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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/567,716	09/25/2009	Morris P. Kesler	WTCY-0026-P01	4901
87084	7590	06/28/2012	EXAMINER	
GTC Law Group LLP & Affiliates c/o CPA Global P.O. Box 52050 Minneapolis, MN 55402			KAPLAN, HAL IRA	
			ART UNIT	PAPER NUMBER
			2836	
			NOTIFICATION DATE	DELIVERY MODE
			06/28/2012	ELECTRONIC

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.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 12/567,716	Applicant(s) KESLER ET AL.	
	Examiner HAL KAPLAN	Art Unit 2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-23 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 22 and 23 is/are allowed.
- 7) ☒ Claim(s) 1-6, 17, 18 and 21 is/are rejected.
- 8) ☒ Claim(s) 7-16, 19 and 20 is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 25 September 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) ☒ Notice of References Cited (PTO-892) | 4) ☐ Interview Summary (PTO-413) |
| 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) ☒ Information Disclosure Statement(s) (PTO/SB/08) | 5) ☐ Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) ☐ Other: ____. |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :3/15/10,3/29/10,1/7/11,1/7/11,2/22/11,3/1/11,5/5/11.

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Objections

2. Claim 15 is objected to because of the following informalities: Claim 15, line 1, "the direct electrical connections" lacks proper antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 4 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. The term "useful" in claim 4 is a relative term which renders the claim indefinite. The term "useful" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1, 3, 4, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by the US patent of Joannopoulos et al. (7,741,734).

As to claim 1, Joannopoulos discloses a system comprising: a source resonator (1) having a first Q-factor and a characteristic size, coupled to a power generator (power supply) with direct electrical connections; and a second resonator (2) having a second Q-factor and a characteristic size, coupled to a load with direct electrical connections, and located a distance D from the source resonator (1), wherein the source resonator (1) and the second resonator (2) are coupled to exchange energy wirelessly among the source resonator (1) and the second resonator (2) in order to transmit power from the power generator to the load, wherein the square root of the product of the Q-factors is greater than 100 (if both Q-factors are greater than 100, the square root of their product will be greater than 100) (see column 1, lines 54-60; column 2, lines 30-33 and 58-61; column 4, lines 37-40; and Figure 1).

As to claim 3, the first and second Q-factors are both greater than 100.

As to claim 4, a useful energy exchange is maintained over an operating distance from 0 to D, where D is larger than the smaller of the first and second characteristic sizes (see column 1, lines 58-60).

As to claim 17, the source resonator (1) is physically separated from the power generator and the second resonator (2) is physically separated from the load (see Figure 1).

8. Claims 1, 5-6, 18, and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by the US patent application publication of Cook et al. (2012/0001492).

As to claim 1, Cook discloses a system comprising: a source resonator (112) having a first Q-factor and a characteristic size, coupled to a power generator (102) with direct electrical connections; and a second resonator (155) having a second Q-factor and a characteristic size, coupled to a load with direct electrical connections, and located a distance D from the source resonator (112), wherein the source resonator (112) and the second resonator (155) are coupled to exchange energy wirelessly among the source resonator (112) and the second resonator (155) in order to transmit power from the power generator to the load, wherein the square root of the product of the Q-factors is greater than 100 (e.g. the first Q-factor may be 1400 and the second Q-factor may be 300) (see paragraphs [0020]-[0021], [0025], and [0034], and Figure 1).

As to claim 5, the source (112) resonator is a coil of at least one turn (113) connected to a first network of capacitors (114) (see paragraphs [0021] and [0034], and Figure 1).

Art Unit: 2836

As to claim 6, the first network of capacitors (114) includes a tunable capacitor (see paragraphs [0021] and [0025]).

As to claim 18, the second resonator (155) is coupled to a power conversion circuit (160) to deliver DC power to the load (see paragraph [0025] and Figure 1).

As to claim 21, the second resonator (155) is coupled to a power conversion circuit (160) to deliver power to plurality of loads (e.g. loads within an automobile) (see paragraph [0025]).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

Art Unit: 2836

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cook.

As to claim 2, Cook discloses all of the claimed features, as set forth above, except for the first Q-factor being greater than 100 and the second Q-factor being less than 100; however, it would have been obvious to one of ordinary skill in the art, at the time of the invention, to have modified Cook by setting the first Q-factor greater than 100 and the second Q-factor less than 100, because selections of values of components and operational levels for an electronic device are engineering decisions based upon the system's intended use and the expected requirements of the other systems with which it will interface. See MPEP §2144.04(IV)(A). In *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), *cert. denied*, 469 U.S. 830, 225 USPQ 232 (1984), the Federal Circuit held that, where the only difference between the prior art and the claims was a recitation of relative dimensions of the claimed device and a device having the claimed relative dimensions would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device.

Allowable Subject Matter

13. Claims 22-23 allowed.

Art Unit: 2836

14. Claims 7-16, and 19-20 are objected to as being dependent upon a rejected base claim, and because of an informality, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, with the informality corrected.

15. The following is an examiner's statement of reasons for allowance:

Claim 22 is allowed because none of the prior art of record discloses or suggests the square root of the product of the first and second Q-factors being greater than 100, and at least one of the resonators being enclosed in a low loss tangent material, in combination with the remaining claimed features.

Claim 23 is allowed because none of the prior art of record discloses or suggests at least one of the resonators including a coil of a plurality of turns of a conducting material connected to a network of capacitors, wherein the plurality of turns are in a common plane, and wherein a characteristic thickness of the at least one of the resonators is much less than a characteristic size of the at least one of the resonators, in combination with the remaining claimed features.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

16. The following is a statement of reasons for the indication of allowable subject matter:

Claims 7-8 contain allowable subject matter because none of the prior art of record discloses or suggests the direct electrical connections of at least one of the source resonator to the ground terminal of the power generator and the second resonator to the ground terminal of the load made at a point on an axis of electrical symmetry of the first network of capacitors, in combination with the remaining claimed features.

Claims 9-14 contain allowable subject matter because none of the prior art of record discloses or suggests the direct electrical connection of at least one of the source resonator to the power generator and the second resonator to the load made via a second network of capacitors, wherein the first network of capacitors and the second network of capacitors form an impedance matching network, in combination with the remaining claimed features.

Claim 15 contains allowable subject matter because none of the prior art of record discloses or suggests the direct electrical connections of at least one of the source resonator to the power generator and the second resonator to the load are configured to substantially preserve a resonant mode, in combination with the remaining claimed features.

Claim 16 contains allowable subject matter because none of the prior art of record discloses or suggests at least one of the source and second resonators being a tunable resonator, in combination with the remaining claimed features.

Claim 19 contains allowable subject matter because none of the prior art of record discloses or suggests the second resonator coupled to a power conversion

Art Unit: 2836

circuit to deliver AC power to the load, in combination with the remaining claimed features.

Claim 20 contains allowable subject matter because none of the prior art of record discloses or suggests the second resonator coupled to a power conversion circuit to deliver both AC and DC power to the load, in combination with the remaining claimed features.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HAL KAPLAN whose telephone number is (571)272-8587. The examiner can normally be reached on M-F 9:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jared Fureman can be reached on 571-272-2391. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 12/567,716
Art Unit: 2836

Page 10

/Hal I. Kaplan/
Primary Examiner, Art Unit 2836