

- [54] **ROTARY VALVE DISPENSER FOR TABLETS**
- [72] Inventor: **Hans Viessmann, Battenberg/Eder im Hain, Germany**
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- [58] Field of Search.....**221/231, 232, 266, 279, 280, 221/277, 15, 174, 14; 206/DIG. 26, 42**

[56] **References Cited**

**UNITED STATES PATENTS**

2,954,948	10/1960	Johnson .....	221/15 UX
478,863	7/1892	Hoyt.....	221/231
3,270,915	9/1966	Auer.....	221/232 X
1,718,572	6/1929	Marcuse .....	221/279 X
2,870,937	1/1959	Telly.....	221/15 X
2,870,895	1/1959	McDaniel .....	221/232 X

**FOREIGN PATENTS OR APPLICATIONS**

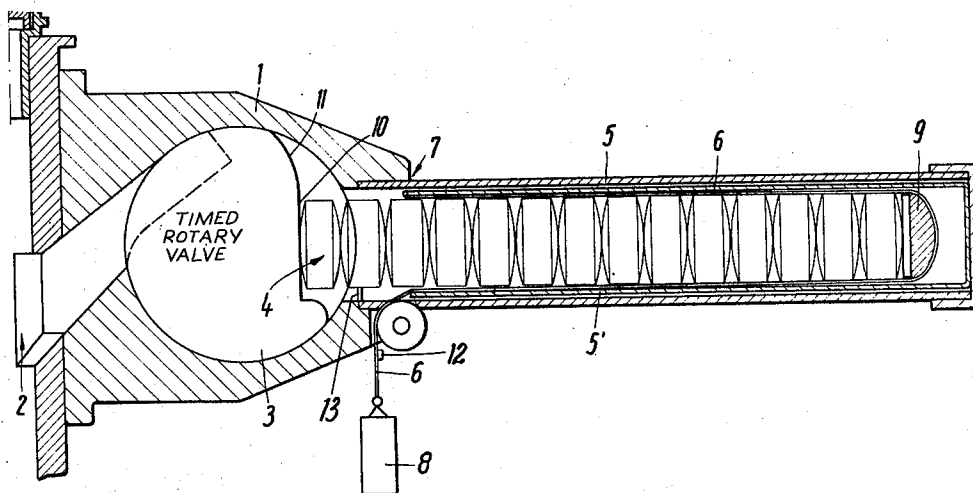
687,097 4/1930 France.....221/277

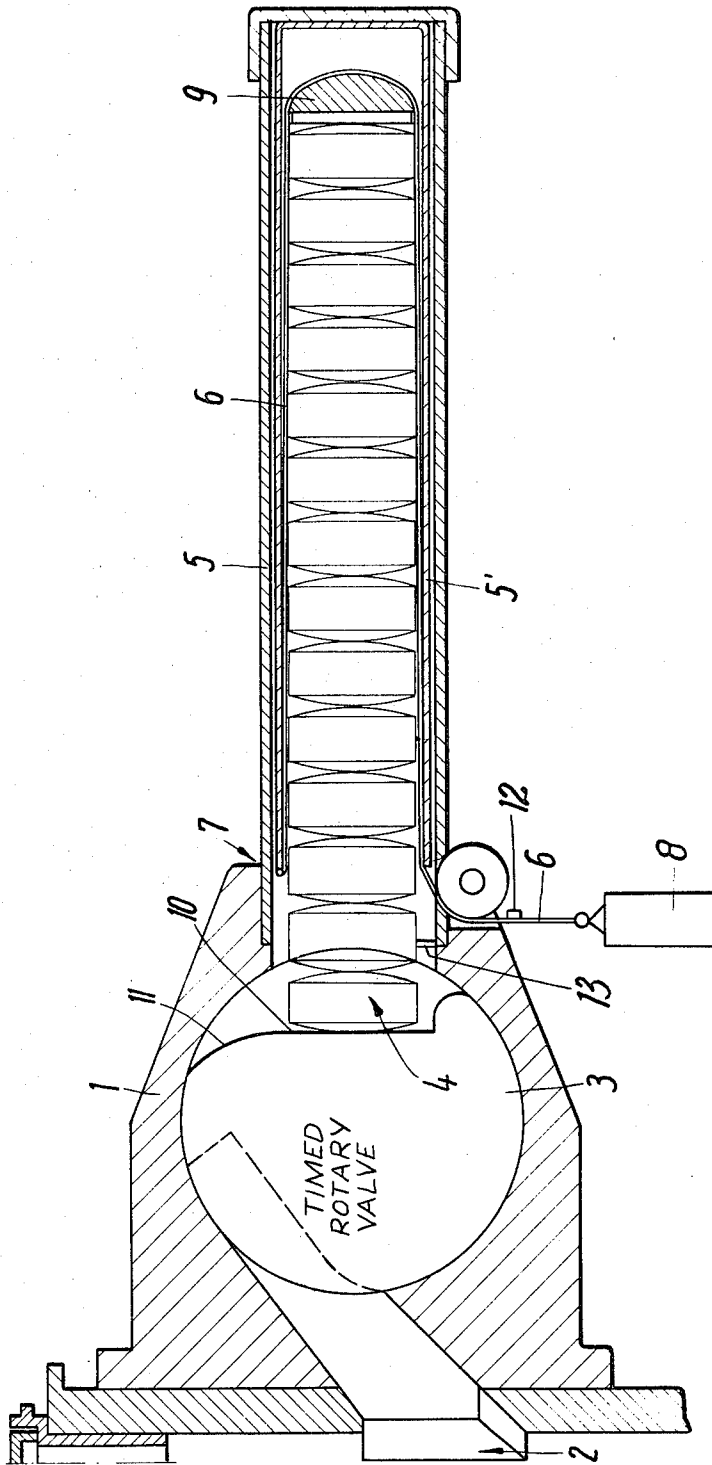
*Primary Examiner*—Robert B. Reeves  
*Assistant Examiner*—David A. Scherbel  
*Attorney*—Kurt Kelman

[57] **ABSTRACT**

An apparatus for automatically dispensing disinfecting or germicidal tablets into a swimming pool or other body of water where the application of a disinfectant is required is disclosed. The apparatus consists of a casing having a rotary valve positioned therein and means to rotate the rotary valve on a timed program. A supply of tablets is provided adjacent the rotary valve and pressure is maintained on the tablet to maintain the tablets in contact with the valve. The valve is provided with a recess whereby one tablet is transported from the column of tablets to a dispensing duct in the casing with one tablet being dispensed into the pool during each rotation of the valve. Means may also be provided for indicating when the supply of tablets has been depleted.

**5 Claims, 1 Drawing Figure**





Inventor:  
HANS VISSMANN

BY Kurt Kelm

AGENT

**ROTARY VALVE DISPENSER FOR TABLETS**

The present invention relates to an automatic device or apparatus for dispensing tablets, such as disinfectant or germicidal tablets, into the water of swimming pools or the like. The apparatus includes a compartment for storing a supply of tablets and for dispensing tablets into the water at selected intervals of time.

Apparatus for the dispensing of disinfecting or germicidal tablets into swimming pools and the like and consisting of a compartment for holding a supply of tablets are known.

In the known dispensers, a type of rotary valve is divided into compartments and is positioned in a correspondingly shaped container for receiving and dispensing chemicals which are to be fed into the pool.

Moreover, the treatment of water in swimming pools from time to time with chemicals, for example, with chlorine bleach, or the like, in order to maintain the water free from germs is also known.

Disinfecting and germicidal tablets for maintaining the water in a swimming pool free from germs are also known, but these tablets are simply thrown into the water by hand. This is a very simple procedure, but the possibility always exists that the tablets may not be added to the pool at regular intervals as required to maintain the water germ-free.

In order to avoid this hit-and-miss method of dispensing by hand, U.S. Pat. Nos. 2,761,562 and 2,950,950 provide receptacles for a supply of tablets. However, the dispensing of the chemical substances contained in the tablets takes place in such a way that either (1) the water continuously flows over a tablet or a certain portion thereof, or (2) a tablet is positioned in the bottom of a receptacle which is immersed in the liquid and hence is dissolved. In fact, the addition of chemicals to water in a swimming pool is automated to some extent, but these known devices are generally not satisfactory either since the time necessary for dissolving individual tablets differs from tablet to tablet and since tablets which are positioned at a higher level in the container and which are not yet to be dissolved may become damp and stick in the mechanism thus failing to be discharged at the proper time. Finally, the dissolving of known chemical disinfecting substances and their transfer to the water of course necessarily depends on whether they actually come in contact with the water, and it is absolutely essential that reliable operation of the apparatus be assured.

These difficulties are overcome with the dispensing apparatus of the present invention. The apparatus consists of a casing and a chamber or compartment to hold a supply of tablets, and a rotary valve in the casing which is time controlled and which has at least one groove or recess in its peripheral edge to receive one tablet from the chamber, with the whole dispenser being installed above the water in a swimming pool. The apparatus is also provided with a tablet ejection duct to receive tablets from the rotary valve and dispense them into the water. The tablet storage compartment is detachably connected to the dispenser casing and means are provided for applying pressure to the tablets stored in the compartment.

Depending on where the device according to the present invention is installed, the tablets may be dispensed either directly into the water of the pool or, for example, into the casing of a skimming arrangement

which are known for use with swimming pools. In the apparatus according to the present invention the rotary valve is rotated by means of a drive controlled by a timing mechanism and as the rotary valve rotates one tablet is dispensed from the storage compartment out through the outlet duct and into the water in the pool.

The tablets which are stored in the compartment do not come into contact with the water in the swimming pool at any time. Moreover a further advantage lies in the fact that the supply of tablets (which are preferably arranged in column form) is always under a constant pressure, which assures a constant and interrupted feed of tablets. The pressure exerted is not too great to crush or destroy the tablets nor to adversely affect the rotation of the rotary valve.

Finally, the rotary valve is so designed that the first tablet in the column of tablets is not broken nor jammed when it enters the receiving recess provided in the rotary valve. This is accomplished by designing the recess whereby its bottom surface is free from sharp edges and smoothly merges into the remaining peripheral area of the valve. The receiving recess is of course open in the direction of rotation of the rotary valve to receive a tablet.

The invention will now be described in more detail with reference to the accompanying drawing which is a side sectional view of one embodiment of the apparatus according to the present invention.

In the drawings, numeral 1 indicates a dispenser casing, and a tablet ejecting duct or opening is shown at 2. A rotary valve is indicated by numeral 3 and the periphery of the rotary valve is recessed as shown generally at 4 to receive a tablet during rotation of the valve. Numeral 5 shows a compartment for the storage of a number of tablets preferably arranged in column form. The tablet receiving recess provided on the rotary valve has a bottom surface 10 which smoothly curves at 11 to merge with the rounded periphery of the rotary valve. This smooth and rounded merging of the bottom 10 with the periphery of the valve and the avoidance of any sharp edges or angled corners removes the possibility of the crushing of a tablet during the dispensing action or cause jamming of the apparatus. The carrying surface of the rotary valve (not numbered in the drawings) is also preferably rounded as shown to avoid breaking or crumbling of the tablets during transport. Specific mechanism for rotating the rotary valve is not shown in the formal drawings inasmuch as such mechanisms are known in the art and are readily available. However, it will be appreciated that the rotary valve drive means may be coupled with a time switch, or the like, whereby a specific time of rotation of the rotary valve may be preselected.

In order that the tablets contained within the compartment be urged toward the rotary valve, pressure applying means is provided. The pressure applying means may consist of a flexible band or cord 6 which is securely fastened within the compartment at 7. The band or cord passes around a slide or pressure plate 9 which is positioned against the last tablet in the cabinet. The other end of the band or cord 6 is provided with a weight 8 positioned exteriorly of the compartment, whereby the tablets are urged toward the rotary valve under the same pressure at all times, regardless of the number of tablets still contained in the storage chamber.

In the embodiment shown in the drawing the band or cord 6 and pressure plate 1 are positioned within a sheath or sleeve 5'.

When the rotary valve rotates, the tablet receiving recess 4 moves adjacent the end of the tablet compartment and the first tablet in the compartment is urged, by means of the pressure applying means, onto the bottom 10 of the recess. During further rotation of the rotary valve the tablet is transported to the tablet dispensing duct 2 and from this position the tablet simply slides into the water in the swimming pool. The inner end of the tablet dispensing duct 2 is shown in broken lines in the drawing.

The apparatus of the present invention may be positioned in a horizontal position with respect to the casing 1 with such a positioning allowing the apparatus to be installed along an upper edge of the pool without projecting above the upper edges of the pool.

The apparatus of the invention may also be secured adjacent a water filtering device with the result that it is then possible to attain a uniform concentration of disinfectant chemicals in the water of the pool.

The specific shape of the tablet shown in the drawings is of course simply as a form of illustration and the tablets may be formed in any shape. For example, the tablets may be spherical in configuration and this spherical configuration is to be preferred inasmuch as spherical tablets do not have longitudinal axis and will not tilt in the chamber thus causing a jamming of the tablets. Moreover spherical tablets are to be preferred for loading of the apparatus.

The apparatus may be provided with an indicating device for indicating the number of tablets still in the compartment. This may be accomplished by providing the band or cord 6 with indicator markings, the first such marking being shown at 12 and showing the number 14 to indicate the number of tablets remaining in the compartment. Subsequent markers carrying the numbers 13, 12, etc. are spaced along the band to show the number of tablets still contained in the compartment. A limit switch 13 may be installed in the compartment to indicate when the supply of tablets has been depleted the limit switch being arranged in the path of the tablets adjacent dispensing valve 3 and thus being actuated when the last tablet has moved into recess 4 of valve 3.

It is preferred that either one of the last two alternatives mentioned above be employed. With these latter arrangements the number of tablets remaining in the compartment may be conveyed to a bulletin board or other indicating device close to the swimming pool whereby the number of tablets remaining in the compartment may be ascertained without having to directly inspect the device.

Of course it is also possible to provide an indicator

which will, for example, indicate the exact number of tablets remaining in the apparatus.

I claim:

1. Apparatus for automatically dispensing disinfectant and germicidal tablets into water in a swimming pool or the like, the apparatus comprising
  1. a compartment for receiving and positioning a supply of the tablets in column form,
    - a. the compartment having an open end;
  2. a casing mounted adjacent the open end of the compartment,
    - a. the casing having an opening adjacent the compartment opening for receiving respective and successive ones of the tablets from the compartment;
  3. means providing a constant and uniform pressure on the supply of tablets in the compartment to urge the column of tablets towards the open compartment end and into the casing opening,
    - a. the pressure means including a weight exteriorly of the apparatus;
  4. a timed rotary valve mounted in the casing for dispensing successive ones of the tablets at timed intervals,
    - a. the dispensing valve having a tablet receiving recess in the periphery thereof, the recess having a substantially flattened bottom curving smoothly into the periphery of the valve for carrying one tablet during each rotation of the valve; and
  5. a tablet dispensing duct angularly spaced in the casing from said opening:
    - a. the rotary valve being mounted between the opening and the duct in the casing to dispense the successive tablets received through the opening in the valve recess and carried by the rotary valve to the duct.
2. The apparatus of claim 1, wherein the pressure applying means comprises a band extending around the column of tablets, one end of the band being secured within the compartment and the weight being secured to the other end of the band which protrudes out of the apparatus.
3. The apparatus of claim 2, wherein the band carries indicator markings exteriorly of the apparatus to indicate the number of tablets remaining within the compartment.
4. The apparatus of claim 2, further comprising a packaging sheath holding the column of tablets and the band extending therearound, the packaging sheath being insertable in the compartment.
5. The apparatus of claim 1, further comprising a limit switch mounted within the compartment in the path of the column of tablets.

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