ABSTRACT

A cover for the surface of the water in a swimming pool comprises a membrane the buoyancy of which can be varied from positive to negative and vice versa so that it either floats on the surface or lies on the bottom. The membrane may be flexible and formed with deflatable air pockets or may be rigid and the pockets arranged to be flooded.
SWIMMING POOL COVERS

This invention relates to swimming pools and is particularly concerned with covers for such pools.

According to the present invention, a cover for a swimming pool comprises a flexible imperforate membrane weighted and shaped so that it will rest submerged on the bottom of the pool, loading means on a single line joining opposite edges of the cover to define a weighted line across the membrane, means defining air pockets carried by the membrane which when filled with air cause the membrane to float freely and evenly on the surface of the water in the pool, and means for emptying the pockets of air to cause the membrane to sink firstly along the weighted line and the remainder of the membrane to bend upwardly to allow water to bypass the membrane. The cover may be provided with hoses connecting points on its periphery with contiguous anchorage points on the edge of the pool, each line being of a length to reach the bottom of the pool when hanging vertically from its anchorage point.

The invention thus provides a floating cover for the water in a swimming pool which cover is adapted to be rendered heavier than water so as to sink to the bottom and give access to the water and subsequently to be made buoyant and rise to the surface again.

Reference will now be made to the accompanying drawings illustrating, by way of example only, several embodiments of the invention. In the drawings:

FIG. 1 is a perspective view of a flexible inflatable cover for a rectangular pool,

FIG. 2 is a fragmentary cross section of a flexible inflatable cover illustrating a particular method of fabrication

FIG. 3 is a view similar to FIG. 2 illustrating another method.

In FIG. 1 the outline of a swimming pool is indicated by the broken lines 1 and a cover 2, adapted to float on the surface of the water in a pool, consists of a polyvinylchloride (PVC) inflatable mattress divided transversely into four sections each connected and being capable of being inflated with air through a respective flexible hose 3.

The hoses 3 are each connected at one end to a corner of the cover and at the other end to an anchorage on the edge of the pool from whence by means of further piping 3b and manifolds 3c they are connected to an electrically driven reversible air pump 3d. In the drawing the cover is shown inflated and floating on the surface of the water but by simply switching on the pump 3d in the direction to evacuate the air the cover ceases to be buoyant and sinks to the bottom.

To accelerate and control the sinking process the PVC material may be loaded with a heavy filler and/or thin lead plates may be incorporated in pockets formed in the cover. It will be appreciated that when the cover sinks the whole of the water in the pool will be required to pass from below to above the cover and unless a very ample free surface is allowed around the edge of the cover it may be desirable to load the cover mainly along the shorter axis 4 and progressively less towards the ends. This will ensure that the center sinks first and the ends bend upwards to facilitate the transfer of water. Control of the movement of the cover may also be effected by differential pumping of the hoses 3 connected to the separate sections of the cover.

The length of each hose 3 is carefully adjusted so as to be taut when the cover is resting on the bottom so as to minimise skewing of the cover relatively to the pool.

To raise the cover it is only necessary to press a switch to actuate the pump 3d in the direction to inflate the cover and it will rise to the surface. Pressure sensitive switches may be incorporated to stop the pump when the cover is fully inflated or fully deflated, respectively.

The flexible cover of FIG. 1 may be fabricated similarly to a conventional rubber or plastic air mattress but the methods shown in FIGS. 2 and 3 are preferred. In FIG. 2 the cover comprises a sheet 24 of heavily loaded PVC such as is used for floor coverings to the underside of which an indented sheet 25 of thin plasticised PVC is welded at intervals quilt fashion to form "blisters". In FIG. 3 the sheet 24 has a series of thin walled plasticised PVC tubes 26 located by flexible straps 27 to its under surface. This latter type of fabrication involves less welding and enables the buoyancy chambers (the tubes 26) to be renewed if necessary. In this connection it will be appreciated that whatever plastic material is used in any of the embodiments of the present invention it will be selected to have the maximum resistance to the chemicals normally used in swimming pools as is consistent with the necessary physical requirements.

What I claim is:

1. A cover for a swimming pool comprising:
   i. a flexible imperforate membrane weighted and shaped such that it will rest submerged on the bottom of the pool,
   ii. loading means on a single line joining opposite edges of the cover to define a weighted line across said membrane,
   iii. means defining air pockets carried by said membrane which when filled with air cause the membrane to float freely and evenly on the surface of the water in the pool and,
   iv. means for emptying said pockets of air to cause the membrane to sink firstly along said line weighted and the remainder of the membrane to bend upwards to allow water to by-pass the membrane.

2. A cover as claimed in claim 1 wherein the cover is provided with hoses connecting points on its periphery with contiguous anchorage points on the edge of the pool, each line being of a length to just reach the bottom of the pool when hanging vertically from its anchorage point.

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