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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
11/198,386	08/08/2005	William J. Carroll	000309-00077	8339
27557	7590	01/11/2012	EXAMINER	
BLANK ROME LLP WATERGATE 600 NEW HAMPSHIRE AVENUE, N.W. WASHINGTON, DC 20037			GEDEON, BRIAN T	
			ART UNIT	PAPER NUMBER
			3766	
			MAIL DATE	DELIVERY MODE
			01/11/2012	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM J. CARROLL

Appeal 2010-000923
Application 11/198,386
Technology Center 3700

Before LINDA E. HORNER, STEVEN D.A. McCARTHY, and
PHILLIP J. KAUFFMAN, *Administrative Patent Judges*.

HORNER, *Administrative Patent Judge*.

DECISION ON APPEAL

STATEMENT OF THE CASE

William J. Carroll (Appellant) seeks our review under 35 U.S.C. § 134 of the Examiner's decision rejecting claims 5, 8, and 10-12 under 35 U.S.C. § 103(a) as unpatentable over Wingrove (US 5,540,735, issued July 30, 1996). We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

THE INVENTION

Appellant's claimed invention relates to surface electrical stimulation that delivers electrical pulses across the skin for various purposes, such as relief of pain, disuse atrophy, maintenance of range of motion, or healing of tissue. Spec. 2, para. [0003]. Claim 5, reproduced below, is representative of the subject matter on appeal.

5. A method of providing selective surface electrical stimulation, comprising:

providing a first stimulation circuit, connected to at least two first circuit electrodes in a first state;

providing a second stimulation circuit, connected to at least two second circuit electrodes in the first state;

using a switch means, selectively changing circuit connections in a second state so that the first stimulation circuit is connected to at least one second circuit electrode and the second stimulation circuit is connected to at least one first circuit electrode.

CONTENTIONS AND ISSUES

Appellant argues claims 5, 8, 10, and 11 as a group. App. Br. 3-4. We select claim 5 as representative, and claims 8, 10, and 11 stand or fall with claim 5. *See* 37 C.F.R. § 41.37(c)(1)(vii). Appellant separately argues claim 12. App. Br. 5-6.

The Examiner determined that the method of claim 5 would have been obvious because even though Wingrove does not expressly disclose using a switch means, "providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art." Ans. 3. The Examiner explained that use of "switch means is nothing more than an automation of the manual repositioning of the electrodes disclosed in Wingrove." Ans. 4.

Appellant argues that Wingrove does not render obvious the method of claim 5 because Wingrove does not recognize the problem Appellant was trying to solve, *viz*, low patient compliance with instructions to change electrode configuration manually. App. Br. 3-4; Reply Br. 2. Appellant argues for claim 12 that “*Wingrove* does not describe selectively changing circuit connections sequentially from a first state (interferential stimulation) to a second state (NMES¹).” App. Br. 6. The Examiner determined that claim 12 does not claim a sequence of stimulation and Wingrove’s Figures 9-11 clearly depict a selective changing of connections from a first state (interferential stimulation) to a second state (NMES). Ans. 4-5.

The issues presented by this appeal are:

Would it have been obvious to one of ordinary skill in the art in view of Wingrove to use switch means to selectively change circuit connections as called for in claim 5?

Would it have been obvious to one of ordinary skill in the art in view of Wingrove to apply interferential current stimulation in a first state and NMES in a second state, as called for in claim 12?

FINDINGS OF FACT

The following enumerated findings are supported by at least a preponderance of the evidence.

1. Wingrove discloses that “[n]euromuscular stimulation (NMS), transcutaneous electrical nerve stimulation (TENS), and interferential stimulation are three types of electrical stimulation utilized to relieve pain or reduce edema.” Col. 1, ll. 26-29.

¹ NMES stands for Neuromuscular Electrical Stimulation.

2. Wingrove discloses that to apply interferential stimulation, the patient must place four electrodes on his skin in a criss-cross pattern and correctly connect four wires between each skin electrode and the stimulation unit. Col. 2, ll. 3-16.
3. Wingrove teaches that “this treatment as currently applied is so complex and cumbersome that many patients have difficulty or do not follow their prescribed treatment.” Col. 2, ll. 21-23.
4. One object of Wingrove is to provide “an easy-to-use apparatus to help patients relieve pain in their hands (or other flexing body portions) caused by conditions such as carpal tunnel syndrome.” Col. 2, ll. 43-45.
5. In the hand/wrist embodiment, Wingrove discloses “a wrist brace positioning means with internal stimulation output contacts and electrodes” that allows the patient to avoid having to “place separate skin electrodes on his/her skin and then connect multiple wires from the stimulator to the skin electrodes.” Col. 2, ll. 45-52.
6. Figure 9 of Wingrove “shows an interferential stimulation pattern that can be produced” and Figures 10 and 11 “show alternative stimulation patterns that can be produced.” Col. 3, ll. 25-28.
7. Wingrove discloses that “[i]deally, the stimulator 11 used in the present invention can provide neuromuscular stimulation (NMS) or transcutaneous electrical nerve stimulation (TENS), in addition to interferential stimulation.” Col. 6, ll. 30-33.
8. Wingrove discloses that “[a]lthough the criss-cross pattern is the preferred method, this invention may be used to apply stimulation between any two electrodes supported by the wrist brace 12. As

illustrated in FIGS. 10 and 11, the waveforms can travel between any suitably connected pair of electrodes.” Col. 7, ll. 28-32.

9. Appellant’s Specification describes that “[i]nput 516 of switch 506 is selectively connected to one of outputs A and B associated with input 516, depending on the state of switch 506,” and that “[i]nput 518 of switch 506 is connected either to electrode 104 or to electrode 106’, depending on the state of switch 506.” Spec. 6-7, para. [0026].

10. The Specification describes:

[S]witch 506 is shown schematically as a double pole, double throw switch. However, it will be understood that the scope of the invention is not limited to any particular type of switch. The functionality of switch 506 can be implemented either as a mechanical switch, a solid state or electronic switch, or in any other known manner that produces similar results in terms of the application of electrical stimulation in the desired patterns.

Spec. 7, para. [0027].

PRINCIPLES OF LAW

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense. In that instance the fact that a combination was obvious to try might show that it was obvious under § 103.

KSR Int’l Co. v. Teleflex, Inc., 550 U.S. 398, 421 (2007) (addition of a well-known electronic sensor to a well-known mechanical adjustable pedal would have been obvious).

Since *KSR*, the Federal Circuit has concluded that it would have been obvious to combine: (1) a mechanical device for actuating a phonograph to play back sounds associated with a letter in a word on a puzzle piece, with

(2) an electronic, processor-driven device capable of playing the sound associated with a first letter of a word in a book. *Leapfrog Enter., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007). The court’s conclusion of obviousness was based in part on the reasoning that “[a]pplying modern electronics to older mechanical devices has been commonplace in recent years.” *Id.* The Federal Circuit recognized that “[a]n obviousness determination is not the result of a rigid formula disassociated from the consideration of the facts of a case. Indeed, the common sense of those skilled in the art demonstrates why some combinations would have been obvious where others would not.” *Id.* (citing *KSR*, 550 U.S. at 417 (“The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.”)). The Federal Circuit relied in part on the fact that Leapfrog presented no evidence that the inclusion of a reader in the combined device was “uniquely challenging or difficult for one of ordinary skill in the art” or “represented an unobvious step over the prior art.” *Id.* at 1162 (citing *KSR*, 550 U.S. at 418).

Similarly, in *Muniauction, Inc. v. Thomson Corp.*, 532 F.3d 1318 (Fed. Cir. 2008), the court concluded that conducting previously known methods of bidding through an Internet web browser was obvious because it amounted to no more than applying the use of the Internet to existing electronic processes at a time when doing so was commonplace. *Id.* at 1327. Also, in *Western Union Co. v. MoneyGram Payment Systems, Inc.*, 626 F.3d 1361 (Fed. Cir. 2010), the court found “the use of an electronic transaction device where the prior art employed a fax machine to be an unpatentable improvement at a time when such a transition was commonplace in the art.”

Id. at 1370 (citing *In re Mettke*, 570 F.3d 1356, 1360-61 (Fed. Cir. 2009) (finding it obvious to add Internet access to a prior art kiosk that included a fax-machine)).

ANALYSIS

We agree with the Examiner that use of a switch means in the device of Wingrove to switch the connections between the skin electrodes and the stimulation unit, and thus switch between various known stimulation patterns, would have been obvious to one of ordinary skill in the art at the time of Appellant's invention.

Wingrove discloses that it was known in the art to use NMS, TENS, and interferential stimulation to treat pain and edema (Fact 1). Wingrove recognizes the design need and market pressure to provide an easy-to-use device for applying electrical stimulation therapy (Facts 2, 3). An object of Wingrove's invention was to provide a simple, easy-to-use apparatus to help patients relieve pain using electric stimulation therapy that avoids requiring the patient to place the electrodes on the skin and connect multiple wires from the stimulator to the electrodes (Facts 4, 5). Wingrove discloses that the hand/wrist brace embodiment can be used to provide an interferential stimulation pattern and a NMS pattern (Facts 6-8). These patterns require different connections between the electrodes and the stimulation unit.

The finite predictable solutions for switching between these stimulation therapies is either to have two different wrist braces, one for applying interferential stimulation and another for applying NMS, and requiring a patient to don and use the proper brace at the appropriate time, or to use the same brace and simply switch from the criss-cross connection between the electrodes and the stimulation unit used for interferential

stimulation to the connections used for NMS. We find, in light of design need and market demand recognized in Wingrove, that a person of ordinary skill in the art would have had good reason to pursue the known options within his or her technical grasp at the time of Appellant's invention. We also find that the switch means disclosed in Appellant's Specification were known and that the use of switches in place of manual methods to switch between one circuit and another was commonplace at the time of Appellant's invention (Fact 10). Thus, the use of switch means in Wingrove to change between different stimulation patterns would have been obvious to try and would have led to predictable results. Hence, Appellant's claimed invention is the product not of innovation but of ordinary skill and common sense. *See KSR*, 550 U.S. at 417 ("The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results."). Appellant presented no evidence that the use of switch means in Wingrove would have been uniquely challenging or difficult for one of ordinary skill in the art or would have represented an unobvious step over the prior art.

We agree with the Examiner's reading of the language of claim 12 as not requiring selectively changing circuit connections sequentially from a first state (interferential stimulation) to a second state (NMES). Ans. 4-5. Wingrove's Figures 9-11 clearly depict a selective changing of connections from a first state (interferential stimulation) to a second state (NMES) (Facts 6-8). For these reasons, we sustain the rejection of claims 5, 8, and 10-12 under 35 U.S.C. § 103(a) as unpatentable over Wingrove.

CONCLUSIONS

It would have been obvious to one of ordinary skill in the art in view of Wingrove to use switch means to selectively change circuit connections as called for in claim 5.

It would have been obvious to one of ordinary skill in the art in view of Wingrove to apply interferential current stimulation in a first state and apply Neuromuscular Electrical Stimulation (NMES) in a second state, as called for in claim 12.

DECISION

The decision of the Examiner to reject claims 5, 8, and 10-12 is **AFFIRMED**.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED



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27557	7590	11/13/2009	EXAMINER	
BLANK ROME LLP WATERGATE 600 NEW HAMPSHIRE AVENUE, N.W. WASHINGTON, DC 20037			LEE, YUN HAENG NMN	
			ART UNIT	PAPER NUMBER
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			11/13/2009	PAPER

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BLANK ROME LLP
WATERGATE
600 NEW HAMPSHIRE AVENUE, N.W.
WASHINGTON, DC 20037

Appeal No: 2010-000923
Application: 11/198,386
Appellant: William J. Carroll

**Board of Patent Appeals and Interferences
Docketing Notice**

Application 11/198,386 was received from the Technology Center at the Board on October 13, 2009 and has been assigned Appeal No: 2010-000923.

A review of the file indicates that the following documents have been filed by appellant:

Appeal Brief filed on: April 09, 2009
Reply Brief filed on: August 06, 2009
Request for Hearing filed on: NONE

In all future communications regarding this appeal, please include both the application number and the appeal number.

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BOARD OF PATENT APPEALS AND INTERFERENCES
UNITED STATES PATENT AND TRADEMARK OFFICE
P.O. BOX 1450
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By order of the Board of Patent Appeals and Interferences.



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27557	7590	10/08/2009	EXAMINER	
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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
11198386	8/8/2005	CARROLL, WILLIAM J.	000309-00077

BLANK ROME LLP
WATERGATE
600 NEW HAMPSHIRE AVENUE, N.W.
WASHINGTON, DC 20037

EXAMINER

YUN HAENG LEE

ART UNIT	PAPER
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3766

20091002

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Commissioner for Patents

The reply brief filed on 8/6/09 is noted.

/YHL/

/Carl H. Layno/
SPE, Art Unit 3766

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
William J. CARROLL

Application No.: 11/198,386

Confirmation No.: 8339

Filed: August 8, 2005

Art Unit: 3766

For: SWITCHABLE AND PROGRAMMABLE
ELECTRODE CONFIGURATION

Examiner: Y. H. N. Lee

REPLY BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Madam:

In response to the Examiner's Answer mailed June 10, 2009, the Appellant, through undersigned counsel, submits the present Reply Brief.

The Examiner's Answer has reiterated the rejection and, beginning on page 4, has provided a response to the arguments which the Appellant presented in the Appeal Brief. The Appellant will take up each part of the response set forth in the Examiner's Answer in turn.

In the paragraph spanning pages 4 and 5, the Examiner's Answer asserts that the rule in *In re Venner*, 262 F.2d 91, 120 U.S.P.Q. 192 (C.C.P.A. 1958), is a *per se* rule that the automation of a previously manually performed step would have been obvious. The Appellant respectfully disagrees with that reading of the decision and submits that there is no such *per se* rule. Rather, the decision states that "it is not 'invention' to *broadly* provide a mechanical or automatic means to replace manual activity which has accomplished the same result." *Id.*, 262 F.2d at 94, 120 U.S.P.Q. at 194 (emphasis added). The fact that that decision does not provide a *per se* rule is evidenced by the immediately following paragraph, which discusses whether the

timing device imparts patentability and which would be entirely unnecessary if the reading of the decision in the Examiner's Answer were correct:

With respect to the paramount contention of appellants that the timing device of their combination establishes patentability, we are of the opinion that the prior art and the logical deductions of anyone skilled in the art would preclude the determination that the recitation of "time-controlled means set to the period between the completion of the pouring of the metal in the mold and solidification of the metal of the piston therein" constitutes "invention." The need for withdrawal of the middle core section upon solidification is recognized by Flammang et al.; Waldie and Stern teach the advantages of timing devices used in conjunction with pressure valves to cause the withdrawal of various parts at predetermined times after pouring in the operation of molding devices. Therefore it would be obvious to any person skilled in this art to equip the mold structure of Flammang et al. with the timing devices of Waldie or Stern.

Id., 262 F.2d at 94, 120 U.S.P.Q. at 194-195. That is, contrary to the reading of the decision given in the Examiner's Answer, the court in *Venner* in fact needed to consider the issue of the timing device on its merits.

Moreover, the rejection from which the present appeal is taken is distinguishable on its facts from the rejection at issue in *Venner*. Whereas in *Venner*, the applied prior art taught the very problem to be addressed by the invention and also taught the advantages of timing devices which would be readily seen to overcome that problem, in present case, the reference applied in the rejection does not acknowledge the problem sought to be solved by the present claimed invention, which is noted in paragraph [0008] of the specification and in the third full paragraph of page 3 of the Appeal Brief, namely, that patient compliance with instructions to change electrode configuration manually is very low, nor does the Examiner's Answer make any representation that such a problem was at all known in the prior art.

Accordingly, the Appellant respectfully submits that the present claimed invention is patentable, notwithstanding *Venner*.

The Examiner's Answer then asserts that claim 12 does not claim a sequence of stimulation. However, as explained in the Appeal Brief in the paragraph spanning pages 3 and 4, the applied reference does not teach the two stimulation modes as applied in the present claimed invention, in either order.

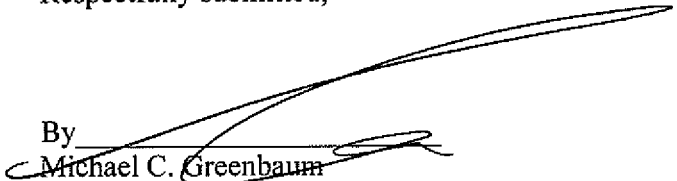
Finally, the comments in the Examiner's Answer on page 5, beginning with line 2, on the changing of connections in the applied reference have already been answered in that same paragraph in the Appeal Brief.

For the reasons set forth above and in the Appeal Brief, the Appellant respectfully urges reversal of the rejection of all claims.

Dated: August 6, 2009

Respectfully submitted,

By


Michael C. Greenbaum

Registration No.: 28,419

BLANK ROME LLP

Correspondence Customer Number: 76317

Attorney for Applicant

Electronic Acknowledgement Receipt

EFS ID:	5842943
Application Number:	11198386
International Application Number:	
Confirmation Number:	8339
Title of Invention:	Switchable and programmable electrode configuration
First Named Inventor/Applicant Name:	William J. Carroll
Customer Number:	27557
Filer:	David J. Edmondson/Jeffery De Hart
Filer Authorized By:	David J. Edmondson
Attorney Docket Number:	000309-00077
Receipt Date:	06-AUG-2009
Filing Date:	08-AUG-2005
Time Stamp:	16:04:59
Application Type:	Utility under 35 USC 111(a)

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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Reply Brief Filed	0003090077_- _0003090077replybriefpdf.PDF	78706 <small>adc180b8822db1b70802eb0262e01530e3 aae5b3</small>	no	3

Warnings:

Information:

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 11/198,386
Filing Date: August 08, 2005
Appellant(s): CARROLL, WILLIAM J.

Michael C. Greenbaum
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/9/2009 appealing from the Office action mailed 12/23/2008.

Art Unit: 3766

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

5,540,735

WINGROVE

7-1996

Art Unit: 3766

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 5, 8 and 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wingrove (US Pat. No. 5,540,735).

Regarding claim 5 and 10, Wingrove discloses a method of providing selective surface electrical stimulation, comprising:

providing a first stimulation circuit (point A), connected to at least two first circuit electrodes (33 at A and C) in a first state (fig. 9);

providing a second stimulation circuit (point B), connected to at least two second circuit electrodes (33 at B and D) in the first state (fig. 9);

selectively changing circuit connections in a second state (fig. 10 or 11) so that the first stimulation circuit (point A) is connected to at least one second circuit electrode (33 at B or D) and the second stimulation circuit (point B) is connected to at least one first circuit electrode (33 at A or C).

Wingrove does not expressly disclose a switch means which operates under a programmed electronic control for changing circuit connections. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a switch means which operates under a programmed electronic control to selectively change circuit connections in Wingrove since it has been held that broadly providing a mechanical or automatic means to replace manual activity which has accomplished the same result involves only routine skill in the art. *In re Venner*, 120 USPQ 192.

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Regarding claim 8, in order to selectively change circuit connections between the circuit connection of fig. 9 and figs. 10/11, the switch means would have to perform the function of a double pole double throw switch.

Regarding claims 11 and 12, in the first state, the electrodes are connected to apply a cross current (fig. 9) to apply interferential current stimulation (col. 6 line 34), and in the second state, the electrodes are connected to apply a longitudinal current (figs. 10 or 11) to apply Neuromuscular Electrical Stimulation (col. 6 line 31).

(10) Response to Argument

Appellant argues that the fact that the present claimed invention addresses a problem posed by prior art somehow makes the invention non-obvious. While Examiner agrees that advantages not appreciated by the prior art can be evidence of non-obviousness, such evidence is not dispositive on the issue of obviousness. The mere fact that an issue has yet to have been addressed in the prior art hardly makes the solution to such an issue readily non-obvious. The only difference between the prior art and the present claimed invention is the switch means. Such a switch means is nothing more than an automation of the manual repositioning of the electrodes disclosed in Wingrove. Therefore, under *In re Venner*, 120 USPQ 192, it would have been obvious to replace the manual activity of Wingrove with an automatic means such as a switch means. Appellant further argues that Wingrove fails to mention a sequence of stimulation that includes interferential stimulation followed by NMES. This argument seems moot as Appellant also fails to claim such a sequence of stimulation. Although

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claim 12 mentions a first state and a second state, such designations do not necessarily limit the sequential order in which the states/configurations must occur. Finally, Appellant argues that Wingrove does not describe selectively changing circuit connections sequentially from a first state (interferential stimulation) to a second state (NMES). Examiner disagrees since it seems clear that figs. 9-11 clearly depict such a changing of connections. In addition, Wingrove discusses providing neuromuscular stimulation "in addition" to interferential stimulation, thus creating the inference that both modes of stimulation are used (col. 6 lines 31-33). Note that in the rejection above Examiner considers the points A-D to correspond to circuits.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Yun Haeng Lee/

Examiner, Art Unit 3766

Conferees:

/Carl H. Layno/

Supervisory Patent Examiner, Art Unit 3766

Angela D. Sykes

/Angela D Sykes/

Application/Control Number: 11/198,386

Page 6

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Supervisory Patent Examiner, Art Unit 3762

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
William J. CARROLL

Application No.: 11/198,386

Confirmation No.: 8339

Filed: August 8, 2005

Art Unit: 3766

For: SWITCHABLE AND PROGRAMMABLE
ELECTRODE CONFIGURATION

Examiner: Y. H. N. Lee

APPEAL BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Madam:

Further to the Notice of Appeal filed February 9, 2009, the Appellant, through undersigned counsel, submits the present Appeal Brief.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1205.02:

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I. REAL PARTY IN INTEREST

The real party in interest for this appeal is the assignee, International Rehabilitative Sciences, Inc., of Vancouver, Washington.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

Claims 1-12 have been presented for examination. Of those claims, claim 4 has been canceled, and claims 1-3, 6, 7 and 9 have been withdrawn from consideration. Claims 5, 8 and 10-12 are pending and under consideration, stand finally rejected, and form the subject matter of the present appeal.

IV. STATUS OF AMENDMENTS

The Response to Final Rejection filed December 23, 2008, did not seek to amend the claims.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The invention defined by claim 5 and the claims dependent therefrom is directed to a method of providing selective surface electrical stimulation, comprising: providing a first stimulation circuit, connected to at least two first circuit electrodes in a first state (Figs. 5 and 6, first channel circuit 502 and electrodes 104' and 106'; page 6, paragraph [0025], lines 3-5; pages 6-7, paragraph [0026], lines 1-3); providing a second stimulation circuit, connected to at least two second circuit electrodes in the first state (Figs. 5 and 6, second channel circuit 504 and electrodes 104 and 106; page 6, paragraph [0025], lines 3-4; pages 6-7, paragraph [0026], lines 3-5); using a switch means, selectively changing circuit connections in a second state so that the first stimulation circuit is connected to at least one second circuit electrode and the second stimulation circuit is connected to at least one first circuit electrode (Figs. 5 and 6, switch 506; page 7, paragraph [0028], lines 1-4).

Claim 12 depends from claim 5 and adds the further limitations wherein, in the first state, interferential current stimulation is applied (Figs. 1-3, interferential pattern 102 formed by electrodes 104, 104', 106, 106'; page 6, paragraph [0024], lines 3-7), and in the second state, Neuromuscular Electrical Stimulation (NMES) is applied (Fig. 4, stimulation applied by electrodes 104, 104', 106, 106'; page 6, paragraph [0024], lines 7-11).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

The sole ground of rejection to be reviewed is the rejection of claims 5, 8 and 10-12 under 35 U.S.C. § 103(a) over *Wingrove et al.*

VII. ARGUMENT

A. Claims 5, 8, 10 and 11

The Appellant respectfully urges reversal of the rejection of claims 5, 8, 10 and 11 under 35 U.S.C. § 103(a) over *Wingrove*. The Final Rejection alleges that it would have been obvious to introduce a switch means into *Wingrove* because “broadly providing a mechanical or automatic means to replace mechanical activity which has accomplished the same result involves only routine skill in the art.” However, the present invention seeks to overcome a problem, noted in the originally filed specification in paragraph [0008], in which patient compliance with instructions to change electrode configuration manually is very low. Therefore, the Appellant respectfully submits that the present claimed invention addresses a problem posed by prior art like *Wingrove* and would thus have been non-obvious.

Although *Wingrove* describes the use of both interferential stimulation and NMES, the spirit of *Wingrove* is to treat carpal tunnel syndrome with the preferred interferential stimulation. *Wingrove* preferably describes interferential stimulation over NMES because the electrodes in *Wingrove* for the NMES mode would have to be repositioned from the preferred interferential technique to affect the musculature associated with the wrist and hand. In order to administer NMES to a joint or joints in the hand and wrist, these newly repositioned *Wingrove* electrodes would have to be positioned along the forearm (where the muscles that cause range of motion of the joints in the hand and wrist are located), not in the criss-cross pattern (*Wingrove*, FIGs. 8 and 9) for interferential stimulation as described by *Wingrove* as its preferred application

technique (*Wingrove*, column 6; lines 15-16). Moreover, such a repositioning of the electrodes and administration of NMES contradict *Wingrove's* use of a wrist brace 12 which is intended to restrict the motion of the wrist joint and substantially limit flexing during stimulation (*Wingrove*, column 3; lines 61-63).

In response to section 5 of the Final Rejection, captioned "Response to Arguments," the Applicant respectfully submits the following.

The Applicant respectfully disagrees with the test for obviousness applied in the Final Rejection. Contrary to the assertions in the Final Rejection, it is well settled law that advantages not appreciated by the prior art are evidence of non-obviousness. *In re Fine*, 837 F.2d 1071, 1075-76, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988). Therefore, when the invention overcomes a deficiency in the prior art, there is no requirement that the prior art *explicitly* set forth that deficiency; in fact, the prior art seldom does. Indeed, the fact that an issue has not been addressed in the prior art can be used as evidence of non-obviousness under *Fine, supra*. Therefore, such advantages are among the considerations pointing to non-obviousness which must be considered. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1555, 220 U.S.P.Q. 303, 314 (Fed. Cir. 1983).

The Advisory Action argues,

Applicant's arguments are not persuasive. Examiner does not consider the mere existence of an advantage not disclosed in the prior art to be dispositive. Furthermore, it is not necessary for the reason for obviousness to coincide with Applicant's reason of modifying a prior art invention.

However, those arguments will be seen as moot in light of the foregoing.

For the reasons set forth above, the Appellant respectfully urges reversal of the rejection of claims 5, 8, 10 and 11.

B. Claim 12

The Appellant respectfully submits that claim 12 is patentable for the reasons set forth above and also for the following additional reasons. Therefore, even if the rejection of claims 5, 8, 10 and 11 is affirmed, the Appellant respectfully urges reversal of the rejection of claim 12.

Wingrove fails to mention a sequence of stimulation that includes interferential stimulation followed by NMES. In the present application though, sequential stimulation is applied by first using interferential stimulation to provide pain control and “quiet” the system, followed by NMES for “working” the muscle or muscle rehabilitation. Present claim 12 recites that in the first state, interferential current stimulation is applied, and in the second state, Neuromuscular Electrical Stimulation is applied. See also specification paragraph [0004], which describes sequential stimulation, and specification paragraph [0011], which teaches an advantage offered by the present invention in that regard in terms of sequential stimulation.

During the bipolar mode of *Wingrove*, only two electrodes are necessary because the carrier and interfering frequency are mixed within the stimulator 11 itself (*Wingrove*, column 6; lines 16-19). *Wingrove* describes interferential therapy in its preferred embodiment, as quadrupolar stimulation, using four electrodes placed in a criss-cross pattern. But, included in this same description of interferential therapy, *Wingrove* describes the above mentioned bipolar mode such that the bipolar mode is what applicant discloses as premodulated (carrier and interfering frequency are mixed within the stimulator) interferential therapy. Specifically, *Wingrove* column 6; lines 12-26 describes switching from quadrupolar stimulation to bipolar stimulation or what the applicant discloses as true interferential stimulation to premodulated interferential stimulation. As disclosed in the present application’s specification, paragraph [0008], this switch from true interferential to premodulated interferential does not require a change in the electrode configuration. Thus, in its description for switching from one mode to another, *Wingrove* fails to disclose a switching from interferential stimulation to another type of stimulation; e.g., NMES which requires a different electrode configuration.

Wingrove does not disclose, and would not have rendered obvious, a method of stimulation as suggested by the Office. *Wingrove* describes interferential stimulation; the first

and fourth contacts are part of a circuit delivering one channel of stimulus of a first specified frequency, and the second and third contacts are part of a circuit delivering a second channel of stimulus of a second specified frequency with an interference relationship to the first frequency. However, *Wingrove* does not describe selectively changing circuit connections sequentially from a first state (interferential stimulation) to a second state (NMES).

For the reasons set forth above, the Appellant respectfully urges reversal of the rejection of all claims.

Please charge any deficiency in fees, or credit any overpayment thereof, to our Deposit Account No. 23-2185, under Order No. 000309.0077 from which the undersigned is authorized to draw. If a petition for extension of time is required to render the present Appeal Brief timely and either does not accompany the present Appeal Brief or is insufficient to render the present Appeal Brief timely, the Appellant hereby petitions under 37 C.F.R. § 1.136(a) for such an extension for as many months as are required to render the present Appeal Brief timely. Any fee due is authorized above.

Dated: April 9, 2009

Respectfully submitted

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VIII. CLAIMS APPENDIX

5. A method of providing selective surface electrical stimulation, comprising:

providing a first stimulation circuit, connected to at least two first circuit electrodes in a first state;

providing a second stimulation circuit, connected to at least two second circuit electrodes in the first state;

using a switch means, selectively changing circuit connections in a second state so that the first stimulation circuit is connected to at least one second circuit electrode and the second stimulation circuit is connected to at least one first circuit electrode.

8. The method of claim 5, wherein the switch means performs the function of a double pole double throw switch.

10. The method of claim 5, wherein the switch means operates under a programmed electronic control.

11. The method of claim 5, wherein in one of the first state and second state, the electrodes are connected to apply a cross current, and in the other of the first state and the second state, the electrodes are connected to apply a longitudinal current.

12. The method of claim 5, wherein, in the first state, interferential current stimulation is applied, and in the second state, Neuromuscular Electrical Stimulation (NMES) is applied.

IX. EVIDENCE APPENDIX

No evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the examiner is being submitted.

X. RELATED PROCEEDINGS APPENDIX

No related proceedings are referenced in II above; hence, copies of decisions in related proceedings are not provided.