Nov. 29, 1960 J. COURTIN 2,962,022

COMPRESSED AIR MASSAGING EQUIPMENT

Filed Dec. 12, 1956 3 Sheets-Sheet 1

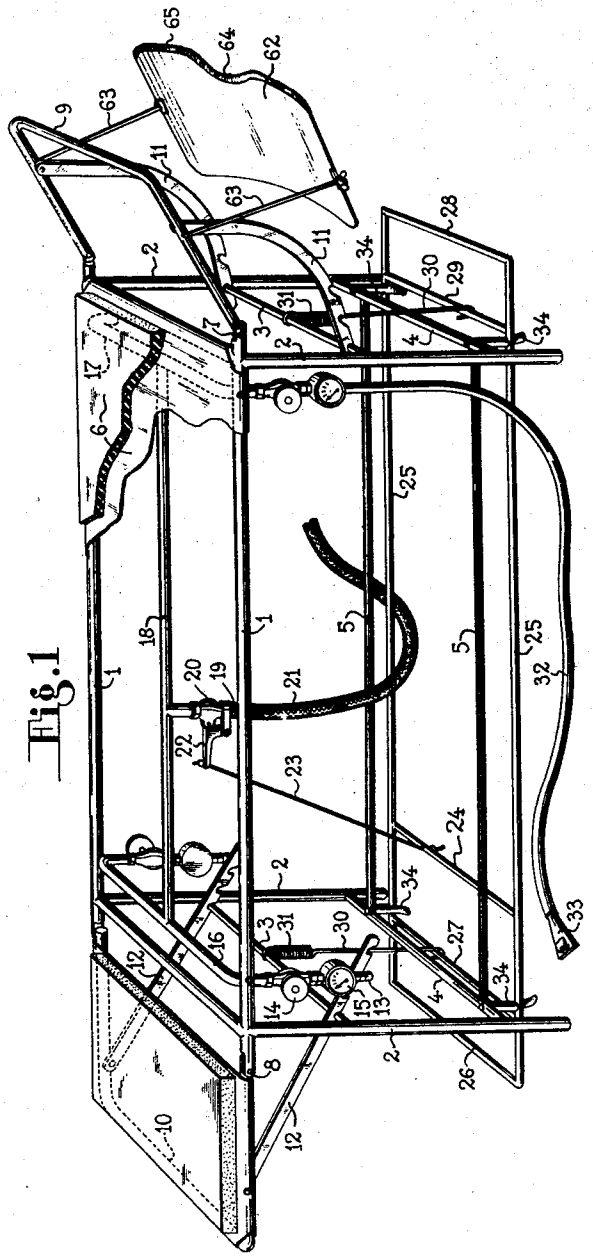


Fig. 1

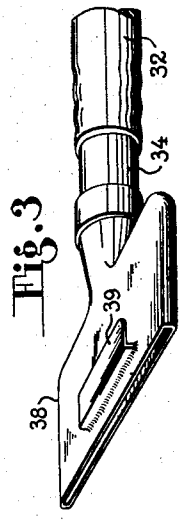


Fig. 3

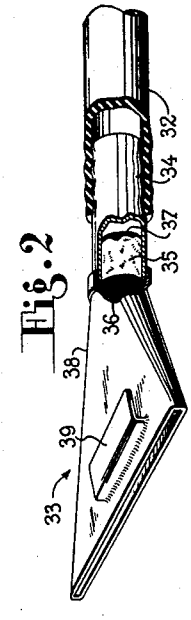


Fig. 2

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COMPRESSED AIR MASSAGING EQUIPMENT

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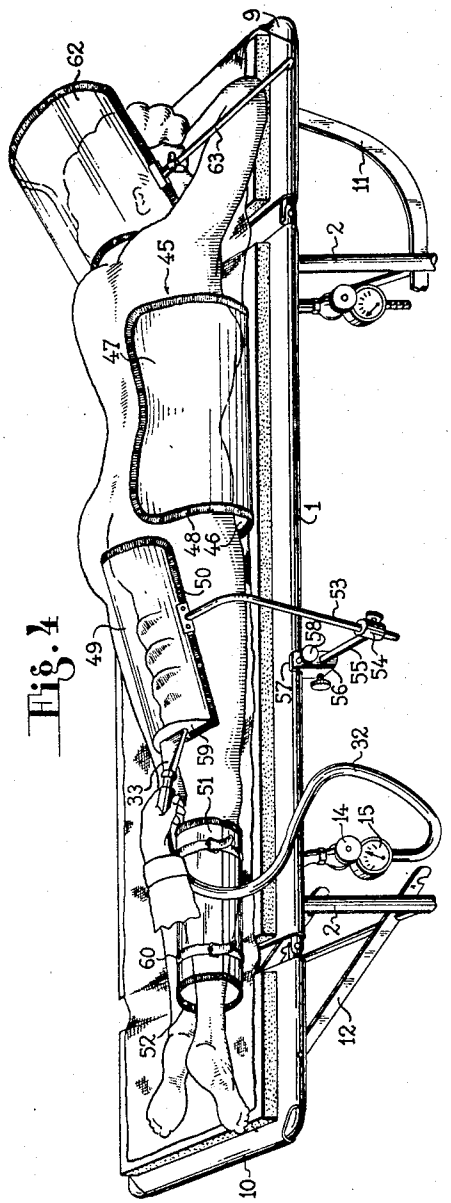


Fig. 4

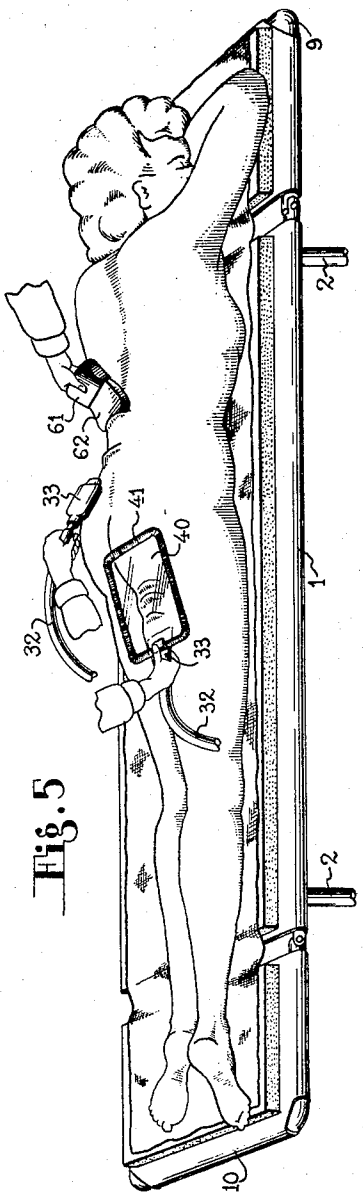


Fig. 5

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Fig. 8

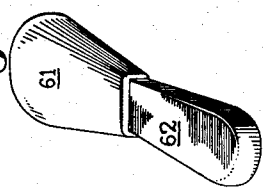


Fig. 7

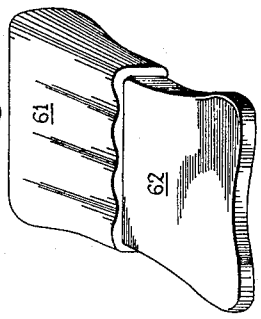


Fig. 6

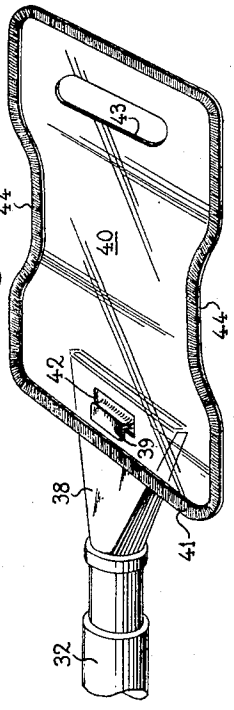


Fig. 10

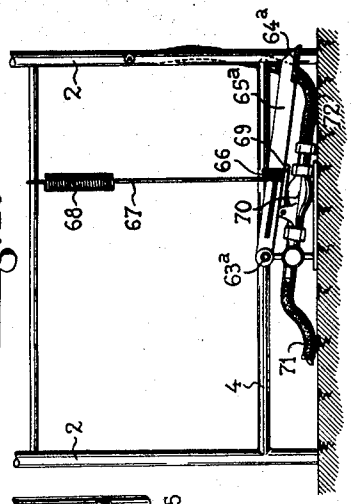
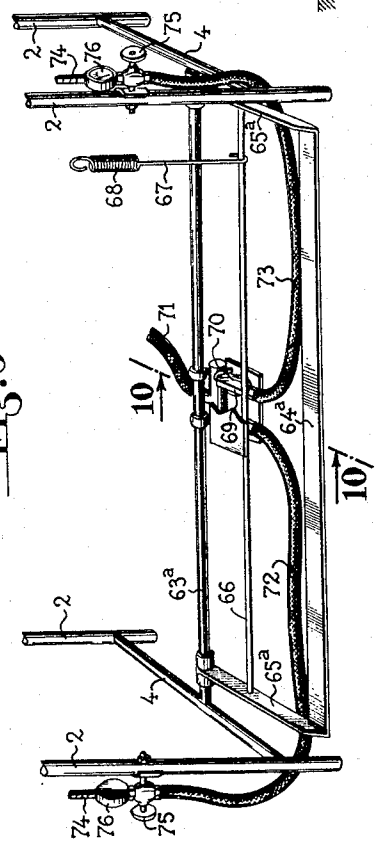


Fig. 9



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2,962,022

COMPRESSED AIR MASSAGING EQUIPMENT

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Claims priority, application France Dec. 20, 1955

12 Claims. (Cl. 128—38)

The applicant has discovered that directing onto the body a jet of compressed air through a narrow slit of suitable length, lifts the derma and connective and adipose tissues and forms therein waves or ripples. This perfectly painless lifting enables the masseur to effect further treatment, such as kneading and elimination of surplus fluids and matter at a depth and with an effectiveness heretofore unknown, thereby treating cellulitis and adiposity and obtaining a maximum toning of the superficial parts of the system.

The equipment for carrying out this method of massaging comprises a horizontal supporting surface such as a table, which the patient or subject lies on, and which is provided with a compressed air distributing system of conduits, for the connection of blower nozzle means, and air supply valve means controlled by control means, for example a pedal.

In order to localize, direct and amplify the action of the compressed air, the equipment is preferably completed by guiding surface means or deflectors, for example in the form of resilient screens, channels or tunnels arranged to conform to the shape of the body of the patient.

The compressed air current flowing at a small angle with the body surface causes an uneven lift in said surface as well as a compression and decompression zone resulting in an air flutter and in deep ridges reaching to the bottom of said tissues into the underlying muscles.

Advantage can be taken of the considerable amplitude of the waves and of the painless nature of the treatment for eliminating deeply located surplus fluids and matter, for example that in the wall of an adipose abdomen, by means of elastic scrapers or drainers.

The equipment is preferably completed by a windshield to shield the face or hair of the patient from the stream of air.

Further features and advantages of the invention will be apparent from the ensuing description with reference to the accompanying drawings, to which the invention is in no way limited.

In the drawings:

Fig. 1 is a perspective view, with parts cut away, of a table of the invention;

Figs. 2 and 3 are perspective views of two blower nozzles, Fig. 2 having parts cut away;

Fig. 4 shows how a patient is treated with deflectors, channels and tunnels;

Fig. 5 shows treatment with a movable, preferably vibrating, screen, and with scrapers or drainers;

Fig. 6 is a perspective view of a vibrating screen connected to a blower nozzle;

Figs. 7 and 8 are perspective views of two types of drainers;

Fig. 9 is a perspective view of a modification of the air supply control pedal, and

Fig. 10 is an end elevational view corresponding to Fig. 9.

The table of the invention consists of a conventional

massage table with which compressed air supply means and a control pedal are associated.

The conventional table comprises, for example, a horizontal frame 1 mounted on four legs 2 braced by cross-members such as members 3, 4 and 5. Mounted on the frame 1 is a platform made of wood or metal covered by a layer of felt or other material. Pivoted on the ends of the platform, by means of hinges 7 and 8, are a head-rest 9 and foot-rest 10 provided with adjusting racks 11 and 12, the notches in the latter co-operating with the cross-members 3.

Compressed air is supplied, to preferably the four corners of the table (although in certain cases the number of air supply points may be reduced to three, two or one), by pipe connections 13, each of which is combined with a tap or valve 14 and, preferably, with a pressure gauge 15. In the presently-described embodiment, the two connections adjacent each end of the table are supplied with air through a distributing system of conduits comprising a conduit or pipe 16, 17 connected to an axial main conduit or pipe 18 which is provided with a central connection 19 having a master tap or valve 20. The connection 19 is adapted to receive a flexible conduit or pipe 21 connected to the source of compressed air.

The taps 14 are operated separately and adjusted manually, but the tap 20 comprises a control lever 22 which, by the action of a return spring (not shown), tends to rise to its position corresponding to closure of the tap. The latter is opened by depressing the lever 22, that is by pulling on a cable 23 connected to this lever and to a cross-member 24 of a pedal. This pedal is in the form of a frame having two longitudinal rods 25 and two pairs of transverse rods 26, 27 and 28, 29 and is suspended by cables 30 attached to springs 31 hooked on the cross-members 3 of the table.

The operator or masseur connects a blower nozzle to the compressed air connection 13 nearest the region to be massaged, by means of a flexible tube or pipe 32 in the end of which is mounted a blower nozzle 33. Each air connection may correspond to a different air discharge rate or pressure, in which case the operator uses the air supply corresponding to the discharge and pressure suitable for the treatment to be carried out.

It will be understood that, irrespective of his position relative to the table, the operator is able to control the compressed air supply by depressing the pedal, which is accessible at any point around the table. The pedal is depressed on the side on which the foot is applied and this causes extension of one or the other, or both, of the springs 31. The opposite side of the pedal frame forms a pivot by abutting the underside of the cross-members 4 and the adjacent legs 2. The pedal may be further guided by means of rods, such as rods 34, which form guiding forks with the lower ends of the legs 2.

The nozzle 33 comprises a narrow slit of suitable length so as to blow onto the part to be massaged a sheet of compressed air. Depending on the nature and position of the region to be massaged, a triangular nozzle (Fig. 2), having a diverging effect, or a rectangular nozzle (Fig. 3), having no diverging or a reduced diverging effect, may be used.

The width of the slit may vary from several tenths of a millimeter to 1 or 2 millimeters and its length may be about 100 mm.

A blower having different characteristics, according to the treatment to be effected, may be connected to each air supply connection.

Preferably, the part 34 receiving the pipe 32 contains filtering means 35, such as cotton-wool disposed between two metal wire-gauzes 36, 37, for preventing impurities or particles of lubricant, carried along in the compressed

air, from passing out through the nozzle. The part 38 of the nozzle may include a hook 39 for attaching a screen, such as a fluttering screen.

The flutter effect of the deflector has for its principal function the more efficient spreading of the air ways resulting in a broader ridge area in the body surface.

The formation of waves or deep ridges is distributed over a wider surface by making the deflector flexible and increasing the efficiency of this air flutter in accordance with the inertia of the deflector.

This fluttering screen is seen in Figs. 5 and 6. It consists, for example, of a thin sheet or plate of transparent plastic material 40 provided with a beading or border 41 of rubber, fabric or other material. This sheet has an aperture 42 through which extends the hook 39 of the blower nozzle, against which the screen may be held by the thumb of the operator (Fig. 5). The screen concentrates the air on to the surface to be treated and increases the effect of the air flow. It may also have a large aperture 43 through which the operator may pass his fingers (and, if desired, an aperture for the thumb) if the operator, instead of holding the screen against the nozzle, wishes to hold it near the patient at a certain distance from the nozzle. Concave notches 44 may also be provided so as to enable the screen to be held in the hand between the thumb and fingers without danger of the screen slipping from the operator's grasp under the effect of the jet of air.

This jet of air not only has a tendency to blow the screen away but also causes the latter to flutter in the manner of a sail, or flap in the manner of a flag, with a force and frequency determined by the thickness of the screen. For a rather thick screen (having a thickness of about 2 mm.), the flutter is of large amplitude and relatively small frequency. For a thin screen (having a thickness of about 0.5 mm.), the amplitude is small and the frequency high.

These fluttering screens also permit progressively shifting the point of application of the air pressure, for example they permit moving the point of application up the leg for slimming an ankle, or effecting a very localized massage at the reflex points.

Instead of guiding, localizing or amplifying the action of the compressed air by means of small movable screens, such as that shown in Fig. 6, these selective effects may be further increased in certain parts of the body by using members whose shapes substantially correspond to the contour of the patient.

Fig. 4 shows a deflector 45 consisting of a sheet folded into a dihedral angle. The horizontal side 46 of the deflector is engaged under the body of the patient, whose weight maintains the deflector in place, and the vertical side 47 is so shaped as substantially to correspond to the shape of the part of the body to treat, from which it is spaced several centimeters away. The deflector 45 may be of malleable metal so as to be readily deformed, but as it is desirable to watch the treatment, it is preferable to use deflectors made of transparent moulded plastic material having the required shape. The deflector 45 has a border 48 similar to that of the screen 40.

For massaging regions of the body for which the dihedral deflector is unsuitable, there may be used channel-like members 49 made of transparent plastic material having a protecting border 50, or similar tunnel-like members 51 having a protecting border 52. In Fig. 4, the channel 49 is shown attached to a rod 53 which is orientable and vertically adjustable in a sleeve 54. The latter is rigid with a rod 55 which is orthogonal to the rod 53 and is rotatable and horizontally adjustable in a sleeve 56 rigid with a clamp 57, which may be fixed by a clamping screw 58 to a suitable point on the frame 1. The longitudinal edges of the channel 49 bear against the body so that there is a very precise guiding of the air.

The channel 49 is shown to have an end screen 59 having an aperture corresponding to the shape of the nozzle 33; the other end of the channel is open.

This channel is particularly suitable for massaging the thighs and arms.

For massaging the legs, ankles and forearms etc., it is preferable to use the tunnel 51 which may simply consist of a sheet of transparent plastic material rolled in the form of a cylinder whose diameter is set by suitably adjusting straps 60.

In using these various guiding devices, all the compressed air acts selectively on the selected parts of the body and the air massage is both deeper and more regular along the whole length of the guiding device.

In certain regions, such as the abdomen, the hips and the lumbar region, where the waves produced by the compressed air become much deeper, a mechanical massage may be effected so as to reach deep regions painlessly, by using scrapers or drainers (Figs. 5, 7 and 8) consisting of a handle 61 and a sort of blade of thick flexible rubber which the operator urges into and moves along the trough of the waves while following the movement of the latter so as to produce a scraping effect suitable for eliminating surplus fluid or matter. The width of these drainers (Figs. 7 and 8) depends on the part of the body to be massaged.

A wind-shield of transparent plastic material 62, for shielding the patient's face or hair, may be held by the patient or mounted on rods 63 pivotably mounted on the head-rest 9. The lower end of this shield is shaped at 64 to suit the neck and shoulders of the patient. It is provided with a protecting border 65 similar to those of the other screens and may be made of plastic material of suitable colour.

In the modification shown in Figs. 9 and 10, the cross-members 4 of the table are interconnected by a longitudinal member 63^a forming a pivot shaft for a pedal 64^a. The latter is a flat bar rigid with two bars 65^a pivoted to the member 63^a and braced by a rod 66 on which is hooked a rod 67 attached to a return spring 68. The rod 66 bears against a lever 69 which controls a valve 70. The latter is disposed between the air supply pipe 71 and pipes 72 and 73 and controls the air supply through the connections 74 which are provided with taps 75 and pressure gauges 76. This pedal is suitable for tables placed against a wall, when the operator remains on one side of the table.

The air supply connections may also be used for connecting liquid spraying devices for health treatment of the skin.

Although specific embodiments of the invention have been described, many modifications and changes may be made therein without departing from the scope of the invention as defined in the appended claims.

It is also pointed out that the deflector can fulfill its purpose without contacting the body.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A massaging table comprising a compressed air source, a valve controlling the release of air from said source, a nozzle for directing the flow of the compressed air, a flexible tube coupling said nozzle to said source so that said nozzle is adapted for directing compressed air at a subject supported on said table, and, control means to control said valve, said control means extending along the length of said table to enable the release of compressed air independent of an operator's position adjacent said table.

2. A table as claimed in claim 1 comprising a distributing system of conduits mounted on said table, and a connection between said source and said system, said flexible tube being engageable with different parts of said system to facilitate the direction of said nozzle towards different parts of the subject, said valve being coupled to said connection.

3. A table as claimed in claim 2 comprising outlet

means in said system adapted for engaging said flexible tube and pressure controls on each of said outlet means for the individual control of the compressed air at said outlet means.

4. A table as claimed in claim 3 wherein said control means is a pedal mounted on and extending along the length of said table.

5. A table as claimed in claim 4 comprising guiding surface means detachably coupled to said nozzle for guiding, localizing and intensifying the compressed air.

6. A table as claimed in claim 5 wherein said guiding surface means is a screen which vibrates due to the effect of the discharged compressed air.

7. A table as claimed in claim 4 wherein said nozzle is provided with a narrow slot for the discharge of compressed air.

8. A table as claimed in claim 4 comprising independent guiding surface means for enclosing portions of the subject, said independent means being adapted for the insertion of said nozzle for confining the discharged compressed air.

9. A table as claimed in claim 8 wherein said independent guiding surface means comprises a sheet of transparent plastic and a cushioning edge mounted on the periphery of said sheet.

10. A table as claimed in claim 8 comprising a mounting device for pivotally and adjustably supporting said independent guiding surface means.

11. A table as claimed in claim 4 comprising shielding means positionable on a subject to protect portions thereof from the effects of the compressed air.

12. An air massage apparatus comprising in combination substantially horizontal means adapted to receive a body in a relaxed muscle position, a compressed air source, a valve controlling the release of air from said source, a nozzle for directing the flow of said compressed air, a flexible tube coupling said nozzle to said source so that said nozzle is adapted for directing said compressed air at said body surface relaxedly supported by said first means, control means adapted to enable said release, and shielding means adjustably attached to said horizontal means and positionable on said body surface to protect portions thereof from the effects of the compressed air.

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