

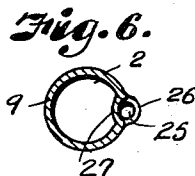
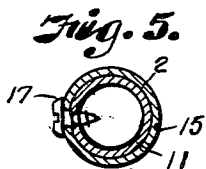
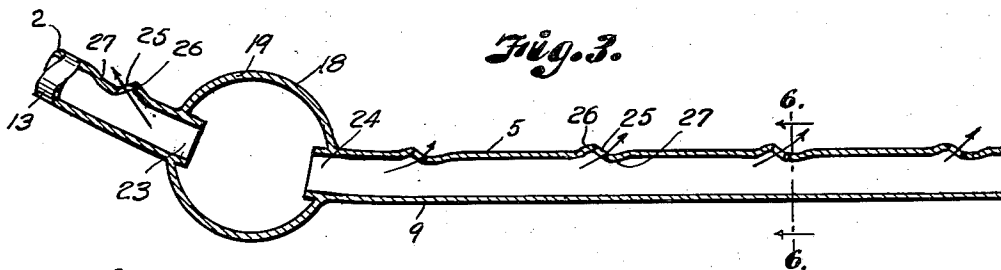
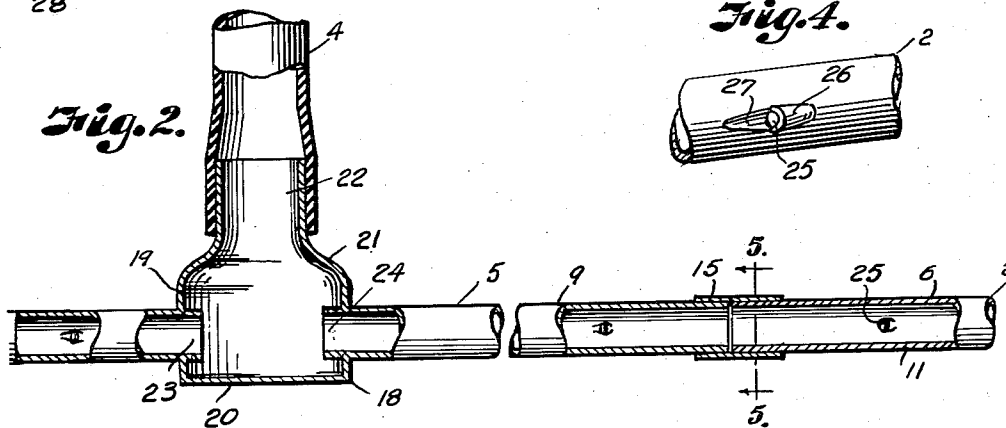
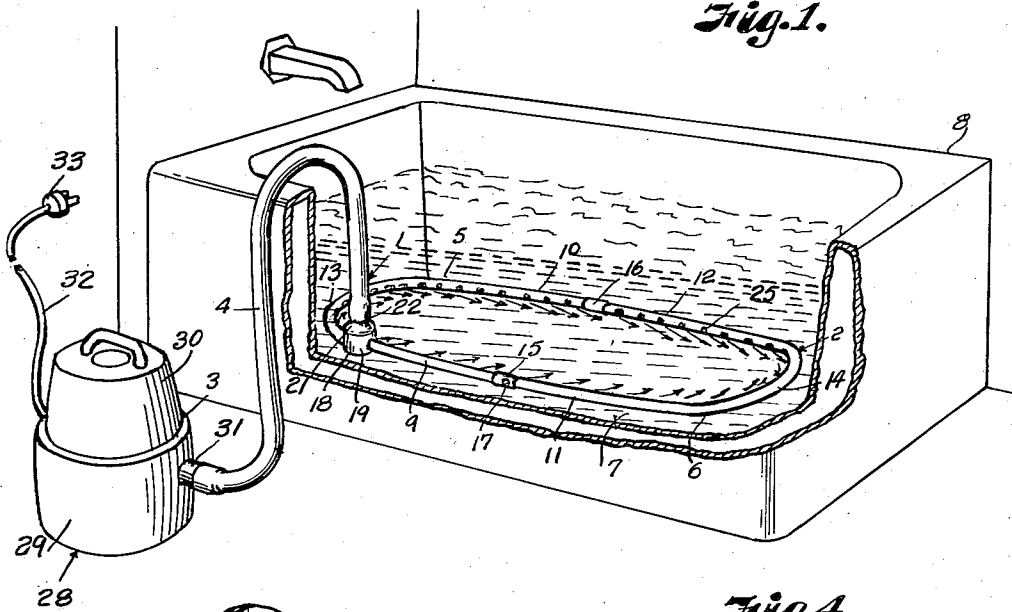
July 10, 1962

B. F. GREGORY

3,043,296

HYDROTHERAPY APPARATUS

Filed Feb. 15, 1961



INVENTOR.
Benjamin F. Gregory
BY
Paul E. Mullendore
ATTORNEY

1

3,043,296

HYDROTHERAPY APPARATUS

Benjamin F. Gregory, 3743 College, Kansas City, Mo.

Filed Feb. 15, 1961, Ser. No. 89,433

3 Claims. (Cl. 128-66)

This invention relates to an apparatus for hydrotherapy, and has for its principal object to provide a simple and relatively inexpensive apparatus for agitating the water in a bathtub or other vessel for producing a massaging action.

A further object of the invention is to provide an apparatus that includes a submerged tubular ring generally conforming to the bottom contour of the vessel or tub in which it is used, and which has a plurality of air jets discharging along the inner side of the ring in opposite directions from an air connection with a source of air supply, to set up a rolling action of the water in the tub, and whereby the hydrostatic head of water in effect valves off the flow of air until the pressure of the jets breaks through, thereby producing a pulsation of the water simultaneously with the rolling action.

Further objects of the invention are to provide a generally elongated tubular ring in which the person using the apparatus is seated, and which has air jets discharging between the body of the user and wall of the ring, for concentrating the agitation of the water in massaging contact with the body of the user; to provide a source of high volume low pressure air for supply to the air jets and which is located outside of the tub and connected with the tubular ring by a flexible connection of insulating material; and to provide a tubular ring composed of sections that are easily packaged for shipping and readily assembled for use.

It is a further object of the invention to provide the tubular ring with directional jets that are formed directly in the ring.

In accomplishing these and other objects of the invention hereinafter pointed out, I have provided an improved structure, the preferred form of which is illustrated in the accompanying drawings, wherein:

FIG. 1 is a perspective view of an apparatus embodying the features of the present invention and showing installation thereof in a conventional bathtub for producing a hydrotherapeutic agitation of the water therein, the front wall of the bathtub being broken away to better illustrate the invention.

FIG. 2 is an enlarged fragmentary view of the tubular jet ring and particularly showing the air connection therefor.

FIG. 3 is a horizontal section through the portion of the jet ring illustrated in FIG. 2.

FIG. 4 is a detail perspective view of a portion of the jet ring, illustrating one of the jets.

FIG. 5 is a cross section through one of the couplings that connect the sections of the jet ring when made of sections, the cross section being taken on the line 5-5 of FIG. 2.

FIG. 6 is a section through the tubular ring on the line 6-6 of FIG. 3, particularly illustrating one of the jets.

Referring more in detail to the drawings:

1 designates a hydrotherapeutic apparatus including a jet ring 2 and a high volume, low pressure air source 3 that supplies the air to the jet ring 2 through a flexible connection 4. When the apparatus is used for home hydrotherapy, the jet ring is generally used in a bathtub, as illustrated. The jet ring is difficult to package, and, therefore, the jet ring may be of two sections 5 and 6. The sections when connected together make up an elongated tubular ring having the general shape of the bottom 7 of a bathtub 8. The sections 5 and 6 are formed of pipe

2

bent to substantially U-shape in that they have leg portions 9-10 and 11-12 connected by curving portions 13 and 14. The legs of the sections are connected together by couplings 15 and 16. The couplings 15 and 16 are preferably welded or soldered to the ends of the leg portions 9 and 10 of one section 5, and the ends of the leg portions 11 and 12 of the other section are pressed into the couplings and secured by fastening devices, such as screws 17.

The section 5 has an air distributing member 18 comprising a hollow body having an annular wall 19, a bottom 20, and a top 21 curving inwardly and upwardly to terminate in a relatively smaller neck 22. The connection of the member 18 with the section 5 is preferably made by providing the opposite diametrical sides of the wall 19 with openings through which the ends 23 and 24 are projected and welded or soldered therein, as shown in FIGS. 2 and 3.

The jet ring is provided on the inner facing sides thereof with spaced apart orifices 25 that are specially formed to direct the air jets. In forming the orifices 25, the wall of the pipe on one side of each orifice is bent outwardly and the other sides are bent inwardly, in the lengthwise direction of the pipe, as indicated at 26 and 27 in FIGS. 4, 3 and 6 to face the orifices 25 at an angle with respect to the central axis of the pipe for giving an angular direction to the jets. The duct is thus formed to direct the jets discharged therefrom in opposite directions from the air distribution member, as shown by the arrows in FIGS. 1 and 3 of the drawings, for producing a swirling or rolling action of the water in the tub, as later described.

The source of air supply for the jets may be a vacuum cleaner 28, having a blower therein, indicated by the housing 29, and which is operated at high speed by a motor, indicated by the housing 30, the blower housing being provided with an air discharge nozzle 31 that is connected with the neck 22 by the flexible hose 4, preferably formed of rubber or similar insulating material, so as to avoid any possibility of shock when the apparatus is in use. If desired, the air supply unit may consist of a high volume blower that is driven by a high speed motor. The motor or vacuum cleaner is provided with the usual electrical connection comprising a cord 32 that is provided with a plug 33 that is adapted to be plugged into any suitable electrical receptacle.

In using the apparatus, the jet ring, constructed and assembled as described, is placed on the bottom of the tub and connected with the air supply unit 28 by the hose 4. The tub is filled with water to the desired height, for example, up to the overflow outlet of the tub. With the air supply unit in operation, a person seats himself in the tub so that he is encircled by the jet ring, leaving ample passageways between his body and the side walls of the tub for the agitation or pulsing action of the water as the air is discharged through the orifices 25 when the air pressure breaks through the hydrostatic head of the water in the tub. The air, on entering the neck 22 of the distributing member 18, is discharged in opposite directions through the connections 23 and 24 of the jet ring and flows in opposite directions therearound to escape through the orifices under the hydrostatic head of the water. Discharge of the air at numerous points around the inner circumference of the jet ring produces a rolling and seething action of the water between the body of the user and the walls of the tub, to give all of the benefits of hydrotherapy.

What I claim and desire to secure by Letters Patent is:

1. A water agitating apparatus for use in a bath tub to produce a rolling pulsation action on the water contained in the tub; said apparatus including a ring member of generally elongated shape and comprising a pipe

3

having a rigid wall of circular cross section coextensive with the sides and rounding ends of the tub at the bottom thereof; a high volume blower, and a flexible hose connected with the blower and having a connection with the ring member for supplying a high volume flow of air under pressure for divided flow in the ring member in opposite directions from said connection; said wall of the pipe having orifices spaced apart along the entire length of the pipe and located substantially in the horizontal diameter of the pipe and on the inner facing sides of the ring member, said wall of the pipe being inwardly bent at one side of each orifice and outwardly bent at the opposite side of each orifice to face said orifices at an angle with respect to the central axis of the tubing and with the angle of said orifices being directed to discharge said air in jets into the water in the tub to cause a rolling action and pulsation of the water as the air breaks through the hydrostatic head of water in the tub.

2. A water agitating apparatus for use in a bath tub to produce a rolling pulsation action on the water contained in the tub, as described in claim 1, wherein the ring member is composed of sections with the pipe of said sections having abutting ends at opposite sides of the ring member, couplings fixed to the abutting ends of one section and slidably containing the abutting ends of the other section, and fastening devices for securing the last named end in the couplings.

3. A water agitating apparatus for use in a bath tub to produce a rolling pulsation action on the water contained in the tub; said apparatus including a ring member of generally elongated shape and comprising a pipe having a rigid wall of circular cross section coextensive

4

with the sides and rounding ends of the tub and having ends spaced apart and in facing relation; an air distributing member having an annular wall provided with openings in diametrical opposite sides to connect with said ends of the pipe, a closed bottom, and a top terminating in a tubular neck of smaller diameter than the annular wall; a high volume blower, and a flexible hose connecting the blower with the tubular neck of the distributing member for supplying a high volume flow of air under pressure to the distributing member for divided flow in opposite directions to the respective ends of the pipe; said wall of the pipe having orifices spaced apart along the entire length of the pipe and located substantially in the horizontal diameter of the pipe and on the inner facing sides of the ring member, said wall of the pipe being inwardly bent at one side of each orifice and outwardly bent at the opposite side of each orifice to face said orifices at an angle with respect to the central axis of the tubing and with the angle of said orifices being directed to discharge said air in jets into the water in the tub to cause a rolling action and pulsation of the water as the air breaks through the hydrostatic head of water in the tub.

References Cited in the file of this patent

UNITED STATES PATENTS

1,830,853	Osterhage	Nov. 10, 1931
2,848,203	Misiura	Aug. 19, 1958

FOREIGN PATENTS

105,590	Great Britain	Apr. 16, 1917
---------	---------------	---------------