

United States Patent

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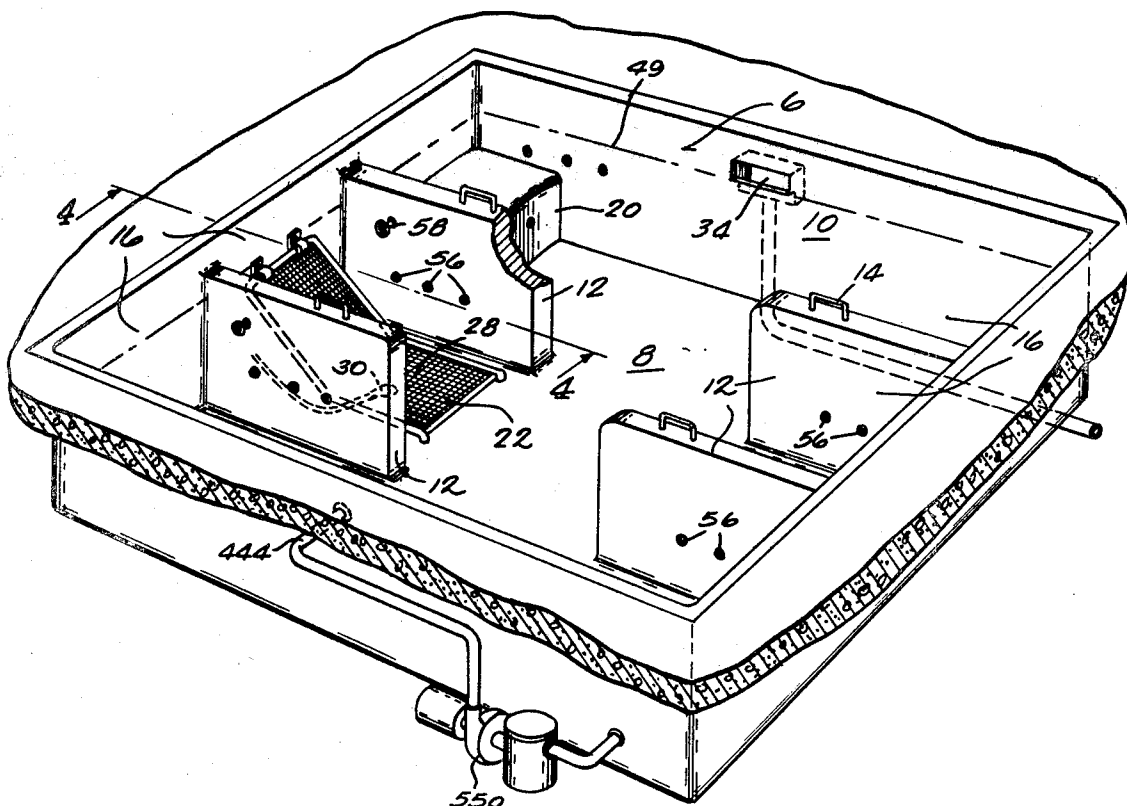
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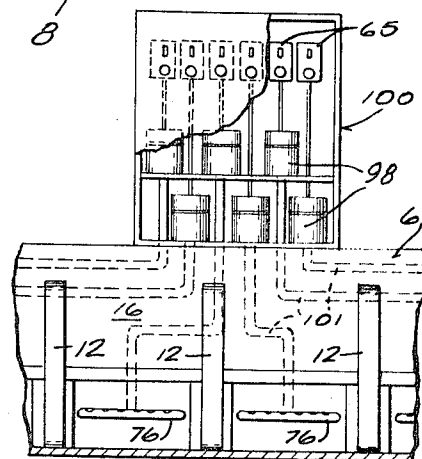
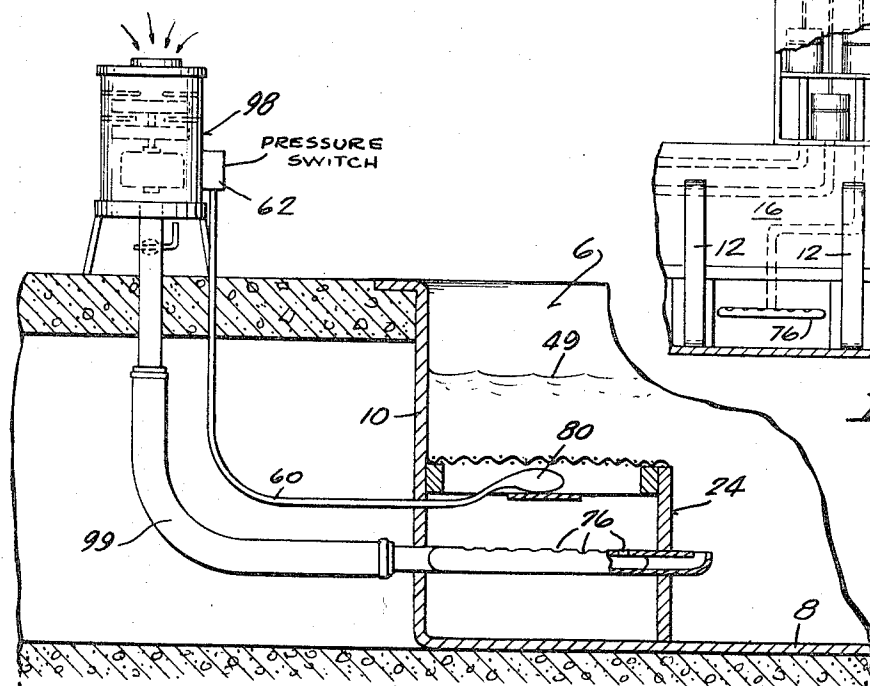
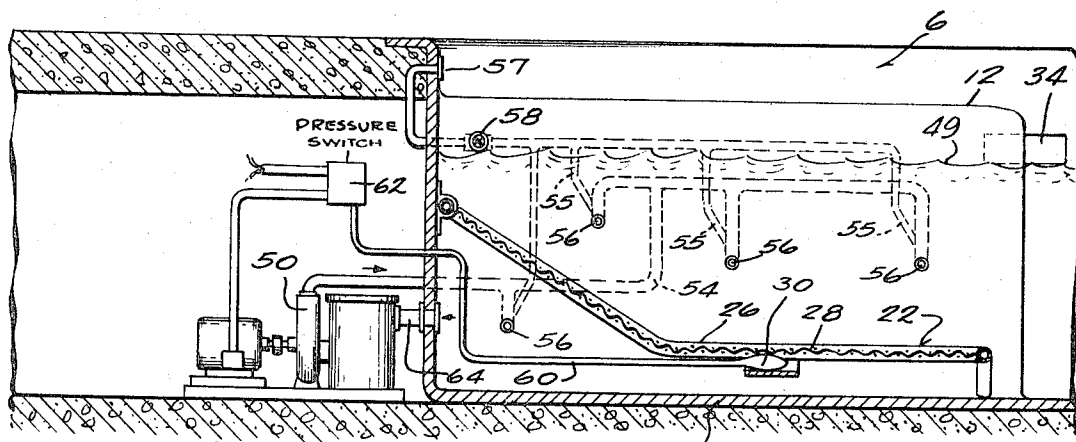
[54] **THERAPEUTIC POOL**
10 Claims, 6 Drawing Figs.

[52] U.S. Cl..... 128/66,
4/178
[51] Int. Cl..... A61h 9/00
[50] Field of Search..... 128/66;
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ABSTRACT: A pool provided with conventional water circulating, cleaning, chlorinating or other treating devices has alcoves to permit individual users occupying the respective alcoves to regulate the degree of turbulence to which they respectively are subject, thereby combining individual controls of turbulence with participation in the use of water purification facilities common to the entire pool. The individual therapeutic equipment comprising either compressed air or water with entrained air bubbles, or both, can conveniently be energized automatically by a pressure bulb and pressure switch when the user occupies his compartment.





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THERAPEUTIC POOL

BACKGROUND OF INVENTION

Therapeutic equipment has commonly been used in tubs or the like which require completely separate facilities for each user. Either separate water purification means is needed or the tub is drained and refilled prior to occupation by another user.

It is also old to equip fairly large pools with whirlpool devices of one kind or another. However, in such installations, everyone using the pool is subject to the same intensity of therapeutic action of the water.

SUMMARY OF INVENTION

The instant apparatus differs from all equipment previously known to me in that it is easily installed and has such water purification equipment as may be necessary and which handles all of the water of the pool regardless of the number of treatment alcoves, while nevertheless enabling each user to have his own therapeutic apparatus functioning in his own alcove without interfering with the use of therapeutic apparatus in other alcoves at different degrees of intensity.

In the preferred practice of the invention, the pool is made unitarily, the whole construction preferably being sufficiently light so that the pool can be prefabricated and installed as a unit either above or below ground. This is practicable because the device need not be comparable in size to a swimming pool, even though it may be equipped with a water purification system such as commonly used in connection with a swimming pool. Thus constructed unitarily and in a size to permit unitary installation, the cost is relatively low and this is particularly true in relation to other devices for individual therapeutic treatment.

BRIEF DESCRIPTION OF DRAWINGS

FIG. 1 is a diagrammatic view in perspective fragmentarily illustrating a therapeutic pool made in accordance with this invention.

FIG. 2 is a diagrammatic fragmentary detail view in perspective showing how conventional water treating equipment can be provided to serve the entire pool.

FIG. 3 is a fragmentary detail view showing a modified embodiment in which it is unnecessary to provide a separately fabricated couch or seat.

FIG. 4 is a detail view on an enlarged scale taken in cross section on the line 4-4 of FIG. 1.

FIG. 5 is a fragmentary detail view in section similar to FIG. 4 but showing a somewhat modified construction.

FIG. 6 is a fragmentary diagrammatic elevation on a reduced scale showing an optional assembly for control of turbulence in the individual alcoves.

The pool 6 is preferably prefabricated to include a bottom 8 and sidewalls 10, the whole assembly preferably being made much lighter than a conventional swimming pool. It can desirably be handled unitarily to be placed either above or in the ground.

Projecting from some of the sidewalls are relatively short partitions 12 preferably provided with handles 14 for the convenience of the occupants of the resulting alcoves 16. Each alcove is large enough to accommodate a single patient and each opens into the center of the pool and in use is full of water to the depth established in the pool as a whole.

Individual alcoves may, as in FIG. 3, be designed with a sloping headrest portion 18. Alternatively, the alcoves may be equipped with fixed seats 20 or separately fabricated lounges 22 as in FIGS. 1 and 4 or with separately fabricated chairs 24 as in FIG. 5. I have shown at 20 a contoured seat without a back. Whatever is employed by way of a separately fabricated lounge or chair, there is preferably a frame 26 either with hinged seat or having a reticulated flexible web 28 to yield under the weight of the user, thereby compressing some type of pressure-operated control device such as the bulb 30 to start the therapeutic mechanism as hereinafter described.

The therapeutic equipment is desirably individual to the respective alcoves 16. It may comprise either means for jetting streams of air into the water of the alcove or means for jetting water recirculated by pump 50, preferably filled with air bubbles by aspirating nozzles 56 which have air inlets 55 (FIG. 4). FIG. 5 shows only the preferred use of air jets 76 from pipe 740 through pipe 99 from blower 98, it being understood that either or both may be employed as desired, and either or both may have the jets at any level or position within the alcove.

It is preferred that the entire pool 6 have conventional water clarification and purification equipment and water level maintaining means such as is commonly employed in swimming pools but not commonly used in therapeutic apparatus. One of the walls 10 may be provided with a surface skimmer opening at 34 as shown in FIG. 3. The overflow into opening 34 is passed through a filter 36, a heater 38 and, if need be, a chlorinator 40 from which the pump 42 recirculates the water to the pool. A drain is provided at 44 at any desired point. Replacement water may be admitted as desired. The equipment of the pool as a whole may also include a small recirculator at 550 which has a return nozzle 444 directed toward the skimmer 34 so that any floating material will tend to be propelled toward the skimmer. The level at which water is maintained is not critical, the level at 49 being an exemplification. It will be understood that no claim is made to the water clarification or purification or level-establishing means per se. Any or all of these parts may be used in such combination and relationship as may be appropriate.

Whatever the water clarification system may be, the effect will be to treat the water of the entire pool regardless of how many alcoves are provided for individual patients. This makes it unnecessary to change the water of the treating area when one patient leaves and another enters. It also makes it unnecessary to provide separate purification systems for each treating zone. The water of the entire pool will be kept sanitary just as the water of a swimming pool is kept sanitary regardless of how many bathers may be using it.

Water turbulating openings into the individual alcoves are provided as needed. These communicate with water or air pipes connected with pumps for creating turbulence. The resulting turbulence, in practice, is substantially limited to the water of the individual alcove. FIG. 4 shows at 50 a recirculating pump to which water is returned through pipe 64 and which has an outlet connection through pipe 54 with a plurality of aspirating nozzles 56 which are directed below water level toward the lounge 22 upon which the user may be reclining. Aspirating nozzles 56 may receive air from a common aerator 57. Water jetted against the patients by the nozzles 56 is filled with bubbles aspirated into the water at the respective nozzles. The aerated jets have powerfully stimulating therapeutic action. It will be understood that nozzles 56 will preferably be duplicated at both sides of the recess or alcove. The intensity of turbulence created in the alcove may optionally be regulated by the user himself through manipulation of one or more valves such as that shown at 58.

It will be understood that the initiation of action may be time-controlled or controlled by any appropriate switch which can safely be operated by the patient himself. It is not desired to limit the invention to the use of a fluid-filled bulb as a means of starting the apparatus by closing a remote pressure switch. However, this does have advantages. The weight of the user will compress the bulb 30. This may be filled either with liquid or gas. The fluid displaced through the line 60 closes a pressure switch 62 controlling the electrical current to the pump 50, thereby initiating the jetting of water and entrained air toward the body of the user.

In the construction shown in FIG. 5, the pressure switch 62 energizes the motor of an air pump which may take the form of blower 98 which delivers compressed air through the pipe 99 to a ring 76 beneath the seat 24 so that the resulting bubbles rise about the legs and body of a patient using seat 24.

The pumps or blowers for the several alcoves may have separate timers or manual switches 65 (if automatic switching

is not used) and may be associated in a cupboard or wall cabinet 100 if desired. This may be located at any convenient point and the pipes 101 run from the several blowers to outlets in the respective alcoves. Those shown at 76 in FIG. 5 are examples.

While an air system in general accordance with FIG. 5 is preferred, it is contemplated that any combination of water and air may be used to provide the therapeutic effect limited to the vicinity of a single patient using a single alcove.

It is my intention to indicate by the variety of alternative arrangements illustrated that I do not wish to limit the invention to the preferred employment of air jets or to any particular level or disposition of nozzles or to any particular arrangement for the support of the patient or to any specific means of control of the amount of turbulence.

Any reference to water purifying means is intended to refer inherently to any arrangement for filtering, sterilizing or similarly treating the water of the entire pool, no claim being made to any such means per se but only for the combination with means for purifying all the water of the pool, of means of the individual therapeutic treatment of patients by controlled water turbulence substantially limited in effect to a particular alcove containing a portion of the water of the pool. Turbulence in a given alcove does not materially affect the water in other alcoves of the pool. However, the turbulence results, in some limited extent, to interchange of water between the individual alcove and the purified water content of the pool as a whole.

I claim:

1. A water-containing pool having an alcove of small area as compared with the pool and with accommodation for a patient, which alcove is open to the pool for interchange of water therewith, and separate means for jetting a fluid into the alcove in a direction transverse to the direction in which the alcove opens to the pool for creating turbulence in the water of the respective alcove independently of the pool.

2. A combination according to claim 1 in which the means for creating turbulence is provided with means for automatically initiating its operation when a patient arrives.

3. A combination according to claim 2 in which the alcove has a patient-receiving support which yields under the weight of the patient, the means for creating turbulence including an electrically operable pump provided with a switch, and means whereby the switch is closed to effect pump operation when said yieldable support yields under the weight of the patient.

4. A combination according to claim 1 in which a respective

alcove is provided with means for the support of a patient, means for directing toward the patient fluid jets for establishing turbulence in the water of the respective alcove substantially independent of turbulence of the water of the pool as a whole.

5. A combination according to claim 4 in which the patient-support means includes a yieldable member, and the means for effecting turbulence in the water of the alcove includes a pump, a pump-driving motor, a pressure switch controlling the motor, and a fluid-containing bulb under said yieldable member and having fluid tube connection with the pressure switch for closing the pressure switch when the bulb is subjected to the weight of a patient.

6. In combination, a water-containing pool prefabricated for unitary handling and placement and having a bottom and external walls and partial partitions defining alcoves sufficiently large to accommodate patients for therapeutic treatment, said alcoves communicating with the water of the pool, means for purifying the water of the entire pool, including the water in respective alcoves, and means including nozzles for jetting fluid independently into the water of respective alcoves for creating turbulence therein for the therapeutic treatment of patients exposed thereto in the respective alcoves.

7. A combination according to claim 6 in which the means for jetting fluid into the respective alcoves comprises a separate pump for each alcove, a plurality of said nozzles opening into the respective alcove and with which such pump communicates, and means for admitting air to said pump as at least a partial component of the fluid to be jetted from said nozzles.

8. A combination according to claim 7 in which said pump has an inlet located above the level of water in said pool, said fluid being comprised entirely of air.

9. A combination according to claim 6 in which the means for jetting fluid comprises at least some of said nozzles below the level of water in the pool, and a water pump having an inlet communicating with said pool and an outlet communicating with said nozzles, and patient-controllable means for the operation of said pump.

10. A combination according to claim 6 in which the means for jetting fluid into the water of the alcove comprises a pump having a motor and having a discharge connection with the jetting means of the alcove, a switch controlling the motor, and pressure controlled means for closing the switch and including means operated by the weight of a patient using the alcove.

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