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NOTICE OF ENTITLEMENT

I, Kenneth Lochbaum, of 3002 East 38th Street, Erie, Pennsylvania 16510-2924 U.S.A., being the applicant in respect of Application No. 12541/95, state the following:-

~~The person(s) nominated for the grant of the patent:~~
~~is the actual inventor.~~

~~The person(s) nominated for the grant of the patent:~~
~~is the applicant of the basic application listed on the patent request form.~~

The applicant is entitled to rely on the application listed in the Declaration under Article 8 of the PCT as follows:
the applicant is the actual inventor.

The basic application listed on the Declaration under Article 8 of the PCT is the first application made in a Convention country in respect of the invention.

Kenneth Lochbaum Dated: 5-22, 1996

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(56) Prior Art Documents
US 4934689
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(57) Claim

1. An exercising and conditioning facility comprising a closed loop water track and a soaking pool;

said track having a bottom, an outside wall and an inside wall extending up from said bottom;

said bottom of said exercise and conditioning facility being substantially flat providing for generally constant depth water for walking or running exercises;

an island is formed inside said inside wall of said track;

said soaking pool is formed in said island;

said soaking pool having a bottom and an outside wall extending up from said bottom of said soaking pool and defining said soaking pool;

a channel formed in said island extending between said soaking pool and said track;

said channel having a substantially flat bottom whereby a user can walk through said channel between said track and said soaking pool;

said exercise and conditioning facility further comprising pumps and water jets positioned around said track to impart a constant velocity to water in said track in a range of 3 to 20 mph (4.8 to 32.2 km/hr) whereby said user walking with said flow is assisted for rehabilitation therapy and said user walking against said flow is resisted for exercise and conditioning therapy.

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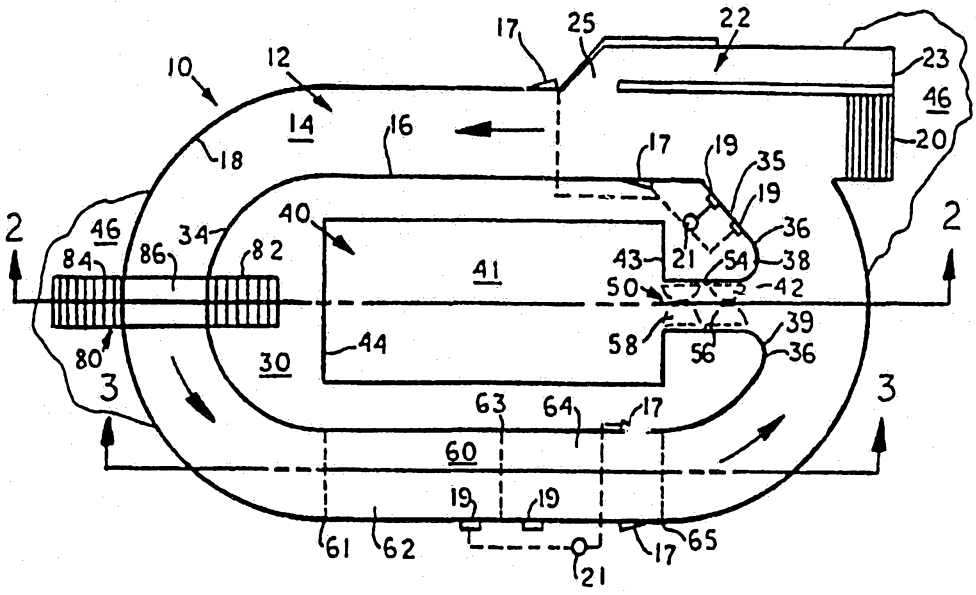
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(54) Title: DEEP WATER EXERCISE AND THERAPY POOL



(57) Abstract

A water exercise device made up of a closed loop track (12), a soaking pool (40) and a channel (50) providing a walking path therebetween. The water depth is generally uniform in depth to provide running and walking exercise but deeper areas (44, 63) may be provided to require swimming in a part of the track (12) and total immersion in the soaking pool (40). A constant water flow rate is maintained in the track (12) and a temperature gradient may be maintained between the track (12) and the soaking pool (40) to provide temperatures appropriate for different activity levels by a user.

DEEP WATER EXERCISE AND THERAPY POOL

BACKGROUND OF THE INVENTION

Applicant is aware of the following Patents: U. S. Patent No. 3,691,995 to Little, granted September 19, 1972, discloses a swimming pool for exercising and conditioning horses comprising a circular track with a depth that requires swimming, an island in the area enclosed by the track and bridges to the island. Ramps for access to and egress from the pool are provided.

U.S. Patent No. 4,203,390 to Brazelton, issued May 20, 1980, discloses a closed loop pool for exercising horses with a central island, and a longitudinally shiftable bridge to access the island. The depth of the pool requires swimming around the island from the entry area to the exit area. Concrete and stainless steel are disclosed as preferred construction materials. Ramp entry and a stairs and ramp exit are disclosed. Water circulation means are disclosed to facilitate water filtration. No current is generated to vary swimming conditions.

U.S. Patent No. 3,259,105 to Shepard issued July 5, 1966, discloses a circular swimming depth exercise pool for horses with a ramp for entry and exit and a draw bridge across the entry to provide a walkway for a trainer.

U.S. Patent No. 4,934,689 to Burdenko, issued June 19, 1990, discloses one or two exercise pools in the enclosed area, reached by arch type bridges high enough that they do not obstruct users of the pool. Also disclosed are jets of water to create a variation of conditions to eliminate monotony in training and create fun.

U.S. Patent No. 4,197,815 to Brazelton, issued April 15, 1980, discloses an exercise pool for animals of a depth sufficient to require swimming and pumping sufficient water to establish a current to swim against.

The soaking pool of the present invention has an inclined bottom that is not shown in Burdenko. Doors or other structure separating the soaking from the loop pools

are not shown in any of the references. The widening of the loop to prevent whirlpooling at the doors is not shown in the references.

Summary of the Invention

According to the present invention in a first aspect there is provided an exercising and conditioning facility comprising a closed loop water track and a soaking pool;

said track having a bottom, an outside wall and an inside wall extending up from said bottom;

said bottom of said exercise and conditioning facility being substantially flat providing for generally constant depth water for walking or running exercises;

an island is formed inside said inside wall of said track;

said soaking pool is formed in said island;

said soaking pool having a bottom and an outside wall extending up from said bottom of said soaking pool and defining said soaking pool;

a channel formed in said island extending between said soaking pool and said track;

said channel having a substantially flat bottom whereby a user can walk through said channel between said track and said soaking pool;

said exercise and conditioning facility further comprising pumps and water jets positioned around said track to impart a constant velocity to water in said track in a range of 3 to 20 mph (4.8 to 32.2 km/hr) whereby said user walking with said flow is assisted for rehabilitation therapy and said user walking against said flow is resisted for exercise and conditioning therapy.

According to the present invention in a second aspect there is provided an exercising and conditioning facility comprising a closed loop water track and a soaking pool;

said track having a bottom, an outside wall and an inside wall extending up from said bottom of said exercise and conditioning facility and defining said track;

said bottom of said exercise and conditioning facility having a first section, said first section being substantially level providing for constant depth water in said first section for walking or running exercises;

a swimming area is provided in said track comprising a down slope in said bottom of said track which increases said water depth in said track so that a user must swim for some distance;

an up slope in said bottom of said track which decreases said water depth so that said user can resume walking or running;

an island is formed inside said inside wall of said track;

said soaking pool is formed in said island;

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said soaking pool having a bottom and an outside wall;

a channel having a bottom is formed in said island extending between said soaking pool and said track;

said bottom of said channel being substantially level whereby said user can walk between said track and said soaking pool;

said exercise and conditioning facility further comprising pumps and water jets positioned around said track to impart a constant velocity to water in said track in a range of 3 to 20 mph (4.8 to 32.2 km/hr) whereby said user walking with said flow is assisted for rehabilitation therapy and said user walking against said flow is resisted for exercise and conditioning therapy.

According to the present invention in a third aspect there is provided an exercising and conditioning facility comprising a closed loop water track and a soaking pool;

said track having a bottom, an outside wall and an inside wall extending up from said bottom;

said bottom of said exercise and conditioning facility being substantially flat providing for generally constant depth water for walking or running exercises;

an island is formed inside said inside wall of said track;

said soaking pool is formed in said island;

said soaking pool having a bottom and an outside wall extending up from said bottom of said soaking pool and defining said soaking pool;

a channel formed in said island extending between said soaking pool and said track;

said channel having a substantially flat bottom whereby a user can walk through said channel between said track and said soaking pool;

temperature control means for maintaining a temperature gradient in said water whereby said water in said soaking pool is maintained at a first temperature sufficiently high to reduce hypothermia in said user due to low physical effort activities and said water in said track is maintained at a second temperature sufficiently low to cool said user due to aggressive activities in said track;

said exercise and conditioning facility further comprising pumps and water jets positioned around said track to impart a constant velocity to water in said track in a range of 3 to 20 mph (4.8 to 32.2 km/hr) whereby said user walking with said flow is assisted for rehabilitation therapy and said user walking against said flow is resisted for exercise and conditioning therapy.

According to the present invention in a fourth aspect there is provided an exercising and conditioning facility comprising a closed loop water track and a soaking pool;

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said track having a bottom, an outside wall and an inside wall extending up from said bottom;

said bottom of said exercise and conditioning facility being substantially flat providing for generally constant depth water for walking or running exercises;

water pumping means and water jets are positioned around said track to impart a constant velocity to water in said track whereby a user walking with said flow is assisted for rehabilitation therapy and said user walking against said flow is resisted for exercise and conditioning therapy;

an island is formed inside said inside wall of said track;

said soaking pool is formed in said island;

said soaking pool having a bottom and an outside wall extending up from said bottom of said soaking pool and defining said soaking pool;

a channel formed in said island extending between said soaking pool and said track;

said channel having a substantially flat bottom whereby said user can walk through said channel between said track and said soaking pool;

said exercise and conditioning facility further comprising pumps and water jets positioned around said track to impart a constant velocity to water in said track in a range of 3 to 20 mph (4.8 to 32.2 km/hr) whereby said user walking with said flow is assisted for rehabilitation therapy and said user walking against said flow is resisted for exercise and conditioning therapy.

It is desirable to maintain different areas of water at different temperatures. The track may be maintained at 80° F to 88° F and preferably between 84° F to 88° F so that the water will act to cool the body while the person is exercising. This temperature allows a user to exercise for a longer amount of time, thus enabling the person to exercise longer by allowing the body heat to be dissipated. When you are able to exercise longer your muscles are able to get stronger quicker for a given amount of exercise time.

On the other hand, the centre soaking pool may be maintained at a temperature ranging between 88° F and 102° F and preferably from 94° F to 96° F to help prevent hypothermia. This pool is useful for lower levels of activity such as

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rehabilitation therapy when one is unable to exercise as hard or strenuously as when the therapy has been completed. In lower levels of activity the user relies on the water to maintain body temperature while you are exercising so that you can exercise for a longer period in the pool and again the principle applies of getting stronger more quickly within a given amount of exercise time.

The speed of the water flow in the track may range from 3 to 20 mph and optimally approximately 7 to 10 mph to allow the water resistance created to be sufficient to allow the perfect anatomical position during exercise without artificially introducing any other devices to give resistance. The difference in speed preferred depends on the use of the pool. The faster currents are for the stronger users such a training athletes, the weaker currents are more helpful to weaker users such as those in rehabilitation therapy.

The channel jets at the openings at each end of the channel create a stream of water to keep the different temperatures from mixing to maintain the two temperatures.

Exercise pockets may be provided around the outside of the track to provide exercise stations around the track. In water exercise equipment may be stationed in the pockets for use during an exercise regime, while no obstruction is provided to those using the track.

It is an object of the present invention to provide an improved exercise and therapy pool.

It is another object of the present invention to provide a water exercise and therapy pool that is simple in construction, economical to manufacture and simple and efficient to use.

With the above and other objects in view, the present invention consists of the combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawing and more particularly pointed out in the appended claims, it being understood that changes may be

made in the form, size, proportions and minor details of construction without departing from the spirit or sacrificing any of the advantages of the invention.

BRIEF DESCRIPTION OF THE DRAWING(S)

FIGURE 1 is a top view of the water exercise and therapy device of the present invention.

FIGURE 2 is a cross sectional view taken on line 2-2 of Figure 1.

FIGURE 3 is a cross sectional view taken on line 3-3 of Figure 1.

FIGURE 4 is a top view taken of an alternative embodiment of the water exercise and therapy device showing exercise pockets and the temperature gradient maintaining water jets in the entrance channel.

FIGURE 5 is an enlarged isometric view showing the channel and the water jets located at the entrances from the channel to the track and to the pool.

FIGURE 6 is an enlarged side view of the channel showing the water jets.

DESCRIPTION OF THE PREFERRED EMBODIMENT(S)

Now with more particular reference to the drawings, an exercising and conditioning facility **10** is shown comprising a closed loop water lap pool track **12**, an island **30**, and a soaking pool **40**. Facility **10** is suitable for rehabilitation exercise and therapy, as well as athletic exercising and conditioning.

Track **12** has stair access **20** and handicapped ramp access **22**. Track **12** has substantially flat bottom **14**, inner wall **16** and outer wall **18**. Track **12** being of a depth, for example four (4) feet, suitable for walking about its entire length as shown in Figure 4.

In another embodiment, swimming area **60** may be provided where the depth is increased to a point where a standing person would be substantially submerged. The depth may increase to seven (7) feet deep for example. Down slope **62** increases the depth in swimming area **60** from down position **61** through maximum depth position **63** and up slope **64**

decreases the depth in swimming area **60** from maximum depth position **63** to up position **65**. The preferred seven foot maximum depth of swimming area **60** requires a user to swim for some of the distance between down position **61** and up position **65** on each lap around track **12**.

Wall jets **17** are supported in outer wall **18** and in inner wall **16**. Water is pumped from pumps **21** through wall jets **17** at a velocity higher than the velocity of water in track **12**. Wall jets **17** are inclined at an acute angle to the direction that the water in track **12** is intended to flow to urge water in track **12** to flow in the desired direction at a velocity suitable for walking and running. Sufficient water is pumped to create a constant velocity flow at a predetermined velocity suitable for exercising or conditioning. The flow is also suitable for using surface floats, skiing, boats and other water flotation devices.

Inlets **19** supply water to pumps **21** which supply water to wall jets **17**.

Island **30** is enclosed by track **12**. Bridge **80** provides access from walkway **46** across track **12** to island **30**. Bridge **80** has first stairway **82** on the end of island **30**, second stairway **84** on the end of walkway **46** and top walkway **86** extending therebetween.

Soaking pool **40** is formed in island **30**. Soaking pool **40** may have bottom **41** that inclines downwardly from first end **43** to a greater depth at second end **44** of soaking pool **40**. A heat gradient is maintained between soaking pool **40** and track **12**. Temperature control means may be used to separate the water in soaking pool **40** from the water in track **12** so that the water in soaking pool **40** may be maintained at a higher temperature than the water in track **12**. The temperature difference may be maintained. Doors **58** may be used to separate the different temperature areas. Doors **58** may be double acting so that they may be swung open in either direction.

In another embodiment, temperature gradient water jets **59** may be located on sides **54,56** of channel **54** adjacent track **12** and pool **40**. Water jets **59** will project a flow of water angularly across channel **50** to reduce the amount of water moving between track **12** and pool **40**, and will enable the temperature gradient to be maintained.

The temperature in soaking pool **40** is maintained at a first temperature that is sufficiently high to reduce the hypothermia in a user of soaking pool **40** due to low physical effort activities. Low effort portions of a conditioning or therapy regimen are conducted in soaking pool **40** where the first temperature will help the user maintain body heat. As the user's body heat is maintained during low effort activities, the user will be able to exercise longer at a particular session, for greater benefit to the user over a shorter overall period of treatment.

The temperature in track **12** is maintained at a second temperature that is kept sufficiently low so that the user will be cooled from his aggressive high physical effort activities in track **12**. High effort portions of a therapy or conditioning regimen will be conducted in track **12** or, in another embodiment, in track **12** and in exercise pockets **70** disposed around track **12**, where the second temperature will help the user dissipate heat. Thus the user will be able to exercise for a longer period of time at a particular session, for greater benefit to the user over a shorter overall period of treatment.

The temperature difference maintained between soaking pool **40** and track **12** is maintained within a range between 6°F. and 22°F. At less than 6°F. temperature difference the beneficial effects of a temperature difference are not significant. At more than a 22°F. temperature difference, the shock of the change to the user outweighs the benefit of the temperature difference. In a preferred embodiment the temperature difference is maintained within a range of 6°F. to 10°F.

The temperature of the water in track **12** is maintained within a range of 80°F. to 88°F. to provide the beneficial effect of cooling the user during aggressive activities. In a preferred embodiment the temperature of the water in track **12** is maintained within a range of 84°F. to 88°F.

The temperature of the water in soaking pool **40** is maintained within a range of 88°F. to 102°F. to provide the beneficial effect of reducing the hypothermia in a user during low physical effort activities. In a preferred embodiment the temperature of the water in soaking pool **40** is maintained within a range of 94°F. to 96°F.

Wall jets **17** maintain a constant flow current of water around track **12** of about 3 to 20 miles per hour for example or conditioning therapy. At less than 3 mph the resistance or assistance of the flow is not sufficient to provide a benefit. Above 20 mph the benefit to athletes for exercise purposes diminishes because the athlete cannot maintain an upright walking posture at current velocities above 20 mph. Most rehabilitation exercise and therapy and athletic exercise and conditioning will preferably be done at a predetermined constant velocity between 7 to 10 mph. First end **34** and second end **36** of island **30** are generally cylindrical. Second end **36** is divided into first part **38** and second part **39** by entrance channel **50**. First part **38** is flattened by straight surface **35** providing a widening of the flow path of track **12** downstream from the intersection of track **12** and channel **50** to prevent a whirlpool flow pattern from developing in the water at second end **36** of island **30** in track **12**.

Handicapped access ramp **22** has platform **23** that inclines down from walkway **46** to a depth of about 4 feet at flat part **25**.

Entrance channel **50** extends between soaking pool 40 and track **12**. Channel **50** has bottom 52, first side 54 and second side **56**.

In the embodiment of the invention shown in Figure 4, an exercise and therapy pool **10'** is shown comprising a closed loop water lap pool track **12'**, an island **30'**, and a soaking pool **40'**.

Track **12'** has stair access **20'** and handicapped rampaccess **22'**. Track **12'** has bottom **14'**, inner wall **16'** and outer wall **18'**. Track **12'** being of a depth, for example four (4) feet, suitable for walking and running.

Wall jets, similar to wall jets **17** shown in Figure 1, are supported in outer wall **18'** and in inner wall **16'**. Water from the wall jets flows at a velocity higher than the velocity of water in track **12'**. The wall jets are inclined at an acute angle to the direction that the water in track **12'** is intended to flow to urge water in track **12'** to flow in the desired direction at a velocity suitable for walking and running. Inlets similar to inlets **19** shown in Figure 1, supply water to pumps that supply water to the wall jets.

Island **30'** is enclosed by track **12'**. A bridge similar to bridge **80** shown in Figure 1, provides access from a walk across track **12'** to island **30'**.

Soaking pool **40'** is formed in island **30'**. Soaking pool **40'** has bottom **41'** that inclines downwardly from first end **43'** to a greater depth at second end **44'** of soaking pool **40'**. Doors similar to doors **58** shown in Figure 1, separate the water in soaking pool **40'** from the water in track **12'** so that the water in soaking pool **40'** may be maintained at a higher temperature than the water in track **12'**.

A heat gradient is maintained between soaking pool **40'** and track **12'**.

The wall jets maintain a constant flow current of water around track **12'** of about 3 to 20 miles per hour. First end **34'** and second end **36'** of island **30'** are generally cylindrical. Second end **36'** is divided into first part **38'** and second part **39'** by entrance channel **50'**. Second part **39'** is flattened by straight surface **35'** providing a

widening of track 12' to prevent a whirlpool flow pattern from developing in the water at second end 36' of island 30' in track 12'.

Handicapped access ramp 22' has platform 23' that inclines down the walkway to a depth of about 4 feet at flat part 25'.

Entrance channel 50' extends between soaking pool 40' and track 12'. Channel 50' has bottom 52', first side 54' and second side 56'. The door jets similar to door jets 59 shown in Figure 5, are fixed to side 53' of entrance 52'. The door jets direct streams of water toward soaking pool 40' and prevent water from flowing from soaking pool 40' to track 12'.

Exercise pockets 70' are formed in outer side walls 18' of track 12'. Exercise pockets 70' may be of the same depth as track 12' or of greater or lessor depth. Exercise pockets 70' have bottom 72', first side 74', second side 76' and rear side 78'. Exercise pockets 70' may have water exercise equipment 79' disposed therein for use during an exercise or therapy program.

The exercise pool may be provided with a filtration system and other accessories commonly used with swimming pools that are familiar to those skilled in the art.

The foregoing specification sets forth the invention in its preferred, practical forms but the structure shown is capable of modification within a range of equivalents without departing from the invention which is to be understood is broadly novel as is commensurate with the appended claims.

The claims defining the invention are as follows:

1. An exercising and conditioning facility comprising a closed loop water track and a soaking pool;

said track having a bottom, an outside wall and an inside wall extending up from said bottom;

said bottom of said exercise and conditioning facility being substantially flat providing for generally constant depth water for walking or running exercises;

an island is formed inside said inside wall of said track;

said soaking pool is formed in said island;

said soaking pool having a bottom and an outside wall extending up from said bottom of said soaking pool and defining said soaking pool;

a channel formed in said island extending between said soaking pool and said track;

said channel having a substantially flat bottom whereby a user can walk through said channel between said track and said soaking pool;

said exercise and conditioning facility further comprising pumps and water jets positioned around said track to impart a constant velocity to water in said track in a range of 3 to 20 mph (4.8 to 32.2 km/hr) whereby said user walking with said flow is assisted for rehabilitation therapy and said user walking against said flow is resisted for exercise and conditioning therapy.

2. The exercise and conditioning facility according to claim 1 wherein said constant velocity of water in said track is maintained in a preferred range of 7 to 10 mph (11.3 to 16.1 km/hr).

3. The exercise and conditioning facility recited in claim 1 or 2 wherein doors are provided in said channel to prevent flow of water through said channel and to maintain a temperature gradient between water in said pool and in said track.

4. The exercise and conditioning facility recited in claim 3 wherein temperature gradient water jets are provided in said channel to maintain said temperature gradient.

5. The exercise and conditioning facility recited in any one of the preceding claims wherein a temperature difference between water in said pool and in said track is maintained within a range between 6 and 22° F (3.3 and 12.2° C).

6. The exercise and conditioning facility recited in claim 5 wherein said temperature difference is maintained within a preferred range of 6 to 10° F (3.3 to 5.5° C).

7. The exercise and conditioning facility recited in any one of claims 1 to 4 wherein said water in said track is maintained within a temperature range of 80 to 88° F (27 to 31° C).

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8. The exer and conditioning facility recited in any one of claims 1 to 4 wherein said water in said track is maintained within a temperature range of 84 to 88° F (29 to 31° C).

9. The exercise and conditioning facility recited in any one of claims 1 to 4 wherein said water in said soaking pool is maintained within a temperature range of 88 to 102° F (31 to 39° C).

10. The exercise and conditioning facility recited in any one of claims 1 to 4 wherein said water in said soaking pool is maintained within a temperature range of 94 to 96° F (34 to 36° C).

11. The exercise and conditioning facility recited in claim 1 further comprising exercise pockets;

said exercise pockets being located in said outside wall adjacent said track;

said pockets having a bottom and sides;

said exercise pockets being open to said track and adapted to have water exercise equipment positioned in said exercise pockets.

12. The exercise and conditioning facility recited in claim 1 wherein said bottom of said soaking pool is inclined from a first end of said soaking pool adjacent said channel to a second end of said soaking pool remote from said channel so that the depth of said soaking pool is sufficient to immerse a tall person in a standing position adjacent said second end of said soaking pool.

13. The exercise and conditioning facility recited in claim 1 further comprising a bridge extending across said track from said outside wall of said track to said inside wall of said track; and

said bridge crosses said track at a sufficient height that said bridge will not interfere with said user of said track.

14. The exercise and conditioning facility recited in claim 1 further comprises stairs to provide access to said track and a ramp to provide handicapped access to said track.

15. An exercising and conditioning facility comprising a closed loop water track and a soaking pool;

said track having a bottom, an outside wall and an inside wall extending up from said bottom of said exercise and conditioning facility and defining said track;

said bottom of said exercise and conditioning facility having a first section, said first section being substantially level providing for constant depth water in said first section for walking or running exercises;

a swimming area is provided in said track comprising a down slope in said bottom of said track which increases said water depth in said track so that a user must swim for some distance;

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an up slope in said bottom of said track which decreases said water depth so that said user can resume walking or running;

an island is formed inside said inside wall of said track;

said soaking pool is formed in said island;

said soaking pool having a bottom and an outside wall;

a channel having a bottom is formed in said island extending between said soaking pool and said track;

said bottom of said channel being substantially level whereby said user can walk between said track and said soaking pool;

said exercise and conditioning facility further comprising pumps and water jets positioned around said track to impart a constant velocity to water in said track in a range of 3 to 20 mph (4.8 to 32.2 km/hr) whereby said user walking with said flow is assisted for rehabilitation therapy and said user walking against said flow is resisted for exercise and conditioning therapy.

16. An exercising and conditioning facility comprising a closed loop water track and a soaking pool;

said track having a bottom, an outside wall and an inside wall extending up from said bottom;

said bottom of said exercise and conditioning facility being substantially flat providing for generally constant depth water for walking or running exercises;

an island is formed inside said inside wall of said track;

said soaking pool is formed in said island;

said soaking pool having a bottom and an outside wall extending up from said bottom of said soaking pool and defining said soaking pool;

a channel formed in said island extending between said soaking pool and said track;

said channel having a substantially flat bottom whereby a user can walk through said channel between said track and said soaking pool;

temperature control means for maintaining a temperature gradient in said water whereby said water in said soaking pool is maintained at a first temperature sufficiently high to reduce hypothermia in said user due to low physical effort activities and said water in said track is maintained at a second temperature sufficiently low to cool said user due to aggressive activities in said track;

said exercise and conditioning facility further comprising pumps and water jets positioned around said track to impart a constant velocity to water in said track in a range of 3 to 20 mph (4.8 to 32.2 km/hr) whereby said user walking with said flow is assisted for rehabilitation therapy and said user walking against said flow is resisted for exercise and conditioning therapy.

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17. An exercising and conditioning facility comprising a closed loop water track and a soaking pool;

said track having a bottom, an outside wall and an inside wall extending up from said bottom;

said bottom of said exercise and conditioning facility being substantially flat providing for generally constant depth water for walking or running exercises;

water pumping means and water jets are positioned around said track to impart a constant velocity to water in said track whereby a user walking with said flow is assisted for rehabilitation therapy and said user walking against said flow is resisted for exercise and conditioning therapy;

an island is formed inside said inside wall of said track;

said soaking pool is formed in said island;

said soaking pool having a bottom and an outside wall extending up from said bottom of said soaking pool and defining said soaking pool;

a channel formed in said island extending between said soaking pool and said track;

said channel having a substantially flat bottom whereby said user can walk through said channel between said track and said soaking pool;

said exercise and conditioning facility further comprising pumps and water jets positioned around said track to impart a constant velocity to water in said track in a range of 3 to 20 mph (4.8 to 32.2 km/hr) whereby said user walking with said flow is assisted for rehabilitation therapy and said user walking against said flow is resisted for exercise and conditioning therapy.

18. The exercising and conditioning facility recited in claim 17 further comprising means to prevent whirlpool flow patterns from developing at an intersection of said track and said channel;

said means comprising widening a flow path of said track adjacent to and downstream from said intersection of said track and said channel.

19. An exercising and conditioning facility substantially as described herein with reference to the accompanying drawings.

Dated 3 November, 1997
Kenneth Lochbaum

Patent Attorneys for the Applicant/Nominated Person
SPRUSON & FERGUSON

AUSTRALIAN PATENT OFFICE
13

SUBSTITUTE SHEET (RULE 26)

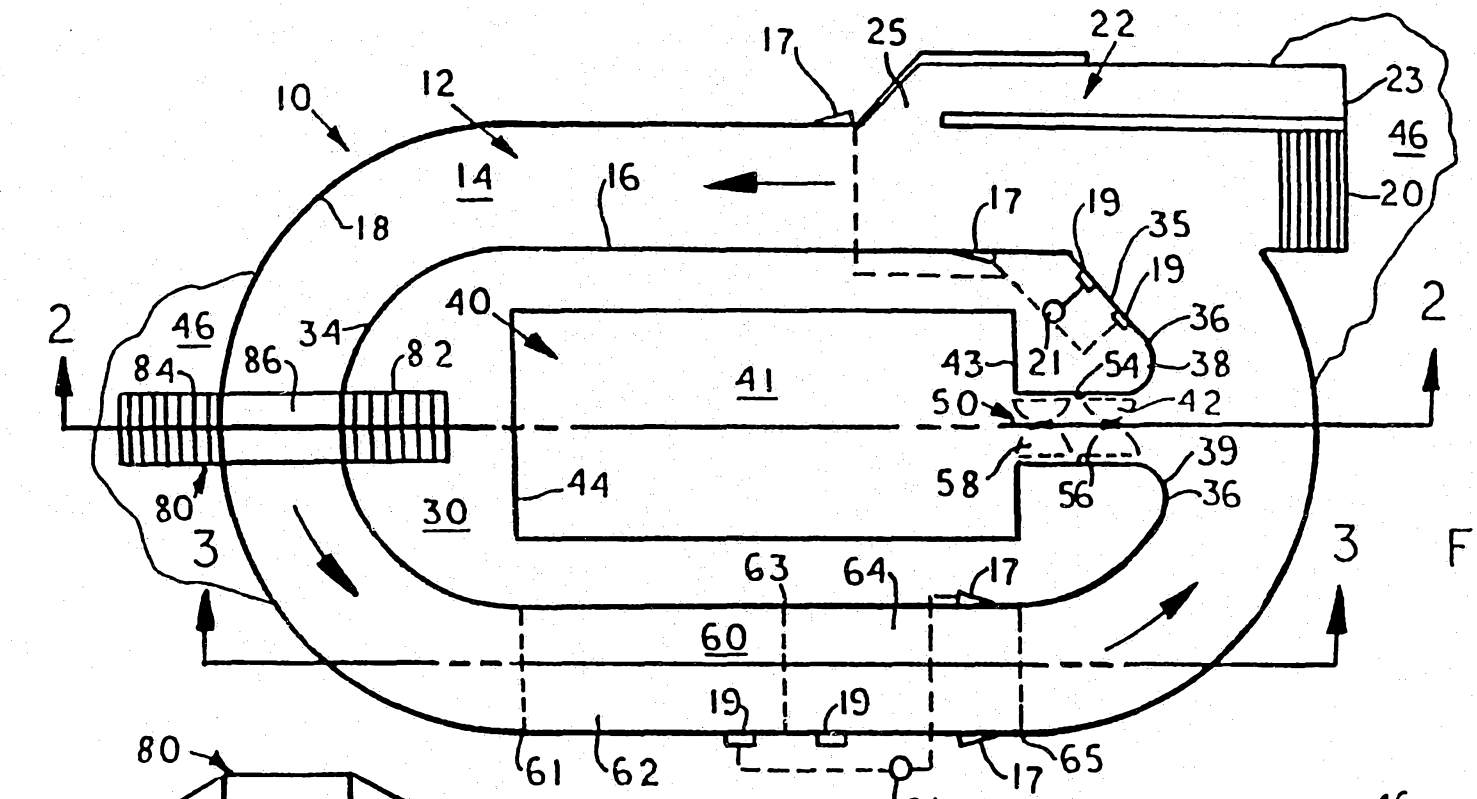


FIG. 1

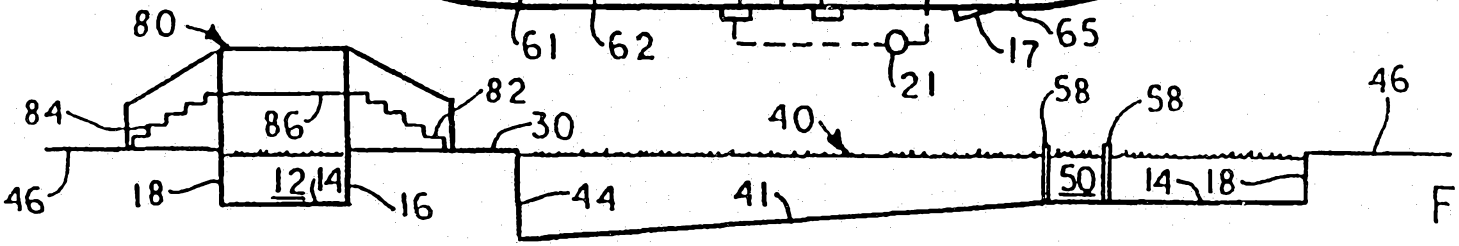


FIG. 2

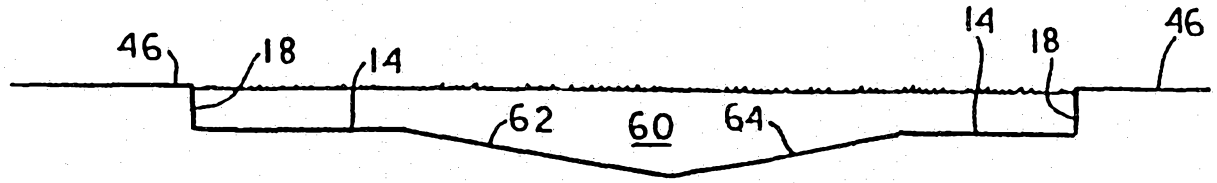


FIG. 3

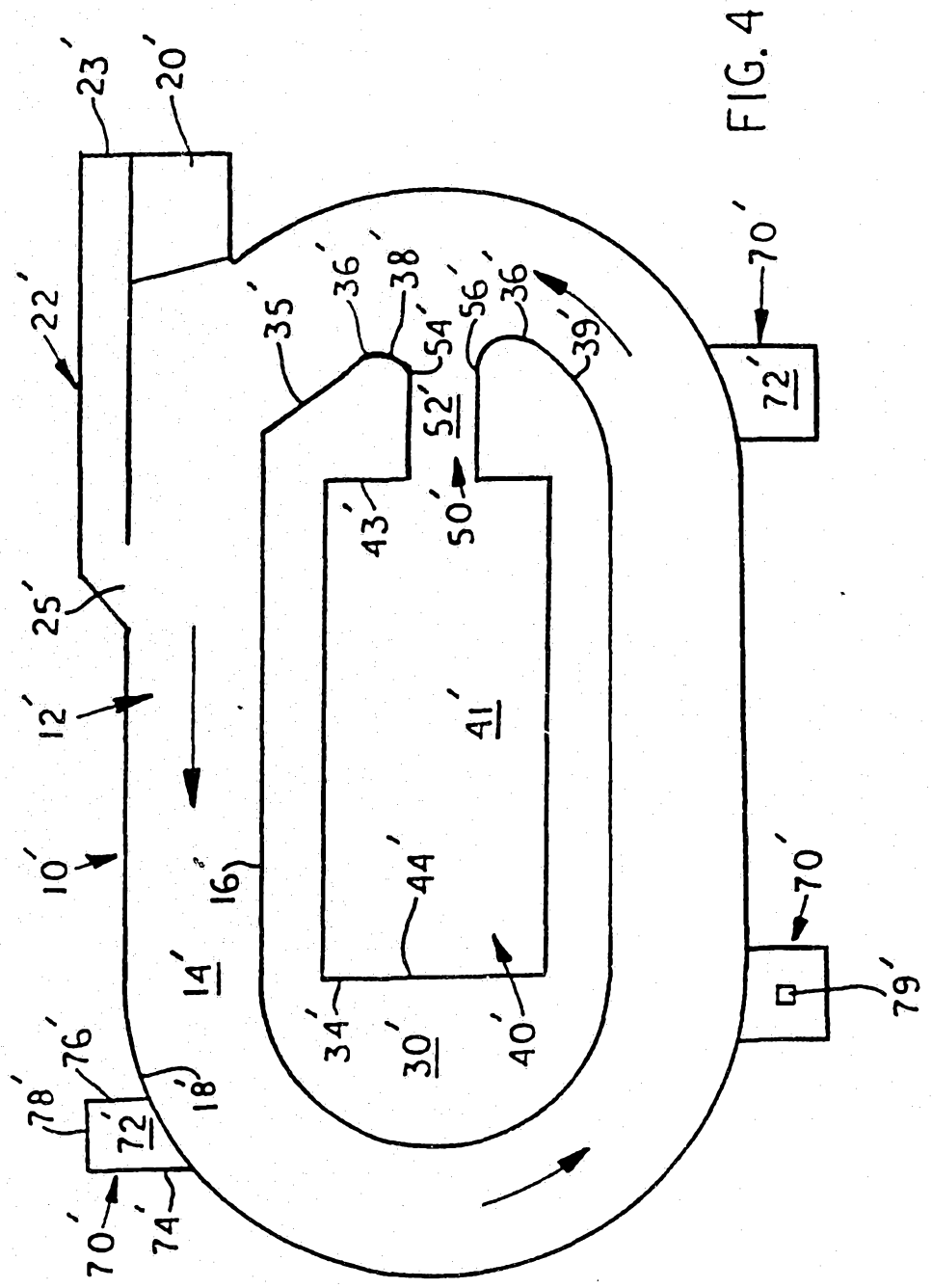

23'
20'
22'
35'
36'
38'
54'
56'
36'
39'
70'
72'
52'
50'
43'
25'
12'
41'
10'
16'
44'
14'
34'
30'
40'
70'
79'
76'
78'
72'
18'
70'
74'

FIG. 4

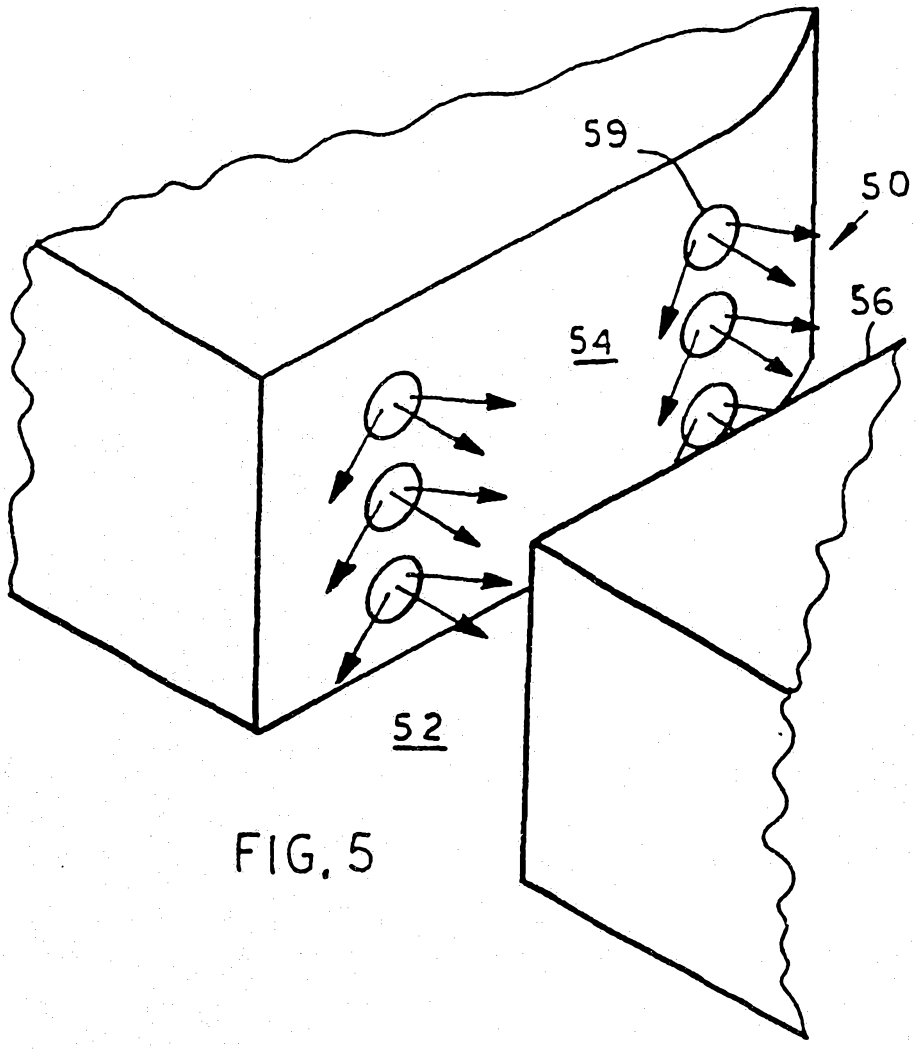


FIG. 5

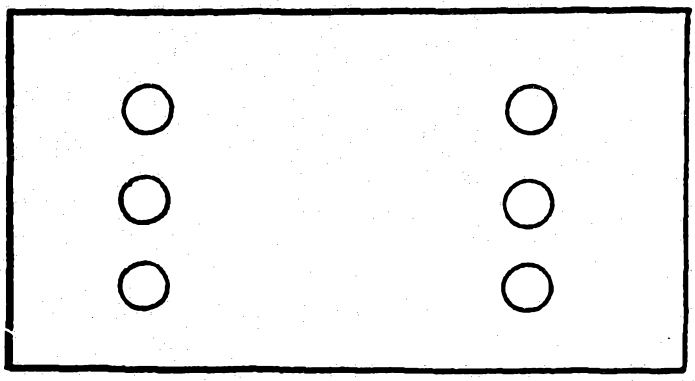


FIG. 6

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US94/12589

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :E04H 4/12, 4/14
US CL :4/489, 494, 507, 904
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 4/489, 494, 507, 904, 492, 496, 505, 506, 508, 509, 513, 541.1. 541.3, 541.4; 482/55; 119/702

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

none

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

none

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US, A, 5,217,420 (ABBOUDI) 08 JUNE 1993.	
A	US, A, 5,123,641 (ABBOUDI) 23 JUNE 1992.	
A	US, A, 5,098,085 (ABBOUDI) 24 MARCH 1992.	
A	US, A, 5,018,723 (BURDENKO) 28 MAY 1991.	
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A	US, A, 4,761,838 (HARGROVE) 09 AUGUST 1988.	
A	US, A, 4,551,108 (BASS) 05 NOVEMBER 1985.	

[X] Further documents are listed in the continuation of Box C. [ ] See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 21 FEBRUARY 1995	Date of mailing of the international search report 13 MAR 1995
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer for Robert M. Fetsuga Sheila H. Veney Paralegal Specialist Group 2400 Telephone No. (703) 308-1506

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US94/12589

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	US, A, 4,238,859 (BADON, JR.) 16 DECEMBER 1980.	
A	US, A, 4,203,390 (BRAZELTON) 20 MAY 1980.	
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