

Oct. 13, 1959

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2,908,273

POWER VAGINAL IRRIGATOR

Filed Nov. 7, 1956

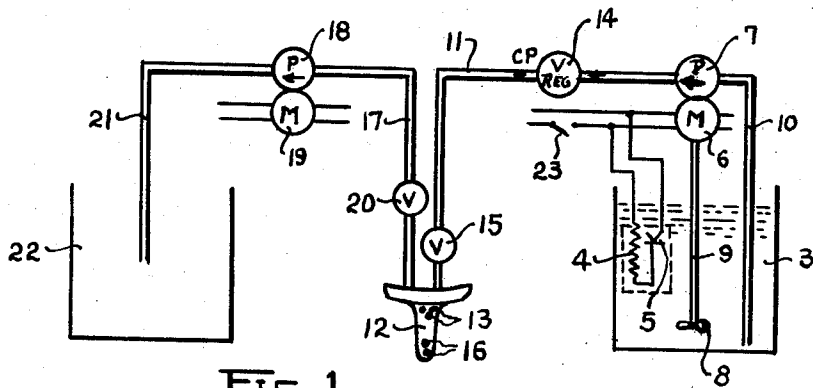


FIG. 1

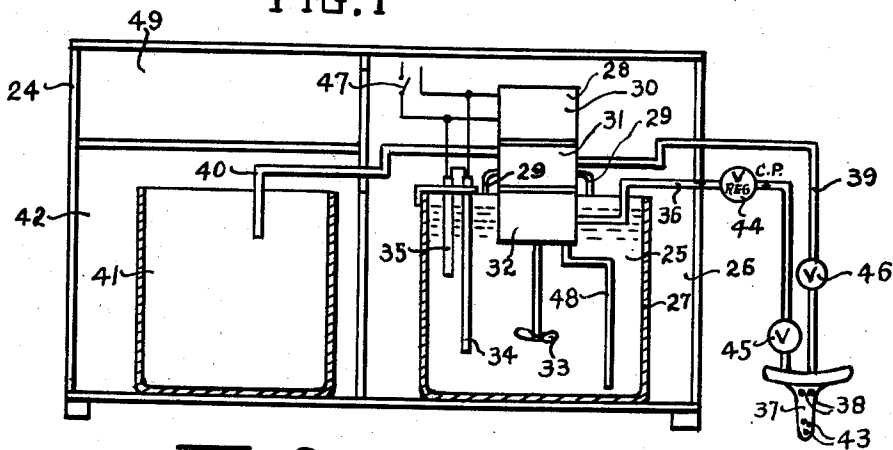


FIG. 2

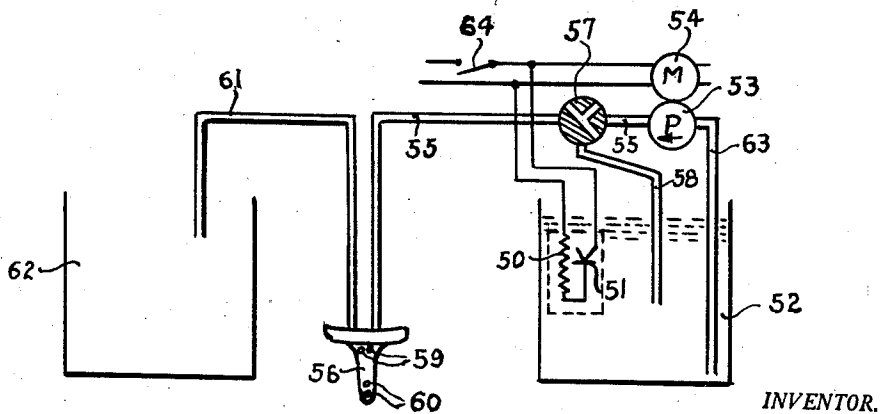


FIG. 3

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POWER VAGINAL IRRIGATOR

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Application November 7, 1956, Serial No. 620,966

11 Claims. (Cl. 128—251)

This invention relates to fluid mechanisms and more particularly to a vaginal irrigator having a power driven pump, a mixing mechanism and a controlled heating element.

The present vaginal irrigating mechanisms are provided with a hand operated pump arrangement for forcing the irrigating fluid into the vagina. The pump that forces the irrigating fluid into the vagina is used to withdraw the fluid from the vagina or else the fluid is allowed to spill or flow out of the vagina by gravity. My improved vaginal irrigator forces the fluid into the vagina by means of a power operated pump and discharges the fluid into a disposal reservoir. In this way a continuous flow is provided during the entire irrigating process. The present type of vaginal irrigators does not provide mixing and automatic temperature control mechanisms. My novel vaginal irrigator provides a mixing device that thoroughly mixes the irrigating fluid and also provides a means for heating and automatically controlling the temperature of the irrigating fluid. Furthermore the present type of vaginal irrigators are adapted to be used while the patient is in a sitting or standing position. My novel vaginal irrigator can be used while the patient is in a sitting, standing or prone position. Medical authorities today claim that a prone position is the proper position during vaginal irrigation.

One of the objects of my novel vaginal irrigator is to provide a vaginal irrigator that is power operated.

Another object of my novel invention is to provide a vaginal irrigator that provides a continuous flow of irrigating fluid through the vagina during the entire irrigating period.

Another object of my invention is to provide a means for discharging the irrigating fluid from the vagina and also dispose the fluid without soiling the surroundings.

Another object is to provide a vaginal irrigator that automatically mixes the irrigating fluid before it enters the vagina.

Another object of my novel invention is to provide a vaginal irrigator that heats and automatically controls the temperature of the irrigating solution.

Another object of my invention is to provide a vaginal irrigator that can be used while the person is in a prone position.

Another object of my invention is to provide a vaginal irrigator in which the solution can be prepared beforehand and stored so that when it is desired to use the irrigating solution the power is turned on and the irrigating solution is ready for use as soon as the solution is heated to the proper temperature.

Another object of my invention is provide a vaginal irrigator that can pump air to draw off the last remains of the fluid to avoid wetting or soiling of the surroundings after the irrigation process.

Further objects of the invention will appear as the description proceeds in connection with the appended claims and the annexed drawings wherein:

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Figure 1 is a diagrammatic representation of one form of my novel power vaginal irrigator.

Figure 2 is a front elevation of one form of my novel power vaginal irrigator located in a suitable cabinet.

Figure 3 is a diagrammatical representation of another embodiment of my novel power vaginal irrigator.

Referring more particularly to the drawings the supply reservoir 3 is adapted to hold a supply of suitable irrigating solution. A heating element 4 is located under liquid level in the supply reservoir 3. A thermostatically controlled switch unit 5 is also located in the supply reservoir 3 under liquid level. The thermostatically controlled switch unit 5 is connected in series with the electrical heating unit 4 and is adapted to maintain the irrigating solution at the desired temperature if the solution is not used as soon as it reaches the desired temperature. A motor 6 operates the supply pump 7 and also the mixing vanes 8 which are secured to the drive shaft 9. A fluid supply passageway 10 extends from the proximity of the bottom of the supply reservoir 3 to the supply pump 7. A fluid pressure supply passageway 11 extends from the outlet side of the supply pump 7 to the syringe nozzle 12 and terminates in the syringe nozzle outlet openings 13. A pressure control valve 14 is located in the pressure fluid supply passageway 11 and is adapted to control the pressure of the irrigating solution to the syringe nozzle 12. A shut off valve 15 is also located in the pressure fluid supply pressure passageway 11. A fluid discharge passageway 17 extends from the discharge openings 16 in the syringe nozzle 12 to the disposal pump 18 which is operated by the motor 19. A shut off valve 20 is located in the fluid discharge passageway 17. A disposal fluid passageway 21 extends from the disposal pump 18 to the disposal reservoir 22. A manually operated switch 23 is located in the power line leading to the motor 6. The heating unit 4 is also turned off and on by the manually operated switch 23. The motor 19 may be controlled by the switch 23 or an independent switch may be provided.

The supply reservoir 3 is kept charged with sufficient irrigating solution for one irrigating process so that when it is desired to use the irrigating solution it is merely necessary to turn on the switch 23.

When it is desired to use my novel power vaginal irrigator the switch 23 is turned on. The heating unit 4 will then heat the irrigating solution. At the same time the agitator vanes 8 mix the solution so that the entire solution in the supply reservoir 3 is at a uniform temperature and consistency. The thermostatically controlled switch turns off the heating element 4 as soon as the irrigating solution reaches the proper predetermined temperature. The irrigating solution is then ready for use. If the patient is not ready to use the irrigating solution when it reaches the predetermined temperature the thermostatically controlled switch retains the temperature of the irrigating solution at the predetermined temperature until the patient uses the irrigating solution.

During the heating and mixing period the shut off valve 15 is closed so that the irrigating fluid can not flow to the syringe nozzle 12. When or after the irrigating solution reaches the proper temperature the syringe nozzle 12 is inserted in the vagina preferably while the patient is in a prone position. The shut off valves 20 and 15 are opened and the motor 19 is turned on to operate the pump 18. The supply pump 7 then draws irrigating solution from the supply reservoir 3 through the fluid supply passageway 10, and forces it through the fluid pressure supply passageway 11 and through the syringe outlet openings 13 into the vagina for irrigation purposes. The disposal pump 18 draws the fluid from the vagina through the discharge openings 16 of the syringe nozzle 12 through the fluid discharge passageway 17 and

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discharges the fluid into the disposal reservoir 22 through disposal fluid passageway 21. The supply reservoir contains sufficient irrigating solution for one operation. When all of the irrigating solution is drawn from the supply reservoir 3 the motor 6 is turned off. As soon as the disposal pump has drained all of the fluid from the vagina the motor 19 is turned off. The nozzle 12 may then be removed from the vagina without soiling or wetting the surroundings.

The pump 7 may be allowed to operate for a short time after all of the solution is drawn from the supply reservoir 3. The supply pump 7 will then pump air through the system and thereby remove any traces of irrigating fluid that may remain in the vagina.

Figure 2 shows my novel power vaginal irrigator installed in a suitable cabinet 24. With this arrangement my novel power irrigator may be kept in a bed room and have the appearance of a nice piece of furniture. A supply reservoir 25 provided by the fluid container 27 is located in the compartment 26. A powered pump unit 28 is supported on the fluid container 27 by means of the brackets 29. The power pump unit 28 comprises a motor or power unit 30, a disposal pump 31 and a supply pump 32. An agitator 33 is operated by the power unit 30. A heating unit 34 is located in the reservoir 25 and is controlled by the thermostatic switch 35. A fluid supply passageway 48 extends from the proximity of the bottom of the reservoir 25 to the inlet side of the supply pump 32. A fluid pressure passageway 36 extends from the outlet side of the supply pump 32 to the syringe nozzle 37 and terminates in the nozzle outlets 38. A fluid discharge passageway 39 extends from the discharge openings 43 of the syringe nozzle 37 to the inlet side of the disposal pump 31. A fluid disposal passageway 40 extends from the outlet side of the disposal pump 31 to the disposal reservoir located in the compartment 42. A pressure control valve 44 is located in the fluid pressure passageway 36 to avoid excessive pressures at the nozzle outlets 38. A shut off valve 45 is located in the fluid pressure passageway 36 and is used to prevent or permit the flow of irrigating fluid in the fluid pressure passageway 36. The shut off valve 46 is used to open and close the fluid discharge passageway 39.

The reservoir 25 is kept filled with a suitable irrigating solution so that it is ready for use when desired. When it is desired to use the power vaginal irrigator the manually operated switch 47 is closed thereby energizing the heating unit 34 and the motor 30. The agitator 33 is operated by the motor 30 thereby mixing the irrigating solution in the supply reservoir 25 so that a uniform temperature is maintained throughout the reservoir 25 and at the same time providing a homogenous solution. When the proper predetermined temperature is reached the heating element 34 is automatically turned off by thermostatic switch 35. The irrigating solution is then properly heated and mixed and is ready for use. The supply pump 32 is of a type that produces a small pressure head while the fluid pressure passageway 36 is closed by the shut off valve 45.

The syringe nozzle 37 is then inserted in the vagina preferably while the patient is in a prone position. The shut off valves 45 and 46 are opened. The irrigating solution is then drawn from the supply reservoir 25 through the fluid supply passageway 48 and is forced through the fluid pressure passageway 36, out of the syringe nozzle outlets 38 into the vagina. The fluid circulates through the vagina producing a cleansing and washing action. The fluid is drawn out of the vagina through the nozzle discharge openings 43, through the fluid discharge passageway 39 by the disposal pump 31. The disposal pump 31 forces the fluid through the fluid disposal passageway 40 into the disposal reservoir 41. The supply pump 32 continues to force irrigating solution through the described path until the supply of irrigating solution in the supply reservoir is exhausted, thereby

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thoroughly irrigating the vagina. During this time the disposal pump 31 is drawing fluid from the vagina. The switch 47 may be opened as soon as the supply of irrigating solution in the supply reservoir is exhausted and thereby stop the process or the pumps may be allowed to operate a short time after the solution in the supply reservoir 25 is exhausted thereby pumping air through the system and thoroughly drain the vagina to avoid wetting or soiling of the surroundings when the syringe nozzle is removed from the vagina. When the syringe nozzle 37 is removed from the vagina it may be placed in the compartment 49 for storage. The fluid in the disposal reservoir 41 may be disposed of at any convenient time after the irrigating operation. The supply reservoir 25 is preferably charged or filled with a new supply of irrigating solution at the earliest convenience so that the unit will be ready for service when desired.

The fluid passageways 36 and 39 consist of rubber or other suitable flexible tubing and are of sufficient length to reach from the power irrigating unit to the patient. The power unit 28 is supported on the supply reservoir container 27 by means of the brackets 29 and may be lifted therefrom for cleaning or refilling the fluid container 27. The cabinet 24 may be provided with doors (not shown) thereby making the unit appear as a neat piece of furniture.

It will be noted that if the supply reservoir is kept filled with irrigating solution the device is ready for use at any time. The only waiting period necessary is the time required to heat the irrigating solution. The unit may be turned on in advance and thereby eliminate any waiting period.

Figure 3 discloses a modification of my device. In this arrangement a heating element 50 is controlled by the thermostatic switch 51. The heating element 50 and the thermostatic switch are located below liquid level in the supply reservoir 52. A supply pump is operated by the motor 54. A fluid supply passageway 63 extends from the proximity of the bottom of the supply reservoir 52 to the inlet side of the pump 53. A pressure fluid passageway 55 extends from the outlet side of the supply pump 53 to the syringe nozzle 56. A three way valve is located in the pressure fluid passageway 55. A return fluid passageway 58 extends from the three way valve 57 to the supply reservoir 52. The pressure fluid passageway 55 terminates in the nozzle outlet openings 59 of the syringe nozzle 56. The discharge openings in the syringe nozzle 56 are connected to the disposal fluid passageway 61 which extends to the disposal reservoir 62. In the arrangement shown in Figure 3 the heating unit 50 and the supply motor 54 may be operated by the same switch (not shown). The fluid supply reservoir is preferably kept filled with irrigating solution. When it is desired to use the power vaginal irrigator the heating element 50 and the motor 54 are turned on. The three way valve 57 should be so adjusted that the supply pump 53 forces the fluid to return to the supply reservoir through the return fluid passageway 58. While the heating unit 50 is heating the irrigating solution in the supply reservoir 52 the pump 53 is drawing fluid from the supply reservoir 52 through the fluid supply passageway 63 and forcing the fluid through the pressure fluid passageway 55 to the three way valve 57 and then through the fluid return passageway 58 and back into the supply reservoir 52. This circulation of fluid agitates the irrigating solution in the supply reservoir 52 so that the entire supply of irrigating solution has a uniform temperature and consistency. When the irrigating solution in the supply reservoir reaches a predetermined temperature the thermostatic switch 51 turns off the heating element and the solution is ready for use. The syringe nozzle 56 is inserted in the vagina preferably while the patient is in a prone position. The three way valve is then adjusted so that the irrigating solution flows through the pressure fluid passageway 55 and out of the nozzle outlet openings 59 and into the

vagina. The fluid circulates in the vagina and then leaves the vagina through the discharge openings 60 and flows through the disposal passageway 61 to the disposal reservoir 62. The disposal reservoir 62 is placed below the level of the syringe nozzle 56 thereby causing the fluid to flow by gravity from the vagina to the disposal reservoir 62. The force of gravity is augmented by the slight pressure created in the vagina by the supply pump 53 to discharge the irrigating solution from the vagina. When the irrigating solution in the supply reservoir 52 is exhausted the unit may be shut off or it may be allowed to operate for a short period to pump air through the system to completely drain the vagina.

The circulating of the irrigating fluid in this arrangement before the irrigation process begins serves a twofold purpose as it provides sufficient agitation so that the entire irrigating solution in the supply reservoir has the same temperature and consistency and at the same time the pump and a large portion of the fluid passageways are heated in the same temperature as the irrigating solution. Consequently when the irrigation process is started a properly heated mixture will immediately be provided.

From the above description it is apparent that my novel power irrigating device has many advantages over the present vaginal irrigators. My novel power vaginal irrigator is provided with a fluid supply reservoir which can be kept filled so that the device is always ready for use. My novel power vaginal irrigator automatically heats and mixes the irrigating solution. My novel device is also adapted to be used while the patient is in a prone position. My novel device also prevents the irrigating solution from being overheated and at the same time it keeps the solution at the proper temperature if it is not used as soon as the proper temperature is reached.

While I have described several embodiments of my invention it is apparent that many modifications in construction, combination and arrangements of the various parts can be made by those skilled in the art without departing from the scope of my invention.

Having thus described my invention what I claim is:

1. A power vaginal irrigating device of the type described comprising a supply reservoir open to atmosphere and adapted to contain irrigating solution, a vaginal syringe nozzle, a fluid passageway extending from said reservoir to said syringe nozzle, a power operated pump located in said fluid passageway adapted to transmit said irrigating solution from said supply reservoir to outlet openings in said syringe nozzle, a disposal reservoir and a disposal fluid passageway extending from said syringe nozzle to said disposal reservoir adapted to transmit fluid from discharge openings in said syringe nozzle to said disposal reservoir.

2. A power vaginal irrigating device of the type described comprising a supply reservoir open to atmosphere adapted to contain irrigating solution, a thermostatically controlled heating unit located in said reservoir, a vaginal syringe nozzle, a fluid passageway extending from said supply reservoir to said outlet openings in said syringe nozzle, a power operated pump located in said fluid passageway adapted to transmit said irrigating solution from said supply reservoir to outlet openings in said syringe nozzle, a disposal reservoir and a disposal fluid extending from discharge openings in said syringe nozzle to said disposal reservoir adapted to transmit fluid from said discharge openings in said syringe nozzle to said disposal reservoir.

3. A power vaginal irrigating device of the type described comprising a supply reservoir open to atmosphere adapted to contain a supply of irrigating solution, a thermostatically controlled heating unit located in said supply reservoir, a vaginal syringe nozzle, a power operated pump, a suction fluid passageway extending from said supply reservoir to said pump, a pressure fluid passageway extending from said pump to outlet openings in said syringe nozzle, a shut off valve located in said

pressure fluid passageway, a disposal reservoir and a disposal fluid passageway extending from discharge openings in said syringe nozzle to said disposal reservoir.

4. In a power vaginal irrigating device of the type described comprising a supply reservoir adapted to store sufficient irrigating solution for one irrigating operation, a thermostatically controlled heating unit located below liquid level in said supply reservoir, a means adapted to agitate said irrigating solution operated by a power driven pump, a fluid supply passageway extending from said supply reservoir to said pump, a vaginal syringe nozzle, a fluid pressure passageway extending from said pump to outlet openings in said vaginal syringe nozzle, a disposal reservoir and a disposal fluid passageway extending from discharge openings in said syringe nozzle to said disposal reservoir.

5. A power irrigating device of the type described comprising a supply reservoir open to atmosphere adapted to retain irrigating solution, a thermostatically controlled heating unit adapted to heat said irrigating solution, a means adapted to agitate said irrigating solution, a power operated pump, a fluid supply passageway extending from said supply reservoir to said pump, a vaginal syringe nozzle, a fluid passageway adapted to transmit irrigating solution from said pump to outlet openings in said vaginal syringe nozzle, a shut off valve adapted to control the flow of said irrigating solution to said nozzle, a disposal reservoir and a fluid passageway extending from discharge openings in said nozzle to said disposal reservoir.

6. A power vaginal irrigating device of the type described comprising a supply reservoir open to atmosphere and adapted to store irrigating solution, a vaginal syringe nozzle provided with outlet and disposal openings, a fluid supply passageway extending from said supply reservoir to outlet openings in said vaginal syringe nozzle, a power operated pump located in said fluid supply passageway, a disposal reservoir and a disposal fluid passageway extending from said vaginal syringe nozzle to said disposal reservoir.

7. A power operated vaginal irrigating device of the type described comprising a supply reservoir open to atmosphere and adapted to store irrigating solution, a vaginal syringe nozzle, a fluid supply passageway extending from said supply reservoir to said vaginal syringe nozzle, a power operated pump located in said fluid supply passageway and adapted to pump fluid therethrough, a shut off valve located in said fluid supply passageway, a pressure control valve located in said fluid supply passageway between said pump and said nozzle, a disposal reservoir and a fluid disposal passageway extending from said nozzle to said disposal reservoir.

8. A power operated irrigating device of the type described comprising an irrigating solution reservoir adapted to store solution, a thermostatically controlled heating unit in said reservoir adapted to heat said solution, a fluid supply passageway extending from said reservoir to a power operated pump, a pressure fluid supply passageway extending from the discharge side of said pump to a vaginal nozzle, a three way valve located in said pressure fluid supply passageway, a return fluid passageway extending from said three way valve to said supply reservoir and a disposal fluid passageway extending from said vaginal nozzle to a disposal reservoir.

9. A power operated irrigating device of the type described comprising a supply reservoir adapted to store irrigating solution, a thermostatically controlled heating unit located in said supply reservoir adapted to heat said irrigating solution to a predetermined temperature and also adapted to retain the temperature of said irrigating solution at the predetermined level for any desired period, a fluid supply passageway extending from said supply reservoir to a vaginal syringe nozzle, a power operated pump located in said fluid supply passageway adapted to pump said irrigating solution therethrough, a three way

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valve located in said fluid supply passageway between said power operated pump and said vaginal syringe nozzle, a fluid return passageway extending from said three way valve to said supply reservoir, said three way valve adapted to prevent the flow of irrigating solution from said pump, to direct the flow of said irrigating solution to said vaginal syringe nozzle or to direct the flow of said irrigating solution through said fluid return passageway back to said supply reservoir and thereby agitate said irrigating solution in said supply reservoir, and a disposal fluid passageway adapted to transmit fluid from said vaginal syringe nozzle to a disposal reservoir.

10. A power operated irrigating device of the type described comprising an open supply reservoir adapted to store prepared irrigating solution, a thermostatically controlled heating unit located in said supply reservoir adapted to heat said irrigating solution to a predetermined temperature and retain said predetermined temperature for a desired period, a fluid supply passageway extending from said supply reservoir to a vaginal syringe nozzle, a power operated pump located in said fluid supply passageway adapted to pump said irrigating solution therethrough, a means adapted to agitate said irrigating solution during the heating period, a valve located in said fluid supply passageway adapted to permit or prevent the flow of said irrigating solution to said vaginal syringe nozzle, a disposal reservoir and a dis-

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posal fluid passageway adapted to transmit fluid from said vaginal syringe nozzle to said disposal reservoir.

11. A power operated irrigating device of the type described comprising a supply reservoir adapted to store prepared irrigating solution, a thermostatically controlled heating unit located in said supply reservoir adapted to heat said irrigating solution to a predetermined temperature and retain said predetermined temperature for any desired period, a fluid supply passageway extending from said supply reservoir to a syringe nozzle, a power operated pump in said fluid supply passageway adapted to pump fluid therethrough, an agitating means adapted to agitate said irrigating solution in said supply reservoir during predetermined periods, a valve in said fluid supply passageway adapted to permit or prevent the flow of said irrigating solution to said syringe nozzle, a disposal reservoir, a disposal fluid passageway adapted to transmit fluid from said syringe nozzle to said disposal reservoir and a means adapted to cause said fluid to flow from said syringe nozzle to said disposal reservoir.

References Cited in the file of this patent

UNITED STATES PATENTS

1,843,169 McKesson Feb. 2, 1932

FOREIGN PATENTS

176,789 Great Britain Aug. 17, 1922
50,507 France Mar. 31, 1939