

[54] ACUPUNCTURE LOCATING DEVICE AND NEEDLE GUIDE

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[58] Field of Search **128/2.1 C, 2.1 Z, 329 A, 128/303.18, 303.19**

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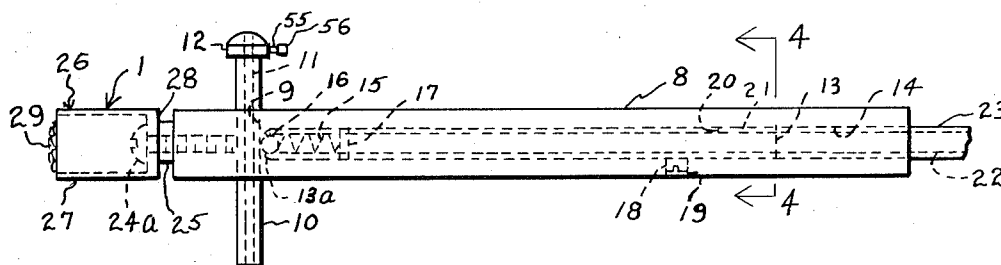
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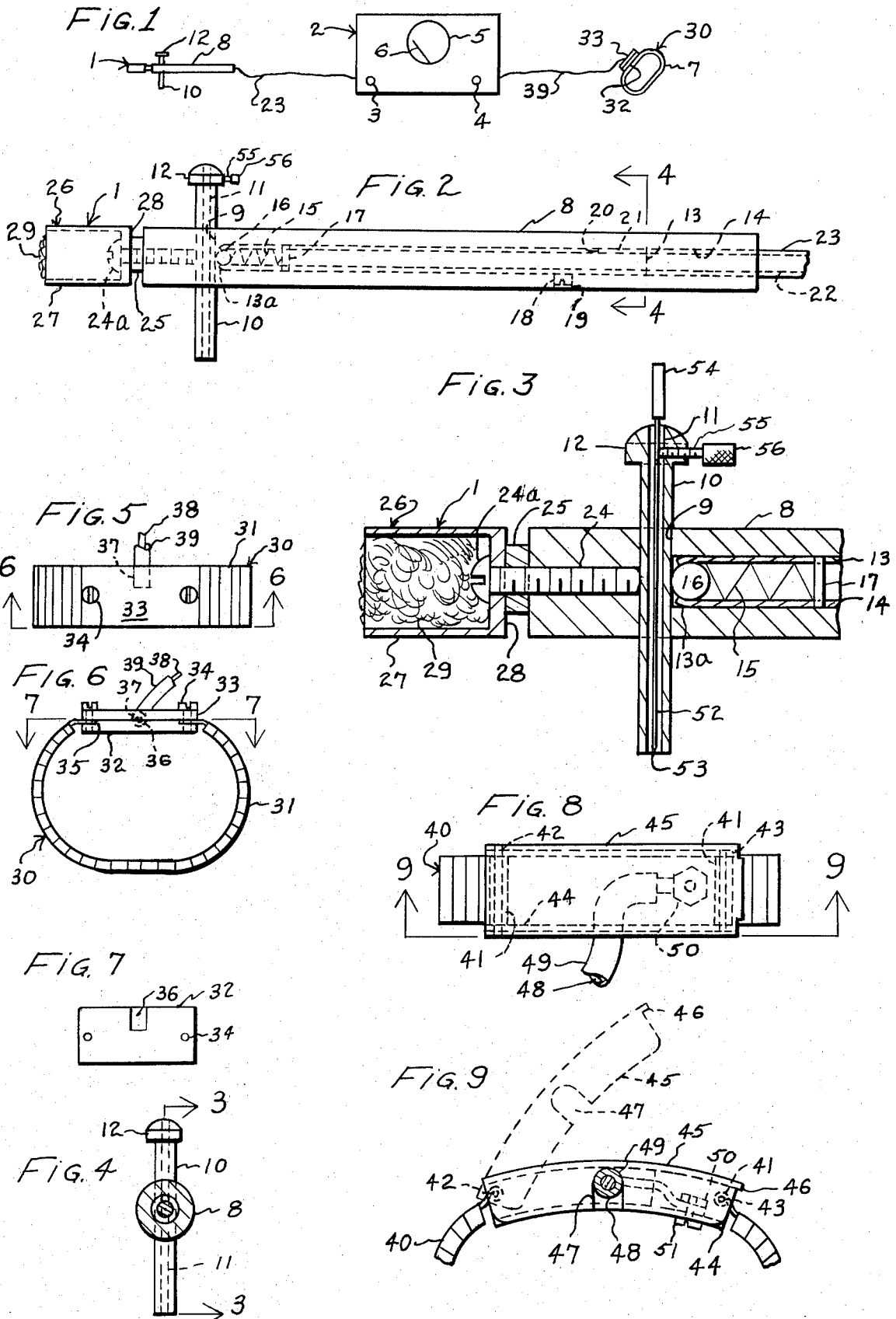
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ABSTRACT

A locating device for transmitting a mild electrical direct current or pulsating direct current through the body of a patient to locate through increased resistance as indicated on a meter, areas in the body that may benefit from the application of an acupuncture needle. Said locating device has an elongated handle, a hole in an end portion of said handle extending diametrically through the handle. A second hole is elongated longitudinally of the handle, and intersects with said first hole. An electrically conductive, tubular locator and needle guide is received in said first hole to have sliding travel therein to desired positions of adjustment relative to the handle. A spring loaded ball is disposed in said second hole to frictionally engage said tubular guide to resist said sliding travel. A screw, threadedly received in said handle, bears against the tubular guide with sufficient force to afford an effective restraint against said sliding travel to secure said guide in a predetermined, and desired position. It is intended that an end of the tubular guide may be placed against the skin of a patient, and the guide held in a desired position by means of the handle, while an acupuncture needle is inserted into the guide and with a light tap forced into the body of a patient in the desired area.

7 Claims, 9 Drawing Figures





ACUPUNCTURE LOCATING DEVICE AND NEEDLE GUIDE

FIELD OF INVENTION

The field of invention lies in the area of devices for locating areas in the body of a patient which would benefit from acupuncture therapy, with the subsequent employment of an acupuncture needle in the area located, and electrical therapy, if needed.

BACKGROUND OF INVENTION

Although a search has been made, nothing in the field of acupuncture has been discovered. However, applicant works in this field, and asserts that there has been used in prior practice, an electrical locating device having an elongated electrode carried by, and in a position transverse to, an elongated handle of electrically inert material; such device employs a meter and an electrode to be held by a patient to complete the circuit.

However, prior practice makes no provision for utilizing the first named electrode as both an electrical locator and a guide for the application of an acupuncture needle and for electrical therapy. Consequently, in prior practice once such an area has been located, either the locating device has been impressed into the skin to leave a temporary mark, or the area has been marked with a harmless dye of some nature, and then an acupuncture needle is applied through a hand held guide. Attention is invited to FIG. 3, which on a larger scale illustrates an acupuncture needle. Such needles are exceedingly fine in diameter and to facilitate handling, are formed with a head of larger cross-sectional dimension as illustrated at 52. Because the needles are so fine, and are flexible, they require support in their application for therapy, and such support is usually derived by tubular members such as is illustrated in FIG. 3, and designated by reference character 10. It should be noted that in prior practice the enlarged diameter head 12 has, to the best of applicant's knowledge, not been employed. Neither has the set screw been employed to secure the needle in the guide.

With the needle disposed approximately as is illustrated in FIG. 3, and with the lower end of the guide placed over the spot requiring treatment, the operator, or physician, may tap the end 52 of the needle, as with a finger, to imbed the needle in the patient's body to a desired depth. The guide assembly is then withdrawn from the needle to leave the needle in the desired position. It is further to be noted, that depending on the area of the body to be treated, the needles, and consequently the needle guides, may vary in length. Clearly a needle which is too much longer than the guide will flex and bend at that portion extending beyond the guide, and equally clearly, a needle which is too short for a guide could not be tapped into the patient's body. Consequently, it is of substantial importance that the tubular guide be removable and replaceable, as is hereinafter described, by longer guides or shorter guides according to the length of needle to be employed.

Further, the needle may be held with the set screw and electrical current permitted to flow in the circuit without removal of the device from the needle. In prior practice the locating device is not equipped to guide the needle. Once, with prior practice, the needle has been inserted, an electrical connection must be added, to employ electrical therapy. With the instant device,

it is already available, if desired, when the needle is applied.

SUMMARY AND OBJECTS OF INVENTION

Invention resides in, and an object of this invention is to provide, an elongated handle with a first hole extending diametrically through an end portion thereof, to receive a tubular locator and needle guide for sliding travel in said hole, and to further provide means to yieldably resist said sliding travel.

A further object of the invention is to provide a screw threadedly received in said handle so as to engage said tubular guide to effectively restrain the guide from displacement from an established position.

Still another object of the invention is to provide in said handle a second hole elongated longitudinally of said handle and intersecting said first hole, and to provide in the second hole electrically conductive means secured to said yieldably resistant means (said tubular guide, and said yieldably resistant means, also being electrically conductive), whereby an electrical circuit may be formed through said conduit, said yieldably resistant means, said tubular guide, and the body of a patient in contact with said guide.

Still another object is to provide a chamber of non-conductive material secured to an end of said handle by said screw and to fill said chamber with an electrically conductive medium in contact with said screw, and to form such a chamber of substantially greater diameter than the tubular guide, so that by means of said chamber and said medium an operator may locate a general area affording significant resistance to electrical current and then by employing the smaller diameter of the probe, or guide, may locate said area more specifically.

Still a further object is to provide an enlarged head at one end of said guide, said head being of a diameter intermediate between the opposite end of said probe and said chamber, to provide a locating area of intermediate size to afford an intermediate step in "pin-pointing" the area requiring treatment.

Still a further object is to provide a bracelet-type of electrode which can engage about the limb of a patient to afford an adequate and constant electrical contact for a complete electrical circuit.

Another object is to drill and tap said annular head to receive a set screw to engage a needle with the interior wall of a tubular guide to prevent movement of the needle longitudinally of the guide.

These and various other objects are attained by the construction hereinafter described and illustrated in the accompanying drawings, wherein:

FIG. 1 is a schematic view showing in small scale, and without detail, a hand-held electrical locating device connected by a wire to a meter, through which meter the electrical probe is in circuit with an electrode, preferably of a bracelet type.

FIG. 2 is a side elevational view of the electrical locator on a substantially larger scale than FIG. 1.

FIG. 3 is a partial, sectional, vertical elevational view of one end portion of said electrical locator taken on line 3—3 of FIG. 4.

FIG. 4 is a vertical, sectional view taken on line 4—4 of FIG. 2.

FIG. 5 is a top view of a bracelet-type electrode.

FIG. 6 is a side elevational view of said bracelet electrode taken on line 6—6 of FIG. 5.

FIG. 7 is a horizontal, partial sectional view of said electrode taken on line 7—7 of FIG. 6.

FIG. 8 is a plan view of a modification of said electrode.

FIG. 9 is a partial, vertical, elevational view of said modification taken on line 9—9 of FIG. 8.

In these views the reference character 1 designates a manually employable electrode assembly, in circuit with a meter generally designated as 2, and intended to provide (either through batteries or by a transformer, now shown) direct electrical current to be transmitted to and through a patient. The meter is provided with an off-on switch 3, and a control 4 of a conventional type, to regulate the flow of current. There is also provided a calibrated dial 5 and the usual conventional gage arm 6. The meter, of course, would be provided with a means of evaluating a characteristic of electrical current, preferably resistance, which will change when current passes through areas of the body which are less conductive than normal areas, and which evaluation would indicate the possible beneficial application of an acupuncture needle.

The reference character 7 designates an electrode, desirably of the bracelet type, so that the same need not be grasped in the hand of a human patient, because the adequacy of electrical contact may vary with the variations in the grip of a patient, and produce misreadings on the meter.

Referring now to FIGS. 2, 3, and 4, which are of a larger scale than FIG. 1, the reference character 8 designates a handle, of electrically non-conductive material, and formed at one end portion thereof with a diametrically transverse hole 9. A tubular needle guide 10 is received in said hole 9, and is formed at one end with a head 12 having a diameter greater than that of the needle guide 10 having the end surface of the head arcuately convex. A hole 11 extends longitudinally through the needle guide to give it the aforesaid tubular character.

An elongated tubular sleeve 13 is received in a hole 14 elongated in the handle, and preferably concentrically therewith. Said hole intersects the aforesaid hole 9, and the sleeve is adapted to receive a coil expansion spring 15 which reacts between a metallic ball 16 and a metallic pin 17, the latter being received diametrically through the walls of said sleeve 13. The spring 15 and the ball 16, pin 17, and the sleeve 13 are all electrically conductive.

To resist withdrawal of the sleeve 13 from the handle 8, it is desired to drill and tap a hole in the handle to receive a set screw 18. To avert the possibility of the set screw conducting electricity to the hand of an operator of the device, it is desired to fill the hole 18 with a wax filler or some other electrically non-conductive substance, 19. It is also desirable to form a slot 20 in an end of the sleeve 13. This affords the use of solder 21 to secure an end portion of a wire 22 disposed in the end portion of said sleeve 13. The wire shown is of the single strand type, and has insulation 23.

A screw 24 is threadedly received in the end portion of the handle 8, so that the end of said screw may bear against the needle guide 10 to positively prevent dislodgment of the needle guide. It is intended that the needle guide have sliding adjustable travel in the hole 9, so that the portion protruding beneath the handle may be adjusted to suit the purposes and convenience of the operator of the device, and such sliding adjust-

ment is available upon loosening of the screw 24 so that it does not engage tightly against the surface of the guide 10. To maintain the guide in the desired position until the screw can be tightened, is the function of the steel ball 16 and spring 15. As is best seen in FIG. 3, it may be desirable to crimp the end 13a of the sleeve 13 to resist the escape of the ball 16 should the guide 10 be withdrawn, to replace it with either a longer or shorter guide. A lock nut 25 may be employed to resist undesired rotation of the screw 24.

A cup 26 is formed by an annular wall 27, and has a bottom wall 28. As may be clearly seen from FIGS. 2 and 3, the shank of the screw 24 passes through the bottom wall to engage in the handle, and the head 24a of the screw clamps the bottom wall against the nut 25. It is desirable that the diameter of the chamber be several times the diameter of the tubular guide, and it is also desirable that said chamber, which is of non-conductive material, be filled with an absorbent material and soaked with a saline solution or alcohol, or the like, to serve as a conductor of electrical current.

The electrical wire 22, 23, extends from the handle to make an appropriate electrical connection (not shown) within the meter. From the opposite side of the meter a wire 38, 39 leads to a bracelet-type of electrode designated generally in FIGS. 5 and 6, as 30. The bracelet portion of the electrode is designated as 31, and the ends of the bracelet are connected between two conductive metal plates 32 and 33. Screws 34 extend through holes in the flattened end plates 35 of the bracelet to maintain the bracelet and said plates in said assembly. The two plates 32, 33 are formed with a groove, respectively designated as 36 and 37 in the respective lower and upper plates, and this groove is dimensioned to clamp on the insulation 39 of the wire 38. It is proposed that the wire 38 be extended beyond the insulation so that it will be engaged with the conductive surfaces of the plates 32, 33. If desired, a soldered connection may also be employed. A conventional expansion strap is contemplated, but, of course, any strap that will grip a limb of a patient, human or animal, will serve.

The modification of the bracelet electrode as shown in FIG. 8, includes the bracelet generally designated as 40 having end members return bent to form pivot loops 41. As is readily seen in FIGS. 8 and 9, a pivot 42 engages the left end (as drawn) of the bracelet and a pivot 43 engages the right end of the bracelet. The end portions of the bracelet are engaged within a housing having a lower section 44 and an upper section 45 pivotally conjoined by the pivot member 42 which extends through the walls of both upper and lower sections. It should be noted, however, that the pivot 43 extends through the walls of only the lower section 44, so as not to interfere with the swinging travel of the upper section 45 about the axis of pivot 42, as is shown in dash line in FIG. 9. A lip 46 extends from the right end of the housing as shown to facilitate pivotally raising the upper section 45 to the position shown in dash line. Both the upper and lower sections have a recess 47 to accommodate a wire 48, insulated as shown at 49. The wire 48 extends beyond the end of the insulation 49 to be secured to the bottom wall of the lower section 44, as by a screw 51 and a nut 50 to establish a secure electrical contact with the bracelet electrode. It is intended that frictional engagement of the side walls of the upper section 45 with the side walls of the lower section 44

will normally retain the casing or housing in a closed position.

It may now be seen that by engaging a bracelet electrode on the wrist of a patient or the limb of an animal, and by tracing either the cotton-filled chamber 26 or the tubular electrode 10 over the skin over areas suspected of requiring treatment, the current will pass from the meter through one electrode or the other, and thence through the body of a patient to the other electrode and then back to the meter where the dial gage 5 will indicate resistance. Clearly the area can at first be generally located by the larger diameter chamber 26, and the specific area, should it be a small one, may be narrowed down by subsequent use first of the head 12 on the tubular guide and then the smaller end of said tubular guide. Once the precise area has been determined, a needle 52, having a sharply pointed end 53 may be dropped into the guide, and tapped in position in the body of a patient without first having to remove the locator and provide some form of marking or indentation of the skin for a later application of the needle after the locating device has been removed.

Obviously, it may require a medically skilled person to be aware of areas of the body where additional resistance might normally be anticipated, and which would therefore not normally require or benefit from treatment.

It should be noted that the needle 52 is formed with a shank 54 of greater diameter than the needle itself. If frequently occurs that a needle is tapped into position by a finger tip of the operator, and the shank 54 affords a surface which may be tapped.

Also, said head provides an area having dimensions sufficient to be engaged by a set screw 55, and engaged with the interior surface of the tubular guide to resist movement of the needle and allow "sparrow-pecking", as earlier described. The set screw 55 may be provided with a knurled knob 56 for manual application of the set screw. It is contemplated that the set screw would be allowed to project to one side or the other, by rotating the needle guide as desired before tightening the screw 24, 24a.

What I claim is:

1. In an electrical locator to determine the areas on the body of a patient which may benefit from treatment by insertion of an acupuncture needle, with said locator included in an electrical circuit, and including,
an elongated handle formed of electrically non-conductive material,
a first hole extending transversely to the longitudinal axis of said handle,
an electrically conductive, elongated tubular electrode, received in said first hole to extend transversely of said longitudinal axis, and having sliding travel therein relative to said handle, for adjustment to desired positions thereon,
electrically conductive, yieldably resistant means carried by said handle to engage said tubular electrode to yieldably resist said sliding travel so as to retain the tubular electrode in assembly with said handle,
an electrically conductive wire, one end of which has electrical communication with said yieldably resistant means,
a second electrode engageable with the body of a patient, and having electrical communication with the other end of said wire and being adapted to

complete a circuit through said tubular electrode through the body of a patient,
a source of electrical power connected in said circuit, and
a gage incorporated in said circuit to measure the characteristic of electrical current.

2. The combination as set forth in claim 1, said handle further having a second hole elongated longitudinally thereof, and intersecting said first hole,

said yieldably resistant means being disposed in said second hole to react against said tubular electrode to yieldably resist said sliding travel.

3. The combination as set forth in claim 2, a screw threadedly received in said handle, said screw being engageable with said tubular electrode to restrain said electrode from dislodgment from a predetermined desired position relative to said handle.

4. The combination as set forth in claim 3, an electrically conductive tubular sleeve received in said second hole,

said yieldably resistant means being a spring disposed in said sleeve,

stop means in said sleeve to engage one end of said yieldably resistant spring,

a ball of electrically conductive material engaging the opposite end of said spring,

said spring reacting between said stop means and said ball to urge said ball into engagement with said tubular electrode to resist said sliding travel.

5. The combination as set forth in claim 4, a cup secured at one end of said handle, a head formed on said screw, said cup having a bottom wall,

an aperture in said bottom wall to receive said screw, whereby the head of said screw bears against the bottom wall of said cup to secure said cup in assembly with said handle,

said cup being composed of electrically non-conductive material, and

electrically conductive absorbent material being received in said cup,

said cup having an open end through which said conductive material may contact the skin of a patient being treated, to assist in the location of areas requiring treatment, whereby such areas may first be located with said cup, and more precisely located with said tubular electrode, precedent to the insertion of an acupuncture needle through said tubular electrode.

6. The combination as set forth in claim 5, a head at one end of said tubular electrode, a surface formed on said head and disposed thereon to guide a needle point into the tubular electrode, said tubular electrode guiding and supporting a needle to be driven therethrough by impact on an end of such needle by a fingertip or the like, said surface serving to limit movement of such needle through said electrode when such fingertip contacts said surface.

7. The combination as set forth in claim 6, a set screw threadedly received in the head of said tubular guide and disposed therein to releasably engage said needle and restrain such needle from movement in said guide.

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