THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

This opinion (1) was not written for publication and (2) is not binding precedent of the Board.

Paper No. 29

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

_____

Ex parte FRANCIS J. CALLAGHAN and WILLIAM VOLLMAN[1]

_____

Appeal No. 96-2179
Application 07/613,466[2]

_____

HEARD: 5 May 1998[3]

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Before HAIRSTON, TORCZON, and CARMICHAEL, Administrative Patent Judges.

TORCZON, Administrative Patent Judge.

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[1] According to Appellants, Robert A. Malkin is also a co-inventor. (Paper "A" (Req. FWC App., 7 Nov. 1990) at 1.) Since the record does not otherwise reflect this fact, Appellants should comply with 37 CFR § 1.48, as amended at 62 Fed. Reg. 53131, 53185 (Oct. 10, 1997).

[2] Attorney docket no. CASE-78.

[3] Counsel for Appellants requested a hearing via teleconference. Although the examiner asked to present oral argument pursuant to 37 CFR § 1.194(b), he subsequently waived his request.

FINDINGS OF FACT AND CONCLUSIONS OF LAW

FINDINGS OF FACT

We have considered the record in light of the arguments of Appellants and the examiner. Our decision presumes familiarity with the entire record. A preponderance of the evidence of record supports each of the following fact findings.

A. The nature of the case

1. This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 1-61. We affirm in part.

2. The application on appeal was filed on 7 November 1990 as a continuation of application number 07/173,573, filed 25 March 1988, now abandoned. (Paper "A" at 1.) Originally, there was a question about whether the present application was a proper continuation of the '573 application. Papers in the present application have been sequentially numbered from Paper 2, although the application has otherwise been treated as a file-wrapper continuation. As a consequence, there are two different documents in the file numbered Paper 2 through Paper 16. Unless otherwise indicated, we are referring to the numbered paper for the pending application. The examiner should correct the paper numbering during any subsequent prosecution.

3. At the hearing, counsel confirmed that Pacesetter Inc. is the real party in interest.

4. The application is entitled "Rate-responsive pacemaker with closed-loop control". The subject matter of the invention is means and steps for regulating pacing with respect to a measured rate control parameter (MRCP) and adjusting the pacing rate to account for variations in the MRCP. Claims 38 and 49 (Paper 17 (Prelim. Amdt.) at 2-3) illustrate the subject matter of the invention:

> 38. A method of controlling rate-responsive pacing comprising the steps of periodically ascertaining the value of a rate control parameter "RCP" to obtain a measured rate control parameter "MRCP", said RCP being such that a measured value thereof is changed in one direction by increases in stress/exercise and in an opposite direction by increases in heart rate, generating pacing pulses at a pacing rate, deriving a target value "target" which is indicative of changes in said MRCP due to non-stress/exercise and non-heart rate factors, and responsive to a change in the difference between MRCP and target adjusting said pacing rate in a direction which tends to return said difference to its pre-change value.
>
> 49. A method of controlling rate-responsive pacing comprising the steps of generating pacing pulses at a pacing rate, ascertaining the value of a rate control parameter "RCP", utilizing closed-loop control for adjusting said pacing rate in accordance with the value of said RCP, and causing said closed-loop control to self-adapt to changes in the value of said RCP which are due to factors other than stress, exercise and heart rate.

B. The rejections

5. The examiner rejects claims 1-61 under 35 U.S.C. § 112 as indefinite and as lacking an enabling description.

6. The examiner relies on the following references in making the remaining rejections:

Wittkampf et al. (Wittkampf)	4,305,396	15 Dec. 1981
Mumford et al. (Mumford)	4,432,360	21 Feb. 1984
Nappholz et al. (Nappholz)	4,702,253	27 Oct. 1987
Callaghan ('900)	4,766,900	30 Aug. 1988 filed 19 Mar. 1986
Callaghan et al. ('497)	4,878,497	7 Nov. 1989

7. Claims 1-37 and claims 38-61 stand rejected under the doctrine of obviousness-type double patenting in view of claims 19-29 and claims 1-18, respectively, of the Callaghan '900 patent.

8. Claims 1-37 also stand rejected under the doctrine of obviousness-type double patenting in view of claims 1-17 of the Callaghan et al. '497 patent and Nappholz.

9. The examiner rejected claim 49 under 35 U.S.C. § 102(b) as anticipated by Wittkampf.

10. The examiner rejected claims 1, 2, 12, 13, 25-27, 29, 34, 38-41, and 49-51 under 35 U.S.C. § 102(e) as anticipated by Nappholz.

11. The following claims stand rejected under 35 U.S.C. § 103 as unpatentable in view of the indicated references:

3-7, 14-18, 20-24, 28, 30-33, and 35-37	Nappholz and Callaghan '900;
42, 43, 45-48, 52-57, and 59-61	Nappholz and Callaghan '900;
8-11 and 19	Nappholz, Callaghan '900, and Mumford; and
44	Nappholz and Mumford.

C. The meaning of terms

12. We agree with the examiner that there is an apparent inconsistency in a measured parameter that changes in one direction in response to increased stress or exercise and in an opposite direction in response to increased heart rate. Daily experience suggests an increase in stress or exercise routinely corresponds to an increase in heart rate in a normally functioning heart. Appellants' specification discloses the depolarization gradient[4] lends itself to rate control in a closed loop because increased emotional or physical stress and increased heart rate have opposite effects on this parameter. (Paper 1 at 13.) The specification continues, however, to explain that this effect appears when either workload or pacing rate are held constant. (Paper 1

[4] The integral of the evoked potential. (Paper 1 at 1; Figs. 5 & 6.)

at 13; Figs. 8[5] & 9.) Indeed, Appellants' invention uses closed-loop control to match heart rates to stress levels. (Paper 1 at 13-14; Fig. 10; see also Paper 18 at 21-24.) Appellants have not identified any parameter other than the depolarization gradient that might satisfy the requirements for the claimed measured parameter.

13. We find that the terms "closed loop system", "closed loop control", and "self-adapt" have readily discernable meanings in light of the disclosure and that these terms appear to be used consistently with their meanings in the references of record. Appellants have not identified any definition for these terms peculiar to their disclosure.

14. Appellants suggest that a person of ordinary skill in the pacemaker art had a master's degree in electrical or mechanical engineering and a basic knowledge of circulatory anatomy and physiology. (Paper 18 (2d Rev'd. App. Br.) at 8 n.1.) The examiner does not dispute this suggestion and we find it plausible for the purposes of this appeal.

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[5] Appellants should note that "exercise" is consistently misspelled in the figures. (Figs. 8-10 & 14.)

D. Claims 1-18 and 19-29 of United States Patent 4,766,900 to Callaghan

15. Callaghan '900 was filed before the effective filing date of the present application and issued to one of the named inventors of this application.

16. Figure 7 of Callaghan '900 is the "schematic diagram of a pacer system constructed in accordance with the present invention". (3:40-41.) This figure appears to be structurally very similar to Figure 7 of the present application, which is the "more complete representation of the illustrative embodiment of the invention. (Paper 1 at 6.)

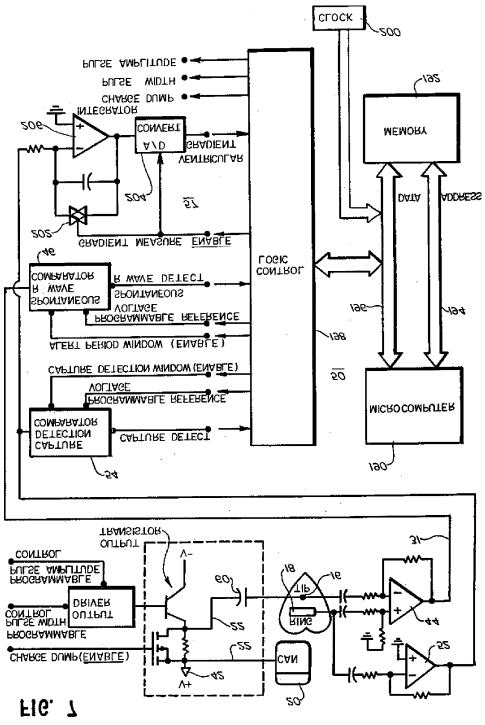

FIG. 7
USP 4,766,900

17. The following table compares claims 19 and 25 of Callaghan '900 to claim 25 of the present application with the addition of numbers from the drawings corresponding to the claimed structures:

SN 07/613,466	USP 4,766,900
25. A rate-responsive pacemaker **10** comprising	19. Cardiac pacing apparatus **10** which comprises:

means **50** for generating pacing pulses at a pacing rate,

means **16** for applying electrical stimulus pulses to the heart;

means **54** for ascertaining the value of a rate-control parameter "RCP",

means **18** for detecting a cardiac event potential;
means **54** for integrating the detected potential over time to obtain a selected parameter;

closed-loop control means **50** for adjusting said pacing rate in accordance with the value of said RCP, and

means **192** for storing said selected parameter;
means **190** for comparing said selected parameter with a corresponding selected parameter of at least one previous cardiac cycle that has been stored; and
means **198** for controlling the rate of said electrical stimulus pulses in response to said comparison.

means **50** for causing said closed-loop control means to self-adapt to the changes in value of said RCP which are due to factors other than stress, exercise and heart rate.

[25. ...means **190** for comparing said selected parameter with a target value; and
means **198** for controlling the rate of said electrical stimulus pulses in response to said comparison.]

18. A "[c]ardiac pacing apparatus" (Callaghan '900) would have implied some "means for generating pacing pulses at

a pacing rate" to a person having ordinary skill in the art. The same basic pulse generating circuit is taught in both disclosures.

19. The means for comparing and means for controlling comprise a programmed microcomputer **190**. ('900 at 6:65-67.) It is axiomatic that differently programmed microcomputers are structurally different machines. In re Lowry, 32 F.3d 1579, 1583, 32 USPQ2d 1031, 1034-35 (Fed. Cir. 1994). On the present facts, the question of structural equivalence seems a bit circular given that the relevant hardware involved appears to be identical. The difference, such as there is, between the structures is a matter of programming, i.e., in the process of making the same hardware function differently. No specific programming is disclosed, only a high-level description of the programming function. Thus, we must infer structural equivalence from on the basis of a high-level functional description.

20. We find that Callaghan '900's means for detecting and integrating the cardiac event potential is the same as the presently claimed means for ascertaining RCP. We agree with the examiner that both the present application and Callaghan '900 are detecting and integrating the same

parameter--evoked potential--to produce the same result--the depolarization gradient. (Compare '900 at 2:29-53 with Paper 1 at 4:12-14; see also Callaghan '497 at 7:51-54 and 8:25-66.) The fact that the means in Callaghan '900 are specified in greater detail does not obscure the fact that the same structures accomplish the same function in both claims.

21. We find that the means for comparing and controlling based on a parameter are equivalent to the closed-loop control means. Again, Callaghan '900 simply defines the same structures accomplishing substantially the same function in greater detail. Appellants contend that Callaghan '900 does not have a closed loop. (E.g., Paper 18 at 16.) We agree with the examiner that this unsupported contention does not make sense on its face. Callaghan '900 appears to meet the definition presented in the third full paragraph on page 10 of Appellant's second revised brief, quoting I. Singer et al., Initial Clinical Experience with a Rate Responsive Pacemaker, 12 PACE 1458, 1459 (1989). To the extent a subtle difference exists, Appellants have failed to explicate it. Cf. Clintec Nutrition Co. v. Baxa Corp., 44 USPQ2d 1719, 1723 n.16 & text (N.D. Ill. 1997) (Court will not look for evidence that party has failed to present directly).

22. Callaghan '900 claims modifying pacing according to a target instead of the measured parameter. (Claim 25.) Certainly the approaches of claims 19 and 25 could be combined for the benefits taught in Callaghan '900 at 2:54-3:7. Callaghan '900 is, broadly conceived, self-adapting with respect to the target. The question, however, is whether it is structurally similar to the claimed self-adapting closed-loop control means. For this to be true, the presently claimed self-adapt means would have to be programmed in a manner that is substantially a combination of the comparing means and controlling means of Callaghan '900's claims 19 and 25. Callaghan '900 sets forth its algorithms at Figs. 8a-9b. Although there are several ways that a person having ordinary skill in the art might combine these algorithms, at best, there is no suggestion of the "tweeking" indicated in Fig. 18 of the present application. Consequently, we agree with Appellants that the pending claims differ in their treatment of the target value adjustment. (Paper 18 at 15-16.)

23. These findings are equally applicable to the steps of claim 49 as well.

E. Claims 1-17 of United States Patent 4,878,497 to Callaghan et al.

24. Callaghan '497 has the same effective filing date--25 March 1988--as the present application, although they do not have overlapping chains of pendency. Cf. In re Berg, ___ F.3d ___, 46 USPQ2d 1226, 1227 (Fed. Cir. 1998) (finding double-patenting between separate applications filed the same day). At the hearing, counsel confirmed that the Office did not require any restriction between the inventions of the '497 patent and the present application.

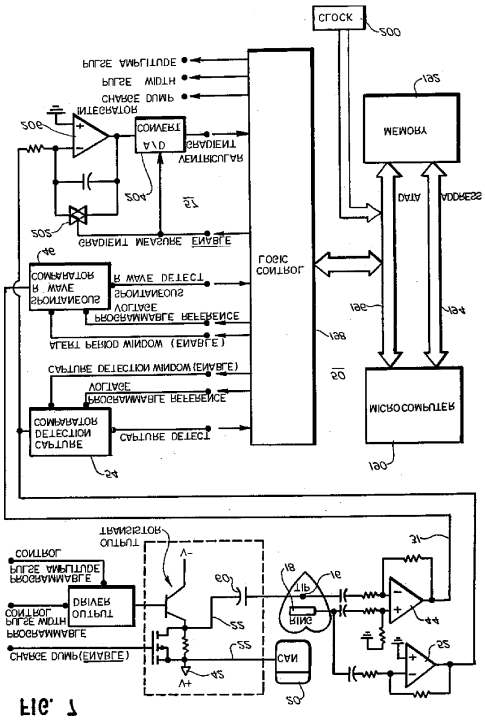

FIG. 1
USP 4,766,900

25. Figure 7 (the "more complete representation of the illustrative embodiment of the invention" (1:59-60)) of Callaghan '497 appears to be identical to corresponding Figure 7 of the present application.

26. The following table compares claim 1 of Callaghan '497 to claim 25 of the present application with the

addition of numbers[6] from the drawings corresponding to the claimed structures:

SN 07/613,466	USP 4,878,497
25. A rate-responsive pacemaker **10** comprising	13. A rate-responsive pacemaker **10** comprising
	means **18** for sensing the presence of [sic, or][7] absence of an evoked potential;
means **54** for ascertaining the value of a rate control parameter "RCP",	means **54** for periodically ascertaining the value of a measured rate control parameter which is based upon the sensing of an evoked potential;
closed-loop control means **50** for adjusting said pacing rate in accordance with the value of said RCP, and	means **50** for generating pacing pulses at a rate which is a function of said MRCP; and
means **50** for causing said closed-loop control means to self-adapt to changes in the value of said RCP which are due to factors other than stress, exercise and heart rate.	

[6] Counsel confirmed the numbering during the hearing.

[7] This typographical error occurs in both of the independent claims of Callaghan '497.

means **50** responsive to the failure to sense an evoked potential following the generation of a pacing pulse for controlling the generation of a back-up pacing pulse.

27. We find that means for generating pacing pulses at a pacing rate is implicit in a rate-responsive pacemaker. The means **50** is not disclosed or claimed in sufficient detail to move it beyond what would have been known to a person having ordinary skill in the art at the time of the invention.

28. The disclosures of the present application and Callaghan '497 are substantively identical. The correspondences indicated below span the entire specification excluding the claims:

SN 07/613,466 Paper 1 (page:line)	USP 4,878,497 (column:line)
1:8-3:31	2:26-3:61
4:2-31	3:62-4:27
4:33-6:25	1:11-2:16
6:26-65:6	4:28-36:62

The only apparent differences lie in the ordering of the text, the introduction, the stated objective, and some of the

transitional phrases.[8] The figures also appear to be identical, right down to the misspelling of "exercise".

29. As we have noted, otherwise identical hardware that is programmed differently constitutes different structure. The corollary of this axiom is that identical hardware identically programmed is structurally identical. Consequently, we find the means in the appealed claims to correspond identically to the means in Callaghan '497.

30. Nappholz teaches self-adapting with respect to minute volume. (3:2-52.) Nappholz would have provided motivation to a person having ordinary skill in the art to exploit the inherent self-adapting functions of Callaghan '497's means **50**, even though that function was not explicitly claimed in the '497 patent.

31. We see no reason why the preceding fact finding should not be true for the steps of appealed claims 38-61 as well. The means of Callaghan '497's claims 1-17 perform the steps of appealed claims 38-61 and thus would have rendered those steps at least obvious.

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[8] Indeed, it is disturbing that most of the differences are cosmetic variations at the beginning of the disclosures. Such variation, if done for the purpose of obscuring the relationship between the disclosures, is ethically suspect. See Berg, ___ F.3d at ____ n.7, 46 USPQ2d at 1231 n.7.

F. Anticipation of claim 49[9] by Wittkampf

32. Appellants argue that Wittkampf does not teach claim 49's "utilizing closed-loop control for adjusting said pacing rate in accordance with the value of said RCP, and causing said closed-loop control to self-adapt to changes in the value of said RCP which are due to factors other than stress, exercise and heart rate." We note that these limitations are written in step-plus-function format.

33. We agree with the examiner that Wittkampf broadly discloses the functions Appellants claim for their invention. The examiner does not, however, identify with particularity the steps in Wittkampf that anticipate, expressly or inherently, the specific acts or their equivalents corresponding to the claimed steps. Consequently, we reverse this rejection of claim 49.

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[9] The Office action of 16 March 1992 (variously labeled Paper 6 and Paper 18) at 5 rejects claims 38 and 49 as anticipated by Wittkampf. The examiner inexplicably failed to maintain the rejection against claim 38 in his answer. We treat as withdrawn any rejection that is not repeated in the examiner's answer. Paperless Acctg., Inc. v. Bay Area Rapid Trans. Sys., 804 F.2d 659, 663, 231 USPQ 649, 651-652 (Fed. Cir. 1986); Ex parte Emm, 118 USPQ 180, 181 (Bd. App. 1957). In any case, we are reversing pro forma the art-based rejections of claim 38.

G. Anticipation of claims 1, 2, 12, 13, 25-27, 29, 34, 38-41, 49-51 and 58 by Nappholz

34. We note at the outset that the meaning of claims 1 and 38, and their dependent claims 2, 12, 13, and 39-41, are sufficiently indefinite to test these claims against the reference. The point of contention is the nature of the rate control parameter, which is precisely the point at which these claims are unclear.

35. We agree with Appellants that Nappholz does not teach the closed-loop control means of claim 25 or the adjusting step of claim 49. (Paper 18 at 28.) We note that these claims are written in means-plus-function and step-plus-function formats, respectively. The examiner argues that Nappholz's minute volume parameter satisfies the rate control parameter provisions of the claims, but provides no analysis of how minute volume would be used with the disclosed structures or acts. We find that Nappholz does not expressly or inherently teach the claimed structures or acts. Consequently, we reverse this rejection of claims 25 and 49, and of their dependent claims 26, 27, 29, 34, 50, 51, and 58.

H. The teachings of Nappholz and Callaghan '900

36. The examiner relies on Nappholz and Callaghan '900 or Mumford, to reject the remaining claims. As we have

already noted, claims depending from claims 1 and 38, in this case claims 3-11, 14-24, 42, and 43-48, are sufficiently indefinite to make a prior art analysis pointless. The rejection of remaining claims 28, 30-33, 35-37, 52-57, and 59-61 is based solely on Nappholz and Callaghan '900.

37. We have already found that Callaghan '900 teaches the basic structure and acts of the invention with the exception of the self-adapting function. We have also already found that Nappholz teaches the advantages of self-adaption with respect to a rate control parameter. We find that Nappholz would have motivated a person having ordinary skill in the art to modify its use of the depolarization gradient to implement self-adapting rate control. We do not, however, see a suggestion in the record on how this would have been accomplished. Moreover, the combination of these references does not suggest the specific acts of Appellants' claimed method in itself or as implemented in programmed means.

38. Neither the examiner nor Appellants have suggested a range of equivalent structures or acts against which we might compare the combination. We find the disclosed acts and corresponding means sufficiently detailed (e.g., a flow chart covering ten pages with many branches and loops) to admit few practical equivalents.

39. Appellants urge no secondary considerations in support of patentability.

CONCLUSIONS OF LAW

A. Claim construction

1. We presume that a claim written in means-plus-function or step-plus-function form is governed by the provisions of the sixth paragraph of section 112 unless the record unambiguously indicates otherwise. York Prods. v. Central Tractor Farm & Family Center, 99 F.3d 1568, 1574, 40 USPQ2d 1619, 1623 (Fed. Cir. 1996). We see no contraindication in this record.[10]

2. During prosecution, a claim must be construed as broadly as is reasonable in light of the specification. In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989). This axiom is not, however, license to ignore the strictures imposed by claiming in means-plus-function or step-plus-function format. The format permitted under "section 112 ¶6 operates to cut back on the types of means which could literally satisfy the claim language." Johnston v. IVAC

[10] This presumption is particularly appropriate during proceedings before the Office, where an applicant has the option to amend the claim or the record to overcome the presumption.

Corp., 885 F.2d 1574, 1580, 12 USPQ2d 1382, 1386-87 (Fed. Cir. 1989).

B. Indefiniteness

3. A claim is indefinite if it fails to apprise those skilled in the art both of the use and the scope of the invention or if the language is not as precise as the subject matter permits. Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624, 225 USPQ 634, 641 (Fed. Cir. 1985). Claims must be read in light of the specification, but this axiom cuts both ways since the specification may reinforce the appearance of uncertainty. In re Moore, 439 F.2d 1232, 1235 n.2, 169 USPQ 236, 238 n.2 (CCPA 1971).

4. The examiner rejected claims 1 and 38 because "[i]t is unclear what parameters are encompassed by ['a measured value thereof is changed in one direction by increases in stress/exercise and in an opposite direction by increases in heart rate'] since there are no known parameters that simultaneously change in opposite directions due to exercise . . .." (Paper 22 at 4, emphasis added.)

5. We conclude that claims 1 and 38 are indefinite. As written, these claims require a parameter that correlates to stress and heart rate in opposite directions when ordinarily the underlying parameters are directly related. Although the

disclosure supports opposite measured responses to changes in stress and pacing rate when one or the other is held constant, these additional qualifications are missing from the claims. We cannot incorporate into these claims the limitations suggested by the specification. Consequently, the claims as written encompass the paradoxical situation the examiner has identified. (E.g., Paper 22 at 12.)

6. Appellants have not separately argued the indefiniteness of claims 2-24 and 38-48, which depend from claims 1 and 38, respectively, so we affirm their rejection as indefinite as well.

7. Since claims 1-24 and 38-48 are indefinite with respect to a contested limitation, we set aside the other rejections of these claims as unripe for our determination. In re Steele, 305 F.2d 859, 862-63, 134 USPQ 292, 295 (CCPA 1962); In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). This course is particularly appropriate in the present case, where the respective contentions of the examiner and Appellants depend so heavily on the divergent interpretations of these claims. We thus reverse the reference-based rejections of these claims pro forma.

8. With respect to claims 25 and 49, the examiner urges that the meaning of "rate control parameter", "closed-loop

control", and "self-adapt" in these claims is unclear. (Paper 22 at 4.) According to the examiner, these terms are not objectionable in themselves, but are unclear as argued. (Paper 22 at 12-13.) While an applicant's statements in the prosecution history are relevant to the meaning of a term, Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582, 39 USPQ2d 1573, 1576 (Fed. Cir. 1996), such statements do not outweigh the effect of the disclosure and objective evidence of record. The test for indefiniteness is objective, based on the understanding of a hypothetical person of ordinary skill. Appellants' subjective intent to claim, even claim badly, does not control the meaning of a term in the claim. If Appellants have used these terms inconsistently during prosecution to avoid prior art-based rejections, these inconsistencies are better treated in the context of those prior-art rejections. Consequently, we reverse the indefiniteness rejection for the remaining claims.

C. Enablement

9. The enablement rejection is similarly based on a dispute over the meaning of the term "closed loop". As we have already indicated, on this record this dispute is better resolved in light of the prior-art rejections. Moreover, we are reluctant to read faults into the claims based on

arguments of counsel that we have already rejected. Consequently, we reverse the rejection of claims 25-37 and 49-61 under section 112 as not enabled.

D. Double-patenting - Callaghan '900

10. We presume that a one-way double-patenting analysis applies for applications filed after 1984. See Berg, __ F.3d at ___, 46 USPQ2d at 1230. Appellants have not urged any reason for applying a two-way analysis. Although Appellants focus on the "concept" of the invention and the examiner focuses on what is disclosed, case law requires us to determine "whether the application claims are obvious over the patent claims." Id., ___ F.3d at ____, 46 USPQ2d at 1229 (emphasis added). The fact that all of the claims being compared are either means-plus-function or step-plus-function claims further restricts the reasonable scope of the comparison.

11. We conclude that claims 25 and 49 are not obvious over the claims of Callaghan '900 because the claimed process step of closed-loop control self-adaptation, in itself and as programmed in the self-adapt means, was not disclosed or suggested. Even though claims 25 and 49 and the claims of Callaghan '900 have similar functions and results, the acts of the self-adapting step and means differ beyond what would have

been obvious to a person having ordinary skill in the art. Consequently, we reverse the double-patenting rejection of claims 25-37 and 49-61 on the merits.

E. Double-patenting - Callaghan '497

12. Appellants have chosen a prosecution strategy that places virtually identical disclosures on separate prosecution tracks. Cf. Berg, ___ F.3d at ___, 46 USPQ2d at 1233. They have also chosen a claim format in both the present application and in their patent that forces us to correlate the claims to nearly identical disclosures. We see no principled basis by which we can ignore the fact that separately claimed functions are both programmed into an identically disclosed means. Consequently, we must affirm the rejection of claims 25-37 under the obviousness-type double-patenting doctrine.[11]

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[11] Since a terminal disclaimer filed to overcome this rejection would apply to the entire resulting patent and not simply these claims, we will not enter a new ground of rejection pursuant to 37 CFR § 1.196(b) for the method claims. Given our affirmance of the indefiniteness rejection for claims 1-24, we will not reach those claims either. We caution the examiner, however, to ensure that a terminal disclaimer is required in any related applications (e.g., applicant-initiated divisionals) with substantially similar claims. We remind Appellants that our findings in this opinion would be material to the prosecution of any related applications. 37 CFR § 1.56(b).

F. Obviousness

13. We agree with the examiner that Callaghan '900 and Nappholz can be combined. Callaghan '900 would have motivated a person having ordinary skill in the art to a closed-loop control pacemaker using the depolarization gradient as its rate control parameter. Nappholz would have motivated a person having ordinary skill in the art to find a way to make the depolarization gradient self-adapting. It does not follow, however, that the artisan is more likely than not to have arrived at the claimed subject matter. We do not find sufficient evidence of record to support a conclusion of obviousness. Accordingly, we reverse this rejection of claims 28, 30-33, 35-37, 52-57, and 59-61.

DECISION

We affirm the rejection of claims 1-24 and 38-48 under section 112 as indefinite. The reference-based rejections of these claims are reversed pro forma.

We reverse the rejection of claims 25-37 and 49-61 under section 112 as indefinite on the merits.

The rejection of claims 1-61 under section 112 as not enabled is reversed pro forma.

We reverse the rejection of claims 25-37 and 49-61 under the obviousness-type double-patenting doctrine as obvious variants of the claims of Callaghan '900.

We affirm the rejection of claims 25-37 under the obviousness-type double-patenting doctrine as obvious variants of the claims of Callaghan '497.

We reverse the anticipation rejections of claims 25-27, 29, 34, 49-51, and 58 on the merits.

We reverse the obviousness rejections of claims 28, 30-33, 35-37, 52-57, and 59-61 on the merits.

The time period for taking any subsequent action in connection with this appeal will be extended only under the limited circumstances provided in 37 CFR § 1.136(b).

AFFIRMED-IN-PART

KENNETH W. HAIRSTON Administrative Patent Judge	)	
RICHARD TORCZON Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JAMES T. CARMICHAEL Administrative Patent Judge	)	

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