United States Patent

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[54] SWIMMING POOL LEAF TRAP

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[52] **U.S. Cl.** **210/244,** 210/163, 210/166, 210/169, 210/473

[51] **Int. Cl.** **E03f 5/04,** B01d 35/28

[58] **Field of Search** 210/232, 244, 464, 465, 463, 210/497, 473, 166, 163; 15/257.3

[56] **References Cited**

UNITED STATES PATENTS

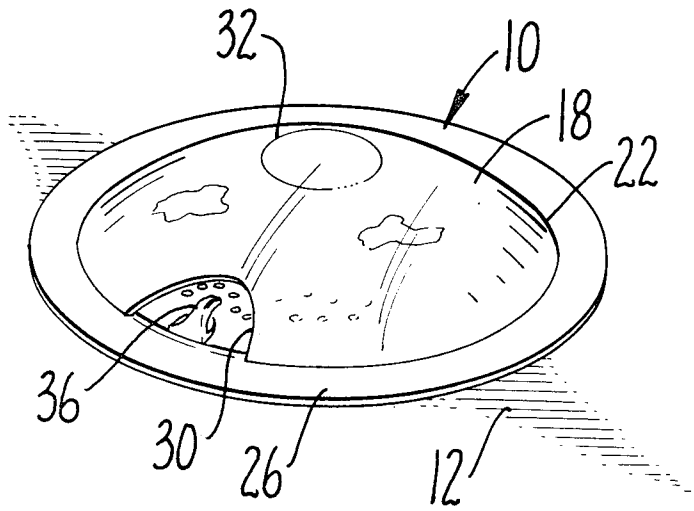
3,517,813	6/1970	Thaler	210/166
3,377,784	4/1968	Walker	210/166 X
3,378,858	4/1968	Jacuzzi	210/166 X

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[57] **ABSTRACT**

A portable leaf trap for use with swimming pools comprising a dome-like housing, perforate means affixed to the housing, a flexible base member extending outwardly from the housing, and lift means. An opening is provided in the side of the housing to provide communication between the outside of the housing and an interior defined by the perforate means and the housing inner surface. The leaf trap is adapted to be positioned over a swimming pool drain upon the floor of the pool with leaves and the like entering the trap interior through said opening. The lifting element is affixed to the perforate means in the vicinity of said opening and offset with respect to the center of gravity of the trap. When an upwardly directed force is applied to the lifting element, the leaf trap tends to pivot therearound thus trapping the leaves and the like within the interior at a location remote from said opening.

4 Claims, 4 Drawing Figures



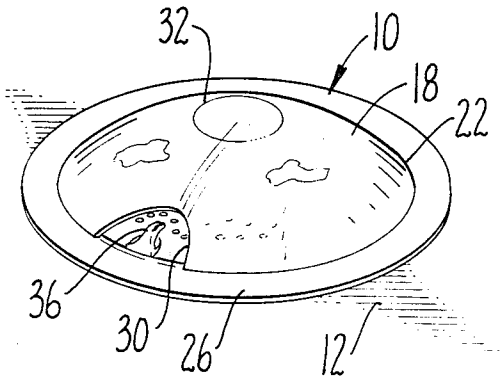


FIG. 1.

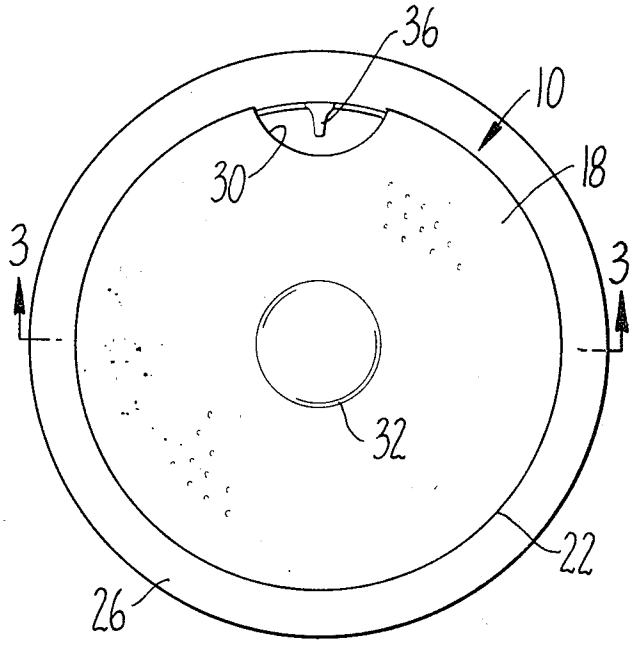


FIG. 2.

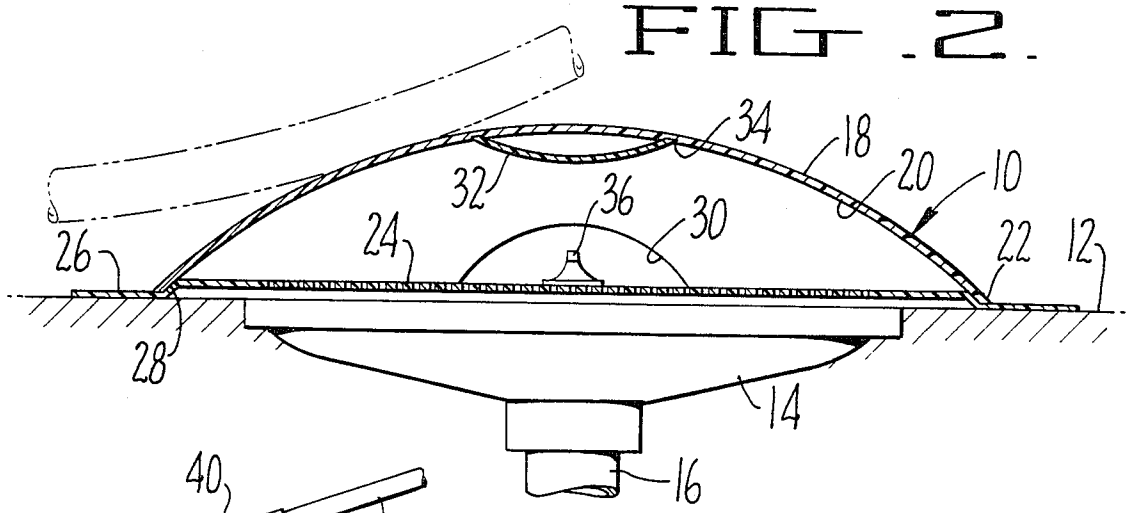


FIG. 3.

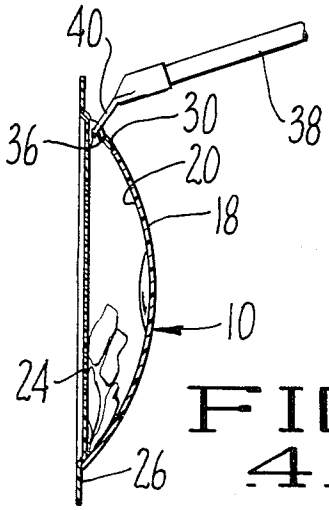


FIG. 4.

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SWIMMING POOL LEAF TRAP

BACKGROUND OF THE INVENTION

The present invention relates to equipment for the maintenance of swimming pools, and more particularly, to a portable trap for the removal of leaves and the like from said pools.

In the cleaning of swimming pools increasing use has been made of automatic swimming pool cleaners which incorporate mechanisms adapted to travel in a random manner over the bottom and side walls of the pool. Examples of such devices may be seen with reference to my prior U.S. Pat. Nos. 3,032,044 of May 1, 1962, and 3,392,738 of July 16, 1968. In these devices random movement and/or cleaning are effected by means of one of more water discharge nozzles which are operatively associated with flexible conduit means. For the proper operation of these devices it is quite important that no foreign obstructions be provided in the swimming pool which would tend to catch them, thereby tending to impede their random movement or halt such movement altogether.

The above-noted prior art cleaning devices are adapted to remove accumulated scum and dirt from the side walls and bottom of a pool, this material being subsequently removed from the pool by suitable drain means. Quite often, a pool will also contain additional relatively large matter such as leaves and the like which may clog the pool drain. To prevent this traps have been devised for straining out this latter material from the water being drained and trapping same for subsequent removal. Such leaf trap arrangements, however, do not readily lend themselves to random movement pool cleaners since they are often large and complex in construction, tending to impede or halt movement of such cleaners.

SUMMARY OF THE INVENTION

It is therefore an object of the present invention to provide a portable trap for the pickup and retention of leaves and the like from the floors of swimming pools which is simple in construction and defines a configuration readily adapting it for use in a swimming pool wherein a random movement cleaner is being employed.

It is a further object of this invention to provide a device of the character described, which employs no moving parts and defines a smooth, fixed outer surface over which random movement pool cleaners may pass in an unobstructed manner.

DESCRIPTION OF THE DRAWINGS

The above-noted and other objects of this invention will be understood from the following description taken with reference to the drawings wherein:

FIG. 1 is a perspective view of a portable leaf trap constructed in accordance with the present invention.

FIG. 2 is a plan view of the portable leaf trap of FIG. 1.

FIG. 3 is a cross sectional view taken along the line 3—3 of FIG. 2.

FIG. 4 is a cross sectional side elevational view illustrating the portable leaf trap constructed in accordance with the teachings of the present invention being retrieved from the pool floor.

DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

Referring now to the drawings, the portable leaf trap constructed in accordance with the present invention is generally designated by the numeral **10**. As shown in FIGS. 1–3, the leaf trap is in operating position upon a swimming pool floor **12** centered over the inlet **14** of pool drain line **16**.

The leaf trap includes a dome-like housing **18** having an inner surface **20** and a rim **22**. Dome-like housing **18** may be fabricated from any suitably rigid material; however, it is preferably formed of a transparent material such as plastic for purposes which will be brought out in greater detail below. Perforate means in the form of a screen **24** is affixed to said housing in proximity to rim **22** in any desired manner such as by means of water insoluble adhesives or conventional thermal bonding techniques. The screen **24** is circular in shape, conforming to the configuration of housing **18** so that the screen and housing inner surface **20** define an interior. In the illustrated embodiment screen **24** is illustrated as being constructed of plastic material (however, it should be understood that any other foraminous material such as wire mesh may be utilized in the construction thereof). The holes defined by screen **24** are large enough to permit the free flow of water therethrough while at the same time being too small to allow the passage therethrough of relatively large objects such as leaves or the like.

A base member **26** extends radially outwardly from housing rim **22** in the manner illustrated. The base member comprises a continuous, thin, flexible element which is disposed completely around the rim and by virtue of its flexibility is adapted to conform to the surface configuration of the swimming pool floor **12**. In the illustrated embodiment base member **26** is constructed of a unitary piece of plastic material along with screen **24**, said screen and base member being interconnected by means of an integral shoulder **28**. Shoulder **28**, in addition to providing relative placement between screen **24** and base member **26**, lies in communication with inner surface **20** of housing **18** and thus provides an additional location whereby bonding with housing **18** as by means of adhesives, etc., may be effected.

An opening **30** is formed in the side of housing **18** to establish communication between the interior defined by screen **24** and housing inner surface **20** and the outside of said housing. As drain line **16** is opened for the discharge of water from the pool through suction means (not shown) in communication with said drain line, a water current is caused to flow through opening **30** into the interior defined by screen **24** and inner surface **20** and thence through the perforations formed by screen **24** and into the drain line. Leaves or other debris will be swept along by the water current and trapped within the leaf trap interior in an obvious manner. Since base member **26** is in continuous annular abutment with pool floor **12**, substantially all water being drained from the pool will have to pass through the opening **30**. In the event the leaf trap constructed in accordance with the teachings of the present invention is employed with a swimming pool cleaner of the random movement type referred to above, such cleaner during the operation thereof will have driven the leaves on the pool floor into the immediate vicinity of the trap thereby increasing the efficiency of its leaf pickup operation. A portion of such a swimming pool cleaner is illustrated by means of the dotted lines in FIG. 3. It should be noted that the leaf trap of the present invention presents in entirety a smooth external surface over which the cleaning device may move freely. As previously stated, freedom of movement is necessary for the proper operation of random motion pool cleaners.

The flow of the water current through the leaf trap will tend to maintain the trap in position upon the pool floor. However, it may be desirable to provide additional means for maintaining the trap in position. A preferred approach for accomplishing this may most readily be seen with reference to FIG. 3 wherein ballast retention means in the form of an inverted cup-shaped element **32** is illustrated as being secured to the interior top of dome-like housing **18**. Element **32**, which is preferably constructed of a yieldable plastic material, is adapted to be affixed to housing **18** by having the rim thereof snapped into an annular shoulder **34** formed at the top of the housing as shown. Prior to being secured to the housing, however, cup-shaped element **32** will be filled with a suitable ballast material such as lead shot, etc., (not shown) so that additional weight will be imparted to the leaf trap substantially along the center of gravity thereof.

Affixed to screen **24** along the edge thereof and in registry with opening **30** is a lifting element in the form of a hook **36**. After completion of the aforedescribed leaf pickup operation, a pole **38** is positioned with its pole hook **40** in hook **36**, as in FIG. 4, and the pole is manipulated to exert upwardly directed force on hook **36** to lift the trap from its position over the pool

drain line **16**. The opening **30** provides free access to the hook **36**. As the leaf trap **10** is lifted from the swimming pool floor, the trap, by virtue of the fact that hook **36** is positioned off center with respect to the center of gravity thereof, pivots about the hook so that opening **30** is disposed in an upwardly direction. Leaves and other debris contained within the interior of the trap tend to fall under the influence of gravity and accumulate within the trap interior in the side of the trap opposite opening **30**. Since hook **36** projects inwardly toward the center of the trap interior, the pivotal movement of the trap will insure that hook **36** and pole hook **40** remain in engagement during the lifting operation. In the above manner, leaf trap **10** may readily be transported out of the pool without danger that the trap will fall off the pole **38** or that leaves and other debris within the trap interior will fall out of opening **30**.

Although only one embodiment of apparatus constructed in accordance with the teachings of the present invention has been illustrated and described, it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or from the scope of the appended claims. For example, the bottom of the trap may be solid over about 25 percent of its total surface in the vicinity of aperture **30** to encourage leaves or the like to move to the rear of the trap.

I claim as my invention:

1. A portable leaf trap for use with a swimming pool having a drain and a floor, said trap comprising an integral dome-like housing having a peripheral rim adapted to be disposed at substantially the level of the pool floor in surrounding relation to said drain, said housing having a substantially concavo-convex imperforate external surface which is smoothly contoured, whereby a floor cleaning hose of a swimming pool cleaner of the random movement type will not be caught or hung-up by said leaf trap, an opening formed in said housing for the entry of leaves, said opening having a lower end and an upper end, said lower end being located substantially at the level of said rim, said upper end being located a substantial distance below the top of said housing, said opening having a width at its lower end which is substantially greater than the height of said opening, and perforate means attached to the housing forming a bottom wall therefor and defining therewith a closed interior adapted to retain therein the leaves which enter through said opening.

2. The portable leaf trap of claim **1** further comprising a lifting element affixed to the trap at a location whereby access to said lifting element may readily be had through said housing opening.

3. The portable leaf trap of claim **2** wherein said lifting element is positioned offset with respect to the center of gravity of said leaf trap whereby upwardly directed force exerted on said lifting element will cause said leaf trap to pivot about said lifting element under the influence of gravity to cause leaves and the like within said interior to accumulate at a location within said interior remote from said opening.

4. The portable leaf trap of claim **3** wherein said lifting element comprises an inwardly extending hook secured to said perforate means in registry with said opening.

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