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HYDROTHERAPEUTIC MAT WITH AIR INLET MEANS AND
MEANS FACILITATING ROLLING INTO A CYLINDER

Filed Sept. 19, 1963

2 Sheets-Sheet 1

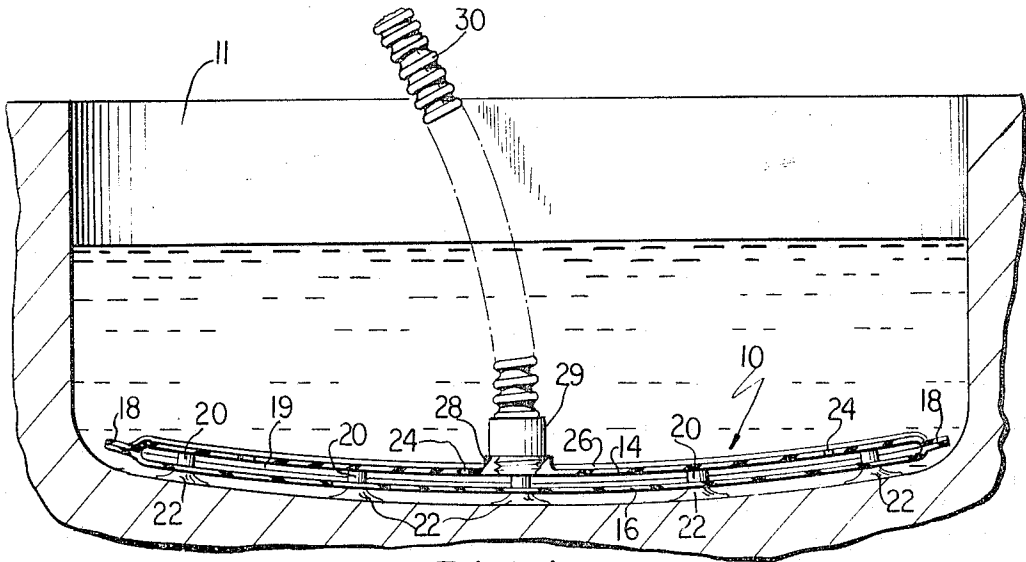


Fig. 1

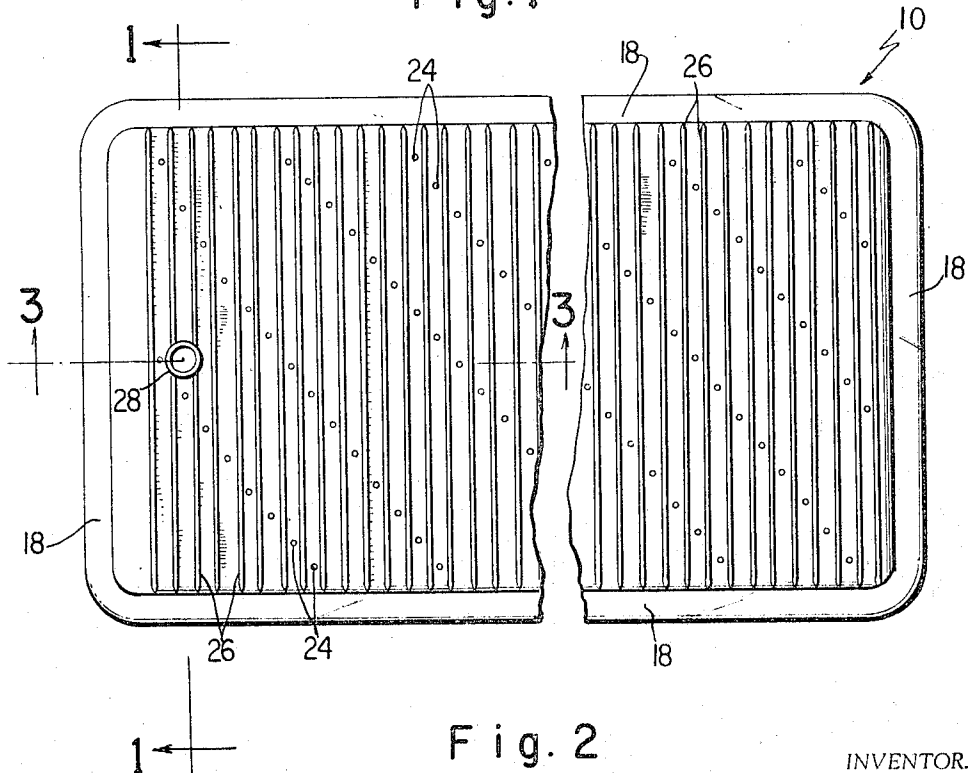


Fig. 2

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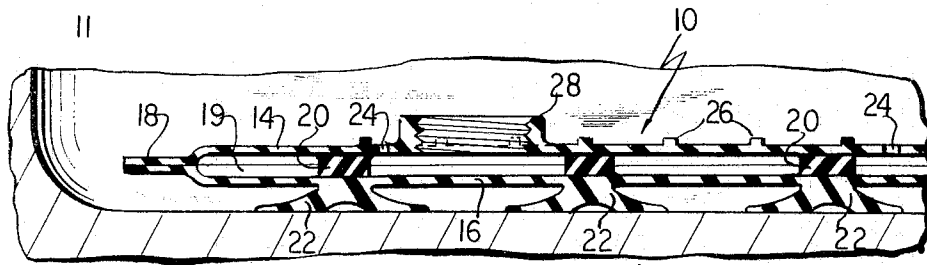


Fig. 3

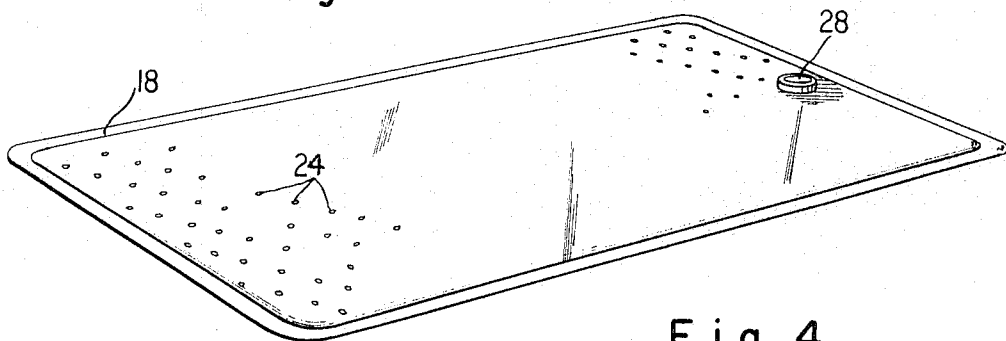


Fig. 4

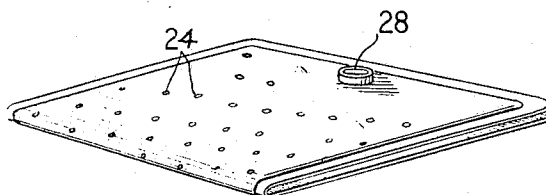


Fig. 5

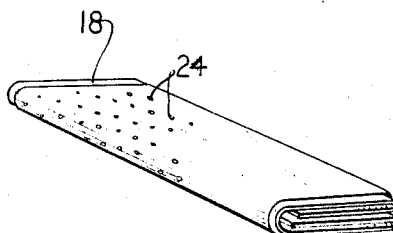


Fig. 6

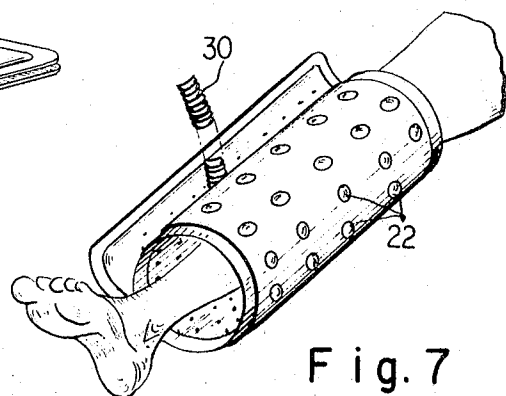


Fig. 7

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HYDROTHERAPEUTIC MAT WITH AIR INLET MEANS AND MEANS FACILITATING ROLLING INTO A CYLINDER**Lloyd Edward Wessel, Louisville, Ky., assignor to American Radiator & Standard Sanitary Corporation, New York, N.Y., a corporation of Delaware****Filed Sept. 19, 1963, Ser. No. 310,056****2 Claims. (Cl. 128—66)**

This invention relates to an apparatus for hydrotherapy such as may be used in a bathtub or other vessel for agitating the water and thereby producing a massaging action. The apparatus is used for bubbling a gas, such as air, through the water in a vessel with the aid of a gas producing device such as a vacuum cleaner, compressor, or like pump means, the gas or air being discharged into the liquid in the vessel through openings in the hydrotherapeutic apparatus which is immersed in the vessel.

Known devices of this kind have been found to be inconvenient and impractical for certain uses. For example, some known devices are formed as rigid units which may not fit into baths of different sizes. Other known devices have employed involved structures which increase costs, some of them using metallic structural members which are not only uncomfortable to the user but which may also cause injury. Such devices are liable to slip in the bathtub or to present a slippery surface to the user. They frequently present a cold surface and are rather large and cumbersome to handle for storage and other purposes.

It is an object of the present invention to avoid and overcome the foregoing and other difficulties of and objections to prior art practices by the provision of a hydrotherapeutic apparatus which is portable and flexible such that it can be used in various size bathtubs and for purposes which prior art devices have not been capable of being used.

A further object of the present invention is to provide a hydrotherapeutic apparatus which is portable, comfortable, safe, and which can be used both as a hydrotherapeutic mat and as a non-skid safety mat.

Another object is to provide a hydrotherapeutic device which provides for escape of a gas even if a person's body is placed adjacent the gas outlet openings and which can be placed against a person's limbs or body without being attached to the bottom of a bathtub or vessel.

The aforesaid objects of the present invention and other objects will become apparent as the description proceeds are achieved by providing a generally hollow mat constructed of a flexible material such as rubber or molded plastic and having openings to permit the escape of a gas.

The inherent flexible construction of the mat permits it to be folded or flexed so that it can be used in various size vessels or wrapped around limbs or other parts of the body. Ridges or corrugations may be provided on the top surface to provide traction for the user while also facilitating discharge of gas. Adhering means such as suction cups may be provided on the bottom of the mat to prevent slipping of the latter in the bathtub.

For a better understanding of the present invention reference should be had to the accompanying drawings, wherein like numerals of reference indicate similar parts throughout the several views and wherein:

FIG. 1 is a cross sectional and elevational view of a hydrotherapeutic mat constructed according to the invention and shown placed in a bathtub.

FIG. 2 is a plan view of the hydrotherapeutic mat shown in FIG. 1.

FIG. 3 is a partial sectional view on a larger scale, taken along the line 3—3 of FIG. 2.

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FIG. 4 is a perspective view of a modified hydrotherapeutic mat.

FIG. 5 is a perspective view of the mat in FIG. 4 but which has been folded in half.

FIG. 6 is a perspective of the mat in FIG. 4 folded to one-quarter size.

FIG. 7 is a perspective view showing the hydrotherapeutic mat wrapped around a person's leg.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also it is to be understood that the phraseology or terminology employed is for the purpose of description and not of limitation.

Although the principles of the present invention are broadly applicable to hydrotherapeutic apparatus, the present invention is particularly adapted to be used in conjunction with a hydrotherapeutic mat and hence it has been so illustrated and so described.

With specific reference to the form of the present invention illustrated in the drawings, and referring particularly to the embodiment of FIGS. 1 to 3 a hydrotherapeutic mat, indicated generally by the reference numeral 10, is shown on the bottom of a vessel 11, such as a bathtub. The mat 10 is comprised of upper and lower layers of material 14 and 16 respectively, which are joined or otherwise sealed to one another at their peripheral edge or portions as indicated at 18. The upper and lower layers 14 and 16 are spaced from one another such that they define therebetween a chamber 19 into which a gas, such as air, may be admitted by means to be hereinafter described.

In order to maintain the two layers 14 and 16 in a spaced disposition as shown in the drawings, support means, are provided in the chamber 19 between the upper and lower layers. These support means may take various forms. For example, they may be spaced solid cylinders 20 as shown in the drawings. These cylinders 20 may be spaced longitudinally and transversely so that there is free communication throughout the chamber 19. It is understood that the purpose of these support means is to keep the upper and lower layers 14 and 16 spaced from one another to define the chamber 19 and accordingly, various arrangements of support means will become apparent to those skilled in the art. For example, transverse, longitudinal, oblique, or various other arrangements of support ribs may be used. Such support ribs, depending on their arrangement, may have grooves to provide free communication throughout the chamber 19.

Suitable means may be provided on the bottom of the mat to prevent the latter from slipping when placed on a smooth surface such as encountered in a bathtub. Such means may comprise suction cups 22 extending from the bottom layer 16. These suction cups 22 may be spaced longitudinally and transversely, as shown, or arranged any other way found to be convenient. Alternatively, the bottom surface 16 may be provided with corrugations (not shown), a rough surface (not shown), or other arrangements, which will become apparent to those skilled in the art, for preventing slipping or skidding of the mat on a smooth surface.

To allow a gas, such as air, to escape from the mat 10 so that it can bubble through the liquid in the bathtub 11, a plurality of openings 24 are provided in the upper layer 14. The openings 24 may be arranged along oblique lines such as shown in FIG. 2, along generally longitudinal or transverse lines as in FIG. 4, or in any other suitable spacing arrangement.

To facilitate the discharge of a gas from the openings

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24 and to provide traction for the user, raised projections or ribs such as corrugations 26 may be provided in the upper layer 14 with the openings 24 arranged in the depressions of the corrugation. This arrangement of openings between the ribs of the corrugation facilitates air discharge from the mat because if the weight of a person's body is placed over one or more of the openings 24, the two adjacent raised ribs of the corrugation on either side of such openings 24 will provide a channel through which the air escaping from such opening will pass laterally through the channel formed by adjacent ribs to bubble up in the area adjacent the person's body. It is evident therefore, that the openings 24 will not be blocked by the user of the mat since the air will be allowed to escape laterally in the channels of the corrugation. Although a transversely corrugated upper layer 14 is illustrated in the drawings, it is to be understood that various other arrangements of projections or ribs may be provided to achieve the desired effect of preventing blocking of the openings 24 while channeling the escaping air to areas immediately adjacent the user and which are not blocked by the latter.

In the embodiment FIGS. 1 to 3 an inlet nozzle 28 is provided for admitting air to the chamber 19. This inlet nozzle 28 may be connected to a pipe 30 with a water-tight seal, for example by using a readily disconnectable coupling 29, such that a source of air, as from a vacuum cleaner, compressor or the like, may be connected to the pipe 30. The construction of the mat and the arrangement of the inlet nozzle 28 is such that the mat may be folded such as to one-half size as shown in FIG. 5 or one-quarter size as shown in FIG. 6. This flexibility permits the mat to be used in various sized vessels, such as bathtubs, whirlpools, sinks, or any other vessel. This flexibility also enables the mat to be wrapped around a person's body or limb such as shown in FIG. 7. It also permits it to conform to the contour of the vessels in which it is placed as shown in FIG. 1 for example. This allows all the suction cups to take hold on the vessel while also serving to provide a greater depth of water above the mat in those areas where it is flexed downwardly.

As an alternate construction (not shown) the inlet nozzle 28 may be located so that it is spaced from the transverse bisect line of the mat such that when the mat is folded along the transverse bisect line, the inlet nozzle 28 will still be in a generally vertical and conveniently disposed direction adjacent the fold.

The hydrotherapeutic mat of the present invention may be constructed of any flexible material such as rubber or molded plastic. The upper and lower layers 14 and 16, corrugations 26, supports 20, and suction cups 22, may be of a one-piece construction, or various components may be cemented, vulcanized, or otherwise joined to form a one-piece mat. For example, the mat may be constructed of an upper layer 14 and lower layer 16 which are cemented or vulcanized along their peripheral edge portions 18. The upper layer 14 may be provided with integral corrugation, while the lower layer 16 may be provided with integral suction cups. The supports 20 may be integral with one of the layers and vulcanized or cemented to the other. It will be evident to those skilled in the art that various methods of construction may be employed to make the mat of the present invention.

It will be evident from the above description that the hydrotherapeutic mat of the present invention is portable

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and flexible. It can be folded or rolled to fit various sized vessels or for storage purposes. It can be wrapped around limbs or other parts of the body. It is safe in that it may be constructed without any metal parts and in that it may be provided with means to prevent slipping on smooth surfaces. The buoyancy of the mat permits its use against a person without being attached to the bottom of the vessel. It can be folded or rolled for use in a smaller container or for storage. It is low-cost, comfortable, warm, non metallic, skid-proof, and it may be used as a hydrotherapeutic mat or a safety non-skid mat such as in a shower. The mat is constructed such that bubbles will escape laterally when the mat is adjacent a person's body. The mat may also be used for drying purposes after liquid has been drained from the vessel in which it was used.

The invention hereinabove described may be varied in construction within the scope of the claims for the particular devices selected to illustrate the invention are but several of many possible embodiments of the same. The invention, therefore, is not to be restricted to the precise detail of the structure shown and described.

What is claimed is:

1. A hydrotherapeutic treatment mat comprising a body portion formed entirely of rubber-like material which may be readily flexed, folded or rolled to assume various shapes, said mat body portion comprising co-extensive separated top and bottom layers which are substantially integrally joined at narrow marginal areas only around the entire marginal edge of the mat, a multiplicity of uniformly spaced substantially parallel narrow up-standing ribs on the top face of said top layer extending substantially for the entire width of the mat in one direction and rendering the mat easy to roll up into a cylinder whose axis is parallel to said ribs, said top layer having a multiplicity of small air outlet openings arranged between said ribs in a pattern which extends over the major portion of the area of the mat, said top layer also having a relatively large air inlet opening formed therein adapted for connection with a suitable hose, and a multiplicity of spacer elements arranged between said top and bottom layers in fixed relation thereto and being widely spaced between said layers so as not to obstruct free circulation of air between said layers, said spacer elements maintaining said layers spaced apart a relatively small and uniform distance over substantially the entire area of the mat.

2. The invention as defined by claim 1, and spaced suction cups fixedly secured to the bottom of said mat for anchoring it in a tub or the like.

References Cited by the Examiner

UNITED STATES PATENTS

55	1,699,198	1/1929	Millmather	4—180
	1,777,982	10/1930	Popp	4—180 X
	2,793,640	5/1957	Schwartz	4—180 X
	2,848,203	8/1958	Misiura	4—180 X
	3,076,976	2/1963	Bogar	128—66 X
60	3,178,730	4/1965	Bogar	4—180

FOREIGN PATENTS

	32,937	5/1908	Austria.
	17,045	1914	Great Britain.

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