Aug. 30, 1960 W. H. VE RELLE 2,950,959

CHEMICAL DISPENSER

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Fig. 1.

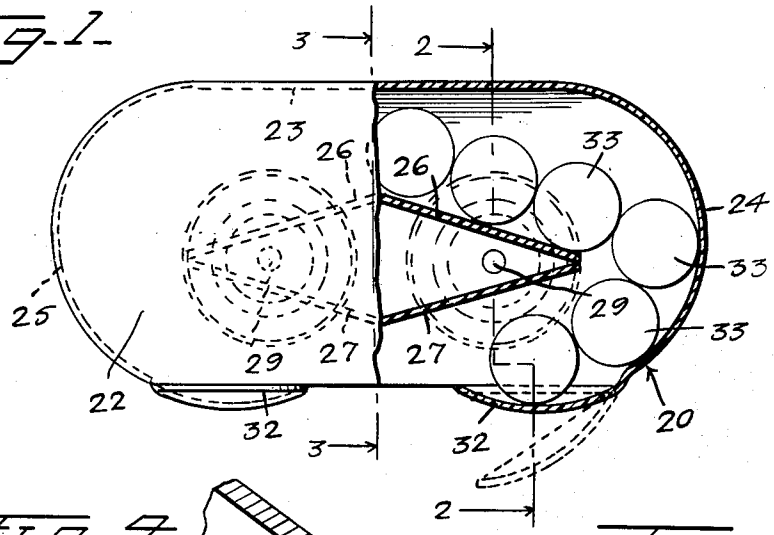


Fig. 4.

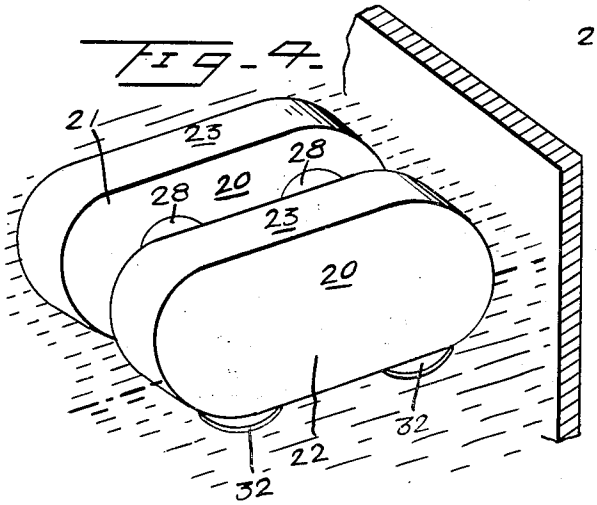


Fig. 5.

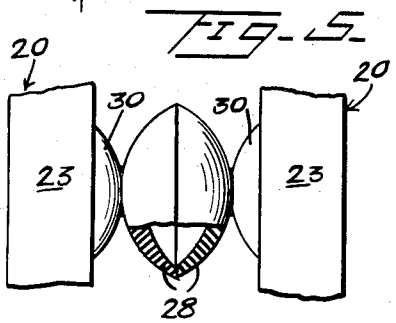


Fig. 3.

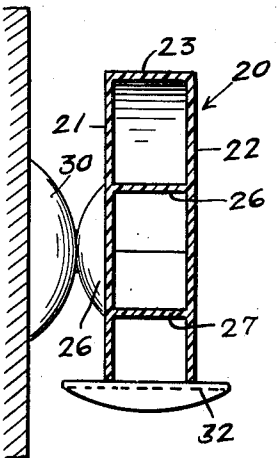
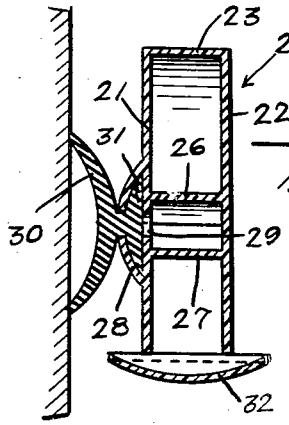


Fig. 2.



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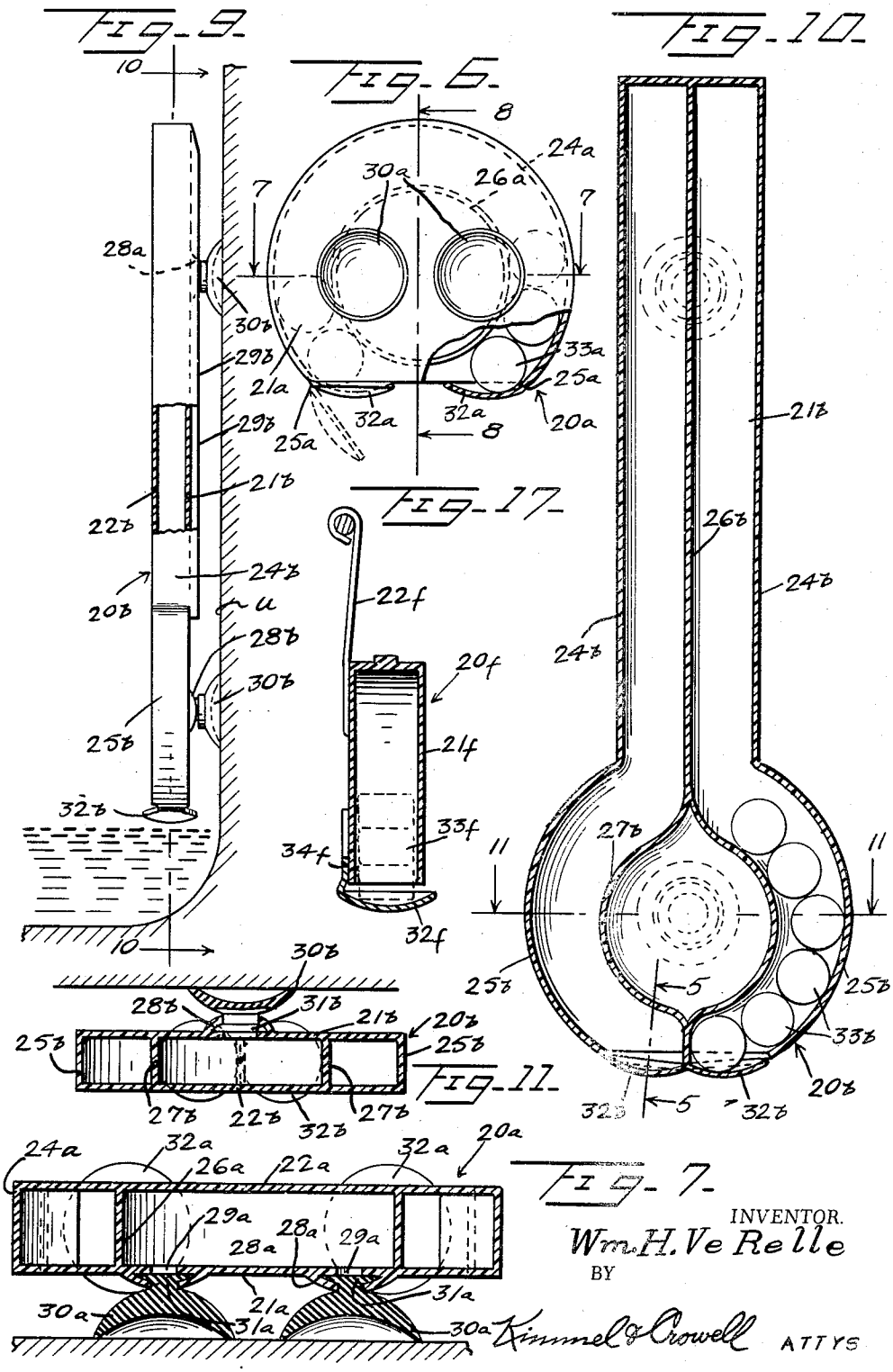
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Fig. 12.

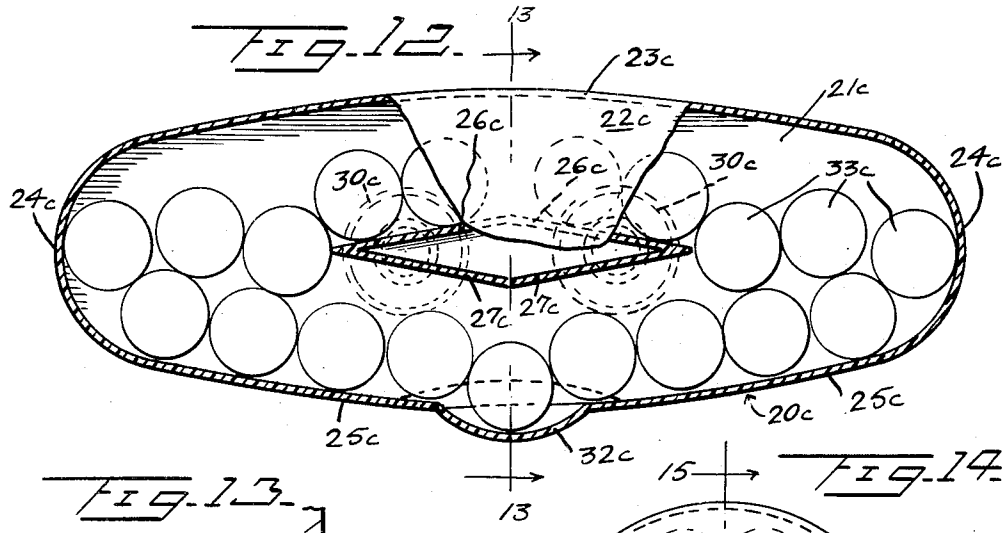


Fig. 13.

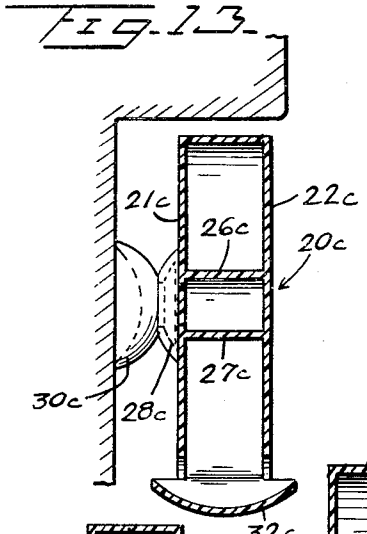


Fig. 14.

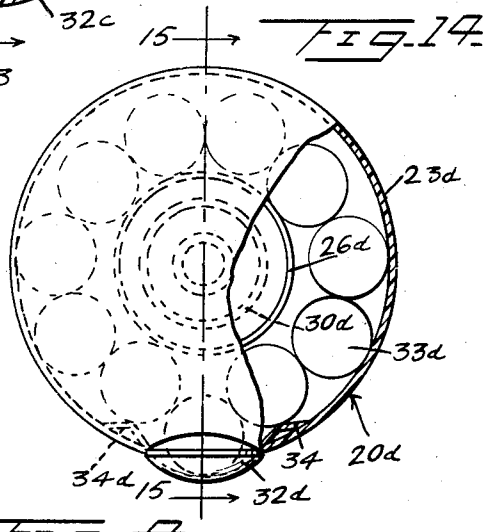


Fig. 8.

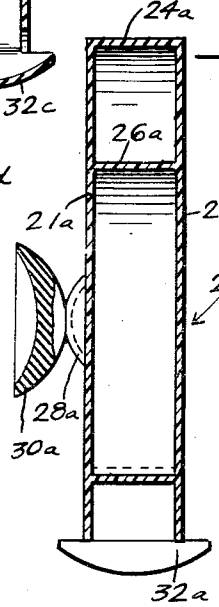


Fig. 16.

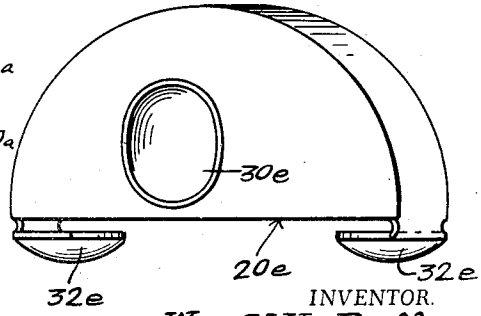
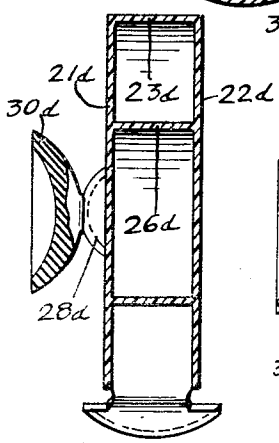


Fig. 15.



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CHEMICAL DISPENSER

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1 Claim. (Cl. 23—267)

The present invention relates to a chemical dispenser and more particularly to a device for dispensing deodorizing and purifying chemicals into toilet bowls, urinals, toilet tanks, swimming pools, ponds and the like.

The primary object of the invention is to provide a chemical dispenser used with chemical tablets which would move the tablets from a non-dispensing point to a dispensing point automatically as the tablets are activated and consumed while simultaneously protecting the supply of tablets from activation.

Another object of the invention is to provide a chemical dispenser of the class described above which will float on the surface of a body of water to be purified, holding a single chemical tablet in position for activation by the water while supporting a protected supply of tablets thereabove.

A still further object of the invention is to provide a chemical dispenser of the class described above which is inexpensive to manufacture, simple to use and which is completely effective in dispensing chemicals where desired.

Other objects and advantages of the invention will become apparent in the following specification when considered in the light of the attached drawings in which:

Figure 1 is a side elevation of the invention shown partially broken away and in sections for convenience of illustration;

Figure 2 is a fragmentary vertical cross-section taken along the line 2—2 of Figure 1 looking in the direction of the arrows;

Figure 3 is a vertical fragmentary cross-section taken along the line 3—3 of Figure 1, looking in the direction of the arrows;

Figure 4 is a perspective view of a pair of the dispensers connected together and floating on a body of water;

Figure 5 is a fragmentary plan view partially broken away and in sections of the floating dispensers;

Figure 6 is a side elevation of a modified form of the invention;

Figure 7 is a horizontal cross-section taken along the line 7—7 of Figure 6, looking in the direction of the arrows;

Figure 8 is an enlarged fragmentary vertical cross-section taken along the line 8—8 of Figure 7, looking in the direction of the arrows;

Figure 9 is a side elevation of a second modified form of the invention shown partially broken away and in sections for convenience of illustration;

Figure 10 is an enlarged vertical cross-section taken along the line 10—10 of Figure 9, looking in the direction of the arrows;

Figure 11 is a horizontal transverse cross-section taken along the line 11—11 of Figure 10, looking in the direction of the arrows;

Figure 12 is a side elevation of a third modified form of the invention shown partially broken away and in sections for convenience of illustration;

Figure 13 is a fragmentary vertical cross-section taken along the line 13—13 of Figure 12, looking in the direction of the arrows;

Figure 14 is a side elevation of a fourth modified form of the invention;

Figure 15 is a vertical section taken on the line 15—15 of Figure 14, looking in the direction of the arrows;

Figure 16 is a perspective view of a fifth modified form of the invention; and

Figure 17 is a vertical cross-section taken through a sixth modified form of the invention.

Referring now to the drawings in detail wherein like reference characters indicate like parts throughout the several figures, the reference numeral 20 indicates generally a dispenser constructed in accordance with the invention.

The dispenser 20 has a pair of spaced apart parallel side walls 21, 22 integrally connected by a top wall 23 and arcuate end walls 24, 25 respectively.

The side walls 21, 22 are connected by a pair of downwardly divergent walls 26 and a pair of upwardly divergent walls 27 joined together in the form of a diamond, as illustrated in Figure 1.

A pair of semi-spherical hollow bosses 28 are integrally formed on the side wall 21 in horizontal aligned relation and have a port 29 extending through the side wall 21 communicating with the space defined by the converging walls 26, 27 and the side walls 21, 22. A resilient suction cup 30 is provided with a head 31 supported in the spherical boss 28, as shown in Figure 2, to provide means of attaching the dispenser 20 to a relatively smooth surface or by engaging the suction cups 30 of one dispenser 20 with the suction cups 30 of another dispenser 20, as shown in Figure 4, to detachably connect a pair of dispensers 20 so as to permit stabilized floating thereof.

The arcuate end walls 24, 25 have integrally formed on the lower ends thereof flexible arcuate flaps 32 which can be swung to the dotted line position illustrated in the right hand portion of Figure 1 to provide an opening through which to fill the space between the converging walls 26, 27 and the arcuate end walls 24, 25 and top wall 23 with a plurality of cylindrical tablets 33.

The tablets 33 are a deodorizing and purifying chemical readily soluble in water and are held in the arcuate flap 32 to be contacted by water in which the dispenser 20 is floating or by water splashing into the flap 32 from a urinal, toilet or other device. As the tablets 33 dissolve in the flap 32 a new tablet 33 is permitted to descend into the flap 32 until the supply of tablets 33 in the dispenser 20 is exhausted.

Referring now to Figures 6 through 8, a modified form of the invention is illustrated comprising a dispenser 20*a* including a pair of parallel generally circular side walls 21*a*, 22*a*, arranged in spaced parallel relation and connected by a semi-cylindrical outer wall 24*a* and a cylindrical inner wall 26*a* arranged in concentric relation within the cylindrical wall 24*a* between the circular side walls 21*a*, 22*a*.

The outer semi-cylindrical wall 24*a* terminates at 25*a* on each side of the dispenser 20*a* and has integrally connected thereto an arcuate member 32*a* flexibly secured at 25*a* to the semi-cylindrical wall 24*a* to permit it to be moved to the dotted line position shown in the left side of Figure 6 to fill the dispenser 20*a* with chemical pellets.

A pair of semi-spherical hollow bosses 28*a* are integrally secured to the side wall 21*a* and are each provided with a central port 29*a* communicating with the space delineated by the side walls 21*a*, 22*a* and the cylindrical inner wall 26*a*. A suction cup 30*a* is secured to each of the hollow semi-spherical bosses 28*a* by means of a

semi-spherical head 31*a* integrally joined to the suction cup 30*a* and engaging in the hollow boss 28*a*.

In the use and operation of the modification illustrated in Figures 6 through 8, the dispenser 20*a* is secured to an upright wall and the space between the side walls 21*a*, 22*a* and between the semi-cylindrical wall 24*a* and the cylindrical inner wall 26*a* is filled with chemical pellets by swinging the member 32*a* outwardly away from the cylindrical inner wall 26*a*. The pellets are then held in position by the members 32*a* and feed downwardly as they are consumed.

Referring now to the modification illustrated in the Figures 9 through 11, a dispenser 20*b* is illustrated having a pair of spaced apart parallel side walls 21*b*, 22*b* connected by a pair of elongated spaced apart parallel end walls 24*b* and a pair of semi-cylindrical lower portions 25*b*. An upright inner wall 26*b* is positioned in parallel relation intermediate the side wall 24*b* and is provided with a semi-cylindrical lower portion 27*b* arranged concentrically to the semi-cylindrical portions 25*b*.

The side wall 21*b* is provided with a pair of semi-spherical hollow bosses 28*b* and a pair of supporting suction cups 30*b* are fastened thereto by means of integral heads 31*b* frictionally engaged in the semi-spherical hollow bosses 28*b*. The lower ends of the semi-cylindrical portions 25*b* are each provided with an arcuate member 32*b* which are flexibly connected to the semi-cylindrical portions 25*b* to permit them to be swung outwardly and downwardly when filling the dispenser 20*b*. The parallel end walls 24*b* each extend rearwardly beyond the side wall 21*b* forming a pair of guide flanges 29*b*, as best seen in Figure 9.

In the use and operation of the invention illustrated in Figures 9 through 11, the suction cups 30*b* are engaged with an upright portion U of a urinal securing the dispenser 20*b* in upright relation thereon. The dispenser 20*b* is filled with chemical tablets 33*b* by moving the members 32*b* away from the semi-cylindrical portion 27*b* in the same manner as disclosed in the prior modifications. Tablets 33*b* fill the space between the end walls 24*b* and the inner wall 26*b* and the space between the semi-cylindrical portions 25*b* and the semi-cylindrical portion 27*b* with the lowermost tablet 33*b* supported on the member 32*b* until it is completely dissolved. The guides 29*b* provide a guideway for the flow of water down the side wall 21*b* catching splashings from the urinal and directing them downwardly towards the members 32*b* so as to insure a supply of water for the lowermost tablet 33*b*.

The modification illustrated in Figures 12 and 13 discloses a dispenser 20*c* having a pair of spaced apart parallel side walls 21*c*, 22*c*. The side walls 21*c* and 22*c* are connected by an arcuate top wall 23*c* and a pair of arcuate end walls 24*c* and downwardly and inwardly converging bottom walls 25*c*. The dispenser 20*c* has a pair of inner inverted V-shaped walls 26*c* extending between the walls 21*c*, 22*c* and a second pair of V-shaped walls 27*c* joined integrally thereto and forming therewith a relatively flat diamond shaped configuration centrally in the dispenser 20*c*. One of the bottom walls 25*c* has an arcuate member 32*c* flexibly secured thereto to support chemical tablets 33*c* therein. The side wall 21*c* is provided with a pair of horizontally spaced hollow semi-spherical bosses 28*c* supporting a suction cup 30*c* in the same manner as in the preferred form of the invention.

The dispenser 20*c* operates identical to the dispenser 20 with the exception that a single member 32*c* is used to support the pellets 33*c*.

In Figures 14 and 15 another modified form of the invention is illustrated wherein a dispenser 20*d* is provided with a pair of spaced apart parallel circular side walls 21*d*, 22*d* connected by an outer semi-cylindrical wall 23*d* and a concentric inner cylindrical wall 26*d*.

A single centrally positioned semi-spherical hollow boss 28*d* is formed on the wall 21*d* and supports thereon a suction cup 30*d* in the same manner as described above. An arcuate member 32*d* is flexibly secured to one end of the wall 23*d* to support pellets 33*d* in dispensing position thereon. Adjacent the member 32*d* a pair of inverted V-shaped guides 34 extend transversely of the wall 23*d* to guide the pellets 33*d* into the member 32*d*.

The operation of the dispenser 20*d* is identical to that of the dispenser 20*c*.

In Figure 16 a semi-circular dispenser 20*e* is illustrated having a pair of arcuate member 32*e* secured to opposite ends thereof and a suction cup 30*e* mounted thereon in the usual manner.

The dispenser 20*e* operates in the same manner as the dispenser 20*a* to dispense chemical purifying and deodorizing tablets where needed.

In Figure 17 a chemical dispenser 20*f* is illustrated with a cylindrical hollow body 21*f* supported on a bracket 22*f* and having an arcuate member 32*f* flexibly secured to the lower end of the hollow body 21*f* by means of an offset extension 34*f*. The cylindrical body 21*f* supports a plurality of tablets 33*f* with the lowermost tablet 33*f* resting on the member 32*f*. In the use and operation of the invention the tablets 33*f* feed downwardly as the lowermost one is dissolved and new tablets are inserted by bending the member 32*f* out of the way.

Having thus described the preferred embodiments of the invention, it should be understood that numerous other structural modifications and adaptations may be resorted to without departing from the scope of the appended claim.

What is claimed is:

A chemical dispenser comprising an upright hollow plastic body adapted to contain circular tablets in edgewise relation and having an opening at the lower end thereof, an arcuate tablet supporting member underlying the opening in the lower end of said body and spaced therebeneath, said member having a shallow concave upper surface and being of a width substantially greater than said body and of a depth to contain only the lower edge portion of a tablet, integral means flexibly securing an edge portion of said member to said body to permit said member to be swung thereon out of alignment with said opening when filling said body with tablets, guide means in said body adapted to direct tablets singly into edgewise position in said support member, said member being adapted to retain a quantity of water in its shallow concave upper surface in contact with the lower edge of the tablet supported on said member, and supporting means for said body adapted to position said body above the surface of the fluid to be purified with said tablet supporting member immersed in said fluid.

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