Dec. 15, 1970 K. M. BISHOP 3,546,719

SWIMMING POOL SKIMMING GUTTER

Filed May 17, 1968

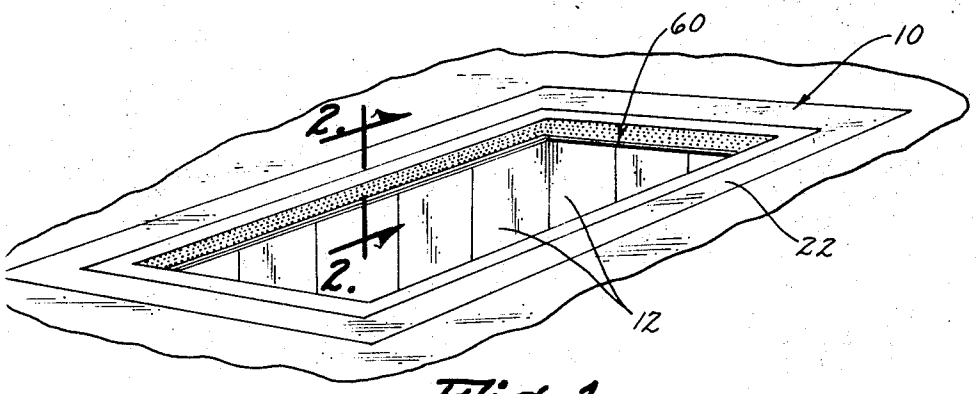


Fig. 1

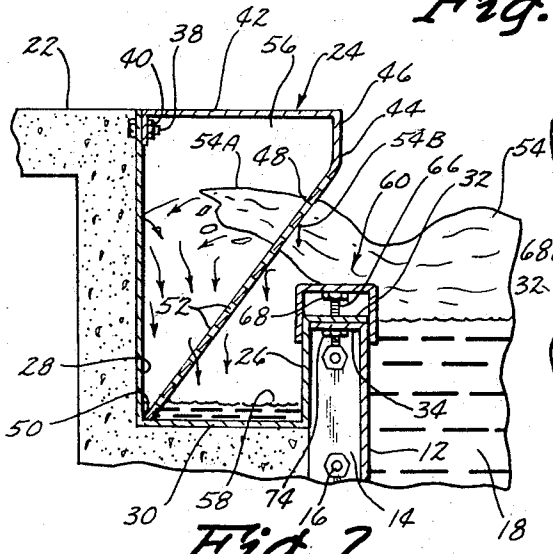


Fig. 2

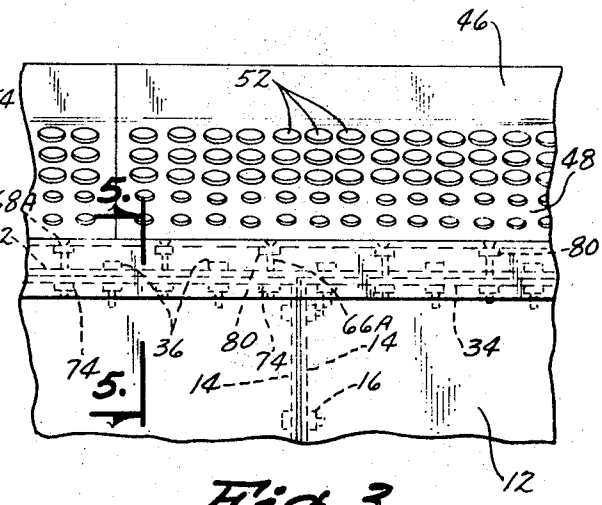


Fig. 3

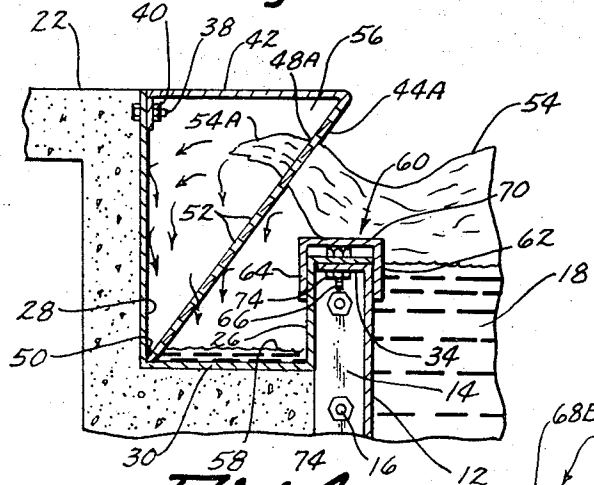


Fig. 4

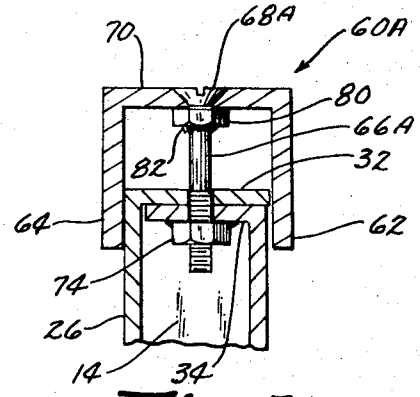


Fig. 5

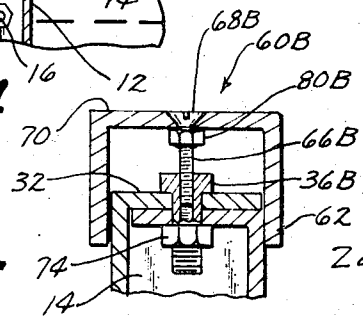


Fig. 6

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SWIMMING POOL SKIMMING GUTTER

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ABSTRACT OF THE DISCLOSURE

A device for controlling the flow of water from a swimming pool into the skimming gutter including an inner gutter wall adjustable in height and an apertured baffle plate extending diagonally inwardly and downwardly across the gutter forming two compartments in the gutter. The splashing waves against the apertured plate are divided into those passing through the plate into a first compartment and those being deflected downwardly into a second compartment in the skimming gutter. The diagonally disposed plate is integral with a top deck plate and has its lower end received in the outer gutter vertex formed by the outer and bottom gutter walls and thus strengthens the top deck plate. The baffle plate may have holes decreasing in size from top to bottom such that the splashing water passing through the top holes will be metered from the first compartment into the second compartment through the bottom holes.

This invention is particularly concerned with two problems common in conventional swimming pools. First, for efficient skimming action of the pool water to occur the water level must be just slightly above the gutter so that a thin film of water passes into the gutter thereby minimizing the amount of water circulated through the filtering system and additionally providing the most effective skimming action for removal of dust, leaves and other matter at the top surface of the water before it settles beneath the water surface. Changing the level of the pool water requires either adding or removing a substantial amount of water and thus is not easily accomplished. The adjustable cap on the inner wall of the gutter makes it simple to obtain the exact desired skimming action by controlling the flow of water into the gutter from the pool.

The second common problem with conventional swimming pools is that turbulent splashing water in the pool is often an undesirable condition. This is particularly true when competitive speed swimming meets are being conducted. The water hitting the side walls and skimming gutters of the pool is deflected directly back into the pool and against swimmers approaching the waves of water thereby significantly reducing their swimming speed. These waves are typically established by the lead swimmers and work to the detriment of the trailing swimmers. The dampening baffle plate extending across the skimming gutters captures some of the splashing water and deflects other water downwardly into the gutter and thus minimizes the water that is deflected back into the pool thereby reducing water turbulence in the pool. The water passing through the baffle plate is metered down into the skimming gutter while the water hitting the diagonally disposed baffle plate is deflected downwardly rather than straight back into the pool.

Another advantage of this novel gutter structure is that it is simple to manufacture and strong in construction since the gutter is formed in a shape of a channel and the baffle plate includes a top plate portion which functions as a part of the swimming deck and is detachably connected to the outer wall of the channel-shaped gutter by bolts or the like. The lower edge of the baffle

plate is received in the vertex of the channel outer and bottom walls and thus is mechanically locked in place to strengthen the top deck plate.

These and other features and advantages of this invention will become readily apparent to those skilled in the art upon reference to the following description when taken into consideration with the accompanying drawings, wherein:

FIG. 1 is a perspective view of a swimming pool employing the skimming gutter structure of this invention;

FIG. 2 is a cross sectional view taken along line 2—2 in FIG. 1;

FIG. 3 is a front elevation view of the structure illustrated in FIG. 2 but illustrating an alternate embodiment of the adjustment bolt for the cap;

FIG. 4 is a view similar to FIG. 2 but showing an alternate baffle plate construction and also showing the cap on the gutter wall adjusted to a lower position from that shown in FIG. 2;

FIG. 5 is a fragmentary view of an alternate embodiment of the height adjusting bolt structure for the skimming gutter; and

FIG. 6 is a cross sectional view similar to FIG. 5 but showing a third cap adjustment bolt assembly.

The swimming pool of this invention is referred to generally in FIG. 1 by the reference numeral **10** and includes metal wall sections **12** having abutting side flanges **14** interconnected by bolts **16**. In FIGS. 2 and 4 the pool is shown filled with water **18**. A concrete deck **22** extends around the perimeter of the pool.

The pool **10** includes a novel skimming gutter **24** being channel-shaped in cross section and having inner and outer upstanding walls **26** and **28** integral with a bottom wall **30**. A horizontally extending flange **32** extends inwardly over the top flange **34** of the pool walls **12**. The gutter flange **32** is fastened to the wall flange **34** by bolts **36**.

The outer gutter or trough wall **28** extends higher than the inner wall **26** and extends to the top of the deck **22** where it is fastened by bolts **38** to a downwardly extending flange **40** integrally connected to a horizontally disposed deck plate **42** also integrally connected to a baffle plate **44** which includes a downwardly extending portion **46** merging into a diagonally inwardly and downwardly extending portion **48** terminating in the vertex **50** of the bottom and outer trough walls **30** and **38** respectively. The diagonally extending baffle plate portion **48** includes apertures **52** decreasing in size from top to bottom in FIG. 3 and uniform in size in FIGS. 2 and 4. These apertures may be of any desired size or shape to receive splashing water **54** from the pool water **18** as seen in FIGS. 2 and 4.

It is seen in FIGS. 2 and 4 that the splashing water **54** passes over the pool wall and hits the diagonally disposed baffle plate portion **48** with a portion **54A** of the water passing through the baffle plate portion **48** into a compartment **56** while other water **54B** is deflected downwardly into the bottom of the trough of the gutter. The water **58** in the bottom of the skimming trough will then flow to an outlet drain (not shown) for circulation through the filtering system and return to the pool.

It is seen that the water **54A** caught in the compartment **56** falls to the bottom thereof and is metered through the lower openings **52** in the baffle plate portion **48** whereby it is returned to the bottom of the gutter trough.

The skimming gutter is easily constructed of two sheets of metal material as seen in FIGS. 2 and 4 and may be quickly assembled or disassembled by use of the bolts **38**. The mechanical locking of the lower edge of the baffle plate **48** in the bottom outer vertex of the channel-shaped trough eliminates the need for any welding but yet pro-

vides substantial structural strength with a minimum quantity of materials.

In FIG. 4 an alternate baffle plate construction is shown wherein the baffle plate **44A** includes a single straight diagonally disposed baffle plate portion **48A** extending from the inner edge of the top deck plate **56**. The structure is otherwise the same as that shown and described in FIG. 2.

The skimming action of the gutter structure is varied by an adjustable in height channel-shaped cap **60** extending downwardly over the pool walls. The inner leg **62** of the cap **60** matingly engages the pool wall **12** while the outer leg **64** matingly engages the inner trough channel wall **26**. A bolt **66** extends through the gutter and pool wall flanges **32** and **34** respectively and includes a head **68** for engaging the base or top wall **70** of the cap **60**. A nut **74** is welded to the bottom side of the pool wall flange **34** and thus permits height adjustment of the bolt **66** as seen in FIGS. 2 and 4 where the cap **60** is in its raised position and then lowered to its lowered position. In the embodiment of FIGS. 2 and 3 the height of the cap **60** is varied by removing the cap **60** and adjusting the bolt **66** accordingly. The cap **60** then is returned.

In FIG. 5 an alternate cap unit **60A** is illustrated wherein the adjustment may be made without removing the cap. A bolt **66A** has a flat head **68A** exposed from the exterior of the cap **60A** for adjustment by a screwdriver or the like. The top wall portion **70** of the cap **60A** rests on a nut **80** secured by weld **82** to the bolt shank. The bolt shank then extends into a nut **74** welded on the lower surface of the pool wall flange **34**. Thus adjustment of the bolt **66A** will cause the cap **60A** to be lowered and raised as desired.

A third alternate cap adjusting bolt **60B** is shown in FIG. 6. The heads of the bolts **36B** interconnecting the gutter flange **32** to the pool wall flange **34** are tapped to threadedly receive an adjustment bolt **66B**. The flat head **68B** and nut **80B** are similar to the structure of FIG. 5. This arrangement does not disturb the seal held by the bolts **36** between the gutter and the pool walls.

It is to be appreciated that through the use of either of the caps **60**, **60A** or **60B** in units of FIGS. 2, and 4, 3 and 5 that the edge of the pool around its perimeter may be maintained in a level condition by appropriate adjustment of selected bolts **66**, **66A** or **66B**. It is further seen that the height of the pool edge may be varied to change the amount of splashing that occurs and thereby alter the amount of water being exposed to the dampening action of the gutter **24** and the baffle plate **48** or **48A**.

Some changes may be made in the construction and arrangement of my swimming pool skimming gutter without departing from the real spirit and purpose of my invention, and it is my intention to cover by my claims, any modified forms of structure or use of mechanical equivalents which may be reasonably included within their scope.

I claim:

1. A swimming pool skimming gutter, comprising:

a trough adapted to receive water from a swimming pool,

said trough adapted to be placed in communication with an outlet drain,

water control flow means for controlling the flow of water into and out of said gutter, and

said water control flow means including an element adjustably connected to the inner longitudinal wall of said trough for varying the height of said inner trough wall whereby a predetermined thickness of water may be skimmed from pool water.

2. The structure of claim **1** wherein said trough is channel-shaped and said apertured plate includes a portion which extends longitudinally diagonally downwardly and outwardly across said trough thereby providing direct access into said other compartment from outwardly splashing water.

3. The structure of claim **2** wherein said apertured plate is integral with a horizontally disposed deck plate extending outwardly from the top edge of said apertured plate and which is integral with the outer wall of said channel-shaped trough, and the lower end of said apertured plate is positioned in the vertex between the bottom and outer walls of said trough thereby mechanically locking said apertured plate in place and strengthening said deck plate.

4. The structure of claim **3** wherein said deck plate and said apertured plate are formed from a single sheet of material and said outer and bottom walls of said trough are formed from a single sheet of material, and detachable means interconnecting said outer wall and said deck wall together.

5. The structure of claim **2** wherein said apertures in said aperture plate portion are progressively smaller from top to bottom whereby splashing water is relatively freely flowable into said first compartment through the top of said plate portion and is metered out into said second compartment through the bottom of said plate portion and a portion of water directed against the bottom portion of said plate portion is deflected downwardly into said other compartment.

6. The structure of claim **1** wherein said element is further defined as an inverted channel member positioned on said inner trough wall, and adjustable bolt means exposed to the exterior of said channel member interconnects the bottom wall of said channel with the top edge of said inner trough wall.

7. A swimming pool skimming gutter, comprising:

a trough adapted to receive water from a swimming pool,

said trough adapted to be placed in communication with an outlet drain,

water control flow means for controlling the flow of water into and out of said gutter,

said control flow means including an apertured plate in said trough for dampening the movement of water into said trough,

said plate being positioned in said trough such that it divides said trough into two compartments whereby water directed towards said plate is adapted to be divided between said compartments, the water going to one of said compartments passing through said apertures in said plate,

said two compartments being in communication with each other and the water in said one compartment may flow into said other compartment, and

said apertured plate being upstanding in said trough and extends above the inner longitudinal side edge of said trough to be exposed to water splashing over said inner longitudinal side edge of said trough.

8. The structure of claim **7** wherein said water control flow means includes an element adjustably connected to the inner longitudinal wall of said trough for varying the height of said inner trough wall whereby a predetermined thickness of water may be skimmed from pool water.

9. The structure of claim **8** wherein said element is further defined as an inverted channel member positioned on said inner trough wall, and adjustable bolt means exposed to the exterior of said channel member interconnects the bottom wall of said channel with the top edge of said inner trough wall.

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