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3,664,585

THERAPEUTIC SHOWER HEAD

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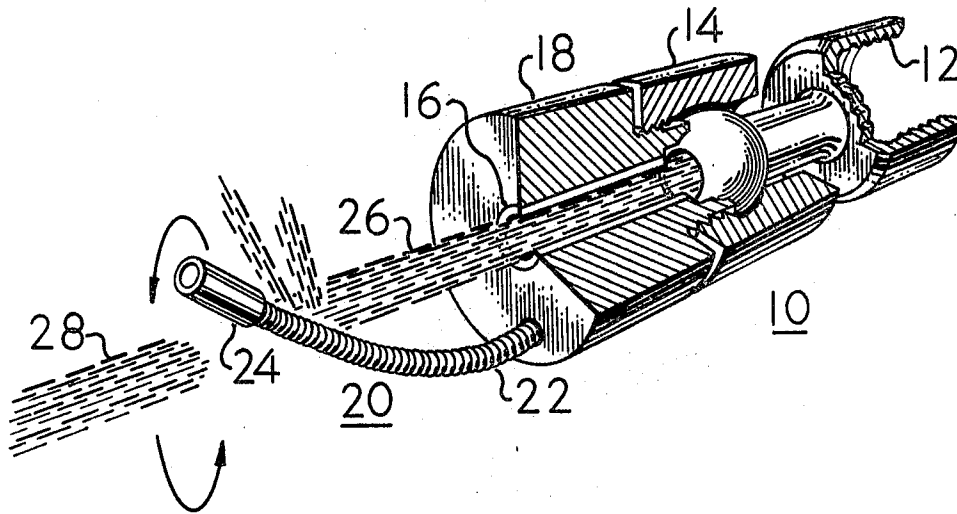


FIG. 1

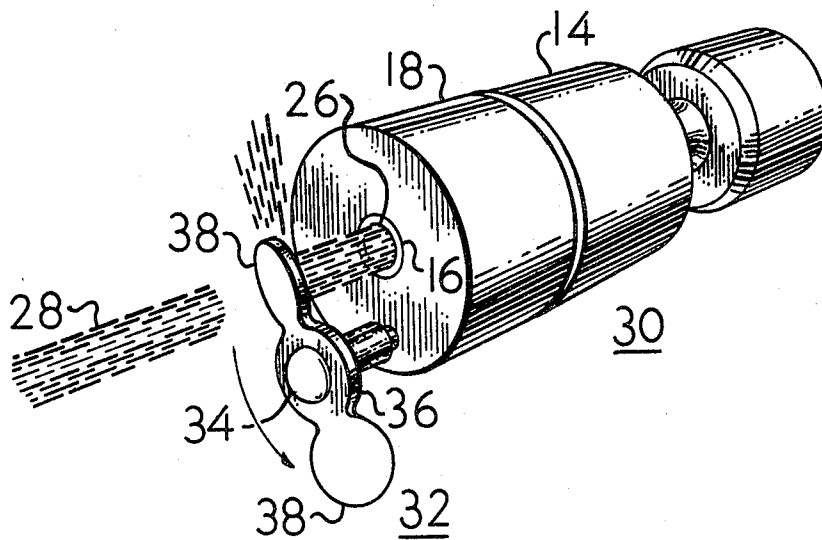


FIG. 2

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1 Claim

ABSTRACT OF THE DISCLOSURE

A therapeutic shower head is disclosed which includes a collimator for producing a single beam of water. A swivel arrangement is provided to allow the direction of the beam to be altered. A beam interrupter is provided at the output that pulsates the beam. The interrupter can either be dormant or if set into motion will derive energy from the beam and begin a sustained oscillation that will periodically interrupt the beam. The therapeutic benefits of the shower head are derived from both the single steady beam and from the pulsating beam.

This invention relates to a therapeutic shower head and more particularly to a shower head that produces a single, forceful beam of collimated water that can be made to pulsate and in a steady or pulsating state will provide therapeutic benefits to the user as a massage.

The therapeutic benefits of water therapy are well known. In particular, major hospitals and convalescent homes routinely use whirlpool baths as a therapeutic adjunct. The baths derive their name from the use of high pressure jets of water that cause the bath water to circulate rapidly. The muscle relaxant qualities of the rapidly circulating water and the water jets are well known. Particular benefit is derived from the jets that have been found to have deep penetrating power as a muscle relaxant.

This invention is based on the same operating principle as above except that a single jet (beam) of water is used and instead of immersing the therapeutic head in water as is done in the whirlpool bath, the beam is allowed to contact the user unimpeded by surrounding water. The beam is thus used as a therapeutic shower with what are believed to be equal or improved results as compared to those derived from the whirlpool bath. The penetrating power and thus therapeutic value of the disclosed shower head has been found to be related to the force that the water is allowed to exert in contacting the user with the larger force giving the greater therapeutic value.

While the feature of using a single, forceful beam of water from a shower head is believed to be unique, an additional improvement has been made to the single beam head that is believed to set it apart from any other design. The improvement, in addition, is believed to increase the shower head's therapeutic value. This improvement consists of a means of pulsating the beam as it leaves the head. The beam pulsations have been found by the user to increase the relaxing effect of the shower. It has also been found desirable by the user to make the pulsations optional with the means provided for easily starting and stopping the pulsator operation. In use, the pulsator power is derived from the beam.

It is accordingly an object of the present invention to provide an improved therapeutic shower head apparatus.

It is yet another object of the present invention to provide an improved therapeutic shower head apparatus that produces a single beam of water.

It is still another object of the present invention to provide an improved shower head apparatus that allows the direction of the beam to be altered.

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It is in addition another object of the present invention to provide an improved therapeutic shower head apparatus that can provide a pulsating beam of water at the discretion of the user.

Briefly stated, and in accordance with the presently preferred embodiment of the invention, a therapeutic shower head is provided which includes a swivel connection to allow altering the direction of the beam, a collimating section that causes the water to immerse from the head in a single, narrow beam, and a pulsator mounted at the output of the head that momentarily and periodically interrupts the beam to produce a series of pulsations.

For a complete understanding of the invention, together with an appreciation of other objects and advantages thereof, please refer to the attached drawings and the following detailed description of the drawings, in which:

FIG. 1 shows a therapeutic shower head apparatus in accordance with the present invention with a preferred embodiment of the beam pulsator. A quarter sectional view of the shower head body is included to show internal construction.

FIG. 2 shows a therapeutic shower head apparatus in accordance with the present invention with a second embodiment of a beam pulsator.

FIG. 1 shows a therapeutic shower head apparatus 10 in accordance with the present invention. The apparatus 10 includes a threaded section 12 for attachment to a shower arm, a ball swivel section 14 for changing the position of the shower head, a collimating section 16 for producing a narrow, highly collimated beam of water, a housing 18 for enclosing the collimator 16 and one embodiment of a beam pulsator 20 consisting of a coiled spring 22 and a weighted section 24. One end of the spring 22 is attached to the housing 18 and the other end is connected to the weighted section 24.

In operation, water (under pressure from the city water mains) passes through the threaded section 12, the ball swivel section 14 and then into the collimating section 16. The collimator 16 has very smooth walls and is of sufficient length to produce a highly collimated beam of water 26. The optimum collimator diameter based upon user preference is $\frac{1}{4}$ inch and a one inch collimator length has been found to provide sufficient collimation.

In operation, the collimated beam of water 26 leaves the collimator 16 and two courses of action are possible depending upon the state of motion of the coiled spring 22. If the spring 22 is stationary such that the beam 26 misses the spring, then the spring will remain stationary and the beam will precede to the user uninterrupted. If, on the other hand, the spring 22 is placed in motion such that contact is made between the spring and the beam 26, energy will be imparted to the spring to increase its motion. The result will be that the spring 22 will oscillate such that during a portion of its cycle the body of the spring will pass through the beam 26 and cause a momentary interruption of the beam. The result will be that the spring 22 will be caused to oscillate rapidly with an interruption of the beam 26 each time the spring passes through the beam. The weighted section 24 is provided to stabilize the oscillations of the spring 22. As the spring 22 continues to oscillate, a pulsating beam 28 will result that some users find more relaxing than a steady flow of water. The non-pulsating of steady flow is obtained by manually stopping the spring 22 from oscillating and leaving it in such a position that the beam 26 can no longer contact the spring body.

FIG. 2 shows a second embodiment of a therapeutic shower head apparatus 30 in accordance with the present invention in which another form of beam pulsator is used. The details of the shower head including the threaded

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section 12, the ball swivel section 14, the collimating section 16 and the housing 18 are identical to the details shown in FIG. 1. The second embodiment deviates from the shower head apparatus of FIG. 1 in that another form of beam pulsator 32 is shown consisting of a shaft 34 and a vane 36. The vane 36 contains blades 38.

In operation, the collimated beam of water 26 leaves the collimator 16 and two courses of action are possible depending upon the state of motion of the vane 36. If the vane 36 is stationary such that the beam 26 passes between the blades 38 without contacting the vane, then the vane will remain motionless and the beam will proceed to the user uninterrupted. If, on the other hand, the vane 36 is placed in motion such that a blade 38 makes contact with the beam 26, energy will be imparted to the vane to increase its motion. The result will be that the vane 36 will be caused to spin rapidly on shaft 34 with an interruption of the beam 26 each time a blade 38 passes through the beam. The result will be a pulsating beam 28 that some users find more relaxing than a steady beam of water. The non-pulsating or steady flow is obtained by manually stopping the vane 36 from rotating and leaving it in such a position that the beam 26 can no longer contact a blade 38. With a rotating vane 36, it has been found more relaxing to the user to minimize the number of beam interruptions per cycle of the vane and to maximize the duration of the beam between interruptions. It is also desirable to symmetrically distribute the blades 38 uniformly about the vane 36 for dynamic balancing reasons. While other configurations are also possible, the optimum choice has been found to be two blades 38 spaced diametrically apart on the vane 36.

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While the invention has thus been disclosed and a preferred embodiment described in detail, it is not intended that the invention be limited to these shown embodiments. Instead, many modifications will occur to those skilled in art which lie within the spirit and scope of the invention. It is thus intended that the invention be limited in scope by the appended claims.

What is claimed is:

1. A shower head apparatus containing a collimator means for producing a highly collimated beam of output fluid and a pulsating means consisting of an oscillating spring that is maintained in motion by deriving energy from contacting the collimated fluid beam in a manner that produces a periodic interruption of the beam.

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239—224, 381, 510, 516, 517, 521, 591