

July 28, 1931.

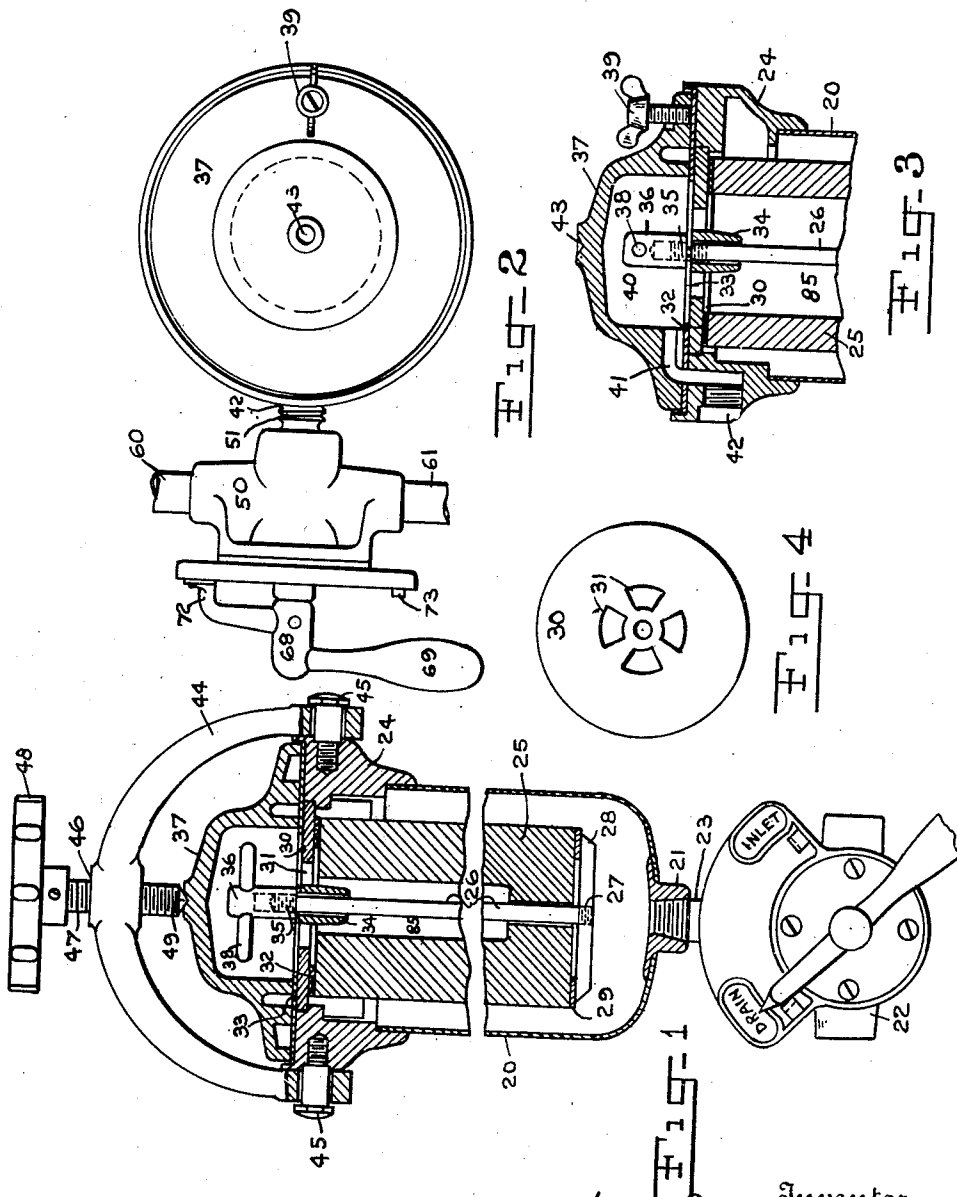
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1,816,012

WATER STERILIZING FILLING DEVICE

Filed June 17, 1930

3 Sheets-Sheet 1



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3 Sheets-Sheet 2

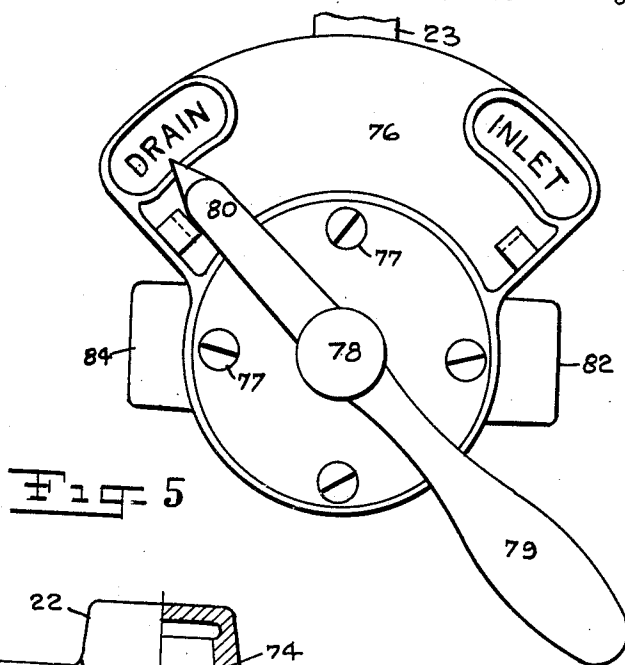


Fig. 5

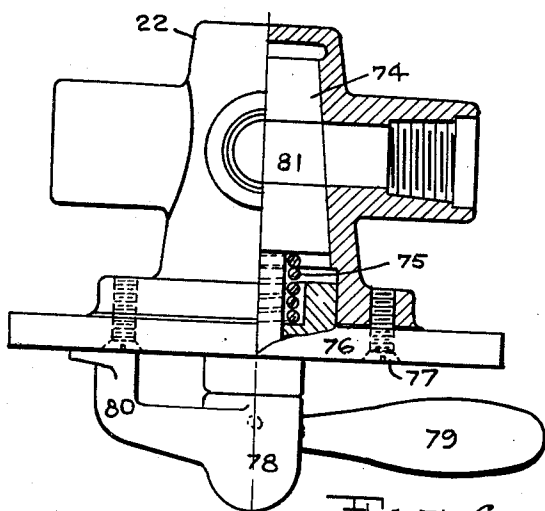


Fig. 6

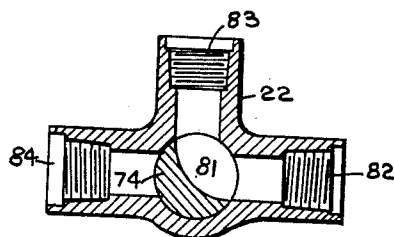


Fig. 7

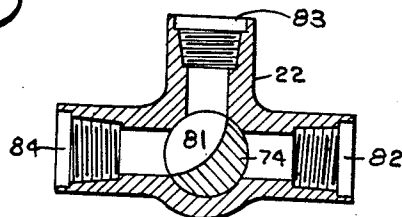


Fig. 8

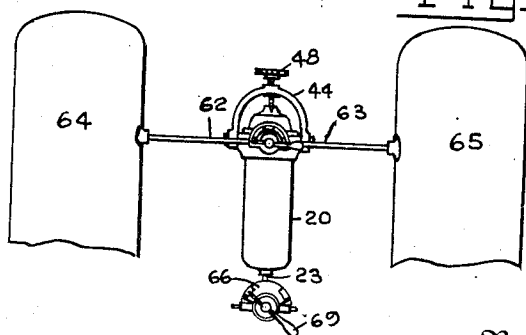


Fig. 9

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WATER STERILIZING FILLING DEVICE

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3 Sheets-Sheet 3

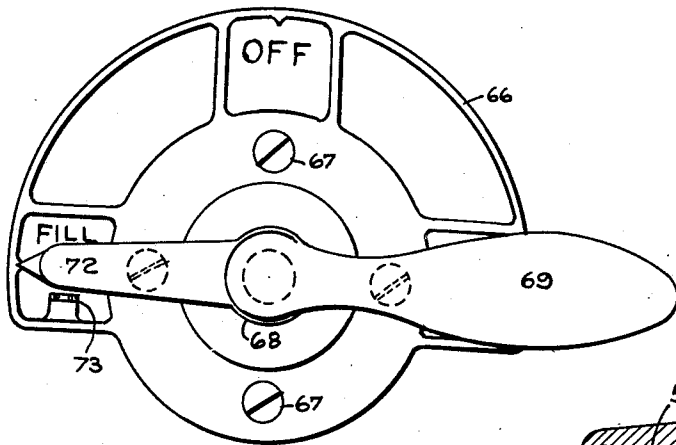


Fig-10

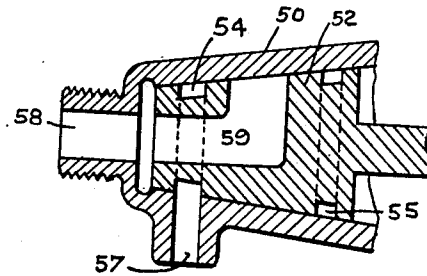


Fig-12

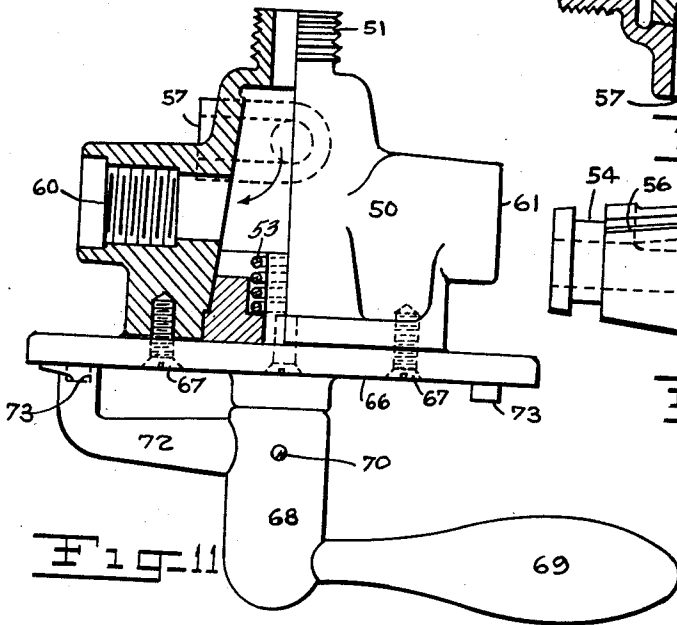


Fig-11

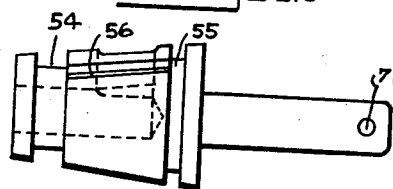


Fig-13

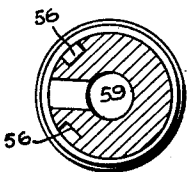


Fig-14

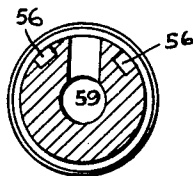


Fig-15

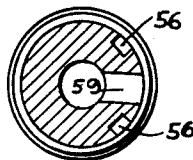


Fig-16

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UNITED STATES PATENT OFFICE

HARRY J. HEINS, OF JERSEY CITY, NEW JERSEY, ASSIGNOR TO KNY-SCHEERER CORPORATION, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK

WATER STERILIZING FILLING DEVICE

Application filed June 17, 1930. Serial No. 461,677.

My invention relates to an improvement in a water sterilizing filling device and the novelty consists in the adaptation and arrangement of parts as will be more fully hereinafter pointed out.

In sterilizing water for use in connection with operations and in hospitals it is imperative that not even the minutest drop of unsterile water should be added to the sterilized water.

Many have attempted to supply this great need in the furnishing of sterile water but this important problem has never been completely solved until the invention of my device.

My device furnishes a positive indicating means to the nurse or operator so that they know accurately whether water is being added to the sterilizing tank and furnishes positive means in a single control for directing said water to either of two sterilizing tanks or positively shutting it off and in case of any leak in this single control valve positive means are furnished for effecting a complete drainage of said leaking water so that it cannot reach either of the sterilizing tanks by accident.

Referring to the drawings, Figure 1 is a front elevation of my complete water filling control device, part being shown in section and being also broken away in the middle for convenience in illustration.

Figure 2 is a top plan view of the complete structure as shown in Figure 3 and showing the upper valve mounted in operative position.

Figure 3 is a vertical section taken through the center of the upper portion of Figure 1 and with the top clamping mechanism removed.

Figure 4 is a top plan view of the plate at the head of the filter.

Figure 5 is a front elevation of the inlet valve and dial indicating means.

Figure 6 is a top plan view of Figure 5 showing a portion cut away in order to show the interior construction.

Figure 7 is a top plan view of a horizontal cross section of the valve control of

Figure 6 showing the water being fed to the filter tank.

Figure 8 is the same as Figure 7 but with the water being drained from the filter tank and the inlet shut off.

Figure 9 is a front elevation showing my complete control as connected to two liquid sterilizing tanks.

Figure 10 is a front elevation of the control valve and indicating dial at the head of the filtering tank.

Figure 11 is a top plan view of Figure 10 with a portion cut away to show the interior construction.

Figure 12 is a vertical section of the valve and housing of Figure 11.

Figure 13 is a side elevation of the valve spindle as shown in Figure 12.

Figure 14 is a cross section of the valve shown in Figure 12 showing the water being fed to the left-hand sterilizing tank.

Figure 15 is the same as Figure 14 but with the valve in the turn-off position in the middle.

Figure 16 is the same as Figure 14 but showing the valve in the filling position for the right-hand sterilizing tank.

In the drawings 20 is a filter tank which has a nipple 21 at its lower end to which a water inlet control valve body 22 is connected by means of an inlet pipe 23. The upper portion of the tank 20 has an annular casting 24 which is rigidly secured thereto by brazing or any other of the usual well known means and a filter member 25 is suspended in said tank 20 by means of fastening rod 26 which has a threaded portion 27 at its lower end which fastens into an internally threaded boring in a plate 28 which is separated from the lower end of the filter member 25 by means of an annular flexible washer 29. On the upper end of the filter member 25 is a circular plate 30 having openings 31 cut therethrough and a flexible washer 32 is mounted between filter member 25 and plate 30. The plate 30 has a cylindrical tapered bearing member 34 which is integral with the plate 30 and the upper end of the rod 26 has a threaded portion 35 over which a locking screw 36 having a central

internally threaded portion adapted to engage the threaded portion 35 is adapted to be turned down by handle 38 so as to lock the plate 28, filter member 25, plate 30 together.

5 A casting comprising a cap member 37 is adapted to fit over the casting 24 with gasket 33 between and said cap 37 forms an internal water containing passage 40 and has
10 an outlet passage 41 leading therefrom into a larger outlet 42 and said cap 37 has a tapered boring 43 at its upper end. A release screw 39 is adapted to be screwed down to break the connection between cap 37 and
15 casting 24.

A clamping ring 44 is adapted to fit over said cap 37 and engage the casting 24, being secured thereto in the usual well known manner by means of screw bolts 45. At the
20 upper part of the clamping ring 44 is an internally threaded boring at 46 in which is adapted to be threaded a bolt 47 having a knurled handle 48 rigidly secured thereto and the tapered end 49 of said bolt 47 en-
25 gaging the tapered boring 43 on the head of the cap 37 so as to lock the same tightly in a water-tight manner over the washer plate 32.

A valve body 50 is connected by means of
30 an externally threaded pipe connection at 51 to the outlet 42 and a spindle valve 52 is mounted in the body 50 by means of spring 53 in the usual well known manner. The valve 52 has an annular cut out 54 near
35 its upper end and an annular cut out 55 near its lower end and these two annular cut outs 54 and 55 are connected by cross cut out members 56 which serve to catch any drop of water which may accidentally leak
40 from said valve, and a waste drain 57 connects to said annular cut out 54. The body 50 has an inlet passage 58 which connects to a passage 59 in the valve 52 and said passage 59 may be connected by the turning of
45 the valve 52 to connect either with the outlet 60 or 61 of the body 50 so as to pass into connecting pipe 62 or 63 respectively and thence into sterilizing tanks 64 and 65 respectively. A semi-circular dial member 66
50 is rigidly secured to the body 50 by means of screws 67 in the usual manner, and a control cap 68 having a handle 69 is rigidly secured to the lower end of the valve 52 in the
55 usual manner by means of a pin 70 which passes through the hole 71 in the lower end of the valve 52. The cap 68 also carries integral therewith an indicating pointer 72 which travels around on the dial 66 so as to
60 indicate the exact position of the valve 52 at all times and there are stop members 73 at the lower edge of either side of the dial 66 to limit the movement of the pointer 72 and the valve 52 controlled by the operation
65 of the handle 69.

An inlet spindle valve 74 is mounted in the valve body 22 under constant spring tension of the spring 75 being held in said operative position by means of a dial plate 76 which is rigidly secured to the body 22 by
70 means of screws 77. A cap 78 to which is integrally secured a handle 79 and a pointer member 80 is mounted over the lower end of the spindle valve 74 being secured thereto by means of a pin which is not shown but
75 which is the same as that shown at 70 in Figure 11 in connection with spindle valve 52. The valve 74 has a cut out portion or passageway 81 and the position of this cut out or passageway 81 permits the flow of
80 the coming water through the inlet 82 and passage 83 to the inlet pipe 23 into the bottom of the filter body 20. The valve body 22 also has a drain outlet 84. The passages 82, 83 and 84 are all internally threaded
85 at their outer ends to receive the usual externally threaded pipe connection. It is to be particularly noted that the cut out portion 81 or passageway in the spindle valve 74 is so constructed that it positively aligns
90 and connects perfectly with either the water inlet 82 therethrough into the inlet 83 connecting with pipe 23 or connecting with 83 through the passageway 81 into the drain
95 outlet 84 by the simple turning of the spindle valve 74 by means of handle 79 so that the pointer 80 rests on the indicating element inlet or on the indicating element drain.

In the operation of my device the operation of the handle 79 turning the pointer 80
100 to the inlet indicating means will turn the valve 74 so that the passageway 81 connects the inlet passage 82 with the passage 83 through pipe 23 into the filter body 20
105 whence the water travelling through the openings 31 into the containing passage 40, thence through the outlet passages 41 and 42 into the pipe 51 through the spindle valve 52 through passage 59 and by turning the
110 control handle 69 the pointer 72 may be turned to the indicating means "Off" or to "Fill" indicating means on either side of the indicating means whereby the water may be directed into either the passage 60 or 61 ac-
115 cording to the position of the pointer 72.

If there is any leak in this valve 52 at any time either while filling one tank or when the valve is turned to "Off" and valve 22 is left open accidentally then the water will
120 be collected either in the annular opening 54 or annular opening 55 and will pass through the connecting passages 56 to the annular opening 54 which always connects with the drain or waste 57, thereby positively pre-
125 venting the admission of water through valve 52 by accident into either of the sterilizing tanks 64 or 65 at any time.

I claim:

1. In a valve means for directing liquid 1:

passing therethrough in either of two directions and a shut off means and indicating means to show the operative position of said valve and separate means for draining said valve in case it leaks comprising annular horizontal head and foot channels connected by a third channel and a drain pipe connected to said head channel.

2. In a valve means for directing liquid passing therethrough in either of two directions and a shut off means and indicating means to show the operative position of said valve and separate means for draining said valve in case it leaks comprising an annular horizontal cut out near the head and foot of said valve member connected by a vertical cut out and a waste drain leading therefrom.

3. In a filter filling control valve means for permitting the inlet of water to the filter in one position and means for draining said filter through said valve in another position and means for indicating the position of said valve at all times comprising a pointer connected to said valve which moves across a dial carrying position markings and separate drain means to carry off any leakage in said valve comprising an annular horizontal cut out near the head and foot of said valve connected by a vertical cut out and a waste drain leading therefrom.

4. In a valve a spindle having a cut out adapted to effect a connection between a water feed pipe and a filter in one position and from said filter to a drain in another position and means for indicating the exact position of said spindle cut out at all times, comprising a dial and pointer oscillatable thereover and separate means for draining off any leakage of said valve.

5. In a valve a spindle having a cut out adapted to effect a connection between a water feed pipe and a filter in one position and from said filter to a drain in another position and means for indicating the exact position of said spindle cut out at all times comprising a dial and pointer oscillatable thereover and separate means for draining off any leakage of said valve comprising an annular horizontal cut out near the head and foot of said valve connected by a vertical cut out and a waste drain leading therefrom.

In testimony whereof I affix my signature.

HARRY J. HEINS.