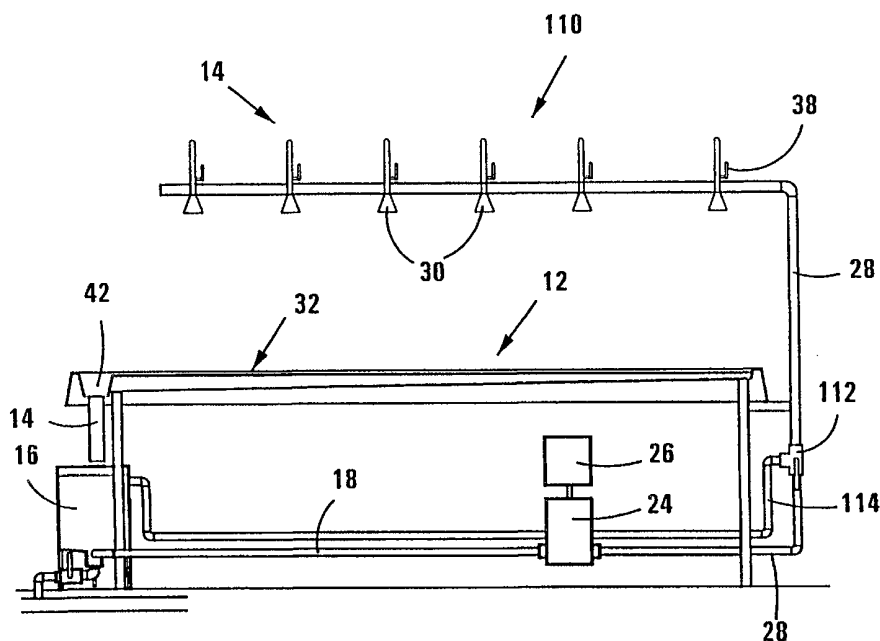




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(54) Title: METHOD AND APPARATUS FOR STIMULATING THE LYMPHATIC SYSTEM OF A VERTEBRATE



(57) Abstract

The invention provides an apparatus (110) suitable for stimulating the lymphatic system of a vertebrate. The apparatus (110) includes support means (12) for supporting the vertebrate in a prone or generally horizontal position and fluid directing means (14) for directing a fluid stream at a lymph node site of the vertebrate. The invention extends to a method of stimulating the lymphatic system of a vertebrate, which includes directing a fluid stream at a lymph node site of the vertebrate.

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METHOD AND APPARATUS FOR STIMULATING THE LYMPHATIC SYSTEM
OF A VERTEBRATE

THIS INVENTION relates to a method of and apparatus for
stimulating the lymphatic system of a vertebrate. It also relates to use of the
5 apparatus, and to methods of treatment of a patient.

According to a first aspect of the invention, there is provided
apparatus suitable for stimulating the lymphatic system of a vertebrate, the
apparatus including

10 support means for supporting the vertebrate in a prone or generally
horizontal position; and

fluid directing means for directing a fluid stream at a lymph node site
of the vertebrate.

The fluid directing means may be configured to simultaneously direct
at least two fluid streams each at a different lymph node site respectively of the
15 vertebrate.

According to a second aspect of the invention, there is provided
apparatus suitable for stimulating the lymphatic system of a vertebrate, the
apparatus including fluid directing means for simultaneously directing at least two
fluid streams each at a different lymph node site respectively of the vertebrate.

The apparatus according to the second aspect of the invention may include support means for supporting the vertebrate in a prone or generally horizontal position.

5 The apparatus according to the first and the second aspects of the invention may include fluid supply means capable of or adapted to provide a supply of fluid to the fluid directing means at a temperature between 36 °C and 39 °C.

10 According to a third aspect of the invention, there is provided apparatus suitable for stimulating the lymphatic system of a vertebrate, the apparatus including

fluid directing means for directing a fluid stream at a lymph node site of a vertebrate; and

fluid supply means capable of or adapted to provide a supply of fluid to the fluid directing means at a temperature of between 36 °C and 39 °C.

15 The apparatus in accordance with the third aspect of the invention may include support means for supporting the vertebrate in a prone or generally horizontal position.

Preferably, the fluid supply means is capable of or adapted to provide the supply of fluid at a temperature between 36,5 °C and 37,5 °C.

20 Preferably, the fluid directing means of the apparatus according to the third aspect of the invention is configured to simultaneously direct at least two fluid streams each at a different lymph node site respectively of the vertebrate. More preferably, the fluid directing means of the apparatus of the invention is configured to simultaneously direct between eight and twelve fluid
25 streams each at a different lymph node site respectively of the vertebrate.

The fluid employed with the apparatus of the invention is typically water or saline water. The fluid directing means may thus include a plurality of spray nozzles, each nozzle in use directing a liquid stream at a different lymph node site of the vertebrate. An example of a suitable spray nozzle is a Collins Adjustable Shower Head, distributed in the USA by Orchard Supply Hardware, San Jose, California, 95119. The spray nozzles may be arranged in pairs forming two rows of spray nozzles. The rows may be arranged on opposite sides of a longitudinal axis of the support means, above the support means and may thus form two transversely spaced parallel rows. A distance between pairs of nozzles may be between 420mm and 550mm. Each spray nozzle may be adjustable to increase or decrease the thickness or diameter of the liquid stream produced by the spray nozzle. In other words, each spray nozzle may be capable of producing a liquid stream which varies between a thin, single stream of liquid to a wide or thick liquid stream comprising a plurality of thin streamlets. Each spray nozzle may further be adjustable to vary the distance between spray nozzles in a pair of spray nozzles, to vary the distance between spray nozzles in adjacent pairs of spray nozzles, to vary the height of the spray nozzle above the support means, and to vary an angle in use between the liquid stream and the support means. In other words, each spray nozzle may be displaceable in three dimensions and may be capable of swivelling about a horizontal axis.

The fluid supply means may include a reservoir for storing a supply of a liquid and a pump for pumping the liquid from the reservoir to the fluid directing means. The reservoir may have a capacity of at least 20 ℓ. Preferably, the reservoir has a capacity of between 25 ℓ and 40 ℓ. The pump may be capable of supplying the liquid to the fluid directing means at a flow rate of up to 450 ℓ/h at a pressure of between 200 kPa(g) and 400 kPa(a) when the liquid is water. If desired, the reservoir and pump may be located away from the support means.

The fluid supply means may include heating means for heating the liquid pumped to the fluid directing means. In one embodiment of the invention, the heating means is in the form of a 4 - 6kW electric element located in the reservoir and controlled by a programmable logic controller.

5 The apparatus may include recycle means for recycling sprayed liquid to the reservoir.

10 The apparatus may include filtration means for filtering the liquid prior to or after spraying the liquid through the spray nozzles. Preferably, the filtration means is located such that it filters liquid recycled to the reservoir, to collect any foreign particles in the liquid, prior to collecting the liquid in the reservoir.

The apparatus may include flow control means for independently controlling the flow rate of liquid through each spray nozzle.

15 The apparatus may include a face shield for in use, when the vertebrate is a human, shielding the face of the human whose lymphatic system is being stimulated, from liquid sprayed by the fluid directing means. The apparatus may also include spatter shields to inhibit liquid spattering from the support means or a patient onto the surrounding floor.

20 According to a fourth aspect of the invention, there is provided a method of stimulating the lymphatic system of a vertebrate, the method including directing a fluid stream at a lymph node site of the vertebrate.

25 The fluid stream is typically a liquid stream, e.g. water or saline water, which is typically sprayed at or onto the lymph node site of the vertebrate. Saline water is preferred and preferably the saline water has a sodium chloride concentration of less than 2% by mass.

The liquid stream may have a temperature of between 36 °C and 39 °C. Preferably, the liquid stream has a temperature of between 36.5 °C and 37.5 °C.

5 Preferably, at least two fluid streams are simultaneously directed each at a different lymph node site respectively of the vertebrate. More preferably, between eight and twelve fluid streams are simultaneously directed each at a different lymph node site respectively of the vertebrate. Examples of such lymph node sites are the popliteal nodes behind the knee, the axillary nodes in the axilla, and the inguinal nodes in the groin.

10 The method may include also directing a fluid stream or streams at areas of the body of the vertebrate located between lymph node sites.

Typically, the vertebrate is arranged generally horizontally or prone for purposes of stimulating the lymphatic system of the vertebrate in accordance with the method of the invention. Thus, when the vertebrate is a human being,
15 the or each fluid stream is first directed at a front side of the body of the human, thereby to treat the front side of the body, and then at a rear side of the body of the human, thereby to treat the rear side of the body of the human. Typically, a left and a right side of the body of a human are treated simultaneously in accordance with the invention.

20 An angle between the or each fluid stream and an exterior surface of the body of the vertebrate whose lymphatic system is being stimulated may range between 90° and 30°.

Each liquid stream may be in the form of a plurality of individual streamlets provided by a multi-apertured spray nozzle. The method may include
25 adjusting the force with which the or each liquid stream impacts the body of the vertebrate, to take into the account the touch sensitivity of the vertebrate whose

lymphatic system is being stimulated. The method may also include adjusting the thickness or diameter of the liquid stream impacting the body of the vertebrate. Typically, the or each liquid stream has a thickness or diameter ranging between 0,5mm and 300mm.

5 The method may include collecting the liquid from the liquid streams directed at the vertebrate whose lymphatic system is being stimulated, reconditioning the liquid, and reusing the liquid as liquid streams directed at the vertebrate whose lymphatic system is being stimulated. Reconditioning of the liquid may include filtering the liquid and/or adjusting the temperature of the liquid
10 so that it is at a desired temperature.

The invention extends to use of the apparatus as hereinbefore described in a method of stimulating the lymphatic system of a vertebrate, the method including directing a fluid stream at a lymph node site of the vertebrate.

15 The lymphatic system of the vertebrate may be stimulated in accordance with the method as hereinbefore described.

The invention extends to a method of treating a patient suffering from Myalgic Encephalomyelitis or Chronic Fatigue Syndrome, stress, or an auto immune illness, the method including stimulating the lymphatic system of the patient.

20 The invention also extends to a method of treating a patient suffering from Candida Albicans and related conditions, lymphedema, endogenic and/or manic depression, post operative effects, incorrect serotonin levels, jet lag, or Taurette's syndrome, the method including stimulating the lymphatic system of the patient.

The lymphatic system may be stimulated in accordance with the method of the fourth aspect of the invention as hereinbefore described.

It is expected that the method and apparatus of the invention will find particular, though not necessarily exclusive use in stimulating the lymphatic system of a human. It is further expected that by stimulating the lymphatic system of a human suffering from Candida Albicans and related conditions, lymphedema, endogenic and/or manic depression, post-operative effects, incorrect serotonin levels, jet lag, or Taurette's syndrome, the condition and immunity of the human can be improved and pain reduced.

The invention will now be described, by way of example, with reference to the accompanying diagrammatic drawings and the case studies.

In the drawings:

Figure 1 is an elevational side view of apparatus in accordance with the invention for stimulating the lymphatic system of a vertebrate;

Figure 2 is an elevational end view of the apparatus of Figure 1;

Figure 3 is an elevational side view of another embodiment of apparatus in accordance with the invention for stimulating the lymphatic system of a vertebrate; and

Figure 4 is an elevational end view of the apparatus of Figure 3.

Referring to Figures 1 and 2 of the drawings, reference numeral 10 generally indicates apparatus in accordance with the invention for stimulating the lymphatic system of a vertebrate, and in particular the lymphatic system of a human. The apparatus 10 includes support means in the form of a bed 12 for in use supporting the body of the human in a prone or generally horizontal position, fluid directing means 14 for directing a liquid stream at lymph node sites of the human, and fluid supply means capable of providing a supply of liquid to the fluid directing means 14 at a temperature between 36°C and 39°C.

The fluid supply means 10 further includes a reservoir 16 having a volumetric capacity of between 40ℓ and 55ℓ. The reservoir 16 is connected by a flow line 18 to a filter 20. The filter 20 is connected by a flow line 22 to a pump 24, which is driven by an electric motor 26. From an outlet of the pump 24, a flow line 28 runs over the bed 12, parallel with and above a longitudinal axis of the bed 12, before the flow line 28 returns to the reservoir 16. The pump 24 is of stainless steel and can deliver 5040ℓ/h at a pressure of up to 300kPa(g).

Twelve spray nozzles 30 are arranged in pairs forming two rows of spray nozzles above an upper surface 32 of the bed 12. The rows of nozzles are arranged on opposite sides of the longitudinal axis of the bed 12. In a neutral or unadjusted condition, a distance between pairs of nozzles is about 420mm and each nozzle is about 590mm above the upper surface 32 of the bed 12.

Each nozzle 30 is in flow communication with the flow line 28 by means of a branch line 34 and is supported by the flow line 28 by means of an adjustable support arrangement 36. The support arrangement 36 allows each spray nozzle 30 to be adjustable to vary the distance between spray nozzles in a pair of spray nozzles, to vary the distance between spray nozzles in adjacent pairs of spray nozzles and to vary the height of each spray nozzle 30 above the upper surface 32 of the bed 12. Each spray nozzle 30 can also swivel about a horizontal axis, thereby in use to vary an angle between the liquid stream produced by the spray nozzle 30 and the upper surface 32 of the bed 12.

Each spray nozzle 30 is also adjustable to increase or decrease the thickness or diameter of the liquid stream in use produced by the spray nozzle 30. Furthermore, the flow through each spray nozzle 30 is controllable in use by means of a flow control valve 38 located in each branch line 34, as well as a pressure control valve 40 located in the flow line 28, between the branch lines 34 and the reservoir 16.

The apparatus 10 includes liquid recycle means in the form of gutters 42 arranged along a periphery of the bed 12, and drainage lines 44 leading from the gutters 42 to the reservoir 16.

5 A thin layer of foam rubber (not shown) defines the upper surface 32 of the bed 12 to make it more comfortable for a human to lie on the bed 12. The bed 12 is slightly inclined towards the drainage lines 44 to facilitate recovery of the sprayed liquid in use.

10 The fluid supply means includes heating means in the form of a 4kW electric element (not shown) located in the reservoir 16 and controlled by a programmable logic controller (not shown). The electric element is located below an outlet of the reservoir 16 to the flow line 18. A liquid temperature input to the controller is provided by a PT100 thermocouple (not shown).

15 In use, the reservoir 16 is filled with water having a saline concentration of 2% by mass. The programmable logic controller is set to control the temperature of the water at 37.5°C, the flow control valves 38 are closed whilst the pressure control valve 40 is opened fully, and the pump 24 is operated by means of the electric motor 26. The water is thus circulated through the flow line 18, the filter 20, the flow line 22, and the flow line 28 until the water has reached the set temperature. A person whose lymphatic system is to be
20 stimulated, then lies on his or her back on the upper surface 32 of the bed 12, a face shield (not shown) is placed in position to shield his/her face from the water sprayed through the nozzles 30, and his/her treatment is commenced.

25 A pair of nozzles 30 are positioned to apply a water stream on the tip of the toes and upper feet (one nozzle per foot). Pairs of nozzles 30 are also positioned to spray liquid just below the patella, at the inguinal lymph node, at the cervical lymph node, on the palm of each hand, and at the supra-trochlear lymph nodes.

The flow control valves 38 are partially opened and the pressure control valve 40 is partially closed, and by adjusting the flow control valves 38 and the pressure control valve 40, the liquid flow through each spray nozzle 30 and the force with which each liquid stream impacts the body of the person, are controlled. When adjusting the force of each liquid stream, the amounts of soft and sensitive tissue present in the front of the body should be borne in mind. The thickness or diameter of each liquid stream is also adjusted in the light of the particular lymph node which is being stimulated by the liquid stream.

The liquid streams are applied for about 10 to 12 minutes before the position of each nozzle 30 is adjusted. Each nozzle 30 is adjusted to spray liquid at an area directly adjacent to the previously treated area, closer to the head of the person. Thus, each nozzle 30 is adjusted to spray liquid at an area between previously treated lymph node sites. However, the nozzles 30 previously spraying on the cervical lymph nodes are moved to the axillary lymph nodes. The liquid streams are then applied for a period of about 10 to 12 minutes.

The person treated is then turned over on his or her stomach and treatment is again commenced, directing fluid streams at the soles of the feet, the popliteal lymph nodes, the cisterna chyli, the occipital lymph nodes, the posterior of the hands, and the elbow. The force with which each liquid stream impacts the body of the person is considerably higher than when the front of the person was treated, since the back is usually less sensitive with more bone present than the front. The treatment is applied for about 10 to 12 minutes, before the nozzles 30 are adjusted to direct fluid streams at areas of the body directly adjacent to the previously treated areas and closer to the head of the person. The nozzles 30 previously treating the occipital lymph nodes are however moved to the subclavian veins. Again, treatment is applied for about 10 to 12 minutes. As will be appreciated, the duration of the entire treatment depends on the health status of the individual, as well as the age of the individual, but it is typically 40

to 50 minutes for an adult. For children, the treatment time must be adjusted to take into account their age.

Referring to Figures 3 and 4 of the drawings, another embodiment of the apparatus in accordance the invention for stimulating the lymphatic system of a vertebrate is generally indicated by reference numeral 110. The apparatus 110 is similar to the apparatus 10, and unless otherwise indicated, the same reference numerals used hereinbefore are used to refer to the same or similar parts or features.

The reservoir 16, having a capacity of between 25 ℓ and 40 ℓ is connected directly by the flow line 18 to the pump 24. From an outlet of the pump 24, the flow line 28 first runs through a two way flow control valve 112 and from there over the bed 12, parallel with and above a longitudinal axis of the bed 12, similar to the flow line 28 of the apparatus 10. A further flow line 114 runs from the valve 112 back to the reservoir 16. The pump 24 is of stainless steel and can deliver up to about 5400ℓ/h at a pressure of up to about 300kPa(g).

As described above, each spray nozzle 30 is adjustable to increase or decrease the thickness or diameter of the liquid stream in use produced by the spray nozzle 30, and the flow through each spray nozzle 30 is controllable in use by means of its associated flow control valve 38 located in its branch line 34, as well as the flow control valve 112 and the flow line 114, which acts as a by-pass line.

A filter (not shown) is provided in the drainage lines 44 to remove particles from water recycled to the reservoir 16.

In use, the reservoir 16 of the apparatus 110 is filled with water having a saline concentration of 2 % by mass. The programmable logic

controllers is set to control the temperature of the water at 37,5°C, the flow control valves 38 are closed, the flow control valve 112 is set so that water is not fed to the flow control valves 38 but rather back to the reservoir 16 along the flow line 114, and the pump 20 is operated by means of the electric motor 26.

5 Water is thus circulated to and from the reservoir 16 through the flow line 18, the pump 20 and a portion of the flow line 28, through the flow control valve 112 and the flow line 114, back to the reservoir 16, until the water has reached the set temperature of 37.5°C.

The persons whose lymphatic system is to be stimulated, lies on his
10 or her back on the upper surface 32 of the bed 12, as hereinbefore described, a face shield (not shown) is placed in position and the treatment is commenced. The nozzles 30 are set as hereinbefore described with reference to the apparatus 10, and the flow control valve 112 is set in such a way that the flow of the water is more or less equally divided between the flow line 28 leading to the flow
15 control valves 38 and the flow line 114. The flow control valves 38 are them fully opened. By diverting less or more water through the flow line 114 back to the reservoir 16, by means of the flow control valve 112, the liquid flow through each spray nozzle 30 can be controlled. If necessary, the flow of water through
20 each spray nozzle 30 can be adjusted individually by means of its associated flow control valve 38. By means of the flow control valves 38, the force with which each liquid stream impacts the body of the person who is being treated, can thus also be manipulated.

CASE STUDY 1

A 31 year old female suffering from severe backache and pain in her
25 right hip was treated with the apparatus 10 as described above. Pain relief occurred during the first treatment, and she had no pain the day after treatment. The pain returned about five days after the first treatment. After follow up treatments, she has reached the stage where she has no pain and experience no

problem with her back or her hip. Previously complained of symptoms such as headaches, reproductive problems, lack of energy, spastic colon and a general feeling of being unhealthy have all disappeared.

CASE STUDY 2

5 A 38 old woman employed in the computer industry was diagnosed with depression and was treated with conventional methods. Initially her condition improved but subsequently she realised that she became more ill if she ate certain food types. She was also eventually diagnosed with Chronic Fatigue Syndrome (CFS or ME), and was then treated with the apparatus 10 and method
10 of the invention as set out above. After each treatment she was tired and had to rest for a few hours, but in the days following the treatment she was energetic, could exercise and did not present the symptoms of a CFS sufferer. Her general health, emotional condition and immune system improved to such an extent that she now generally suffers from very few of the symptoms of CFS.

15

CASE STUDY 3

A woman born with knee problems underwent five knee operations between 1963 and 1991, when it was found that she has a permanent low level infection in her left knee. She was declared medically unfit to work, since she could not walk or stand without severe pain. As a result of her inactivity, her
20 weight increased by 40kg over two years. She had to take large doses of pain killers and anti-inflammatory medicine daily and underwent physiotherapy for her knees. Occasionally, as a result of severe pain she received injections of pain killers. Due to poor blood circulation, her knees and ankles swelled. In 1998 she underwent a sixth knee operation, but as a result of the permanent infection in

her left knee it was decided that she could not receive a replacement knee. It was also then discovered that she has osteo-arthritis in both knees.

5 She received a number of treatments with the apparatus 10 as described above. As a result of the treatment, she lost 10kg in weight and she stopped using anti-inflammatory pills or plasters. The use of pain killers was reduced to a minimum, and she required no further physiotherapy or injections with painkillers. Her mobility has increased and her quality of life has improved.

CASE STUDY 4

10 A 49 year old female (a business woman) showing signs of high stress levels, impatience, arthritis, and extreme and continuous tiredness, was treated with the apparatus 110 as described above. During a first session, lasting about 40 to 50 minutes particular attention was paid to lymphatic sites in the vicinity of her shoulders, where she complained that muscle pain limited her mobility. She experienced the first treatment as extremely relaxing.

15 Two further treatment sessions were provided shortly after the first treatment session. The person became relaxed and all symptoms of arthritis disappeared. Before the treatment, she used an electric shock treatment device for pain release. Two months after treating her in accordance with the method of the invention and with the apparatus 110, she was still relatively pain free and had not yet used the electric shock treatment device again. Her productivity increased, she was energetic, and slept well.

25 It is an advantage of the invention, as illustrated that it provides a method and apparatus for stimulating the lymphatic system of a vertebrate, and in particular the lymphatic system of a human.

It is also an advantage of the apparatus 10, 110, as illustrated, that each spray nozzle 30 is adjustable in three dimensions, as well as adjustable to regulate the force with which the liquid stream impacts the vertebrae whose lymphatic system is being stimulated, and it is thus possible to take into account the touch sensitivity of the vertebrae whose lymphatic system is to be stimulated, and the lymph node sites selected for treatment, when the apparatus 10, 110, is set up or operated.

It is yet another advantage of the apparatus 10, 110, as illustrated, that the temperature of the liquid being used can be controlled at between 36 and 39°C, which is important since an incorrect temperature can aggravate certain conditions which can be improved by stimulation of the lymphatic system using the apparatus 10, 110, and method of the invention.

It is a further advantage of the apparatus 10, 110 as illustrated, that up to twelve lymph node sites can be stimulated simultaneously.

It is an advantage of the invention that it provides a method of treating a person suffering from CFS or ME.

CLAIMS:

1. Apparatus suitable for stimulating the lymphatic system of a vertebrate, the apparatus including
support means for supporting the vertebrate in a prone or generally
5 horizontal position; and
fluid directing means for directing a fluid stream at a lymph node site
of the vertebrate.
2. Apparatus as claimed in claim 1, in which the fluid directing means
is configured to simultaneously direct at least two fluid streams each at a
10 different lymph node site respectively of the vertebrate.
3. Apparatus suitable for stimulating the lymphatic system of a vertebrate, the apparatus including fluid directing means for simultaneously directing at least two fluid streams each at a different lymph node site respectively of the vertebrate.
- 15 4. Apparatus as claimed in claim 3, which includes support means for supporting the vertebrate in a prone or generally horizontal position.
5. Apparatus as claimed in any one of claims 1 to 4 inclusive, which includes fluid supply means capable of or adapted to provide a supply of fluid to the fluid directing means at a temperature between 36 °C and 39 °C.
- 20 6. Apparatus suitable for stimulating the lymphatic system of a vertebrate, the apparatus including
fluid directing means for directing a fluid stream at a lymph node site
of a vertebrate; and
fluid supply means capable of or adapted to provide a supply of fluid
25 to the fluid directing means at a temperature of between 36 °C and 39 °C.

7. Apparatus as claimed in claim 6, which includes support means for supporting the vertebrate in a prone or generally horizontal position, and in which the fluid directing means is configured to simultaneously direct at least two fluid streams each at a different lymph node site respectively of the vertebrate.

5 8. Apparatus as claimed in any one of claims 5 to claim 7 inclusive, in which the fluid supply means is capable of or adapted to provide the supply of fluid at a temperature between 36,5 °C and 37,5 °C.

10 9. Apparatus as claimed in any one of the preceding claims, in which the fluid directing means is configured to simultaneously direct between eight and twelve fluid streams each at a different lymph node site respectively of the vertebrate.

10. Apparatus as claimed in any one of the preceding claims, in which the fluid directing means includes a plurality of spray nozzles, the nozzles being arranged in pairs forming two transversely spaced parallel rows of spray nozzles.

15 11. Apparatus as claimed in claim 10, in which each spray nozzle is adjustable in use to increase or decrease the thickness or diameter of a liquid stream produced by the spray nozzle, and in which each spray nozzle is displaceable in three dimensions and capable of swivelling about a horizontal axis.

20 12. Apparatus as claimed in any one of claims 5 to 8 inclusive, in which the fluid supply means includes a reservoir for storing a supply of a liquid and a pump for pumping the liquid from the reservoir to the fluid directing means.

25 13. Apparatus as claimed in claim 12, in which the reservoir has a capacity of at least 20 ℓ and in which the pump is capable of supplying the liquid to the fluid directing means at a flow rate of up to 450 ℓ/h at a pressure of between 200 kPa(g) and 400 kPa(a) when the liquid is water.

14. Apparatus as claimed in claim 12 or claim 13, in which the fluid supply means includes heating means for heating the liquid pumped to the fluid directing means.

5 15. Apparatus as claimed in any one of claims 12 to 14 inclusive, which includes recycle means for recycling sprayed liquid to the reservoir.

16. Apparatus as claimed in claim 10 or claim 11, which includes flow control means for independently controlling the flow rate of liquid through each spray nozzle.

10 17. Apparatus as claimed in any one of the preceding claims, which includes a face shield for in use, when the vertebrate is a human, shielding the face of the human whose lymphatic system is being stimulated, from liquid sprayed by the fluid directing means.

18. A method of stimulating the lymphatic system of a vertebrate, the method including directing a fluid stream at a lymph node site of the vertebrate.

15 19. A method as claimed in claim 18, in which the fluid stream is a liquid stream sprayed at or onto the lymph node site of the vertebrate.

20. A method as claimed in claim 19, in which the liquid is saline water having a sodium chloride concentration of less than 2 % by mass.

20 21. A method as claimed in claim 19 or claim 20, in which the liquid stream has a temperature of between 36 °C and 39 °C.

22. A method as claimed in claim 21, in which the liquid stream has a temperature of between 36.5 °C and 37.5 °C.

23. A method as claimed in any one of claims 18 to 22 inclusive, in which at least two fluid streams are simultaneously directed each at a different lymph node site respectively of the vertebrate.

5 24. A method as claimed in claim 23, in which between eight and twelve fluid streams are simultaneously directed each at a different lymph node site respectively of the vertebrate.

25. A method as claimed in any one of claims 18 to 24 inclusive, which includes also directing a fluid stream at areas of the body of the vertebrate located between lymph node sites.

10 26. A method as claimed in any one of claims 18 to 25 inclusive, in which the vertebrate is a human, the or each fluid stream first being directed at a front side of the body of the human, thereby to treat the front side of the body, and then at a rear side of the body of the human, thereby to treat the rear side of the body of the human.

15 27. A method as claimed in claim 26, in which the human is arranged horizontally or prone, a left side and a right side of the body of the human being treated simultaneously.

20 28. A method as claimed in any one of claims 18 to 27 inclusive, in which an angle between the or each fluid stream and an exterior surface of the body of the vertebrate whose lymphatic system is being stimulated is between 90 °C and 30 °C.

29. Use of an apparatus as claimed in any one of claims 1 to 17 inclusive in a method of stimulating the lymphatic system of a vertebrate, the method including directing a fluid stream at a lymph node site of the vertebrate.

30. Use as claimed in claim 29, in which the lymphatic system of the vertebrate is stimulated in accordance with a method as claimed in any one of claims 18 to 28 inclusive.

5 31. A method of treating a patient suffering from Myalgic Encephalomyelitis or Chronic Fatigue Syndrome, stress, or an auto immune illness, the method including stimulating the lymphatic system of the patient.

10 32. A method of treating a patient suffering from Candida Albicans and related conditions, lymphedema, endogenic and/or manic depression, post operative effects, incorrect serotonin levels, jet lag, or Taurette's syndrome, the method including stimulating the lymphatic system of the patient.

33. A method as claimed in claim 31 or claim 32, in which the lymphatic system of the patient is stimulated in accordance with a method as claimed in any one of claims 18 to 28 inclusive.

15 34. Apparatus for stimulating the lymphatic system of a vertebrate as claimed in claim 1 or claim 3 or claim 6, substantially as herein described and illustrated.

35 A method of stimulating the lymphatic system of a vertebrate as claimed in claim 18, substantially as herein described and illustrated.

20 36. Use as claimed in claim 29 of an apparatus, substantially as herein described and illustrated.

37. A method of treatment as claimed in claim 31 or claim 32, substantially as herein described and illustrated.

38. A new apparatus, a new method of stimulating the lymphatic system of a vertebrate, new use of an apparatus, or a new method of treatment, substantially as herein described.

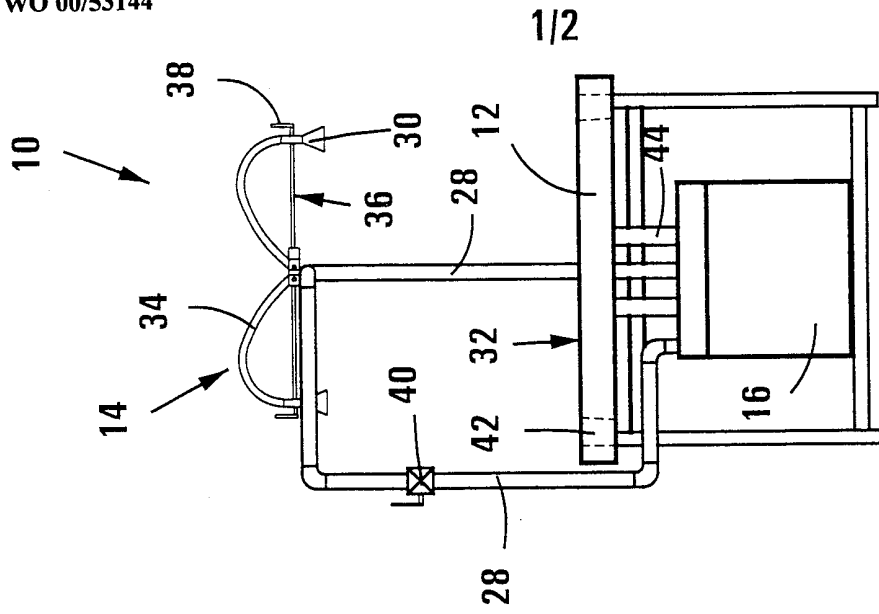


FIG 2

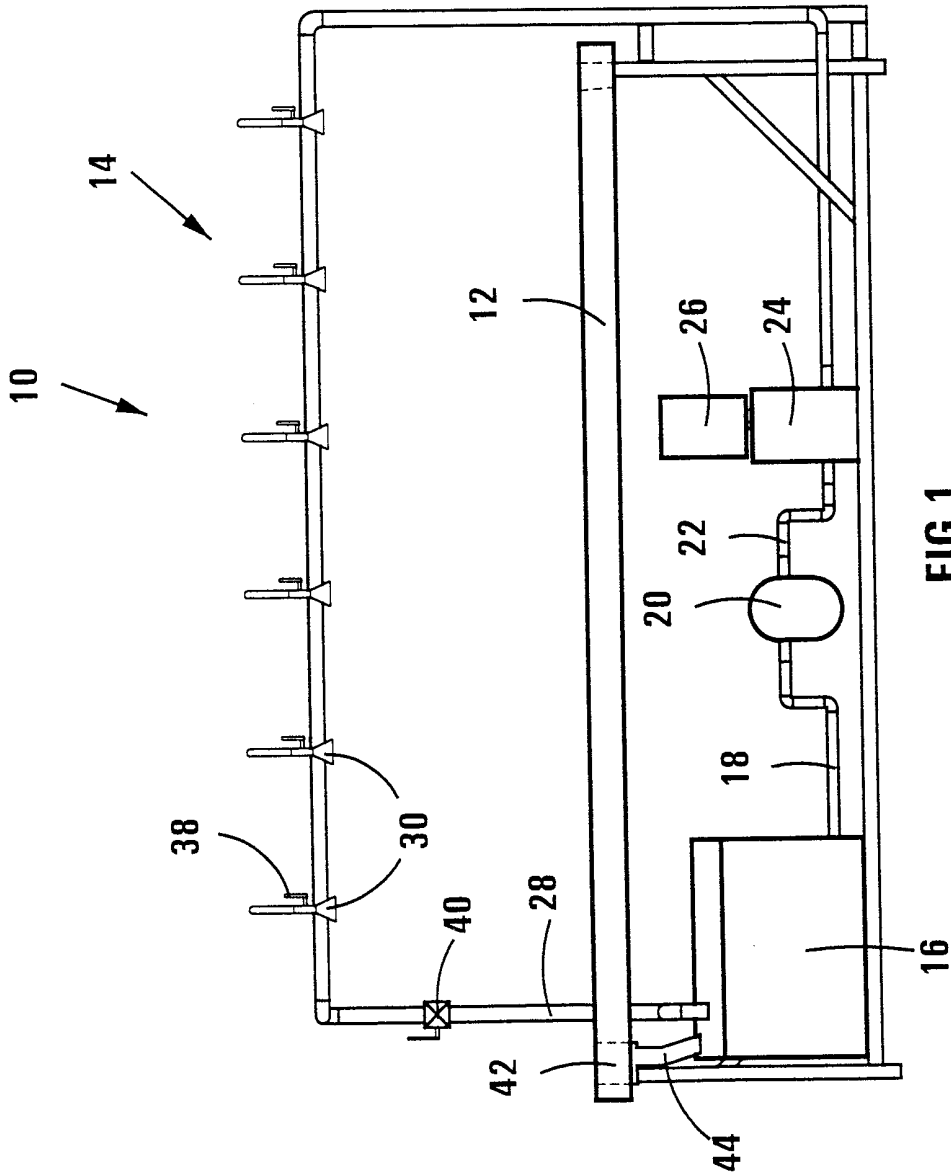


FIG 1

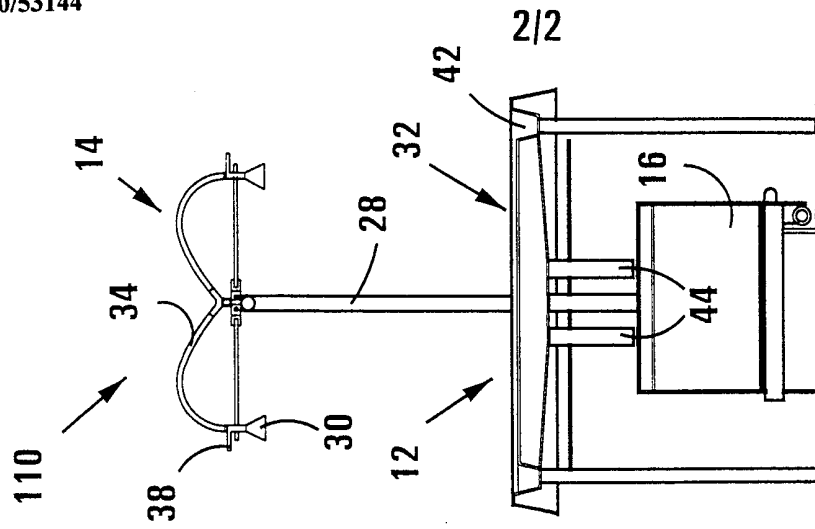


FIG 4

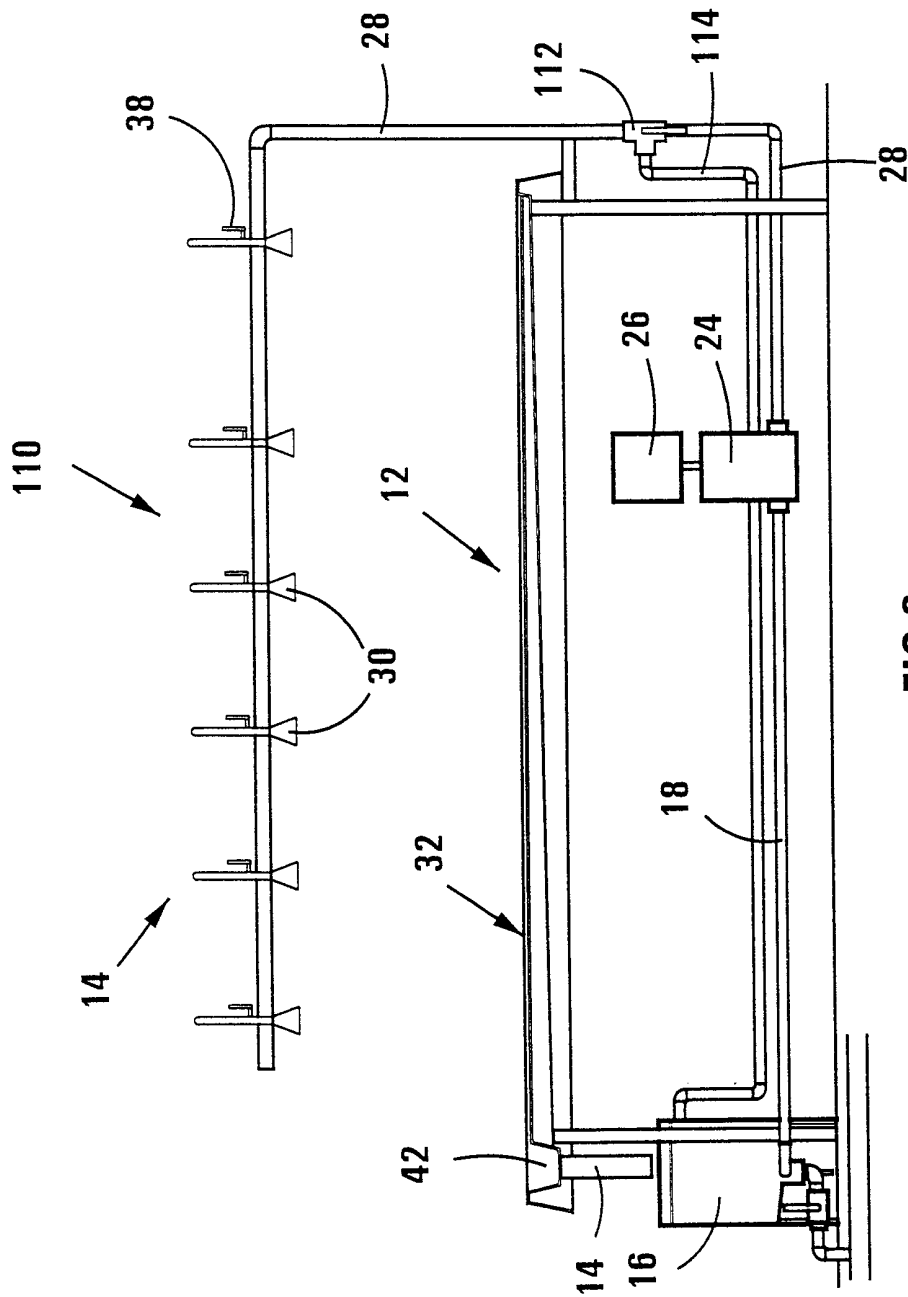


FIG 3

INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 00/00237

A. CLASSIFICATION OF SUBJECT MATTER
 IPC 7 A61H9/00

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)
 IPC 7 A61H

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

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

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 37 14 471 A (HENSEN RITA) 10 November 1988 (1988-11-10) column 3, line 4 -column 4, line 52; figures 1,2	1-10,12, 14,15
X	---	
A	EP 0 154 935 A (CONTI FRANCESCO) 18 September 1985 (1985-09-18) page 5, line 2 -page 8, line 20; figures 1-6,9	1-8,11, 12,15 9,10,14, 16
X	---	
X	WO 98 30186 A (ANTUNA JUAN) 16 July 1998 (1998-07-16) the whole document	1-10,15

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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- *A* document defining the general state of the art which is not considered to be of particular relevance
- *E* earlier document but published on or after the international filing date
- *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)
- *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

- *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
- *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
- *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.
- *Z* document member of the same patent family

Date of the actual completion of the international search 4 July 2000	Date of mailing of the international search report 14.07.00
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Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Georgiou, Z
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INTERNATIONAL SEARCH REPORT

International Application No

PCT/IB 00/00237

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 307 714 A (WEIDEMAN ANDRIES C) 29 December 1981 (1981-12-29) column 2, line 33 -column 3, line 4 column 3, line 47 - line 63 column 4, line 6 - line 14; figure 1 ---	1-11,14
X	FR 2 608 421 A (ORHAN JEAN) 24 June 1988 (1988-06-24) abstract ---	1-3,6, 10,12, 14-16
X	US 3 163 161 A (COURTIN JAQUES) 29 December 1964 (1964-12-29) column 5, line 8 - line 42; figures 1-3,6,7 ---	1-4
A	FR 2 667 247 A (VERRE QUARTZ) 3 April 1992 (1992-04-03) page 2, line 28 ---	3,5,6,8
A	US 2 540 159 A (ANTRIM IRVIN) 6 February 1951 (1951-02-06) column 2, line 18 -column 3, line 23; figure 1 -----	6,14,15

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB 00/00237

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.: 18-33, 35-37
because they relate to subject matter not required to be searched by this Authority, namely:
Rule 39.1(iv) PCT - Method for treatment of the human or animal body by therapy
2. Claims Nos.: 34, 38
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
Rule 6.2 PCT
3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

Continuation of Box I.2

Claims Nos.: 34,38

Rule 6.2 PCT

The applicant's attention is drawn to the fact that claims, or parts of claims, relating to inventions in respect of which no international search report has been established need not be the subject of an international preliminary examination (Rule 66.1(e) PCT). The applicant is advised that the EPO policy when acting as an International Preliminary Examining Authority is normally not to carry out a preliminary examination on matter which has not been searched. This is the case irrespective of whether or not the claims are amended following receipt of the search report or during any Chapter II procedure.

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/IB 00/00237

Patent document cited in search report	A	Publication date	Patent family member(s)	Publication date
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