

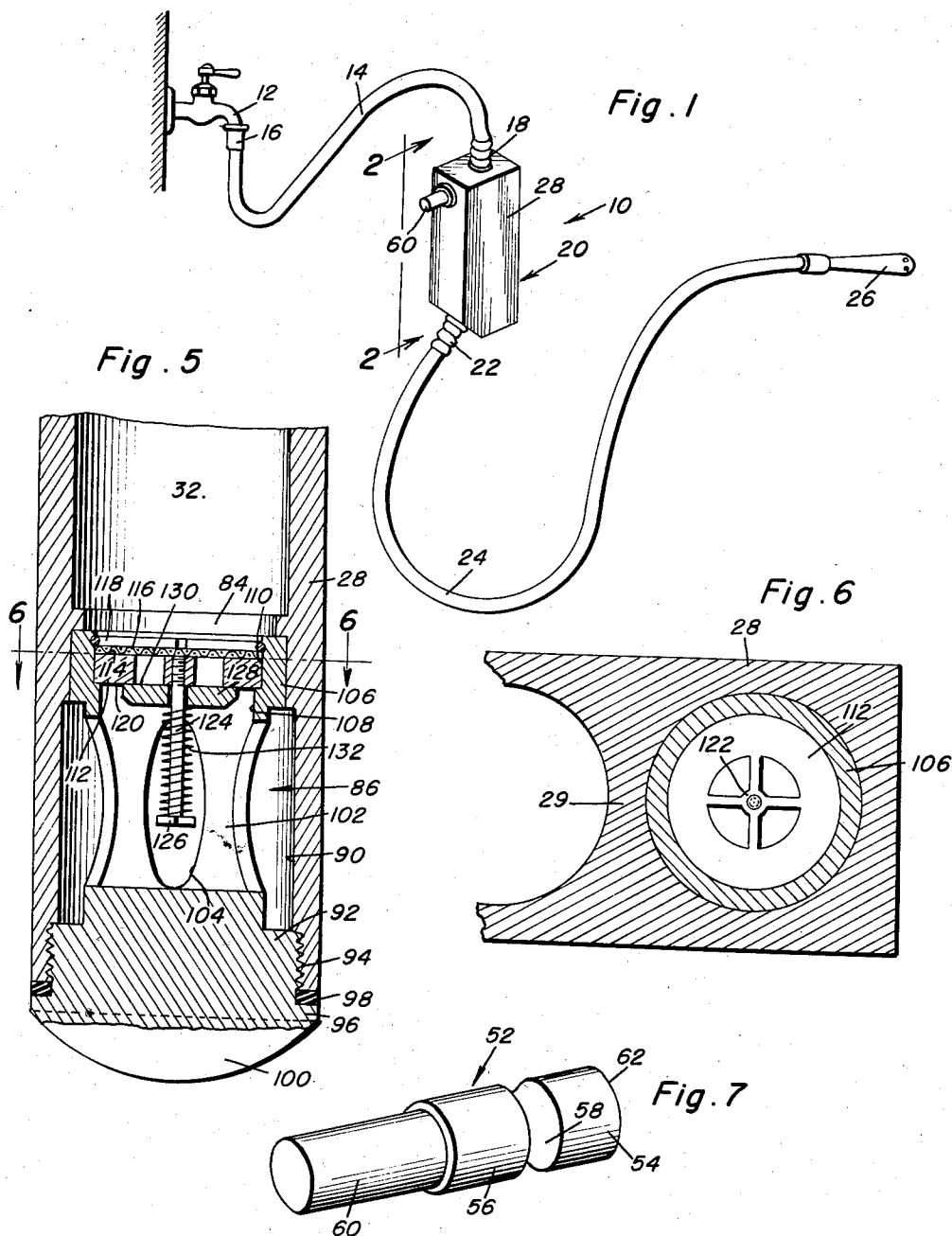
Aug. 26, 1958

J. S. KOWAL
HYGIENIC DISINFECTANT APPARATUS

2,849,256

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2 Sheets-Sheet 1



Jack S. Kowal
INVENTOR.

BY *Almonce A. O'Brien*
and *Harvey B. Jackson*
Attorneys

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J. S. KOWAL

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Fig. 2

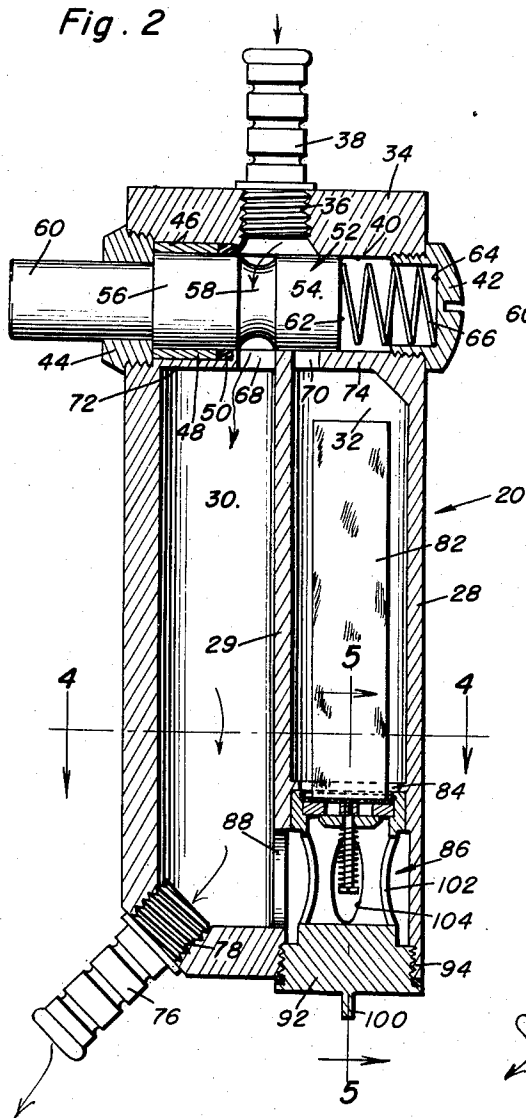


Fig. 3

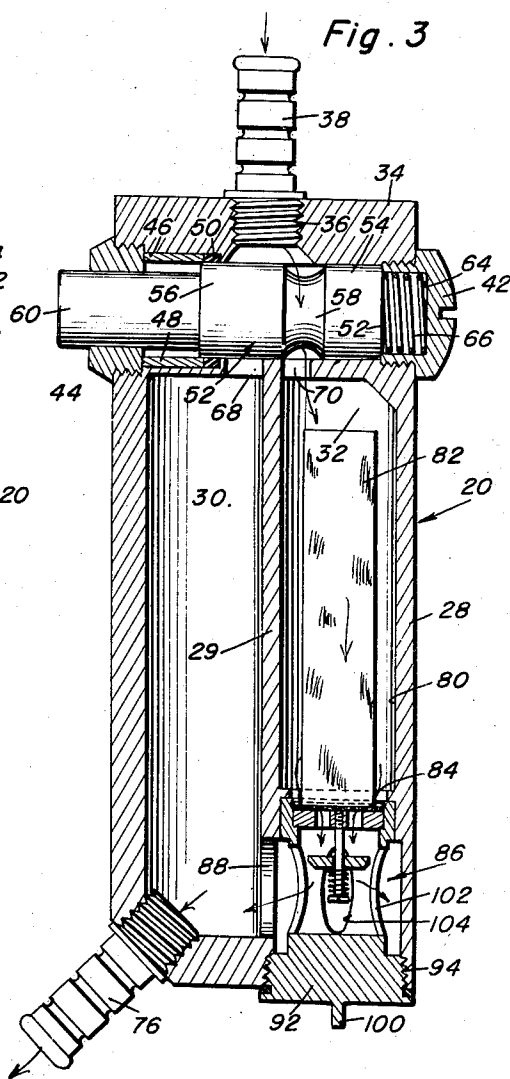
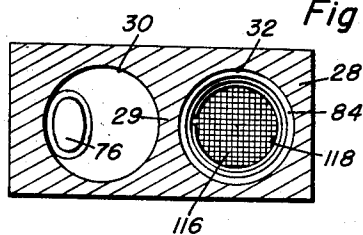


Fig. 4



Jack S. Kowal
INVENTOR.

BY *Oliver A. O'Brien*
and *Harvey R. Jacobson*
Attorneys

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HYGIENIC DISINFECTANT APPARATUS

Jack S. Kowal, Denver, Colo., assignor of fifty percent to Gordon E. Eckley and twenty-five percent to Vincent D. Eckley, both of Denver, Colo.

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2 Claims. (Cl. 299—84)

This invention relates generally to personal hygiene equipment and is more particularly concerned with a novel syringe control assembly for controlling the flows of irrigating fluids.

A primary object of the invention is to provide a syringe control assembly including means for supplying alternate flows of different fluids whereby a rinsing and disinfecting solution may be provided in equipment utilized for administering a douche.

A more specific object of the invention in conformance with that set forth above is to provide a syringe control assembly especially adaptable in douching equipment, said control assembly incorporating a body member having fluid pressure inlet and outlet, the inlet being selectively controllable to supply a separate fluid flow through a pair of internal compartments in the body member, one of said compartments containing the fluid outlet and providing a constant flow of a rinsing fluid from the inlet, the second compartment alternately receiving the fluid flow from the inlet and communicating with the first compartment, the second compartment incorporating a portion receiving a dissolvable and replaceable disinfecting agent therein and including a one-way valve assembly disposed downstream of the portion receiving the disinfecting agent and permitting flow toward the first compartment.

A further object of the invention in conformance with that set forth above is to provide a syringe control assembly of the character set forth which is readily and economically manufactured, easily used, and highly acceptable and practical for the purposes intended.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of a complete syringe kit incorporating the novel syringe control assembly;

Figure 2 is an enlarged vertical sectional view of the novel syringe control assembly taken substantially on the line 2—2 of Figure 1;

Figure 3 is a view similar to Figure 2 showing the alternate position of the parts for providing a disinfecting solution at the outlet of the syringe control assembly;

Figure 4 is a sectional view taken substantially on the line 4—4 of Figure 2;

Figure 5 is a further enlarged fragmentary sectional view taken substantially on the line 5—5 of Figure 2;

Figure 6 is a fragmentary sectional view taken substantially on the line 6—6 of Figure 5; and

Figure 7 is an enlarged perspective view of the valve control element of the syringe control assembly.

As seen in Figure 1, a syringe assembly is indicated generally at 10 incorporating a conventional hydrant outlet 12 which may be utilized to control the temperature

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of the water used in the assembly, a suitably connected flexible conduit 14 is connected at one end by any suitable adapter 16 of the hydrant outlet 12, the other end 18 of the flexible conduit being connected to a syringe control assembly indicated generally at 20. In communication with the lower portion of the syringe control assembly 20 by means of any suitable connector 22 is a second fluid conduit 24 which has secured in any suitable manner at the other end a conventional syringe or douche nozzle 26.

The syringe control assembly 20 comprises a body member 28 incorporating a longitudinally extending central partition 29 defining a pair of longitudinally extending compartments 30 and 32. The body member 28 may be constructed of any suitable material, such as plastic, aluminum etc. The body member incorporates an upper end portion 34 including a centrally threaded apertured portion 36 into which is secured a nipple element 38 of any suitable character, said nipple element being connected to the fluid conduit 14. The portions 36 and 38 constitute a fluid pressure inlet portion in the body member.

The body member 28 includes an upper transverse bore portion 40 which is closed at one end by means of a recessed cap screw 42, the other end incorporating a centrally recessed collar element 44. The bore portion 40 includes an enlarged diameter portion 56 incorporating a cylindrical sleeve element 48 therein and an annular sealing element 50 of any suitable material, and reciprocally supported within the bore 40 is the slide valve element indicated generally at 52.

The slide valve element 52 is substantially cylindrical incorporating a pair of spaced land portions 54 and 56 interrupted by an annular recess portion 58, the land portion 56 terminating in a reduced diameter finger engageable portion 60 which extends out of the body member 28. Interposed between the end 62 of the valve element and the recess portion 64 of the cap screw 42 is a compression spring 66 which urges the valve element 52 in the position shown in Figure 2 wherein the inlet normally communicates around the recess 58 of the valve element into the compartment 30.

The aforementioned communication between the inlet 38 and the chamber 30 as well as the chamber 32 is permitted by means of valve portions 68 and 70 in upper end wall portions 72 and 74 defining ends of the respective compartments 30 and 32.

Thus upon observing Figures 2 and 3 it will be seen that in Figure 2 the water from the hydrant is normally directed to the chamber 30 by virtue of the position of the valve element 52, the downstream portion of the compartment 30 incorporating therein a suitable nipple element 76 secured in a threaded apertured portion 78 in the body member, said nipple element being suitably secured to the flexible conduit 24. Movement of the valve element 52 in the position shown in Figure 3 results in the alignment of the annular recess 58 of the valve element 52 with the valve port 70 of the compartment 32 whereafter the fluid or water under pressure is directed into the compartment 32.

The compartment 32 includes therein a portion 80 for accommodating a disinfecting agent 82 which may be formed in commercial cartridges of any suitable character, said disinfecting agent being readily dissolved in the water flowing through the valve port 70. Included in the lower intermediate portion of the compartment 32 is an annular flange portion 84 which is in abutment with a removable one-way valve assembly indicated generally at 86, said valve assembly controlling flow of the solution formed from the disinfecting agent and the water in its movement out of an enlarged aperture 88 extending through the partition 29 of the body member, the solu-

tion of disinfecting fluid passing out of the nozzle 76 as indicated by the direction arrows in Figure 3. Thus it will be seen that there is supplied alternate flows of rinsing or douching fluids which are readily controllable, the temperature of which being controlled by the hydrant spout 12.

The one-way valve assembly 86 is removed in its entirety from the lower portion 90 of the compartment 32, said valve assembly comprising a lower cap element 92 incorporating an annular threaded portion 94 engageable in a cooperating threaded portion in the lower compartment portion 90, and including an enlarged flange 96 engageable with a suitable washer element 98 interposed between the cap element and the body member 28. The cap portion 96 includes a laterally extending finger engageable handle portion 100 by means of which the valve assembly 86 is removed from the body member. Extending upwardly from the cap portion 92 of the housing member is a perforated wall portion 102 including suitable apertured portions 104 therein, the wall portion terminating in an annular collar 106 engageable at its upper end with a peripheral flange 84 in the compartment 32.

The annular ring 106 comprises a first diameter portion 108 indicating inside of the walls 102 of the housing member, said portion 108 extending into an enlarged diameter portion 110 forming a shoulder upon which rests a spider element 112 which has in engagement on its upper surface 114 a suitable screen element 116 retained in position in the housing member by means of an annular lock ring 118, see Figure 5, the undersurface portion 120 of the spider constituting a valve surface as will subsequently become apparent.

Secured to the spider 112 in a central hub portion 122 thereon is a depending support pin element 124 which includes enlarged transverse lower end portion 126 extending into the housing member in the wall 102. Reciprocally supported on the support pin 124 is a poppet valve element 128 including an upper valve surface 130 engageable with the valve surface 120 of the spider 112 for preventing reverse flow from the chamber 30 into the chamber 32, the pin 124 having circumposed thereon a compression spring element 132 with opposite ends in engagement with the valve element 128 and the enlarged lower end portion 126 of the pin 124.

Thus there has been disclosed a syringe control assembly which provides a plurality of irrigating fluids which are readily controllable, the parts of the control device being readily disassembled so that the device may be easily cleaned and maintained in a sanitary condition.

Various positional directional terms such as "front," "rear," etc. are utilized here and have only a relative connotation to aid in describing the device and are not intended to require any particular orientation with respect to any external elements.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A syringe control assembly comprising a body having a fluid pressure inlet and an outlet, a partition defining two compartments within the body, selective valve control means in the body providing separate communication between the fluid pressure inlet and the compartments, one of the compartments directly communicating with the fluid pressure outlet, the other compartment including a portion for accommodating a fluid dissolvable disinfecting agent, a downstream outlet portion contained in the partition providing communication between the compartments, a one-way valve assembly contained in the other compartment downstream of the portion for containing the disinfecting agent controlling fluid pressure communication between the compartments, said one way valve assembly consisting of a housing extending into the other compartment, said housing including a cap securable in the body and having perforated side walls extending from said cap, said side walls terminating in an open ended annular ring which extends into the other compartment, a spider secured in said ring, a screen extending across one side of said spider, a support pin secured on the spider and being perpendicular thereto, said pin terminating in an enlarged end within the housing, a poppet valve reciprocally received on said pin and engageable in sealing relationship on the spider, and a spring circumposed on the support pin between the poppet valve and the enlarged end of said pin.

2. A syringe control assembly comprising a body member having fluid pressure inlet and outlet portions at opposite ends, a partition member defining a pair of adjacent compartments in the body member, a transverse bore portion in the body member in communication between the inlet portion and one end of the adjacent compartments, a valve control port portion intersecting the bore portion and each compartment, a reciprocable valve element supported in the transverse bore portion, the valve element including an intermediate annular recess in constant communication with the inlet portion and selectively communicable with the port portions of the compartments, annular land portions on the valve element on opposite sides of the annular recess therein, one of the annular land portions being engageable in overlying relationship to a port portion of the compartments, spring means in the transverse bore portion urging the valve element in one direction for permitting constant communication between the inlet portion and one of the compartments, the other compartment including a portion accommodating a fluid dissolvable disinfecting agent therein, a downstream outlet portion contained in the partition member providing communication between the compartments, and a one-way valve assembly contained in the other compartment downstream of the portion adapted to contain the disinfecting agent for controlling one-way fluid pressure communication between the compartments.

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