Jan. 16, 1968 B. T. WHITAKER 3,363,764

AUTOMATIC FLUSHING SEDIMENT SEPARATOR

Filed June 10, 1966

FIG. 1

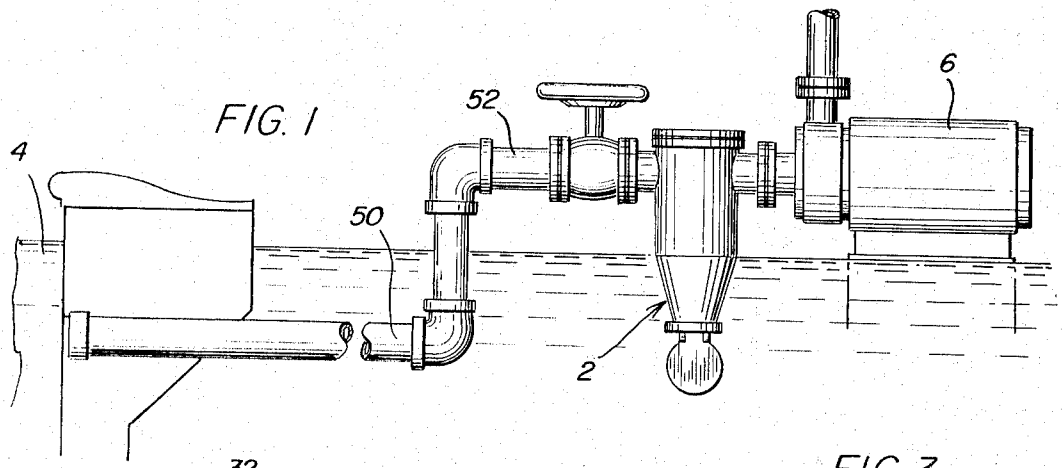


FIG. 2

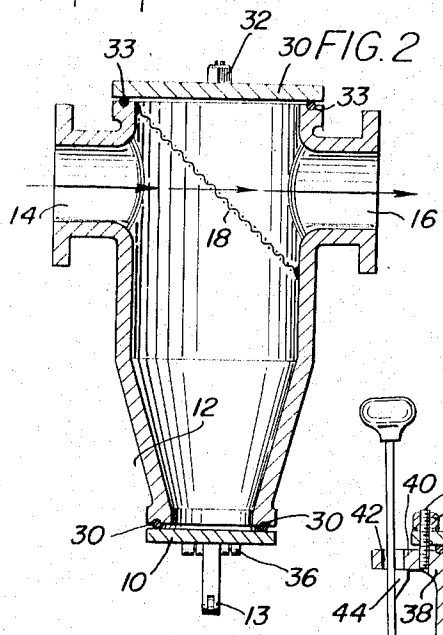
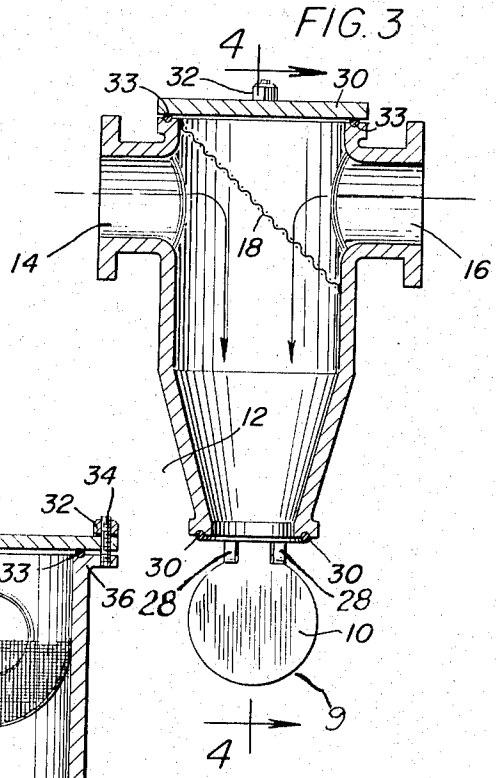


FIG. 3



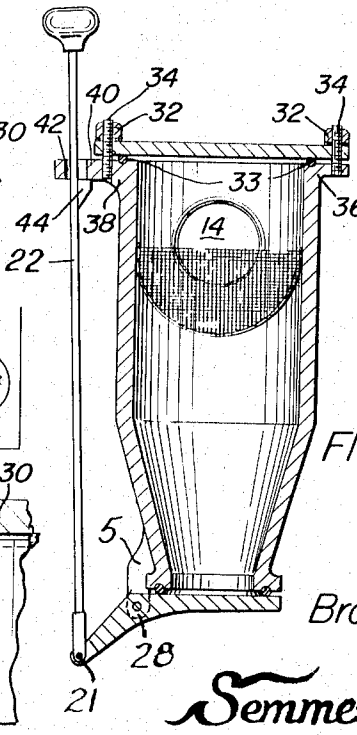


FIG. 4

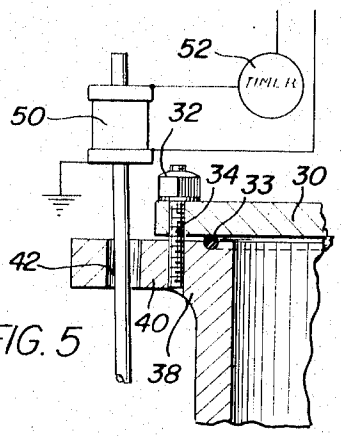


FIG. 5

INVENTOR,
Brackston T. Whitaker
BY
Semmes & Semmes
ATTORNEYS

United States Patent Office 3,363,764 Patented Jan. 16, 1968

3,363,764

AUTOMATIC FLUSHING SEDIMENT SEPARATOR

Brackston T. Whitaker, 1220 S. Alvernon Way, Tucson, Ariz. 85711

Filed June 10, 1966, Ser. No. 556,774
5 Claims. (Cl. 210—138)

ABSTRACT OF THE DISCLOSURE

This is a hair and leaf pot which is adapted to be interposed between swimming pool and pump therefor, the pot having sediment collector which is peculiarly designed to purge itself by a syphoning action upon shutting off the pump.

The present invention is concerned with an automatically flushing separator to strain hair, leaves and other sediment from a liquid. It is particularly adapted for use in a swimming pool.

Conventional strainers, or hair and leaf pots as they are known in the trade, normally operate from the bottom rather than from the top. That is, the collected debris must be removed from the top portion of the pot. However, the present invention is directed towards a hair and leaf pot which operates from the bottom thereof, and which is below the water level of the pool. This allows it to syphon water from the pool to flush leaves and other debris, without the necessity of removing a collection or strainer basket from the pot. Further, standard type hair and leaf pots normally require that the lid be removed from the pot. The basket is then removed from the pot, full of rotted leaves, bugs, and other debris which must then be removed; this is a particularly disagreeable task.

My invention, on the other hand, provides an automatic flushing device for removal of debris from pools without the need for removal of a basket or other type of strainer. Further, the structure provided by my invention is simple and easy to operate; it is efficient. Also, no additional equipment is needed to operate the automatic flushing device which I have invented, and it is easily connected to existing pool equipment.

It is therefore an object of invention to provide an automatic flushing separator which operates from the bottom thereof, and which is below the water level of the pool, thereby allowing it to syphon water from the pool to flush debris therefrom and thus automatically clean the separator.

It is another object of invention to provide a pool pot which may be easily connected to conventional swimming pool equipment, and which does not need additional operational equipment for use.

It is another object of invention to provide an automatic separator which is electrically actuated by a timer.

These and other objects of invention will be apparent from the following specification and drawings in which:

FIGURE 1 is a block diagram of a swimming pool and its associated pumping equipment, showing how the separator is interconnected with the equipment;

FIGURE 2 is a sectional view of the strainer;

FIGURE 3 is a sectional view of the strainer showing the collector valve in the open position;

FIGURE 4 is a sectional view of the strainer, taken along the sections lines 4—4 of FIGURE 2, illustrating the manual operation of the strainer;

FIGURE 5 is a sectional view of a portion of the strainer, illustrating the uses of a timer-controlled solenoid to automatically actuate the collector valve.

As illustrated in FIGURE 1, the hair and leaf pot 2 is connected between pool 4 and pump 6 and filtering equipment. The connection comprises a T-type connection; one arm being connected to the pool water pipe line 50, the other arm being connected to pump 6. Thus, the pool pot which I have developed may be easily connected to existing pool equipment, and does not require auxiliary operating equipment for use.

In FIGURE 2, the collector valve 10 is shown in closed position. The pot comprises chamber 12 with inlets 14 and 16, respectively, connecting it to the pool and pump. Screen 18 comprises a wire or plastic mesh, and prevents sediment from flowing into the pumps and filtering equipment.

Water circulates from the pool 4 through water suction and/or drain line 50, through pot 2, to the pump and filtering equipment, and is then forced by pump 6 back into the pool. As the water circulates through the pot through input 14 and exit 16, any sediment or debris such as hair, leaves, bugs, etc., are separated by strainer 18. The pool pot 2 comprises inner chamber 12, the top thereof being sealed by lid 30 and washer 33, which are secured to the pool pot via nuts and bolts 32 (see FIGURE 4). The pot is substantially cylindrical in form, and converges to a decreasing diameter at the bottom thereof.

The collector valve 9 compriess a substantially cylindrical portion 10 which is pivotably hinged to extension 5 of the pot via connection 28. Washer 30 co-acts with the pool pot and collector valve 9 to form a waterproof seal therebetween. The collector valve is below the water level of the pool as shown in FIGURE 1, and therefore can syphon water therefrom under certain condition as described later.

The collector valve further comprises extended portion 13 as illustrated in FIGURE 4. The end of this extension is pivotably connected to rod 22 via pivotal connection 21. Rod 22 extends through shaft 42 of pot flange 40, and terminates in handle 46.

An alternative construction for activating the collector valve automatically is illustrated in FIGURE 5, which shows rod 22 connected to the plunger of solenoid 50. In this embodiment, the collector valve opening and closing is regulated by the electric timer 52. Thus, the timer may be set to actuate the solenoid at a particular time, and for a predetermined period of time.

Operation

My device works as follows:

As water is circulated by the pump in the system, it flows into the hair and leaf pot through port 14, and exits through port 16. Sediment and other debris, such as leaves, bugs, hair, twigs, etc., are prevented by strainer 18 from flowing into the pump and filtering equipment 6. When it is desired to flush, that is, clean the pool pot, the pool pump is first shut off. The collector valve is then opened, either manually as illustrated in FIGURE 4, or by activation of the timer-solenoid actuating mechanism.

Manual opening is accomplished by pulling rod 22 up, the pivotal convections 21 and 28 thereby opening the valve as shown in the dotted lines in FIGURE 4. Alternatively, the solenoid can be used to pull rod 22 up. The water backflow from the pump and filter, as well as the water syphoned from the pool, as a result of the higher pool water level, will flush chamber 12, as well as any debris clinging to the strainer 18 clean. The water backflow from the pool and pump is illustrated in FIGURE 3.

When the flushing operation is finished, the collector valve is then closed, and the pool pump may again be turned on. The valve may be closed either manually, as illustrated in FIGURE 4, or automatically after a predetermined period of time, as regulated by timer 52. The valve may be locked in the closed position by a cam or twist lock 44, which co-acts with flange 40 to keep the collector valve in the closed position (FIGURE 4).

Thus, my invention provides a simple, automatic way to rid a swimming pool of unwanted debris. Having thus described my invention, I claim the following:

1. A hair and leaf pot for connection in a return water line adapted to disposition between a swimming pool and its associated pumping and filtering equipment, comprising:

(A) a hollow chamber having input and output conduits, the input conduit being connected to a swimming pool return line, the output conduit being connected to pumping and filtering equipment therefor, said chamber being of cylindrical dimension in its upper portion and of conical dimension in its lower portion;

(B) a separator confined by the cylindrical portion of said chamber, said separator being interposed between the conduits in a position which is diagonal to the centerline of said conduits to separate and collect sediment flowing from input to output conduit;

(C) a collector valve connected to the bottom of said chamber, below the water level of the pool;

(D) means to open said valve, whereby the water backflow from the pump and the water syphoned from the pool, flushes the chamber separator and discharges collected sediment through said collector valve when the pump is shut off.

2. The device of claim 1 in which the separator reposes in contiguous connection with the inner circumference of the chamber and is disposed in declining relation to the input conduit.

3. The hair and leaf pot as described in claim 1, wherein said collector valve is pivotally connected to said chamber and a cam rod is connected to said valve, actuation of which opens and closes said collector valve.

4. The device as described in claim 3, which further comprises a solenoid having a plunger, said rod being connected to said plunger, and being actuable thereby to open said collector valve when said solenoid is activated.

5. The device as described in claim 4, which further comprises a timer connected to said solenoid to activate said solenoid at a particular time and for a predetermined period of time;

(F) a source of electricity to actuate said timer and said solenoid.

References Cited

UNITED STATES PATENTS

1,231,477	6/1917	Bibb et al.	130—220
1,370,425	3/1921	Garber	210—312 X
1,547,955	7/1925	Price	210—408 X
2,955,711	10/1960	Haraden	210—138
3,043,431	7/1962	Dudley et al.	210—138 X
3,173,865	3/1965	Bosico	210—169

SAMIH N. ZAHARNA, *Primary Examiner.*

REUBEN FRIEDMAN, *Examiner.*

F. SPEAR, *Assistant Examiner.*