SKIMMING DEVICE FOR SWIMMING POOLS

ABSTRACT: The invention relates to a skimming device which is used to remove floating debris from swimming pools provided with means for circulating the water in the pool. The skimming device comprises a pole and a screening. One end portion of the pole is supported from the edge of the pool while the other portion extends inwardly of the edge so as to be positioned above and substantially parallel with the surface of the pool water. The screening is supported from the extending portion of the pole and extends downwardly into the water.
3,625,364

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BACKGROUND OF THE INVENTION

The skimming device of this invention is very inexpensive but highly effective and can be readily installed and maintained by the homeowner who has a swimming pool in his yard.

The skimming device comprises a pole which is supported from the edge of the pool and is maintained in an extended position above the surface of the water. The screening, which is carried by the pole, has the bottom portion of its downwardly extending angular sides immersed in the pool water. The bottom portion has an upturned edge to assure that any floating debris intercepted by the screening will be retained by the skimming device when it is lifted from the pool for cleaning.

In the prior art, most skimming devices float on the surface of the water to direct the currents and the floating debris to a filtering means or include powered devices that rotate screen elements to remove debris from the water. Other costly apparatus of the prior art incorporate a separate pumping means that jets the water from the pool through a reticulated collection bag.

U.S. Pat. Nos. 3,152,076 and 3,244,284 depict floating skimmers that direct debris into a disposal means built into the side of the pool. Waves will upset the floating devices and, also, foreign material frequently adheres to the skimmer and cannot be effectively removed or the floating debris sinks before it can be removed.

A rotating skimmer, usually used industrially for oil skimming from a watercourse, is shown in U.S. Pat. No. 2,778,500. These devices, although effective, are very expensive and cannot be readily installed in backyard swimming pools.

U.S. Pat. No. 3,372,809 discloses a skimming device that incorporates a submerged pump that jets water tangentially to the surface of the water into a partly submerged reticulated bag to catch the debris. A costly pumping means is used to jet the water through the reticulated bag in this patent.

The basic drawbacks of the prior art are the ineffectiveness of the cheaper floating skim bars to intercept and direct all the floating debris to assure its removal. The other powered devices are too expensive to be installed and maintained by the average swimming pool owner.

SUMMARY OF THE INVENTION

The present invention relates to a skimming device for swimming pools of the type found in the yards of private residences. The skimming device comprises a pole that has one end portion supported from the edge structure of the pool by a mounting means while the other portion of the pole extends above the surface of the pool water and is maintained in a substantially parallel position with the surface of the water by the mounting means. A screening, carried by the extended portion of the pole, extends to below the surface of the water.

In the preferred embodiment, the screening is of an inverted V shape configuration with the apex thereof partially wrapped around the pole and the angular sides of the screening extending to below the surface of the water. The bottom portions of the sides, which are submerged in the water, have upturned edges.

The water, circulating in the pool by conventional circulating means that are standard equipment on most pools, passes through the screening thereby depositing leaves and other floating debris on the skimming device which are retained in the bottom portions of the screening.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective view of the skimming device of this invention installed in an aboveground swimming pool. FIG. 2 is a perspective view of the skimming device of FIG. 1 removed from the pool.

FIG. 3 is a fragmentary enlarged view, partially in section, depicting a mounting means for the skimming device.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In FIG. 1 can be seen a swimming pool 11 of the type which is installed above the ground although this invention can be applied to any type of pool as will be explained later. The swimming pool 11 has sidewalks 12 terminating in an upper peripheral edge 13. This upper edge 13 is surrounded by an outer edge structure 14 or coping to provide support for the sidewalks 12 of the pool 11. The edge structure 14 usually includes a flange 15 that extends outwardly from the upper edge 13 of the pool 11. The pool 11 is provided with a conventional circulating means 16 that includes a water inlet 17 and a water outlet 18 located approximately 12 inches below the edge 13 of the pool 11. The circulating means 16 also may house a pump, a filter, and a heater (not shown).

Water 19 in the pool 11 is circulated by the circulating means 16 in a direction indicated by the arrows shown in FIG. 1. The top surface of the water 19 comes to about 6 to 12 inches below the edge 13 of the pool 11.

The pool 11 in FIG. 1 is shown with the skimming device of this invention, generally referred to as 21, mounted in an operating position.

The skimming device 21 comprises a pole 22, a mounting means 23 at one end portion of the pole 22 to support the pole 22 from the edge structure 14 of the pool 11, and a screening 24 carried by the remaining portion of the pole extending over the surface of the water 19.

The pole 22 is cylindrical and of a relatively small diameter, e.g., 1 to 2 inches, and usually hollow. The pole 22 may be manufactured of a lightweight wood, metal or plastic.

As best seen in FIG. 2, which depicts the skimming device 21 removed from the pool 11, the screening 24 is of an inverted V shape configuration when viewed in profile.

The apex 25 of the V shape screening in part wraps around the extended portion of the pole 22. The screening 24 has two angular sides 26 extending downwardly and outwardly from the apex 25. Each side 26 has a bottom portion 27 that extends to below the surface of the water 19 shown by phantom line in FIG. 2. Each bottom portion 27 has an upturned edge 28 that extends outwardly making an angle with the side 26. The screening 24 can be fabricated of a 14–18 mesh screen, for instance, one of a noncorrosive metallic or thermostatic material which may be hemmed to maintain its shape.

The mounting means 23 for the skimming device 21 has to be designed to suit the various edge structures 14 or copings of the many commercially available swimming pools to which it may be applied.

In FIG. 3 is seen an enlargement of the mounting means 23 of FIG. 1 which, in this embodiment of the invention, permits the skimming device 21 to be used with an aboveground swimming pool 11. This mounting means 23 includes a collar 29 which slidably fits on the end portion of the pole 22. An angle mount 31 has one end portion welded to the collar 29 and its other end portion extending horizontally so as to fit under the flange 15 of the edge structure 14. A butterfly stud 32, which is threaded through a tapped hole 33 in the substantially extending end portion of the angle mount 31, can be manually rotated to abut the underside of the flange 15 to support the skimming device 21 from the edge structure 14. A leveling means 34 or wedge, which may be included as part of the mounting means 23, is positioned intermediate the upper surface of the flange 15 and the collar 29 as best seen in FIG. 4. This assures that the other portion of the pole 22 extending over the pool water 19 is maintained a fixed distance above and substantially parallel to the surface of the water 19.
In case the pool 11 is installed into the ground so that it is relatively flush with the ground level, the mounting means has to be modified so that the skimming device 21 of this invention can be effectively utilized. An alternate mounting means 35 is depicted in FIG. 5. A collar 36, that slidingly fits on the end portion of the pole 22, has a bushing 37 welded to its underside so that the collar 36 and bushing 37 have parallel axes. An angular hook 38 having a pointed portion 39 and a cylindrical portion 41 is used to assist in assemblage and supporting the skimming device 21. The pointed portion 39 is driven into the ground away from (as shown) or towards the flange 15 while the cylindrical portion is received in the bushing 37 when the collar 36 is slid into the pole 22. If required, a leveling means 42 or wedge, similar to the leveling means 34 included in the embodiment of the mounting means 23 shown in FIG. 4, may be positioned between the flange 15 and the pole 22 to assist in supporting the other portion of the pole 22 extending over the pool water 19 so as to maintain the pole 22 above and substantially parallel to the surface of the water 19.

The skimming device 21 of this invention can be installed in a swimming pool of any size or configuration. Preferably, the skimming device 21 should extend to at least the centerline or center of the pool 11 but it may extend across the entire width of the pool if the pool is relatively small. In that case, the other end of the pole 22 opposite of the mounting means 23, 35, can rest on the edge structure 14 or on a support provided for that purpose.

If the pool 11 is very large, a buoyant means 43 may be provided as seen in FIG. 6. The buoyant means 43 may consist of a floating support that is attached to the underside of the pole 22 by a clip 44. This buoyant means 43 or support can be mounted intermediate the ends of the pole 22 or near the end of the extended portion of the pole 22. The buoyant means floats in the water 19 to assist in supporting the skimming device 21 of this invention in a horizontally position and preventing the pole 22 from sagging in the middle sector by providing an upward force.

It is to be understood that the pole 22 may comprise several pole segments that can be interconnected to form a continuous pole. This will provide optimum portability for the skimming device 21 and also permits it to be shipped or stored in a compact form.

From the description, it can be readily seen that the skimming device 21 of this invention provides a low-cost device for intercepting foreign materials such as twigs, leaves, paper etc. floating in a swimming pool. It is positive in operation as the pool water currents generated by the conventional circulating means 16, usually standard equipment with residential swimming pools, will have to pass through the screening 24 thereby depositing all floating debris on the skimming device 21. Thus, most of the foreign material floating in the pool 11 is collected by the skimming device 21 before it can become waterlogged and sink to the bottom of the pool 11 as is usually the case with other skimming or filtering devices.

This reduces pool cleaning and also substantially decreases the cost for maintaining the circulating means 16.

The upturned edges 28 of the sides 26 of the screening 24 will retain the debris on the skimming device 21 even when the skimming device 21 is removed from the pool 11. One man can readily remove the maintenance-free skimming device 21 by detaching the mounting means 23, 35 and lifting and swinging the pole 22 with the screening 24 attached from the pool 11 onto the ground. Then, with the use of a garden hose, the debris can be readily flushed from the screening 24.

The skimming device 21 of this invention can be readily and inexpensively installed in nearly all types, shapes, and sizes of residential swimming pools due to its design simplicity and nonpowered operation. It may be mounted perpendicular to the edge structure 14 of the pool 11 or at an angle therewith. Since the skimming device 21 operates effectively even when the water is wavy or rough as it is nonfloating, it may be used even while swimming.

The invention disclosed will have many modifications which will be apparent to those skilled in the art in view of the teachings of this specification. It is intended that all modifications which fall within the true spirit and scope of this invention be included within the scope of the appended claims; 1. A skimming device for removing floating debris from a swimming pool filled with water, said swimming pool having an outer edge structure along the periphery of the pool and means for circulating the water in said pool, said skimming device comprising a pole, a mounting means connected to one end portion of said pole, said mounting means supporting said one end portion of said pole from the outer edge of the pool while maintaining the remaining portion of said pole in an extended position above the surface of said water, and a screening of a substantially inverted V shape configuration with the apex of said screening partially wrapped over the remaining portion of said pole and the angular sides of said screening extending downwardly with one of said angular sides having a bottom portion extending underneath the surface of the water in said pool.

2. The skimming device of claim 1 and which is further characterized in that one said bottom portions includes an upwardly extending edge making an angle with one of said angular sides.

3. The skimming device of claim 1 and which is further characterized in that said mounting means includes a leveling means to maintain the remaining portion of said pole in a fixed position above and substantially parallel to the surface of the water.