Aug. 12, 1969 K. WEBER 3,460,166

MULTITEMPERATURE SWIMMING POOL

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FIG. 1.

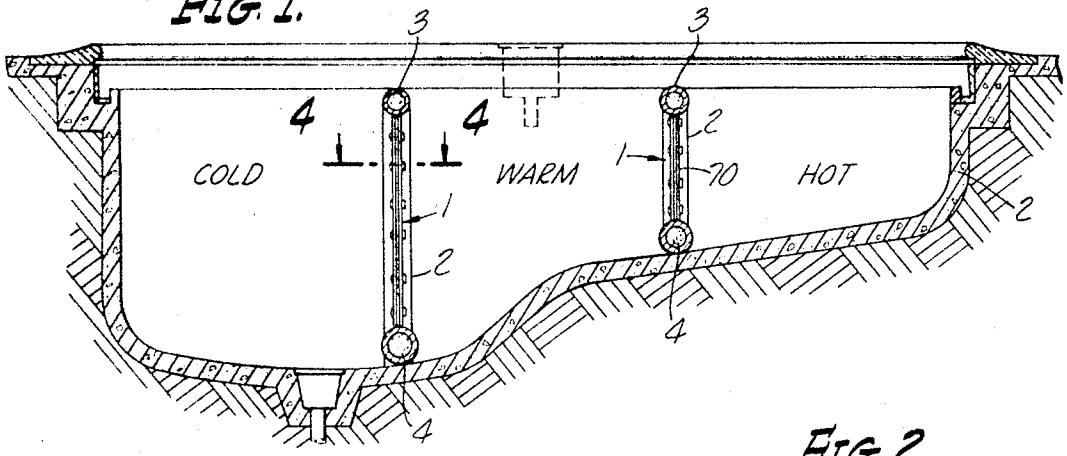
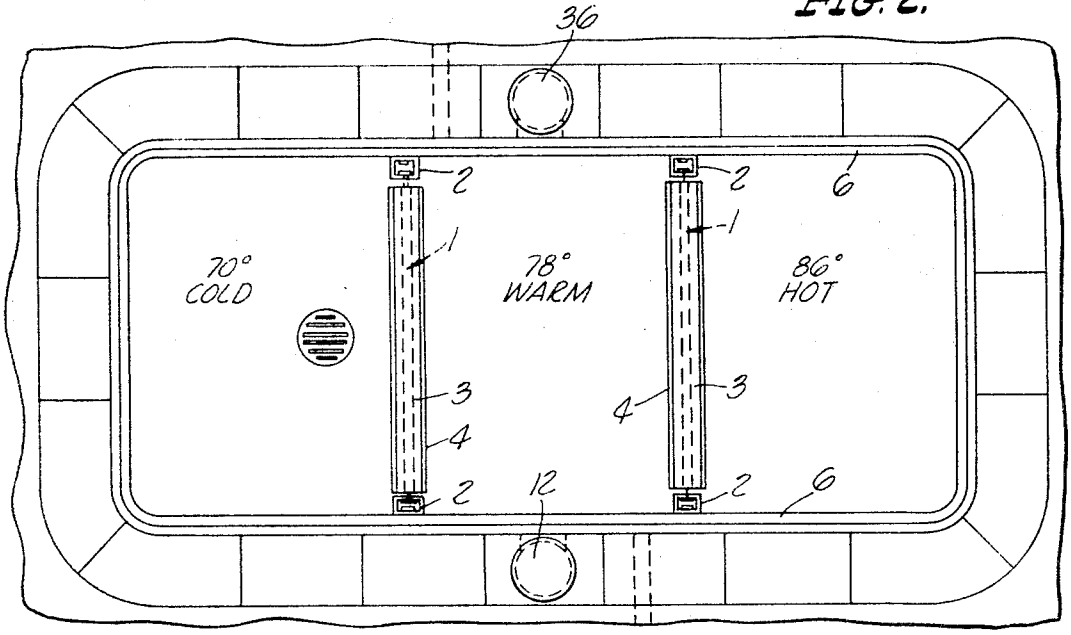


FIG. 2.



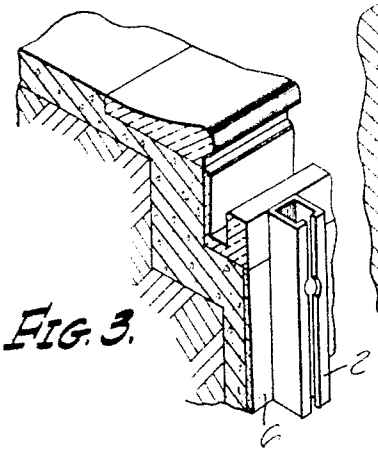


FIG. 3.

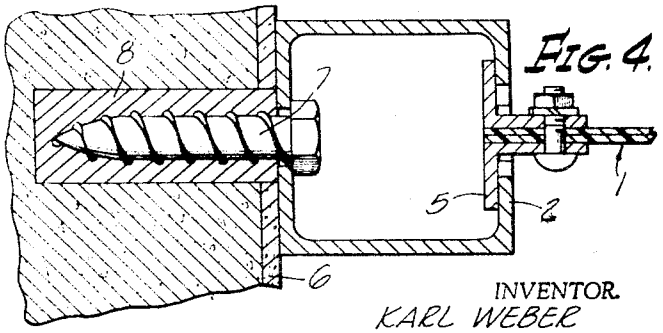


FIG. 4.

INVENTOR.
KARL WEBER
BY Lyon & Lyon
ATTORNEYS

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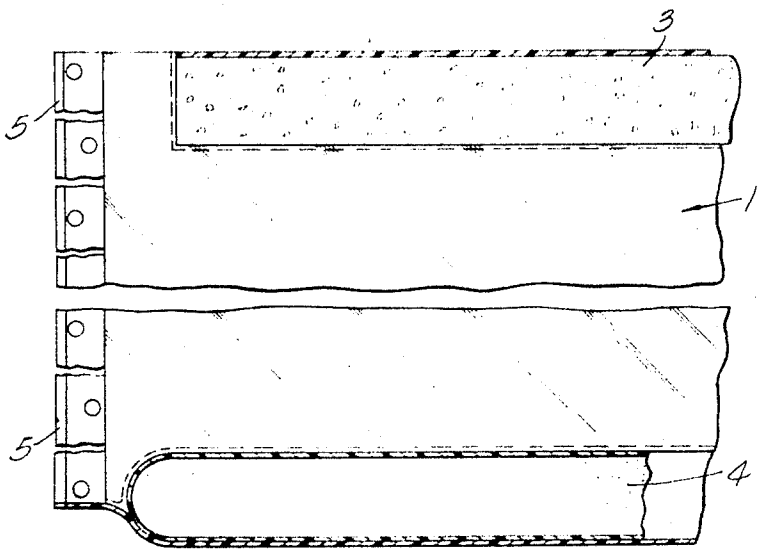
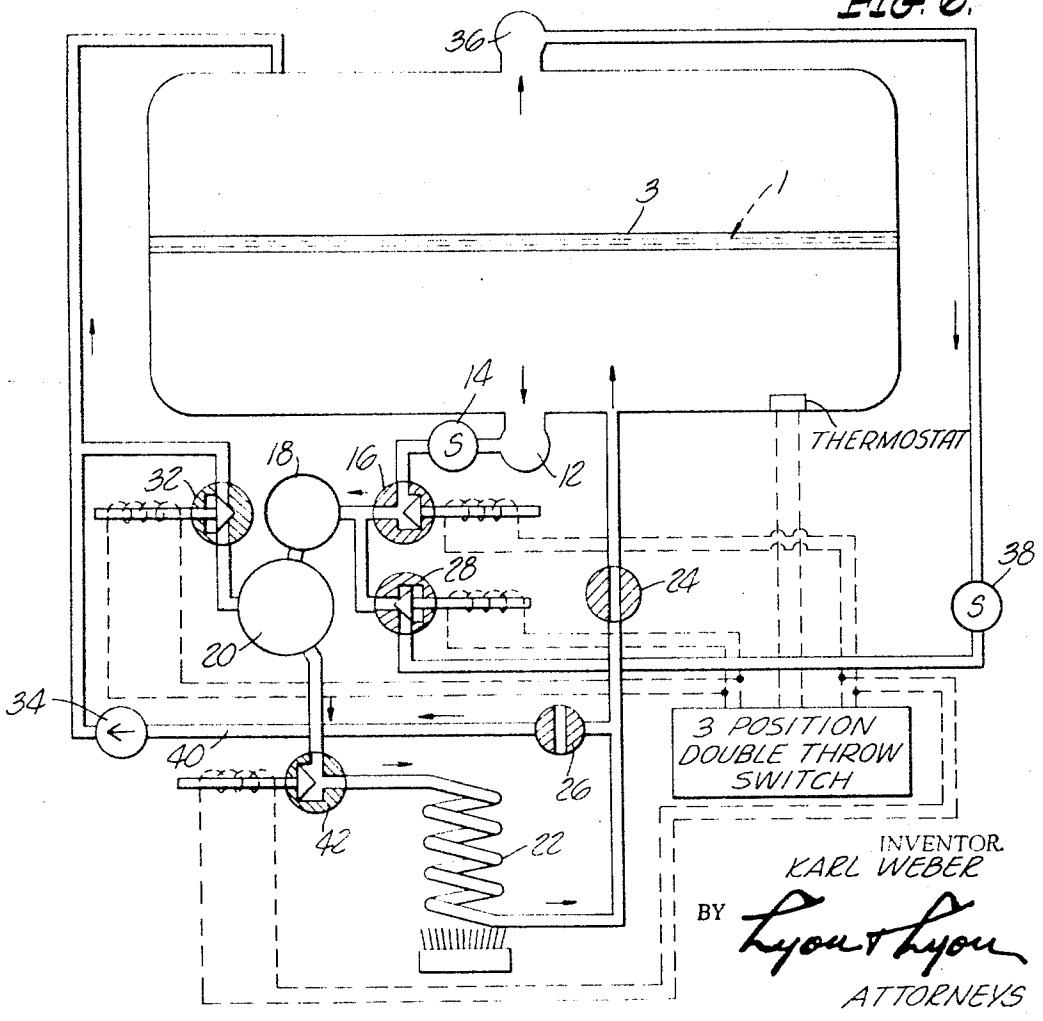


FIG. 5.

FIG. 6.



INVENTOR.
KARL WEBER
BY Lyon & Lyon
ATTORNEYS

Aug. 12, 1969 K. WEBER 3,460,166

MULTITEMPERATURE SWIMMING POOL

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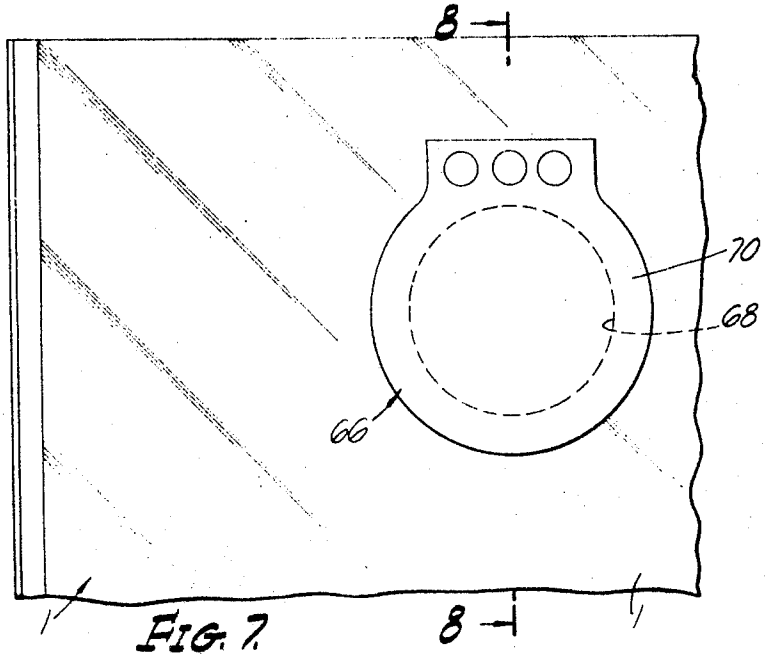


FIG. 7.

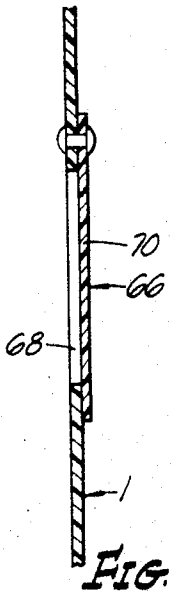


FIG. 8.

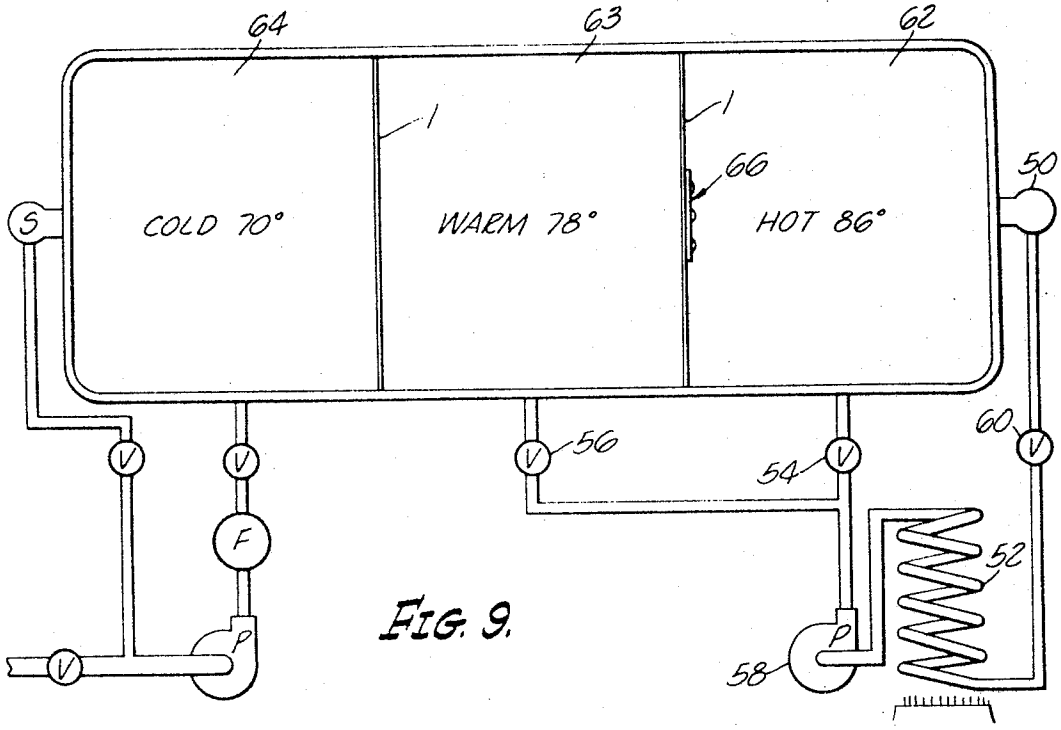


FIG. 9.

INVENTOR.
KARL WEBER
BY Lyon & Lyon
ATTORNEYS

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MULTITEMPERATURE SWIMMING POOL

Karl Weber, Box 509, Rancho Santa Fe, Calif. 92067

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Int. Cl. E04h 3/16
U.S. Cl. 4—172 8 Claims

ABSTRACT OF THE DISCLOSURE

The purpose of this invention is to provide means for heating a swimming pool at an economic rate and/or to provide a high temperature side for therapeutic purposes and a regular temperature side for family swimming which is adaptable to most existing swimming pools.

The primary object of the present invention is to provide a heating means with which different temperatures may be maintained in a swimming pool.

Another primary object of the present invention is to provide heating means which heats only a portion of the swimming pool.

A further object of the present invention is to provide a heating means which is adaptable to most existing swimming pools.

A still further object of the present invention is to provide a means for separating the pool into segments.

A further object of the present invention is to provide separating means which may be easily removed or replaced with a minimum amount of time and effort by the owner.

A still further object of the present invention is to provide means where portions of the swimming pool can be heated to a relatively high temperature for therapeutic purposes thus saving the cost of heating the whole pool.

Still further object and advantages of the present invention which will become apparaent from the following detailed description taken with the accompanying drawings wherein:

FIGURE 1 is a side cross-sectional elevation of a swimming pool containing the curtain of the invention.

FIGURE 2 is a top elevation illustrating the curtain of the invention dividing a swimming pool into multiple segments.

FIGURE 3 is a partial cross-sectional elevation of the curtain retaining means and the side of the swimming pool.

FIGURE 4 is a top cross-sectional elevation of the side of the swimming pool and the curtain retaining means taken through lines 4—4 of FIGURE 1.

FIGURE 5 is a partial cross-sectional elevation of the dividing curtain.

FIGURE 6 is a schematic illustration of the heater and associated apparatus using a single pump circulating system and a single curtain.

FIGURE 7 is a frontal elevation showing the dividing curtain with a flapper check valve therein.

FIGURE 8 is a cross-sectional elevation of the dividing curtain of FIGURE 7 taken through lines 8—8.

FIGURE 9 is a schematic illustration showing a two pump circulating system and multiple dividing curtains.

Upon analyzing the drawings taken with the following description, it should be noted at the onset that the multi-pump circuit of FIGURE 9 can be utilized equally well instead of the single pump system of FIGURE. It should also be understood that the pools shown in FIGURES 6 and 9 could be divided into halves either widthwise or lengthwise and the choice being the preference of purpose made by the owner without departing from the spirit of the present invention.

Referring now to FIGURE 1 which shows the cross-

section of a swimming pool divided by plastic curtains 1. The plastic curtains 1 being held in place at the sides of the pool by brackets 2 and floatably positioned above the surface of the water by a float 3, composed of a Styrfoam or other equivalent buoyant material. These are further maintained along the entire bottom of the pool by weights 4 sewn in the bottom of the curtains 1. This weight 4 may be comprised of sand or any other material which will assume the contour of the bottom of the pool so as to form a semi-water-tight configuration between the curtains 1 and the bottom of the pool.

Referring now to FIGURES 3 and 4, a bracket 2 is affixed to the wall 6 of the pool. For the purpose of illustration, this bracket 2 is shown attached by placing a lag 8 in the side of the pool and attaching the bracket by a screw 7 through the bracket into lag 8.

The curtains 1 have multiple flange brackets 5 attached to its ends. When the curtain is to be placed in the pool, these flanges are dropped into the bracket 2. The bottom weighted portion 4 of the curtain sinks to the bottom of the pool pulling these flanges down and the floatable portion into the bracket 2 until each bracket is in place and 3 floating on top and the weighted portion is firmly on the bottom of the pool.

This simple construction thus makes the curtain simple to install and remove. After removal, the curtain may thus be folded and stored in a box or soil-type bag.

Referring now to FIGURE 6, the pool is divided lengthwise into a warm side 9 and a cold side 10 by curtain 1. In order to heat the warm side 9, the water from the pool is circulated through a skimmer 12, through strainer 14, through valve 16, which is in its open position, by pump 18. The water is filtered by filter 20 and directed into heater 22 and directed to the pool by valve 24 which is open and by valve 26 which is now closed.

In order to filter the water in the "cold" side of the pool which is done alternately with the "hot" side of the pool, valve 28 is opened and valve 16 closes off the "hot" side of the pool. Water from the "cold" side flows through the skimmer 36, through strainer 38, through open valve 28, through the pump 18 and filter 20. Valve 32 is opened and directs the water back to the pool. Check valve 34 is provided in line 40 which leads from the heater.

If the owner wishes to raise the temperature of the "cold" side slightly, water may be drawn from the "hot" side 9 by opening valve 16 and closing valve 28. Water is pumped by pump 18, through filter 20, then through the now open valve 32 to the "cold" side of the pool. In this type of installation the increase of water in the "cold" side will cause the water to flow around the ends and beneath the curtain into the "hot" side and thus prevent overflow of the "cold" side.

When it becomes desirous to heat the water of the "cold" side of the pool, valve 26 is opened. This may be a manual valve or one that is energized electrically.

Water is taken from the "cold" side of the pool in the same manner as discussed previously in the circulation cycle. However, in this instance, valve 32 is closed and valve 42 is opened. This allows water to be pumped through filter 20 into the heater 22. The water from the heater is pumped through valve 26 into line 40, through the one-way check valve 34, and into the "cold" side of the pool. Valve 32 is closed and prevents the water from flowing back into the filter.

Suitable timing devices are associated to provide alternate filtration cycles of the "hot" and "cold" sides and are well understood in the art.

FIGURE 9 illustrates the use of multiple curtains dividing the pool into regions of several different temperatures. In this illustration two separate circulation and filtration systems are utilized. Water is drawn from

strainer **50**, filtered by filter **60** and flows through heater **52** and pumped back to the pool by pump **58**.

In order to raise the temperature of the "hot" end **62**, valve **54** is opened. This valve as well as the valve **56**, which leads to the warm section **63** may be either manually operated or preferably thermostatically controlled. To raise the temperature of the warm section **63** and otherwise circulate and filter the water therein, valve **56** is opened and water added to this section. To prevent overflow from this section and to allow water from this section to be filtered, a flapper valve **66** is provided in the curtain which allows the water to flow into the "hot" section **62**.

This construction of the flapper valve is illustrated by FIGURE 7. This valve comprises a hole **68** cut in the curtain and a flap **70** over the hole. This flap **70** is positioned so that water will flow from the warm section **63** to the "hot" section **62**, but not from the "hot" section to the warm section.

The "cold" section **64** is provided with a pump operated circulating and filtering units similar in construction to that provided by the warm and "hot" sections **63** and **62**.

While the preferred embodiments of the invention have been illustrated and described herein, the invention is not to be construed as limited to the specific details disclosed herein, except as included in the following claims.

I claim:

1. In combination with a swimming pool: a curtain dividing said swimming pool into separate different temperature units, cyclic means for alternately circulating and filtering said units, means for heating one of said units, said heating means being associated in said filtering and circulating means, valve means in said filtering and circulating means to provide for heating the water in the "hot" side of said swimming pool, the combination thus comprising a "cold" side and a "hot" side of said swimming pool.

2. The combination described in claim **1** wherein said curtain comprises a non-permeable material affixed at the ends of a swimming pool, said curtain being weighted at its bottom portion and provided with a floatation means in its uppermost extremity.

3. The combination described in claim **1** wherein said swimming pool comprises an outlet and an inlet on said "hot" side and a like outlet and inlet on said "cold" side, said outlets having a common alternate operating filtration and circulation system.

4. The combination described in claim **1** wherein said circulating and filtering systems operate alternately to filter and recirculate the "hot" side of said pool, and then the "cold" side of said pool, said circulating system having a heater to heat the water in the "hot" side of said pool only during the circulating and filtering cycle of said "hot" side.

5. The combination described in claim **1**, means for taking water from the "cold" side of said pool and pumping said water through the heater normally associated with said "hot" side to heat, filter, and recirculate said water from said "cold" side to raise the temperature therein.

6. The combination described in claim **1** wherein said pool is divided into several separate different temperature units, means for heating and filtering one or more of said units, and a separate means for circulating and filtering the other of said units.

7. The combination described in claim **1** wherein said curtain comprises a non-permeable material affixed at the sides of the pool and at least one of said curtains has a valve means to allow water to flow from one temperature unit to another to prevent overflow in said unit.

8. The combination described in claim **1** wherein said swimming pool comprises an outlet and an inlet on said "hot" side and a like outlet and inlet on said "cold" side, said outlets having separate filtration and circulation systems, and at least one of said circulation systems having a heating means associated therewith.

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LAVERNE D. GEIGER, Primary Examiner

H. K. ARTIS, Assistant Examiner