pressure in communication with said second valve, said second valve comprising means for cutting off the pressure from said pressure creating means to the fluid supply means, a discharge line from the second valve, a pressure gauge on the discharge line, a nozzle receiving the said discharge line, said nozzle having a tip, a colon discharge tube leading from the nozzle tip, a tube in the nozzle attached to the tip, and a valve plug in the nozzle connected with the last tube and selectively controlling flow through said discharge line from the tube.

2. In a high colonic therapy device, a plurality of fluid supply vessels, a single valve selectively controlling the flow from each of said vessels, a tube from said valve, a second valve connected to said tube, means for creating an air pressure in communication with said second valve, said second valve comprising means for cutting off the pressure from said pressure creating means to the fluid supply means, a discharge line from the second valve, a pressure gauge on the discharge line, a nozzle receiving the said discharge line, said nozzle having a tip, a colon discharge tube leading from the nozzle tip, a tube in the nozzle attached to the tip, and a valve plug in the nozzle connected with the last tube and selectively controlling flow through said discharge line from the tube, and an interconnecting tube between said second valve and said discharge tube.

3. In a high colonic therapy device, a plurality of fluid supply vessels, a single valve selectively controlling the flow from each of said vessels, a tube from said valve, a second valve connected to said tube, means for taking air externally of the tube and creating an auxiliary air pressure in communication with said second valve, said second valve comprising means for cutting off the pressure from said pressure creating means to the fluid supply means, a discharge line from the second valve, a pressure gauge on the discharge line, a nozzle receiving the said discharge line, a colon discharge tube leading from the nozzle, and a valve plug in the nozzle selectively controlling flow through said discharge line and from the tube, a tip on the nozzle, and a tube extending from the said plug into the tip, said tube being in communication with a passage in the plug, which passage may be selectively connected and disconnected with said discharge line upon rotation of the plug.

4. In a high colonic therapy device, a plurality of fluid supply vessels, a single valve selectively controlling the flow from each of said vessels, a tube from said valve, a second valve connected to said tube, means for taking air externally of the tube and creating an auxiliary air pressure in communication with said second valve, said second valve comprising means for cutting off the pressure from said pressure creating means to the fluid supply means, a discharge line from the second valve, a pressure gauge on the discharge line, a nozzle receiving the said discharge line having an end tip, a colon discharge tube leading from the nozzle attached to the tip, and a valve plug in the nozzle attached to the last tube selectively controlling flow through said discharge line and from the tube, and an interconnecting tube between said second valve and said discharge tube, said second valve having a rotatable member adapted to provide selectively flow between said tube and said discharge line, flow between said pressure means and said interconnecting tube, flow between said pressure means and said discharge line, and flow between said discharge line and said interconnecting tube.

5. In an irrigating nozzle, a tip having a large internal bore, a nipple on the forward end, said tip having a plurality of relatively large holes on the forward end about said nipple, and a fluid supply tube entered within the nipple extending thereto within the tip, said tube being rotatable within the tip and of relative small diameter and bent to approach and sweep said large internal bore.

6. In an irrigating nozzle, a rotatable plug in

the nozzle, a tip on the nozzle having a relatively large internal bore, and a tube carried by the plug extending therefrom to discharge through the forward end of the tip, said tip having relatively large holes therethrough near its forward end and means to sweep across the holes within the bore of the tip, to remove obstructing accumulations therefrom.

7. In an irrigating nozzle, a rotatable plug in the nozzle, a tip on the nozzle having a relative large internal bore, and a tube carried by the plug extending therefrom to discharge through the forward end of the tip, said tip having relatively large holes therethrough near its forward end, said tube being bent between its forward end and the plug to approach the wall of the tube bore whereby the bent portion of the tube will sweep around the bore upon rotation of the plug.

8. In a high colonic therapy device, a plurality of fluid containing vessels comprising at least three in number, a common valve, a discharge connection leading from each vessel to said valve, and said valve having a single discharge outlet and being formed with a rotary unit having four internally intercommunicating peripheral openings adapted to be registered with openings from the vessel discharge connections and the valve outlet whereby the rotary unit may be revolved to give a selective flow therethrough to the valve discharge outlet from any one container, three containers simultaneously, and to shut off all flow a second valve, a bulb connected with the second valve to discharge air under pressure through said valve and having openings for selectively connecting the tanks and the bulb with the discharge from the first valve.

9. In a high colonic therapy device, a plurality of fluid containing vessels comprising at least three in number, a common valve, a discharge connection leading from each vessel to said valve, and said valve having a single discharge outlet and being formed with a rotary unit having four internally intercommunicating peripheral openings adapted to be registered with openings from the vessel discharge connections and the valve outlet whereby the rotary unit may be revolved to give a selective flow therethrough to the valve discharge outlet from any one container, three containers simultaneously, and to shut off all flow, means for raising and lowering said vessels to vary the discharge head from said valve, a second valve, tube means interconnecting the first and second valves, means operating independently of the discharge head from the vessels for creating an auxiliary pressure connected with said second valve, a rectal valve, and tube means interconnecting the second and rectal valves, said second valve being formed to selectively put said pressure means in communication with either tube means interconnecting with said second valve, and pressure indicating means in communication with the tube means between the second and rectal valves.

10. In a high colonic therapy device, a plurality of fluid supply vessels, means for varying the elevation of the vessels, a rectal nozzle valve having a fluid intake connection, a colon supply opening and a colon drainage outlet separate from the intake connection, a single valve receiving the discharge of all of said vessels and selectively operable to give a flow from an individual vessel or from combinations of vessels, fluid conducting means between the valve and the rectal nozzle valve intake connection, means independent of

the pressure from the vessels for supplying air under pressure, and valve means selectively connecting the air pressure means with the nozzle intake connection and the nozzle drainage outlet.

- 5 11. In a high colonic therapy device, a nozzle having a central passage discharging from the forward end thereof and an inlet and a rear discharge passage each communicating with the central passage, said nozzle having a second inlet
- 10 passage extending from an orifice near the front discharge end thereof and communicating with said central passage, valve means comprising a revoluble plug in said central passage having side inlets selectively intercepting said inlet and discharge passages, and a tube extending from the plug to said forward end, said plug having a passage therein adapted to be placed in communication between said tube and said nozzle inlet.
12. In a high colonic therapy device, a fluid
- 20 supply vessel, a rectal nozzle having a fluid intake 30, a colon supply discharge 54, a separate colon discharge intake 55, and a colon discharge outlet 33, valve means in the nozzle selectively controlling the flow between said intakes and discharges, valve means independent of the nozzle
- 25 valve means between the said vessel, the nozzle fluid intake, and the nozzle colon discharge outlet and an auxiliary pressure means independent of the fluid supply pressure controlled by the in-
- 30 dependent valve means.
13. In an irrigating nozzle, a body having an internal bore, a tip on the body having a relatively large internal bore in communication with the body bore, the tip having a discharge orifice
- 35 in its forward end, a plug revolubly fitted in the body bore having openings about its periphery, the body having a fluid inlet opening and a colon discharge opening, and a tube extending from the plug into said orifice, said plug providing a
- 40 passageway from one of its openings to said tube, said tip having intake passages therethrough around said orifice, and said plug being adapted to be revolved to permit a continuous line of flow from through said inlet opening, plug, and tube
- 45 out through said orifice and back through said intake passages to within said body bore around said tube and out through said discharge opening, said tube providing a means for keeping colon inflowing fluid from mixing with the colon discharge fluid within the body.
- 50 14. In a high colonic irrigating device, a rectal nozzle, a fluid supply vessel giving gravity supply through the nozzle, valve means between the vessel and the nozzle, an air supplying pressure bulb in communication with the nozzle and a second
- 55 valve means for selectively adding the air supply to the fluid pressure at the nozzle or for supplying air alone to the nozzle.
15. In a high colonic irrigating device, a rectal
- 60 nozzle, a fluid supply vessel giving gravity supply through the nozzle, valve means between the vessel and the nozzle, an air supplying pressure bulb in communication with the nozzle and a second
- 65 valve means for selectively adding the air supply to the fluid pressure at the nozzle or for supplying air alone to the nozzle, and a pressure gauge between the second valve and the nozzle.
16. In an irrigating nozzle, a valve body having
- 70 an intake nipple, an outlet nipple, and a distal end opening, a plug rotatable within the valve body having a passage discharging toward its distal end, said passage having one or more lateral passages adapted to connect with the intake nip-

ple, said plug being open at its distal end and having two lateral distal discharges alternately connecting with the outlet nipple of the valve body by a rotary adjustment of the plug.

17. In an irrigating valve, a barrel having an
- 5 intake opening and a discharge opening spaced forwardly of the intake opening, and a plug rotatably carried in the barrel and having a longitudinal bore therein opening out at the forward end,
- 10 said plug having one or more lateral passages from said bore located to selectively register with the intake opening upon suitable rotation of the plug, and said plug having a second longitudinal bore with one or more side openings selectively
- 15 registrable with said discharge opening, a closure over the forward barrel end having one or more openings, said side openings in the plug being formed to afford direct passages from said closure
- 20 opening through the plug to said barrel discharge opening, and means extending said first bore through said cover to afford a communication therethrough independently of said second bore,
- 25 whereby a passage may be had through the intake opening, first plug bore, and said means out through said cover simultaneously with a second passage through the cover, the second bore, and the discharge opening; or one of said passages
- 30 separately by rotation of said plug, or both passages closed off, said passages at all times remaining without intercommunication with each other.

18. In an irrigating nozzle designed selectively to inject into or drain a cavity separately or simultaneously and to completely shut off both the injection and drain, a barrel, a closure over the end
- 35 of the barrel having an injecting discharge passage and a drain passage therethrough, said barrel having an intake passage and a drain passage removed from said closure, a piston shiftable in the barrel having an intake passage selectively
- 40 registering with the barrel intake passage and discharging through said closure injecting discharge passage, and said piston having a second passage in communication with said closure drain
- 45 passage selectively registrable with said barrel drain passage, the barrel intake and drain passages being spaced circumferentially one from the other to permit the piston to be shifted selectively first; to provide a flow from the barrel intake passage and out through the closure discharge
- 50 passage while the barrel drain passage is closed, second; to provide said flow plus a flow from the closure drain passage through the barrel drain passage; third, no flow through the closure discharge passage with flow from the closure
- 55 drain passage through the barrel drain passage; and fourth, no flow through either the closure discharge or drain passages.

19. In an irrigating nozzle, a valve body having an intake nipple, an outlet nipple and a distal end
- 60 opening, a plug rotatable within the valve body having a passage discharging toward its distal end, said passage having one or more lateral passages adapted to connect with the intake nipple, said plug being open at its distal end and
- 65 having two lateral distal discharges alternately connecting with the outlet nipple of the valve body by a rotary adjustment of the plug, a nozzle over the distal end of the body having drain holes therethrough, and a passage carrying member
- 70 leading from said valve body passage discharging end through said nozzle.

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