



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/782,697	01/10/2012	8093767	35099.001	5211

34395 7590 12/21/2011
OLYMPIC PATENT WORKS PLLC
P.O. BOX 4277
SEATTLE, WA 98104

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Brian Marc Pepin, Oakland, CA;
Robin Elenga, Seattle, WA;

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 2213-1450
or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

34395 7500 09/29/2011
OLYMPIC PATENT WORKS PLLC
P.O. BOX 4277
SEATTLE, WA 98104

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

JOANNE BOURGUENON (Depositor's name)
Joanne Bourguignon (Signature)
Dec. 5, 2011 (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/782,697	05/18/2010	Brian Marc Popin	35099.001	5211

TITLE OF INVENTION: LINEAR-RESONANT VIBRATION MODULE

APPL. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$870	\$300	\$0	\$1170	12/29/2011

EXAMINER	ART UNIT	CLASS-SUBCLASS
GONZALEZ QUINONES, JOSE A	2834	310-015000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

OLYMPIC PATENT WORKS PLLC

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number **88-2976**. (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature **Robert W. Belstrom**
Typed or printed name **ROBERT W. BELSTROM**

Date **Dec. 5, 2011**
Registration No. **39,906**

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 2213-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 2213-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Electronic Patent Application Fee Transmittal				
Application Number:		12782697		
Filing Date:		18-May-2010		
Title of Invention:		LINEAR-RESONANT VIBRATION MODULE		
First Named Inventor/Applicant Name:		Brian Marc Pepin		
Filer:		Robert Walter Bergstrom/Joanne Bourguignon		
Attorney Docket Number:		35099.001		
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	2501	1	870	870
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				1170

Electronic Acknowledgement Receipt	
EFS ID:	11541097
Application Number:	12782697
International Application Number:	
Confirmation Number:	5211
Title of Invention:	LINEAR-RESONANT VIBRATION MODULE
First Named Inventor/Applicant Name:	Brian Marc Pepin
Customer Number:	34395
Filer:	Robert Walter Bergstrom/Joanne Bourguignon
Filer Authorized By:	Robert Walter Bergstrom
Attorney Docket Number:	35099.001
Receipt Date:	05-DEC-2011
Filing Date:	18-MAY-2010
Time Stamp:	13:23:39
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$1170
RAM confirmation Number	10570
Deposit Account	502976
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)

Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Issue Fee Payment (PTO-85B)	35099-001-E-ISSUEFEE.pdf	368569	no	1
			0be66d0a8cdd6f44566d8c40b80db77352300b92		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	31874	no	2
			4a1583c1b01e1ade9fd1a43adb4cf607672dbef0		

Warnings:

Information:

Total Files Size (in bytes): 400443

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

34395 7590 09/29/2011
OLYMPIC PATENT WORKS PLLC
P.O. BOX 4277
SEATTLE, WA 98104

EXAMINER

GONZALEZ QUINONES, JOSE A

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 09/29/2011

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/782,697	05/18/2010	Brian Marc Pepin	35099.001	5211

TITLE OF INVENTION: LINEAR-RESONANT VIBRATION MODULE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$870	\$300	\$0	\$1170	12/29/2011

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

**Complete and send this form, together with applicable fee(s), to: Mail Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
or Fax (571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

34395 7590 09/29/2011
OLYMPIC PATENT WORKS PLLC
P.O. BOX 4277
SEATTLE, WA 98104

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

12/782,697	05/18/2010	Brian Marc Pepin	35099.001	5211
------------	------------	------------------	-----------	------

TITLE OF INVENTION: LINEAR-RESONANT VIBRATION MODULE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$870	\$300	\$0	\$1170	12/29/2011

EXAMINER	ART UNIT	CLASS-SUBCLASS
GONZALEZ QUINONES, JOSE A	2834	310-015000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
- ☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 _____
- (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 _____
- 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.111. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (**Please first reapply any previously paid issue fee shown above**)

- ☐ A check is enclosed.
- ☐ Payment by credit card. Form PTO-2038 is attached.
- ☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/782,697	05/18/2010	Brian Marc Pepin	35099.001	5211
34395 7590 09/29/2011 OLYMPIC PATENT WORKS PLLC P.O. BOX 4277 SEATTLE, WA 98104			EXAMINER GONZALEZ QUINONES, JOSE A	
			ART UNIT 2834	PAPER NUMBER

DATE MAILED: 09/29/2011

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No.	Applicant(s)	
	12/782,697	PEPIN ET AL.	
	Examiner	Art Unit	
	JOSE GONZALEZ QUINONES	2834	

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

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 08/30/2011.

2. ☐ 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.

3. ☒ The allowed claim(s) is/are 7-11.

4. ☐ 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 the:
 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)).
 * Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.

 (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948) 3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____ 4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material	5. ☐ Notice of Informal Patent Application 6. ☐ Interview Summary (PTO-413), Paper No./Mail Date ____ . 7. ☐ Examiner's Amendment/Comment 8. ☐ Examiner's Statement of Reasons for Allowance 9. ☐ Other ____
---	--

/JOSE A GONZALEZ QUINONES/ Examiner, Art Unit 2834	/Quyen Leung/ Supervisory Patent Examiner, Art Unit 2834
---	---

Issue Classification 	Application/Control No. 12782697	Applicant(s)/Patent Under Reexamination PEPIN ET AL.
	Examiner JOSE GONZALEZ QUINONES	Art Unit 2834

ORIGINAL						INTERNATIONAL CLASSIFICATION												
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED							
310		15				H	0	2	K	33 / 00 (2006.01.01)								
CROSS REFERENCE(S)						H	0	2	K	41 / 02 (2006.01.01)								
						H	0	2	K	41 / 00 (2006.01.01)								
						H	0	2	K	41 / 00 (2006.01.01)								
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					H	0	2	K	41 / 00 (2006.01.01)								
310	12.15					H	0	2	K	7 / 00 (2006.01.01)								
310	13																	
310	14																	
310	19																	

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original

/JOSE GONZALEZ QUINONES/ Examiner.Art Unit 2834 (Assistant Examiner)	20110916 (Date)	Total Claims Allowed: 5	
/QUYEN LEUNG/ Supervisory Patent Examiner.Art Unit 2834 (Primary Examiner)	09/19/2011 (Date)	O.G. Print Claim(s) 1	O.G. Print Figure 1

Receipt date: 08/30/2011

12782697 - GAU: 2834



OK TO ENTER: /J.A.G./

1

PATENT

I hereby certify that on the date specified below, this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to MAIL STOP AMENDMENT Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

8-22-11
Date _____
Joanne Bourguignon

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Brian Marc Pepin et al.

Application No.: 12/782,697

Filed: May 18, 2010

Title: LINEAR-RESONANT VIBRATION MODULE

Examiner: Jose A. Gonzalez Quinones

Art Unit: 2834

Docket No.: 35099.001

Date: August 22, 2011

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

INTRODUCTORY COMMENTS

Sir:

In response to the Final Office Action dated June 22, 2011, please amend the application as follows:

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L7	139	310/12.15.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/16 18:13
L8	131	310/12.15.ccls. and linear	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/09/16 18:13
S1	37	pepin near2 brian	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:49
S2	37	pepin near2 brian.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:49
S3	0	elenga near2 robin.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:50
S4	94	thumper near2 device	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:54
S5	31	thumper near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:55

S6	0	linear near2 thumper	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:57
S7	0	linear near2 pattycake	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:59
S8	1400	310/15.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:59
S9	1607	310/13-14.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 19:11
S10	30	"6768230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 19:26
S11	80	("3083469" "3554617" "3726574" "3746407" "3834775" "3977739" "4064409" "4171818" "4260901" "4356098" "4357024" "4430239" "4485024" "4645960" "4673997" "4687596" "4706498" "4732706" "4734606" "4797013" "4814654" "4898480" "4938886" "4965864" "5085789" "5175457" "5323076" "5347186" "5358648" "5376862" "5417507" "5444313" "5452520" "5471100" "5490425" "5578877" "5587242" "5713670" "5775169" "5780741" "5818132" "5851416" "5899220" "5908987" "5950543" "6020664" "6056889" "6083082" "6103107" "6208743" "6220719" "6254781"	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 20:31

		"6261471" "6277298" "6313551" "6501357" "6570273").PN. OR ("6768230").URPN.				
S12	31	"6326706" "7449803" "7288860"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/11/03 20:37
S13	12	("3129347" "3728654" "4381181" "4542311" "5231336" "5335284" "5424592" "5973422" "6201329" "6326706"). PN. OR ("7449803"). URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 21:03
S14	28	("3891874" "3937600" "4067667" "4404503" "4533890" "4613285" "4704553" "5296767" "5779455").PN. OR ("6326706").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 21:08
S15	34	("3129347").URPN.	USPAT	OR	ON	2010/11/03 21:11
S16	33	("2852243" "3100292" "3129347" "3308647" "3483759").PN. OR ("4446741").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 21:17
S17	33	("2852243" "3100292" "3129347" "3308647" "3483759").PN. OR ("4446741").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 21:21
S18	25	("2852243" "3100292" "3129347" "3483759" "3987392" "4446741"). PN. OR ("4754644"). URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 21:47
S19	2	"20060208600"	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 22:47
S20	586	H02k033/02.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/01 09:25
S21	282	H02k033/12.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/01 09:37

S22	0	linear near2 vibrator same (control or controller) same microprocessor	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/01 09:51
S23	6	linear near2 vibrator same (control or controller) and microprocessor	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/01 09:51
S24	15	("20040067780" "5896096" "6452588" "6489950" "6643528" "6674358" "6774769" "6836212").PN. OR ("7019622").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/06/01 09:59
S25	31	linear near2 vibrator same (control or controller) and sensor	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/01 10:00
S26	1	"12782697"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 08:12
S27	2013879	linear ner2 vibrator same electromagnet near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:19
S28	1	linear near2 vibrator same electromagnet near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:19
S29	742	linear near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:19
S30	9	linear near2 vibrator and microprocessor and driving	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:27

S31	0	linear near2 vibrator and microprocessor and driving near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:28
S32	7	linear near2 vibrator and driving near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:28
S33	1	("2008/0001484").URPN.	USPAT	OR	ON	2011/06/02 09:30
S34	13	linear near2 electromagnetic near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:36
S35	2342	electromagnetic near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:37
S36	272	electromagnetic near2 vibrator and power near2 supply	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:38
S37	1	microprocessor and electromagnetic near2 vibrator near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 19:40
S38	49	microprocessor and electromagnetic same vibrator same coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 19:41
S39	0	ho2k033/\$\$.ipc. and vibrator and power near2 supply	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 19:43

S40	66	h02k033/\$.ipc. and vibrator and power near2 supply	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 19:43
S41	0	("2005/0231045").URPN.	USPAT	OR	ON	2011/06/02 19:51
S42	1335	318/560.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:03
S43	9	318/560.ccls. and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:03
S44	32	310/19.ccls. and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:09
S45	3	("4481460" "5528697" "5883478").PN. OR ("6411050").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/06/02 20:11
S46	70	318/128.ccls. and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:18
S47	5074	"CPU" and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:24
S48	1182	"CPU" same vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:25
S49	2	"CPU" same vibrator same driv\$3 near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:25

S50	0	processor same vibrator same driv\$3 near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:26
S51	224	processor and vibrator and driv\$3 near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:26
S52	1941	processor and oscillator and driv\$3 near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:36
S53	146	processor same oscillator same driv\$3 near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:36
S54	0	JP-200116892-\$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:27
S55	2	JP-2001016892-\$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:28
S56	7	linear near2 vibrator near2 resonant	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:39
S57	0	linear near2 vibrator and resonant near2 frequency and control near2 unit	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:42
S58	5	linear near2 vibrator and resonant near2 frequency and control near2 unit	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:42

S59	15	linear near2 vibrator and switch and control near2 unit	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:48
S60	1	linear near2 vibrator same plunger	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 22:15
S61	5	linear near2 vibrator and plunger and electromagnetic	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 22:16
S62	0	linear near2 vibrator same directional near2 signal	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 22:58
S63	2290229	linear near2 vibrator same mechanical arm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 23:23
S64	0	linear near2 vibrator same mechanical near2 arm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 23:23
S65	1	linear near2 vibrator and mechanical near2 arm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 23:23

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1240	310/13-14.ccls.	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/16 18:01
L2	1038	310/15.ccls.	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/16 18:01
L3	118	310/19.ccls.	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/16 18:01

L4	343	318/128.ccls.	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/16 18:01
L5	949	318/560.ccls.	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/16 18:02
L6	132	310/12.15.ccls.	US-PGPUB; USPAT; UPAD	OR	ON	2011/09/16 18:04

9/ 16/ 2011 6:14:20 PM

C:\ Documents and Settings\ jgonzalez\ My Documents\ EAST\ Workspaces\ 12782697.wsp

<i>Search Notes</i> 	Application/Control No. 12782697	Applicant(s)/Patent Under Reexamination PEPIN ET AL.
	Examiner JOSE A GONZALEZ QUINONES	Art Unit 2834

SEARCHED			
Class	Subclass	Date	Examiner
310	13-15	10/31/2010	JAG
310	19	6/3/2011	JAG
310	12.15	9/16/2011	JAG

SEARCH NOTES		
Search Notes	Date	Examiner
Limited Text Search and Inventor Name	10/31/2010	JAG
See Est Note Attached	10/31/2010	JAG
Limited Text Search and IPC Search and Consulted case on art unit meeting	6/3/2011	JAG
See East Note Attached	6/3/2011	JAG
See east Note Updated attached	9/16/2011	JAG

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
310	13-15, 19 and 12.15	9/16/2011	JAG

--	--



1

PATENT

I hereby certify that on the date specified below, this correspondence is being deposited with the United States Postal Service as first-class mail in an envelope addressed to MAIL STOP AMENDMENT Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

8-22-11
Date

Joanne Bourguignon
Joanne Bourguignon

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Brian Marc Pepin et al.

Application No.: 12/782,697

Filed: May 18, 2010

Title: LINEAR-RESONANT VIBRATION MODULE

Examiner: Jose A. Gonzalez Quinones

Art Unit: 2834

Docket No.: 35099.001

Date: August 22, 2011

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT

INTRODUCTORY COMMENTS

Sir:

In response to the Final Office Action dated June 22, 2011, please amend the application as follows:

AMENDMENTS TO THE CLAIMS

1 - 6 Cancelled.

7. (currently amended) ~~The linear resonant vibration module of claim 4~~ A linear resonant vibration module comprising:

a housing;

a moveable component;

a power supply;

a driving component that drives the moveable component in each of two opposite directions; and

a control component that includes a microprocessor and that controls supply of power from the power supply to the driving component to cause the moveable component to linearly oscillate, the control component including, in addition to the microprocessor,

a control program, stored in one of a separated electronic memory or within the processor, that is executed by the microprocessor to control operation of the linear resonant vibration module, and

a switch that receives a directional signal d from the processor and that selects a corresponding direction of the two opposite directions in which the driving component drives the moveable component,

the control component receiving output signals from sensors within the linear resonant vibration module during operation of the linear resonant vibration module and adjusting one or more operational control outputs of the control component according to the received output signals from the sensors in order that subsequent operation of linear resonant vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters

~~wherein the control components include:~~

~~—— the microprocessor;~~

~~—— a control program, stored in one of a separated electronic memory or within the processor, that is executed by the microprocessor, to control operation of the linear resonant vibration module; and~~

~~—— a switch that receives a directional signal d from the processor and that selects a corresponding direction of the two opposite directions in which the driving component drives the moveable component.~~

8. (previously presented) The linear resonant vibration module of claim 7 wherein the switch comprises:

a directional-signal d input;

a voltage input;

a directional-signal splitter/inverter that generates two complementary internal signals, d and $\bar{d}$, corresponding to directional-signal d ; and

two pairs of solid-state switches, a first switch of each pair controlled by internal signal d and a second switch of the pair controlled by internal signal $\bar{d}$, that apply the input voltage in a first direction to the driving component when the d is in a first voltage state and that apply the input voltage in a second direction to the driving component when the d is in a second voltage state.

9. (previously presented) The linear resonant vibration module of claim 8

wherein the linear resonant vibration module further includes a vibration sensor;
and

wherein the control program continuously monitors output from the vibration sensor in order to adjust the frequency at which the control program changes the voltage state of the directional signal d .

10. (previously presented) The linear resonant vibration module of claim 8

wherein the control program receives user input from one or more input features, including one or more of buttons, dials, switches, and other user-input features.

11. (previously presented) The linear resonant vibration module of claim 10

wherein, when the control program receives user input directing a change in vibration strength, the control program changes the current provided from a power supply to the driving component; and

wherein, when the control program receives user input directing a change in vibration frequency, the control program changes the frequency at which the control program changes the voltage state of the directional signal *d*.

12-20 Cancelled

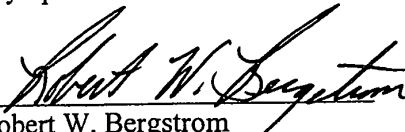
REMARKS

Claims 2-20 are pending in the current application. In an office action dated June 22, 2011 ("Office Action"), the Examiner rejected claim 17 under 35 U.S.C. § 112, first paragraph, rejected claims 2 and 3 under 35 U.S.C. § 103(a) as being unpatentable over Oba et. al., U.S. Patent Application No. 2005/0231045 ("Oba") in view of Orr et al., U.S. Patent Application Publication No. 2005/0275508 ("Orr"), rejected claims 4-6 and 12-14 under 35 U.S.C. § 103(a) as being unpatentable over Oba and Orr in further view of Amaya, U.S. Patent No. 5,995,799 ("Amaya"), rejected claims 15-16 under 35 U.S.C. § 103(a) as being unpatentable over Oba and Orr in further view of Sahyoun, U.S. Patent Application No. 2006/0208600 ("Sahyoun"), rejected claim 17 under 35 U.S.C. § 103(a) as being unpatentable over Oba and Orr in further view of Zabar, U.S. Patent No. 6,323,568 ("Zabar"), rejected claim 18 under 35 U.S.C. § 103(a) as being unpatentable over Oba and Orr in further view of Kim et al., U.S. Patent Application No. 2006/0138875 ("Kim"), and rejected claims 19 and 20 as being unpatentable over Oba in view of Orr and Amaya.

Applicants do not agree with the Examiner with regard to the above-mentioned claim rejections. However, in the interest of obtaining an issued patent in timely fashion, Applicants have cancelled the rejected claims in the above amendment and have rewritten claim 7 to include all of the limitations of claims 2, 3, and 4. Applicants' representative has changed the order in which certain of the limitations are recited, so that the amended claim 7 reads logically, but has included all limitations of the base claim and intervening claims. Applicants request that claims 2-6 and 12-20 be cancelled without prejudice to subsequent filing and arguments, including continuation and continuation-in-part applications. Applicants wish to thank the Examiner for the allowance of rewritten claim 7 and claims 8-11 that depend from claim 7.

In Applicants' representative's opinion, all of the claims remaining in the current application are clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,
Brian Marc Pepin et al.
Olympic Patent Works PLLC


Robert W. Bergstrom
Registration No. 39,906

Olympic Patent Works PLLC
P.O. Box 4277
Seattle, WA 98194-0277
206.621.1933 telephone
206.621.5302 fax



OLYMPIC PATENT WORKS [®]LLC

705 SECOND AVE., SUITE 1111
SEATTLE, WA 98104

MAILING ADDRESS:
P.O. Box 4277
SEATTLE, WA 98104

206.621.1933 (MAIN)
206.621.5302 (FAX)

AFI FFW

Docket No.: 35099.001
Date: August 22, 2011

In re application of **Brian Marc Pepin et al.**
Application No.: **12/782,697**
Filed: **May 18, 2010**
For: **LINEAR-RESONANT VIBRATION MODULE**

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

Sir:

Transmitted herewith is **an amendment** in the above-identified application.

- ☐ A Petition for an Extension of Time for onemonth.
☒ No additional claim fee is required.
☐ The fee has been calculated as shown.

	(Col. 1)		(Col. 2)	(Col. 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST PREV. PAID FOR	PRESENT EXTRA
TOTAL	* 5	MINUS	** 20	
INDEP.	* 1	MINUS	*** 3	
[] FIRST PRESENTATION OF MULTIPLE CLAIMS				
EXTENSION OF TIME FEE				
TOTAL ADDITIONAL FEE				

SMALL ENTITY	
RATE	ADDITIONAL FEE
x 25	\$
x 105	\$
+ 185	\$
	\$
	\$

OR

OTHER THAN A SMALL ENTITY	
RATE	ADDITIONAL FEE
x 50	\$
x 210	\$
+ 370	\$
	\$
	\$

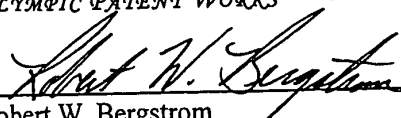
OR

TOTAL

- * If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space.
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found from the equivalent box in Col. 1 of a prior amendment or the number of claims originally filed.

- ☐ Please charge my Deposit Account No. 50-2976 in the amount of \$_. A duplicate copy of this sheet is enclosed.
☐ A check in the amount of \$_ is attached.
☒ The Commissioner is hereby authorized to charge payment of the following additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-2976. A duplicate copy of this sheet is enclosed.
☒ Any filing fees under 37 CFR 1.16 for the presentation of extra claims.
☒ Any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,
Brian Marc Pepin et al.
OLYMPIC PATENT WORKS [®]LLC


Robert W. Bergstrom
Registration No. 39,906



OLYMPIC PATENT WORKS PLLC

705 SECOND AVE., SUITE 1111
SEATTLE, WA 98104

MAILING ADDRESS:
P.O. Box 4277
SEATTLE, WA 98104

206.621.1933 (MAIN)
206.621.5302 (FAX)

Docket No.: **35099.001**
Date: **August 22, 2011**

In re application of **Brian Marc Pepin et al.**
Application No.: **12/782,697**
Filed: **May 18, 2010**
For: **LINEAR-RESONANT VIBRATION MODULE**

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

Sir:

Transmitted herewith is **an amendment** in the above-identified application.

☐ A Petition for an Extension of Time for onemonth.

☒ No additional claim fee is required.

☐ The fee has been calculated as shown.

	(Col. 1)		(Col. 2)	(Col. 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST PREV. PAID FOR	PRESENT EXTRA
TOTAL	* 5	MINUS	** 20	
INDEP.	* 1	MINUS	*** 3	
☐ FIRST PRESENTATION OF MULTIPLE CLAIMS				
EXTENSION OF TIME FEE				
TOTAL ADDITIONAL FEE				

SMALL ENTITY	
RATE	ADDITIONAL FEE
x 25	\$
x 105	\$
+ 185	\$
	\$
	\$

OR

OTHER THAN A SMALL ENTITY	
RATE	ADDITIONAL FEE
x 50	\$
x 210	\$
+ 370	\$
	\$
	\$

OR

TOTAL

* If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space.

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found from the equivalent box in Col. 1 of a prior amendment or the number of claims originally filed.

☐ Please charge my Deposit Account No. 50-2976 in the amount of \$_. A duplicate copy of this sheet is enclosed.

☐ A check in the amount of \$_ is attached.

☒ The Commissioner is hereby authorized to charge payment of the following additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-2976. A duplicate copy of this sheet is enclosed.

☒ Any filing fees under 37 CFR 1.16 for the presentation of extra claims.

☒ Any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,
Brian Marc Pepin et al.
OLYMPIC PATENT WORKS PLLC


Robert W. Bergstrom
Registration No. 39,906

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/782,697		Filing Date 05/18/2010		☐ To be Mailed			
APPLICATION AS FILED – PART I												
(Column 1)			(Column 2)			SMALL ENTITY ☒ OR		OTHER THAN SMALL ENTITY				
FOR		NUMBER FILED	NUMBER EXTRA		RATE (\$)	FEE (\$)		RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A		N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))		N/A	N/A		N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A		N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))		minus 20 =	*		X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*		X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).										
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))												
* If the difference in column 1 is less than zero, enter "0" in column 2.												
APPLICATION AS AMENDED – PART II												
(Column 1)			(Column 2)			(Column 3)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY	
AMENDMENT	08/30/2011	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	* 3	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =			
	Independent (37 CFR 1.16(h))	* 1	Minus	*** 3	= 0	X \$110 =	0	OR	X \$ =			
	☐ Application Size Fee (37 CFR 1.16(s))											
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
	TOTAL ADD'L FEE 0											
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)		
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		OR	X \$ =			
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =			
	☐ Application Size Fee (37 CFR 1.16(s))											
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))											
	TOTAL ADD'L FEE											
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.												

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/782,697	05/18/2010	Brian Marc Pepin	35099.001	5211
34395 7590 06/22/2011 OLYMPIC PATENT WORKS PLLC P.O. BOX 4277 SEATTLE, WA 98104			EXAMINER GONZALEZ QUINONES, JOSE A	
			ART UNIT 2834	PAPER NUMBER
			MAIL DATE 06/22/2011	DELIVERY MODE 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.

Office Action Summary	Application No.		Applicant(s)	
	12/782,697		PEPIN ET AL.	
	Examiner		Art Unit	
	JOSE GONZALEZ QUINONES		2834	

-- 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 22 March 2011.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ 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

4) ☒ Claim(s) 2-20 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 2-6 and 12-20 is/are rejected.

7) ☒ Claim(s) 7-11 is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on 16 February 2011 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).

11) ☐ 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

12) ☐ 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)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 20110120.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

The information disclosure statement (IDS) submitted on January 20 , 2011, is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

Response to Arguments

Applicant's arguments with respect to claims 2-20 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 112

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

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

.Claim 17 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. In this case a moveable component track is not described in the specification.

Claim Rejections - 35 USC § 103

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.

Claims 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oba et al. (US PG Pub 2005/0231045) in view of Orr et al. (US PG Pub 2005/0275508).

As to independent claim 2, Oba et al. teaches a linear resonant vibration module comprising;

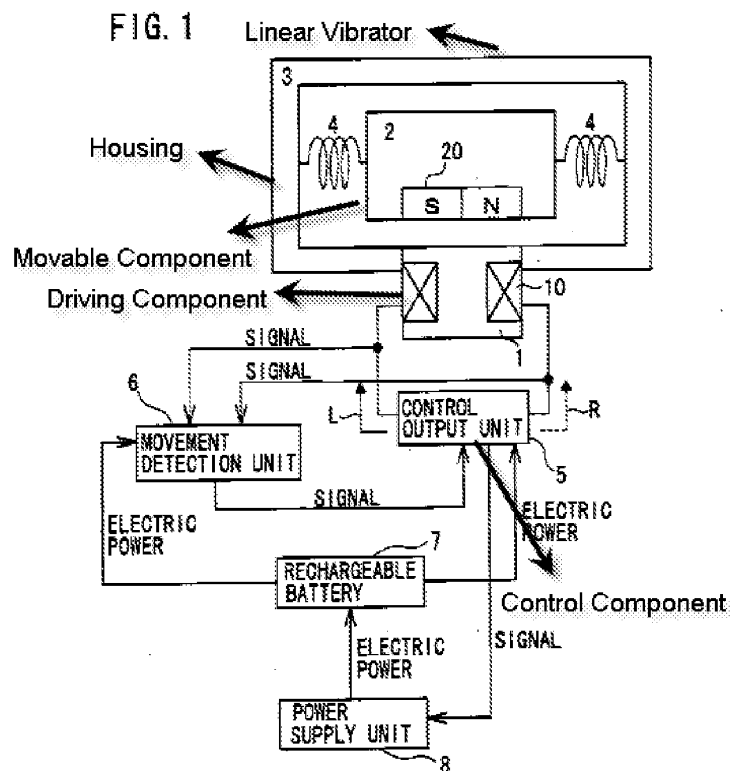
a housing (3);

a moveable component (2);

a power supply (8) ;

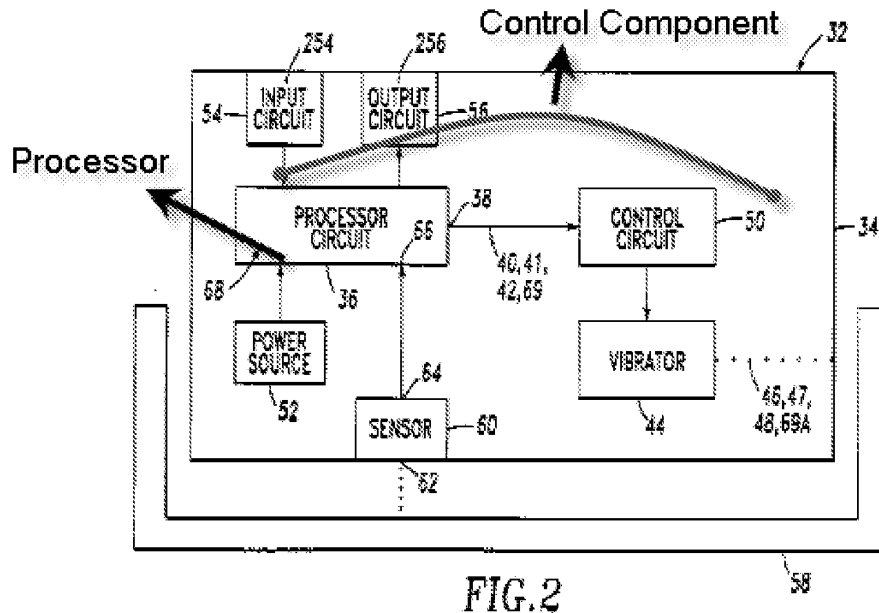
a driving component (1) that drives the movable component (2) in each of two opposite directions; and

a control component (5) and that controls supply of power from the power supply (8) to the driving component (1) to cause the moveable component (2) to linearly oscillate as shown in figure 1.



However Oba et al. fails to disclose a control component that include a microprocessor.

Orr et al. teaches a control component (50) that include a microprocessor (68) as shown in figure 2, for the advantageous benefit of providing one or both of attenuated and varied vibration intensity response (Paragraph [0008].



It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Oba et al. by using a control component that include a microprocessor, as taught by Orr et al., to provide one or both of attenuated and varied vibration intensity response.

As to claim 3/2, Oba et al. teaches wherein the control component (5) receives output signals from sensors (6, detector) within the linear resonant vibration module (see annotated figure 1) during operation of the linear resonant vibration module (see annotated figure 1) and adjusts one or more operational control outputs of the control component (5) according to the received output signals from the sensors (6, detector) as shown in figure 1 and Paragraph [0039].

Claims 4-6 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oba et al. (US PG Pub 2005/0231045) and Orr et al. (US PG Pub 2005/0275508) as applied in claim 2 above, and further in view of Amaya (5,955,799).

As to claim 4/2, Oba et al. in view of Orr et al. has been discussed above except wherein the control component adjusts the one or more operational control outputs of the control component according to the received output signals from the sensors in order that subsequent operation of linear resonant vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters.

Amaya teaches wherein the control component (5) adjusts the one or more operational control outputs (50 and 55) of the control component (5) according to the received output signals from the sensors (39) in order that subsequent operation of linear resonant vibration module produces desired outputs from the one or more sensors (39) corresponding to one or more operational control parameters (50 and 55) as shown in figure 4, for the advantageous benefit of determining the existence of a condition that renders the detection system non-functional, and drives the vibration system at a prescribed frequency when it is determined that the condition exists, during a back-up mode of operation (column 2, line 30-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Oba et al. in view of Orr et al. by using the control component adjusts the one or more operational control outputs of the control component according to the received output signals from the sensors in order that

subsequent operation of linear resonant vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters, as taught by Amaya, to determines the existence of a condition that renders the detection system non-functional, and drives the vibration system at a prescribed frequency when it is determined that the condition exists, during a back-up mode of operation.

As to claim 5/4, Oba et al. in view of Orr et al. has been discussed above except wherein the one or more operational control parameters is a strength of vibration produced by the linear oscillation of the moveable component and

wherein the one or more operational , control outputs is a frequency at which the control component drives the moveable component to linearly oscillate, the control componet dynamically adjust the power applied to the driving component to produce linear oscillation of the moveable component at a resonant frequency for the linear resonant vibration module.

Amaya teaches wherein the one or more operational control parameters (50 and 55) is a strength of vibration produced by the linear oscillation of the moveable component (2) and

wherein the one or more operational (50 and 55), control outputs is a frequency at which the control component (5) drives the moveable component to linearly oscillate, the control component (5) dynamically adjust the power applied to the driving component (11) to produce linear oscillation of the moveable component (2) at a

resonant frequency for the linear resonant vibration module as shown figure 4 and figure 7, for the advantageous benefit of determining the existence of a condition that renders the detection system non-functional, and drives the vibration system at a prescribed frequency when it is determined that the condition exists, during a back-up mode of operation (column 2, line 30-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Oba et al. in view of Orr et al. by using the one or more operational control parameters is a strength of vibration produced by the linear oscillation of the moveable component and wherein the one or more operational , control outputs is a frequency at which the control component drives the moveable component to linearly oscillate, the control component dynamically adjust the power applied to the driving component to produce linear oscillation of the moveable component at a resonant frequency for the linear resonant vibration module, as taught by Amaya, to determines the existence of a condition that renders the detection system non-functional, and drives the vibration system at a prescribed frequency when it is determined that the condition exists, during a back-up mode of operation.

As to claim 6/4, Oba et al. in view of Orr et al. has been discussed above except wherein the one or more operational control parameters include both a strength of vibration produced by the linear oscillation of the moveable component and a current operational mode; and

wherein the one or more operational control outputs is a control output that: determines a current supplied by the power supply to the driving component and a frequency at which the control component drives the moveable component to linearly oscillate.

Amaya et al. teaches wherein the one or more operational control parameters (50 and 55) include both a strength of vibration produced by the linear oscillation of the moveable component (2) and a current operational mode (56); and

wherein the one or more operational control outputs (50 and 55) is a control output that determines a current supplied by the power supply (column 1, line 43) to the driving component (11) and a frequency at which the control component (5) drives the moveable component (2) to linearly oscillate as shown figure 4 and figure 7, for the advantageous benefit of determining the existence of a condition that renders the detection system non-functional, and drives the vibration system at a prescribed frequency when it is determined that the condition exists, during a back-up mode of operation (column 2, line 30-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Oba et al. by using one or more operational control parameters include both a strength of vibration produced by the linear oscillation of the moveable component and a current operational mode; and wherein the one or more operational control outputs is a control output that: determines a current supplied by the power supply to the driving component and a frequency at which the control component

drives the moveable component to linearly oscillate, as taught by Orr et al., to determines the existence of a condition that renders the detection system non-functional, and drives the vibration system at a prescribed frequency when it is determined that the condition exists, during a back-up mode of operation.

As to claim 12/2, Oba et al. teaches wherein the driving component (1) comprises one or more electromagnetic coils (10) that generate magnetic fields parallel to the directions in which moveable component (2) is driven by the driving component (1) as shown in figure 1.

As to claim 13/2, Oba et al. teaches wherein the housing (3) is a linear tube, capped at both ends by moveable-component-repelling components selected from one of mechanical springs (4) and magnets (20);

wherein the moveable component (2) is a magnet (20) shaped to slide within the linear tube (3); and

wherein the driving component (1) is an electromagnetic coil (10) as shown in figure 1.

As to claim 14/2, Oba et al. teaches wherein the housing (3) is a linear tube, capped at both ends by moveable-component-repelling components (4 and 20); and

wherein the moveable component (2) includes an electromagnetic coil driving component (1) as shown in figure 1,

However Oba fails to disclose microprocessor.

Orr et al. teaches a processor (36) as shown in figure 2, providing one or both of attenuated and varied vibration intensity response (paragraph [0008].

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Oba et al. by using microprocessor, as taught by Orr et al., to provide one or both of attenuated and varied vibration intensity response.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oba et al. (US PG Pub 2005/0231045) and Orr et al. (US PG Pub 2005/0275508) as applied in claim 2 above, and further in view of Sahyoun (US PG Pub 2006/0208600).

As to claim 15/2, Oba et al. in view of Orr et al. has been discussed above except further including rotational driving components that induce rotational motion of the moveable component in addition to translational motion induced by the driving component.

However Sahyoun teaches including rotational driving components (stator, coil) that induce rotational motion of the moveable component (slider) in addition to translational motion induced by the driving component (stator , coil) Paragraph [0055], for the advantageous benefit of designing with a slider that moves linearly with respect to the stator in both directions (paragraph [0011].

[0055] With tube 10' having the shape of an arc the electromagnetic motor of this embodiment is capable of producing vibration as well as a twisting motion of tube 10'. When small signal impulses are applied to coils 16 only vibration, produced by short travel distances of the slider, is experienced by the user since the internal rotation of the slider is very small and practically undetectable. With longer signal impulses applied to coils 16, the stator travels rotationally within tube 10' producing vibration of tube 10' as well as transferring a rotational component to tube 10'.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Oba et al. in view of Orr et al. by using rotational driving components that induce rotational motion of the moveable component in addition to translational motion induced by the driving component, as taught by Sahyoun., to designed with a slider that moves linearly with respect to the stator in both directions.

As to claim 16/2, Oba et al. teaches wherein :the linear resonant vibration module further include two or more driving components (1), each, when activated, driving the moveable component (2) to linearly oscillate with an amplitude particular to the activated driving component (1) as shown in figure 1 and Paragraph [0040].

Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oba et al. (US PG Pub 2005/0231045) and Orr et al. (US PG Pub 2005/0275508) as applied in claim 2 above, and further in view of Zabbar (6,323,568).

As to claim 17/2, Oba et al. in view of Orr et al. has been discussed above except wherein housing includes a power supply, the microprocessor, and a moveable component track orthogonal to a long axis of the housing

wherein the moveable component is a plunger the moves a first direction and a second direction, opposite from the first direction within the moveable component -track; and

wherein the driving component comprising two electromagnetic driving coils and a centering magnet.

Oba et al. teaches an moveable component track (2) orthogonal to a long axis of the housing (3) as shown in figure 1.

Orr et al. teaches wherein housing (34) includes a power supply (52), the microprocessor (36) as shown in figure 2.

However Oba et al. in view of Orr et al. fails to disclose wherein the moveable component is a plunger the moves a first direction and a second direction, opposite from the first direction within the moveable component -track .

Zabar et al. teaches wherein the moveable component is a plunger (3) the moves a first direction and a second direction, opposite from the first direction within the moveable component –track (see annotated figure 3), for the advantageous benefit of providing a novel electromagnetic vibrator which can be constructed as a universal drive (column 1, line 34-36).



Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oba et al. (US PG Pub 2005/0231045) and Orr et al. (US PG Pub 2005/0275508) as applied in claim 2 above, and further in view of Kim et al. (US PG Pub 2006/0138875) .

47

wherein the movable component is a clamped mechanical arm to which two magnets are attached and,

wherein the driving component comprising an electromagnetic coil that, when opposite current are applied at a particular frequency to the electromagnetic coil , causes the mechanical and to vibrate.

Kim et al. teaches wherein the movable component is a clamped mechanical arm(60) to which two magnets(40) are attached and, wherein the driving component (30) comprising an electromagnetic coil (50) that, when opposite current are applied at a particular frequency to the electromagnetic coil (50) , causes the mechanical and to vibrate as shown in figure 7, for the advantageous benefit of a simplifying ventilation structure increases a ventilation efficiency (Abstract).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Oba et al. in view of Orr et al. by using wherein the movable component is a clamped mechanical arm to which two magnets are attached and, wherein the driving component comprising an electromagnetic coil that, when opposite current are applied at a particular frequency to the electromagnetic coil , causes the mechanical and to vibrate, as taught by Zabar et al., to simplify ventilation structure increases a ventilation efficiency.

Claims 19 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oba et al. (US PG Pub 2005/0231045) in view of and Orr et al. (US PG Pub 2005/0275508) and Amaya (5,955,799).

As to independent claim 19, Oba et al. teaches a method for applying a vibrational force, the method comprising: applying a linear resonant vibration (see annotated figure 1) module to the target surface, the linear resonant vibration module (see annotated figure 1) comprising a housing (3), a moveable component (2), a power supply (8), a driving component (1) that drives the moveable component (2) in each of two opposite directions, and a control component (5), that controls supply of power from the power supply (8) to the driving component (1) to cause the moveable component (2) to linearly oscillate, activating the linear resonant vibration module (see annotated figure 2), to produce a vibrational force that is transmitted to target surface as shown in figure 1.

However Oba et al. fails to disclose a control component that include a microprocessor and the control component monitoring sensors within the linear resonant vibration module during operation of the linear resonant vibration module to adjust one or more operational control outputs of the control component to seek to optimize one or more operational control parameters.

Orr et al. teaches a control component (50) that include a microprocessor (68) as shown in figure 2, for the advantageous benefit of providing one or both of attenuated and varied vibration intensity response (Paragraph [0008].

Amaya teaches the control (5) component monitoring sensors (39) within the linear resonant vibration module (see abstract) during operation of the linear resonant vibration module (see abstract) to adjust one or more operational control outputs (50 an 55) of the control component (5) to seek to optimize one or more operational control

parameters (50 and 55) as shown in figure 4, for the advantageous benefit of determining the existence of a condition that renders the detection system non-functional, and drives the vibration system at a prescribed frequency when it is determined that the condition exists, during a back-up mode of operation (column 2, line 30-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Oba et al. by using a control component that include a microprocessor and the control component monitoring sensors within the linear resonant vibration module during operation of the linear resonant vibration module to adjust one or more operational control outputs of the control component to seek to optimize one or more operational control parameters, as taught by Orr et al. and Amaya, to provide one or both of attenuated and varied vibration intensity response and determine the existence of a condition that renders the detection system non-functional, and drives the vibration system at a prescribed frequency when it is determined that the condition exists, during a back-up mode of operation.

As to claim 20/19, Oba et al. in view Orr et al. and Amaya has been discussed above except wherein the one or more operational control parameters is a strength of vibration produced by the linear oscillation of the moveable component and

wherein the one or more operational , control outputs is a frequency at which the control component drives the moveable component to linearly oscillate, the control componet dynamically adjust the power applied to the driving component to produce

linear oscillation of the moveable component at a resonant frequency for the linear resonant vibration module.

Amaya teaches wherein the one or more operational control parameters (50 and 55) is a strength of vibration produced by the linear oscillation of the moveable component (2) and

wherein the one or more operational (50 and 55), control outputs is a frequency at which the control component (5) drives the moveable component to linearly oscillate, the control component (5) dynamically adjust the power applied to the driving component (11) to produce linear oscillation of the moveable component (2) at a resonant frequency for the linear resonant vibration module as shown figure 4 and figure 7, for the advantageous benefit of determining the existence of a condition that renders the detection system non-functional, and drives the vibration system at a prescribed frequency when it is determined that the condition exists, during a back-up mode of operation (column 2, line 30-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Oba et al. in view of Orr et al. and Amaya by using the one or more operational control parameters is a strength of vibration produced by the linear oscillation of the moveable component and wherein the one or more operational , control outputs is a frequency at which the control component drives the moveable component to linearly oscillate, the control component dynamically adjust the power applied to the driving component to produce linear oscillation of the moveable component at a resonant frequency for the linear resonant vibration module, as taught

by Amaya, to determines the existence of a condition that renders the detection system non-functional, and drives the vibration system at a prescribed frequency when it is determined that the condition exists, during a back-up mode of operation.

Allowable Subject Matter

Claims 7-11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Note claims 8-11 depends on claim 7.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSE A. GONZALEZ QUINONES whose telephone number is (571)270-7850. The examiner can normally be reached on 1 st week Monday to Friday 7:30 AM to 5:00 PM and 2nd week Monday to Thursday 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen P. Leung can be reached on 571-272-8188. 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.

/Quyen Leung/
Supervisory Patent Examiner, Art Unit 2834

/JOSE A GONZALEZ QUINONES/
Examiner, Art Unit 2834
June 3, 2011

Notice of References Cited	Application/Control No. 12/782,697	Applicant(s)/Patent Under Reexamination PEPIN ET AL.	
	Examiner JOSE GONZALEZ QUINONES	Art Unit 2834	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2005/0231045	10-2005	Oba et al.	310/019
*	B	US-2005/0275508	12-2005	Orr et al.	340/407.1
*	C	US-5,955,799	09-1999	Amaya et al.	310/36
*	D	US-2006/0208600	09-2006	Sahyoun, Joseph Y.	310/254
*	E	US-6,323,568	11-2001	Zabar, Nahum	310/17
*	F	US-2006/0138875	06-2006	Kim et al.	310/015
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<i>Index of Claims</i> 	Application/Control No. 12782697	Applicant(s)/Patent Under Reexamination PEPIN ET AL.
	Examiner JOSE A GONZALEZ QUINONES	Art Unit 2834

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant				☐ CPA		☐ T.D.		☐ R.1.47	
CLAIM		DATE							
Final	Original	10/31/2010	06/03/2011						
	1	✓	-						
	2		✓						
	3		✓						
	4		✓						
	5		✓						
	6		✓						
	7		O						
	8		O						
	9		O						
	10		O						
	11		O						
	12		✓						
	13		✓						
	14		✓						
	15		✓						
	16		✓						
	17		✓						
	18		✓						
	19		✓						
	20		✓						

<i>Search Notes</i> 	Application/Control No. 12782697	Applicant(s)/Patent Under Reexamination PEPIN ET AL.
	Examiner JOSE A GONZALEZ QUINONES	Art Unit 2834

SEARCHED			
Class	Subclass	Date	Examiner
310	13-15	10/31/2010	JAG
310	19	6/3/2011	JAG

SEARCH NOTES		
Search Notes	Date	Examiner
Limited Text Search and Inventor Name	10/31/2010	JAG
See Est Note Attached	10/31/2010	JAG
Limited Text Search and IPC Search and Consulted case on art unit meeting	6/3/2011	JAG
See East Note Attached	6/3/2011	JAG

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

--	--

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L2	0	rotational near2 driv\$3 near2 coil and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 20:34
L3	56	rotational same driv\$3 near2 coil and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 20:35
L4	1699	driv\$3 near2 coil and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 20:39
L5	744	driv\$3 near2 coil same vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 20:39
L6	38	("20010038515" "20030074783" "4636893" "5235472" "5382887" "5390949" "5539270" "5719720" "5856895" "5991114" "6079088" "6098460" "6166874" "6327120" "6329740" "6351341" "6493172" "6501625" "6532138" "6542326" "6587313" "6604431" "6615465" "6621653" "6629462" "6667844" "6680810" "6721136" "6724560" "6724563" "6741012").PN. OR ("6980388").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/06/03 20:43

L7	38	linear near2 vibrator same arm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 20:44
L8	94	linear near2 vibrator same magnet	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 20:46
L9	0	("2006/0138875").URPN.	USPAT	OR	ON	2011/06/03 20:50
L10	9	("3470403" "3500080" "4992685" "5144176" "5602432" "5994854" "6262500").PN. OR ("7485991").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/06/03 20:51
L11	102	linear near2 vibrator same coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 20:52
L12	50	H02k033/\$.ipc. and linear near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 20:57
L13	10	310/15.ccls. and linear near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 20:59
L14	9	("3470403" "3500080" "4992685" "5144176" "5602432" "5994854" "6262500").PN. OR ("7485991").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/06/03 21:01
L15	10	310/13-14.ccls. and linear near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 21:02
L26	99	electromagnetic near2 coil near2 rotate	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 21:53

L27	2	electromagnetic near2 coil near2 rotate and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 21:53
L28	65	electromagnetic near2 coil same rotate and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 21:54
L29	645	coil same rotational and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 21:57
L30	82	arm near2 vibrator same magnet	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:12
L31	1048	arm near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:22
L32	53	clamp near2 arm same vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:27
L33	115	clamp\$3 near2 arm same vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:27
L34	1305	magnet same plate same vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:34
L35	306	magnet with plate with vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:34

L36	1	magnet with arm near2 plate with vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:37
L37	40	magnet with arm with vibrator with coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:38
L38	7	(two or pair) near2 magnet with arm with vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:42
L39	15	(two or pair) near2 magnet with plate with vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:43
L40	0	(two or pair) near2 magnet same linear near2 vibrator same arm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:44
L41	7	(two or pair) near2 magnet same linear near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/03 22:44
S1	37	pepin near2 brian	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:49
S2	37	pepin near2 brian.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:49
S3	0	elenga near2 robin.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:50

S4	94	thumper near2 device	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:54
S5	31	thumper near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:55
S6	0	linear near2 thumper	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:57
S7	0	linear near2 pattycake	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:59
S8	1400	310/15.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:59
S9	1607	310/13-14.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 19:11
S10	30	"6768230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 19:26

S11	80	"3083469" "3554617" "3726574" "3746407" "3834775" "3977739" "4064409" "4171818" "4260901" "4356098" "4357024" "4430239" "4485024" "4645960" "4673997" "4687596" "4706498" "4732706" "4734606" "4797013" "4814654" "4898480" "4938886" "4965864" "5085789" "5175457" "5323076" "5347186" "5358648" "5376862" "5417507" "5444313" "5452520" "5471100" "5490425" "5578877" "5587242" "5713670" "5775169" "5780741" "5818132" "5851416" "5899220" "5908987" "5950543" "6020664" "6056889" "6083082" "6103107" "6208743" "6220719" "6254781" "6261471" "6277298" "6313551" "6501357" "6570273").PN. OR ("6768230").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 20:31
S12	31	"6326706" "7449803" "7288860"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/11/03 20:37
S13	12	("3129347" "3728654" "4381181" "4542311" "5231336" "5335284" "5424592" "5973422" "6201329" "6326706"). PN. OR ("7449803"). URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 21:03
S14	28	("3891874" "3937600" "4067667" "4404503" "4533890" "4613285" "4704553" "5296767" "5779455").PN. OR ("6326706").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 21:08
S15	34	("3129347").URPN.	USPAT	OR	ON	2010/11/03 21:11
S16	33	("2852243" "3100292" "3129347" "3308647" "3483759").PN. OR ("4446741").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 21:17

S17	33	("2852243" "3100292" "3129347" "3308647" "3483759").PN. OR ("4446741").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 21:21
S18	25	("2852243" "3100292" "3129347" "3483759" "3987392" "4446741").PN. OR ("4754644").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 21:47
S19	2	"20060208600"	US-PGPUB; USPAT; USOCR	OR	ON	2010/11/03 22:47
S20	586	H02k033/02.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/01 09:25
S21	282	H02k033/12.ipc.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/01 09:37
S22	0	linear near2 vibrator same (control or controller) same microprocessor	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/01 09:51
S23	6	linear near2 vibrator same (control or controller) and microprocessor	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/01 09:51
S24	15	("20040067780" "5896096" "6452588" "6489950" "6643528" "6674358" "6774769" "6836212").PN. OR ("7019622").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/06/01 09:59
S25	31	linear near2 vibrator same (control or controller) and sensor	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/01 10:00
S26	1	"12782697"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 08:12

S27	2013879	linear ner2 vibrator same electromagnet near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:19
S28	1	linear near2 vibrator same electromagnet near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:19
S29	742	linear near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:19
S30	9	linear near2 vibrator and microprocessor and driving	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:27
S31	0	linear near2 vibrator and microprocessor and driving near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:28
S32	7	linear near2 vibrator and driving near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:28
S33	1	("2008/0001484").URPN.	USPAT	OR	ON	2011/06/02 09:30
S34	13	linear near2 electromagnetic near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:36
S35	2342	electromagnetic near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:37

S36	272	electromagnetic near2 vibrator and power near2 supply	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 09:38
S37	1	microprocessor and electromagnetic near2 vibrator near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 19:40
S38	49	microprocessor and electromagnetic same vibrator same coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 19:41
S39	0	ho2k033/\$.ipc. and vibrator and power near2 supply	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 19:43
S40	66	h02k033/\$.ipc. and vibrator and power near2 supply	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 19:43
S41	0	("2005/0231045").URPN.	USPAT	OR	ON	2011/06/02 19:51
S42	1335	318/560.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:03
S43	9	318/560.ccls. and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:03
S44	32	310/19.ccls. and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:09
S45	3	("4481460" "5528697" "5883478").PN. OR ("6411050").URPN.	US-PGPUB; USPAT; USOCR	OR	ON	2011/06/02 20:11

S46	70	318/128.ccls. and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:18
S47	5074	"CPU" and vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:24
S48	1182	"CPU" same vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:25
S49	2	"CPU" same vibrator same driv\$3 near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:25
S50	0	processor same vibrator same driv\$3 near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:26
S51	224	processor and vibrator and driv\$3 near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:26
S52	1941	processor and oscillator and driv\$3 near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:36
S53	146	processor same oscillator same driv\$3 near2 coil	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 20:36
S54	0	JP-200116892-\$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:27

S55	2	JP-2001016892-\$.did.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:28
S56	7	linear near2 vibrator near2 resonant	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:39
S57	0	linear near2 vibrator and resonant near2 frequency and control near2 unit	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:42
S58	5	linear near2 vibrator and resonant near2 frequency and control near2 unit	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:42
S59	15	linear near2 vibrator and switch and control near2 unit	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 21:48
S60	1	linear near2 vibrator same plunger	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 22:15
S61	5	linear near2 vibrator and plunger and electromagnetic	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 22:16
S62	0	linear near2 vibrator same directional near2 signal	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 22:58
S63	2290229	linear near2 vibrator same mechanical arm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 23:23

S64	0	linear near2 vibrator same mechanical near2 arm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 23:23
S65	1	linear near2 vibrator and mechanical near2 arm	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2011/06/02 23:23

EAST Search History (Interference)

< This search history is empty >

6/ 3/ 2011 11:19:44 PM**C:\ Documents and Settings\ jgonzalez\ My Documents\ EAST\ Workspaces\ 12782697.wsp**

Receipt date: 01/20/2011

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

12782697 - GAU: 2834

PTO/SB/03a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12782697
	Filing Date		2010-05-18
	First Named Inventor	Brian Marc Pepin et al.	
	Art Unit	2834	
	Examiner Name	Jose A. Gonzalez Quirones	
	Attorney Docket Number	35099.001	

U.S.PATENTS						
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Patent citation information please click the Add button.

U.S.PATENT APPLICATION PUBLICATIONS						
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
	1					

If you wish to add additional U.S. Published Application citation information please click the Add button.

FOREIGN PATENT DOCUMENTS								
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ^{2j}	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
/J.A.G./	1	9819383	WO	A1	1998-05-07	OMRON TATEISI ELEC.		☐
/J.A.G./	2	10164809	JP	A	1998-06-19	OMRON TATEISI ELEC.		☐
/J.A.G./	3	11018395	JP	A	1999-01-22	OMRON TATEISI ELEC.		☐

Receipt date: 01/20/2011

12782697 - GAU: 2834

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	12782697
Filing Date	2010-05-18
First Named Inventor	Brian Marc Pepin et al.
Art Unit	2834
Examiner Name	Jose A. Gonzalez Quinones
Attorney Docket Number	35099.001

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/Jose Gonzalez Quinones/	Date Considered	06/03/2011
--------------------	--------------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Brian Marc Pepin et al.

Application No.: 12/782,697

Filed: May 18, 2010

Title: LINEAR-RESONANT VIBRATION MODULE

Examiner: Jose A. Gonzalez Quinones

Art Unit: 2834

Docket No.: 35099.001

Date: March 22, 2011

Mail Stop Amendment
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENTINTRODUCTORY COMMENTS

Sir:

In response to the Notice of Non-Compliant Amendment (37 CFR 1.121) dated February 23, 2011, please amend the "AMENDMENTS TO THE CLAIMS" section of the Amendment filed February 16, 2011, as follows:

AMENDMENTS TO THE CLAIMS

1. Cancelled.

2. (new) A linear resonant vibration module comprising:

a housing;

a moveable component;

a power supply;

a driving component that drives the moveable component in each of two opposite directions; and

a control component that includes a microprocessor and that controls supply of power from the power supply to the driving component to cause the moveable component to linearly oscillate.

3. (new) The linear resonant vibration module of claim 2 wherein the control component receives output signals from sensors within the linear resonant vibration module during operation of the linear resonant vibration module and adjusts one or more operational control outputs of the control component according to the received output signals from the sensors.

4. (new) The linear resonant vibration module of claim 2 wherein the control component adjusts the one or more operational control outputs of the control component according to the received output signals from the sensors in order that subsequent operation of linear resonant vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters.

5. (new) The linear resonant vibration module of claim 4

wherein the one or more operational control parameters is a strength of vibration produced by the linear oscillation of the moveable component; and

wherein the one or more operational control outputs is a frequency at which the control component drives the moveable component to linearly oscillate, the control

component dynamically adjusting the power supplied to the driving component to produce linear oscillation of the moveable component at a resonant frequency for the linear resonant vibration module.

6. (new) The linear resonant vibration module of claim 4

wherein the one or more operational control parameters include both a strength of vibration produced by the linear oscillation of the moveable component and a current operational mode; and

wherein the one or more operational control outputs is a control output that determines a current supplied by the power supply to the driving component and a frequency at which the control component drives the moveable component to linearly oscillate.

7. (new) The linear resonant vibration module of claim 4 wherein the control components include:

the microprocessor;

a control program, stored in one of a separated electronic memory or within the processor, that is executed by the microprocessor, to control operation of the linear resonant vibration module; and

a switch that receives a directional signal d from the processor and that selects a corresponding direction of the two opposite directions in which the driving component drives the moveable component.

8. (new) The linear resonant vibration module of claim 7 wherein the switch comprises:

a directional-signal d input;

a voltage input;

a directional-signal splitter/inverter that generates two complementary internal signals, d and $\bar{d}$, corresponding to directional-signal d ; and

two pairs of solid-state switches, a first switch of each pair controlled by internal signal d and a second switch of the pair controlled by internal signal $\bar{d}$, that apply the input voltage in a first direction to the driving component when the d is in a first voltage

state and that apply the input voltage in a second direction to the driving component when the d is in a second voltage state.

9. (new) The linear resonant vibration module of claim 8

wherein the linear resonant vibration module further includes a vibration sensor;
and

wherein the control program continuously monitors output from the vibration sensor in order to adjust the frequency at which the control program changes the voltage state of the directional signal d .

10. (new) The linear resonant vibration module of claim 8

wherein the control program receives user input from one or more input features, including one or more of buttons, dials, switches, and other user-input features.

11. (new) The linear resonant vibration module of claim 10

wherein, when the control program receives user input directing a change in vibration strength, the control program changes the current provided from a power supply to the driving component; and

wherein, when the control program receives user input directing a change in vibration frequency, the control program changes the frequency at which the control program changes the voltage state of the directional signal d .

12. (new) The linear resonant vibration module of claim 2 wherein the driving component comprises one or more electromagnetic coils that generate magnetic fields parallel to the directions in which the moveable component is driven by the driving component.

13. (new) The linear resonant vibration module of claim 2

wherein the housing is a linear tube, capped at both ends by moveable-component-repelling components selected from one of mechanical springs and magnets;

wherein the moveable component is a magnet shaped to slide within the linear tube; and

wherein the driving component is an electromagnetic coil.

14. (new) The linear resonant vibration module of claim 2

wherein the housing is a linear tube, capped at both ends by moveable-component-repelling components; and

wherein the moveable component includes an electromagnetic-coil driving component and microprocessor.

15. (new) The linear resonant vibration module of claim 2 further including rotational driving components that induce rotational motion of the moveable component in addition to translational motion induced by the driving component.

16. (new) The linear resonant vibration module of claim 2 wherein the linear resonant vibration module further includes two or more driving components, each, when activated, driving the moveable component to linearly oscillate with an amplitude particular to the activated driving component.

17. (new) The linear resonant vibration module of claim 2

wherein housing includes a power supply, the microprocessor, and a moveable-component track orthogonal to a long axis of the housing;

wherein the moveable component is a plunger that moves a first direction and a second direction opposite from the first direction within the moveable-component-track; and

wherein the driving component comprising two electromagnetic driving coils and a centering magnet.

18. (new) The linear resonant vibration module of claim 2

wherein the moveable component is a clamped mechanical arm to which two magnets are attached; and

wherein the driving component comprising an electromagnetic coil that, when opposite currents are applied at a particular frequency to the electromagnetic coil, causes the mechanical arm to vibrate.

19. (new) A method for applying a vibrational force to a target surface, the method comprising:

applying a linear resonant vibration module to the target surface, the linear resonant vibration module comprising a housing, a moveable component, a power supply, a driving component that drives the moveable component in each of two opposite directions, and a control component that includes a microprocessor and that controls supply of power from the power supply to the driving component to cause the moveable component to linearly oscillate, the control component monitoring sensors within the linear resonant vibration module during operation of the linear resonant vibration module to adjust one or more operational control outputs of the control component to seek to optimize one or more operational control parameters; and

activating the linear resonant vibration module to produce a vibrational force that is transmitted to the target surface.

20. (new) The method of claim 19

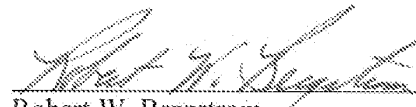
wherein the one or more operational control parameters is a strength of vibration produced by the linear oscillation of the moveable component; and

wherein the one or more operational control outputs is a frequency at which the control component drives the moveable component to linearly oscillate, the control component dynamically adjusting the power supplied to the driving component to produce linear oscillation of the moveable component at a resonant frequency for the linear resonant vibration module.

REMARKS

Applicants' representative has amended the claims so that each claim has now been provided with the proper status identifier, and as such, the individual status of each claim can be identified.

Respectfully submitted,
Brian Marc Pepin et al.
Olympic Patent Works PLLC

A handwritten signature in black ink, appearing to read "Robert W. Bergstrom", is written over a horizontal line.

Robert W. Bergstrom
Registration No. 39,906

Electronic Acknowledgement Receipt	
EFS ID:	9715932
Application Number:	12782697
International Application Number:	
Confirmation Number:	5211
Title of Invention:	LINEAR-RESONANT VIBRATION MODULE
First Named Inventor/Applicant Name:	Brian Marc Pepin
Customer Number:	34395
Filer:	Robert Walter Bergstrom/Joanne Bourguignon
Filer Authorized By:	Robert Walter Bergstrom
Attorney Docket Number:	35099.001
Receipt Date:	22-MAR-2011
Filing Date:	18-MAY-2010
Time Stamp:	18:50:33
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		35099-001-E-NONCOMPLYAMEND.pdf	1207327	yes	8
			664d1b4225fdeb117ea49508f1a452b130a50c59		

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Transmittal Letter		1	1
Amendment/Req. Reconsideration-After Non-Final Reject		2	2
Amendment Copy Claims/Response to Suggested Claims		3	7
Applicant Arguments/Remarks Made in an Amendment		8	8

Warnings:

Information:

Total Files Size (in bytes):	1207327
-------------------------------------	---------

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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.

OLYMPIC PATENT WORKS ^{PLLC}

705 SECOND AVE., SUITE 1111
SEATTLE, WA 98104

MAILING ADDRESS:
P.O. BOX 4277
SEATTLE, WA 98104

206.621.1933 (MAIN)
206.621.5302 (FAX)

Docket No.: **35099.001**
Date: **March 22, 2011**

In re application of **Brian Marc Pepin et al.**
Application No.: **12/782,697**
Filed: **May 18, 2010**
For: **LINEAR-RESONANT VIBRATION MODULE**

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

Sir:

Transmitted herewith is an **Amendment in Response to Non-Compliant Amendment** in the above-identified application.

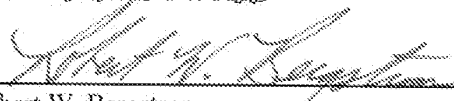
- ☐ A Petition for an Extension of Time for onemonth.
☒ No additional claim fee is required.
☐ The fee has been calculated as shown.

	(Col. 1)		(Col. 2)	(Col. 3)	SMALL ENTITY		OR	OTHER THAN A SMALL ENTITY	
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST PREV. PAID FOR	PRESENT EXTRA	RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
TOTAL	*	MINUS	**		x 25	\$		x 50	\$
INDEP.	*	MINUS	***		x 105	\$		x 210	\$
☐ FIRST PRESENTATION OF MULTIPLE CLAIMS					+ 185	\$	OR	+ 370	\$
EXTENSION OF TIME FEE						\$			\$
TOTAL ADDITIONAL FEE						\$	TOTAL		\$

- * If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space.
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found from the equivalent box in Col. 1 of a prior amendment or the number of claims originally filed.

- ☐ Please charge my Deposit Account No. 50-2976 in the amount of \$_. A duplicate copy of this sheet is enclosed.
☐ A check in the amount of \$_ is attached.
☒ The Commissioner is hereby authorized to charge payment of the following additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-2976. A duplicate copy of this sheet is enclosed.
☒ Any filing fees under 37 CFR 1.16 for the presentation of extra claims.
☒ Any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,
Brian Marc Pepin et al.
OLYMPIC PATENT WORKS ^{PLLC}


Robert W. Bergstrom
Registration No. 39,906

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/782,697		Filing Date 05/18/2010		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)			SMALL ENTITY ☒ OR		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.										
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	03/22/2011	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	X \$110 =	0	OR	X \$ =	
☐ Application Size Fee (37 CFR 1.16(s))										
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
TOTAL ADD'L FEE						0	OR	TOTAL ADD'L FEE		
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		OR	X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =	
☐ Application Size Fee (37 CFR 1.16(s))										
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
TOTAL ADD'L FEE							OR	TOTAL ADD'L FEE		
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/RUTH M. LLOYD/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/782,697		Filing Date 05/18/2010		☐ To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)			SMALL ENTITY ☒ OR		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
☐ SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A			N/A				
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A			N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$ =		OR	X \$ =				
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$ =			X \$ =				
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).									
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.										
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	02/16/2011	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 2	Minus	*** 3	= 0	X \$110 =	0	OR	X \$ =	
☐ Application Size Fee (37 CFR 1.16(s))										
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
TOTAL ADD'L FEE						0	OR	TOTAL ADD'L FEE		
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)	
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		OR	X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =	
☐ Application Size Fee (37 CFR 1.16(s))										
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
TOTAL ADD'L FEE							OR	TOTAL ADD'L FEE		
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.										
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".										
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".										
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/LINDA A. WASHINGTON/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

34395 e 02/23/2011

OLYMPIC PATENT WORKS PLLC
P.O. BOX 4277
SEATTLE, WA 98104

Paper No.

Application No.:	12/782,697 *12782697*	Date Mailed:	02/23/2011
First Named Inventor:	Pepin, Brian, Marc	Examiner:	GONZALEZ QUINONES, JOSE A
Attorney Docket No.:	35099.001	Art Unit:	2834
Confirmation No.:	5211	Filing Date:	05/18/2010

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

Commissioner for Patents

Notice of Non-Compliant Amendment (37 CFR 1.121)	Application No. 12/782,697	Applicant(s) PEPIN ET AL.	
		Art Unit 3700	

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

The amendment document filed on 16 February, 2011 is considered non-compliant because it has failed to meet the requirements of 37 CFR 1.121 or 1.4. In order for the amendment document to be compliant, correction of the following item(s) is required.

THE FOLLOWING MARKED (X) ITEM(S) CAUSE THE AMENDMENT DOCUMENT TO BE NON-COMPLIANT:

- ☐ 1. Amendments to the specification:
 - ☐ A. Amended paragraph(s) do not include markings.
 - ☐ B. New paragraph(s) should not be underlined.
 - ☐ C. Other _____.
- ☐ 2. Abstract:
 - ☐ A. Not presented on a separate sheet. 37 CFR 1.72.
 - ☐ B. Other _____.
- ☐ 3. Amendments to the drawings:
 - ☐ A. The drawings are not properly identified in the top margin as "Replacement Sheet," "New Sheet," or "Annotated Sheet" as required by 37 CFR 1.121(d).
 - ☐ B. The practice of submitting proposed drawing correction has been eliminated. Replacement drawings showing amended figures, without markings, in compliance with 37 CFR 1.84 are required.
 - ☐ C. Other _____.
- ☒ 4. Amendments to the claims:
 - ☐ A. A complete listing of all of the claims is not present.
 - ☒ B. The listing of claims does not include the text of all pending claims (including withdrawn claims)
 - ☐ C. Each claim has not been provided with the proper status identifier, and as such, the individual status of each claim cannot be identified. Note: the status of every claim must be indicated after its claim number by using one of the following status identifiers: (Original), (Currently amended), (Canceled), (Previously presented), (New), (Not entered), (Withdrawn) and (Withdrawn-currently amended).
 - ☐ D. The claims of this amendment paper have not been presented in ascending numerical order.
 - ☐ E. Other: _____.
- ☐ 5. Other (e.g., the amendment is unsigned or not signed in accordance with 37 CFR 1.4): For further explanation of the amendment format required by 37 CFR 1.121, see MPEP § 714.

TIME PERIODS FOR FILING A REPLY TO THIS NOTICE:

1. Applicant is given **no new time period** if the non-compliant amendment is an after-final amendment or an amendment filed after allowance, or a drawing submission (only) If applicant wishes to resubmit the non-compliant after-final amendment with corrections, the **entire corrected amendment** must be resubmitted.
2. Applicant is given **one month**, or thirty (30) days, whichever is longer, from the mail date of this notice to supply the correction, if the non-compliant amendment is one of the following: a preliminary amendment, a non-final amendment (including a submission for a request for continued examination (RCE) under 37 CFR 1.114), a supplemental amendment filed within a suspension period under 37 CFR 1.103(a) or (c), and an amendment filed in response to a Quayle action. If any of above boxes 1 to 4 are checked, the correction required is only the corrected section of the non-compliant amendment in compliance with 37 CFR 1.121.

Extensions of time are available under 37 CFR 1.136(a) only if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action.

Failure to timely respond to this notice will result in:

- Abandonment** of the application if the non-compliant amendment is a non-final amendment or an amendment filed in response to a *Quayle* action; or
- Non-entry** of the amendment if the non-compliant amendment is a preliminary amendment or supplemental amendment.

Legal Instruments Examiner (LIE), if applicable /LINDA A. WASHINGTON/

Telephone No: (571)272-4397

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Brian Marc Pepin et al.

Application No.: 12/782,697

Filed: May 18, 2010

Title: LINEAR-RESONANT VIBRATION MODULE

Examiner: Jose A. Gonzalez Quinones

Art Unit: 2834

Docket No.: 35099.001

Date: February 16, 2011

MAIL STOP AMENDMENT

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

AMENDMENTINTRODUCTORY COMMENTS

Sir:

In response to the Office Action dated November 9, 2010, please extend the period of time for response one month, to expire on March 9, 2011. Please amend the application as follows:

AMENDMENTS TO THE DRAWINGS

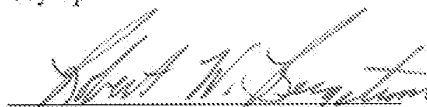
Enclosed are fifteen sheets of drawings (Figures 1-18); each identified as "Replacement Sheet".

REMARKS

Claim 1 is pending in the current application. In an office action dated November 9, 2010 ("Office Action"), the Examiner requested changes to Figures 1A-B, 2A-B, and 3, rejected claim 1 under 35 U.S.C. §112, and rejected claim 1 under 35 U.S.C. §103(a) as being unpatentable over Sahyoun, U.S. Patent Application Publication No. 2006/0208600 ("Sahyoun") in view of Zhang, U.S. Patent No. 6,326,706 ("Zhang"). Claim 1 has been cancelled in the above amendment. Newly added claims 2-20 are written to more clearly claim and particularly point out that which Applicants consider to be their invention. In particular, both newly added independent claims 2 and 19 include a control component that includes a microprocessor. In addition, claim 3 and 19 claim linear resonant vibration modules that represent embodiments of the present invention that are controlled by a microprocessor-based control component that includes feedback control. Applicants' representative can find no mention of a microprocessor-based control component in either Zhang or Sahyoun, and no mention of feedback control in these references for optimizing operational control parameters. For this reason, Applicants' representative believes that the current claims are both novel and non-obvious with respect to references previously cited by the Examiner.

In Applicants' representative's opinion, all of the claims remaining in the current application are clearly allowable. Favorable consideration and a Notice of Allowance are earnestly solicited.

Respectfully submitted,
Brian Marc Pepin et al.
Olympic Patent Works PLLC



Robert W. Bergstrom
Registration No. 39,906

Replacement Sheet
RESONANT SYSTEMS 35099.001

1/15

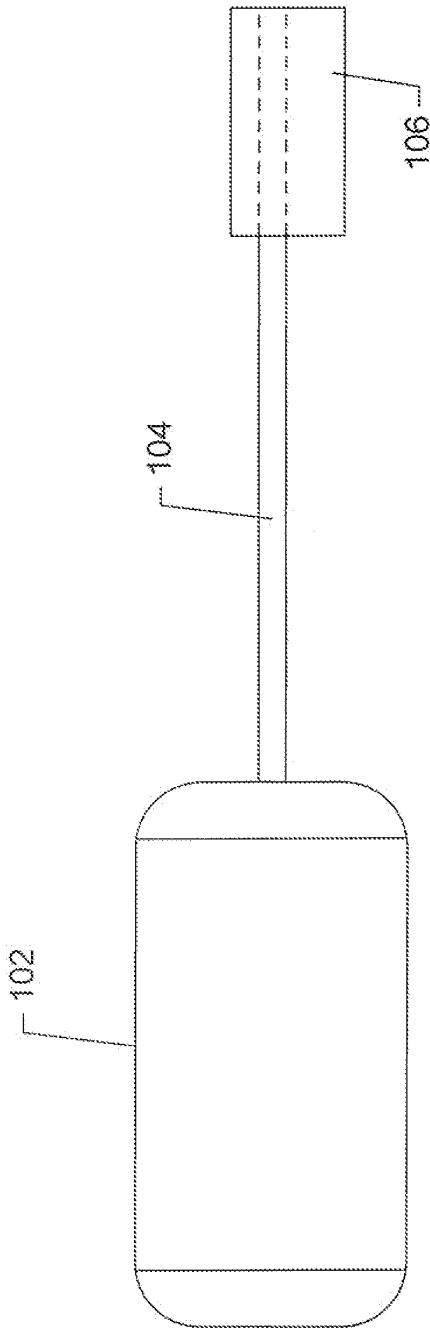


FIGURE 1A

--Prior Art--

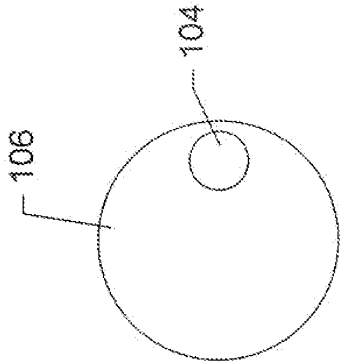


FIGURE 1B

--Prior Art--

2/15

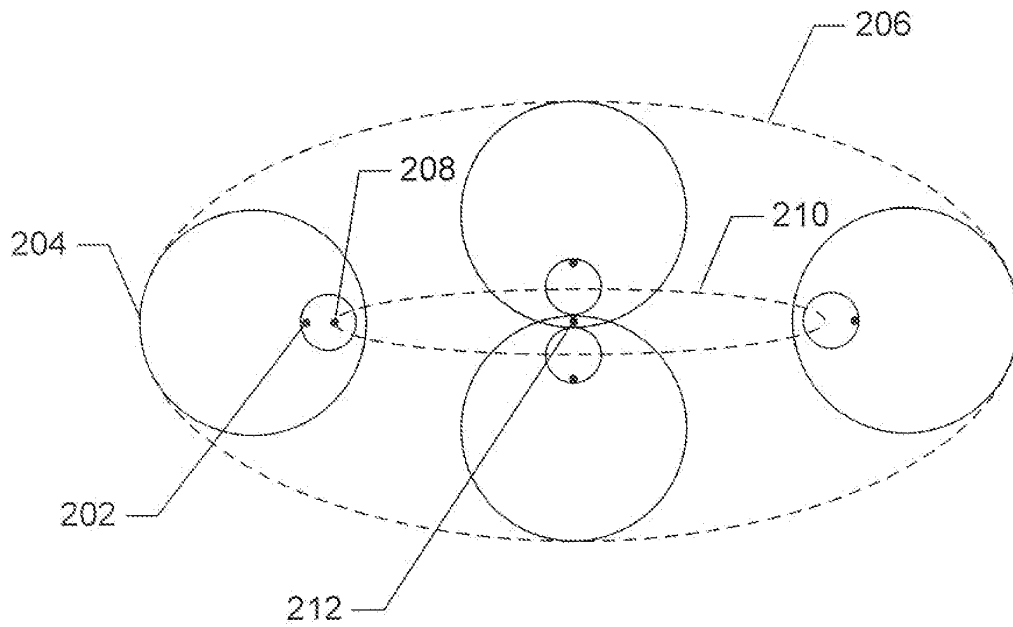


FIGURE 2A

--Prior Art--

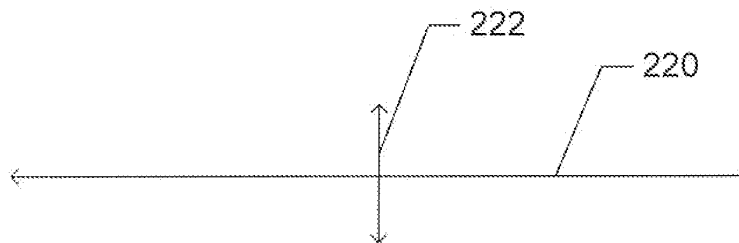


FIGURE 2B

--Prior Art--

Replacement Sheet
RESONANT SYSTEMS 35099.001

3/15

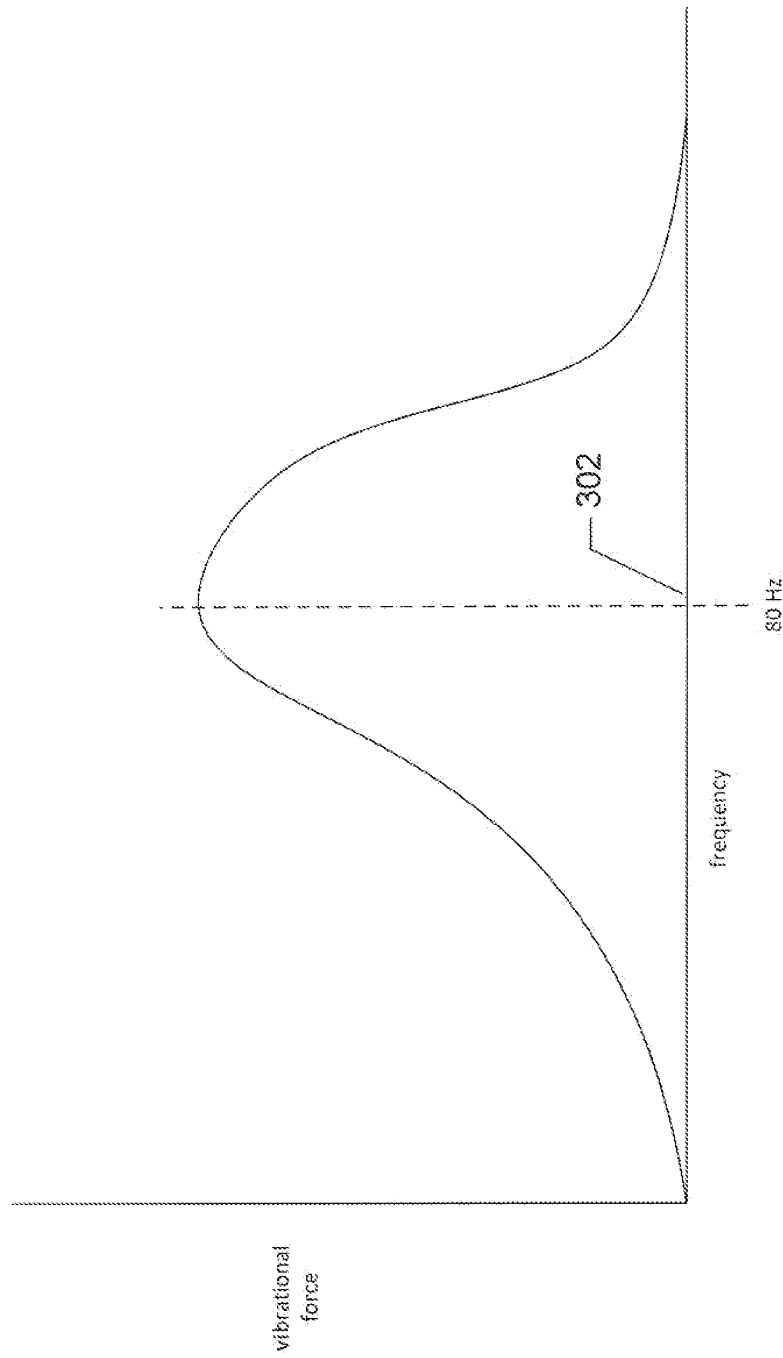
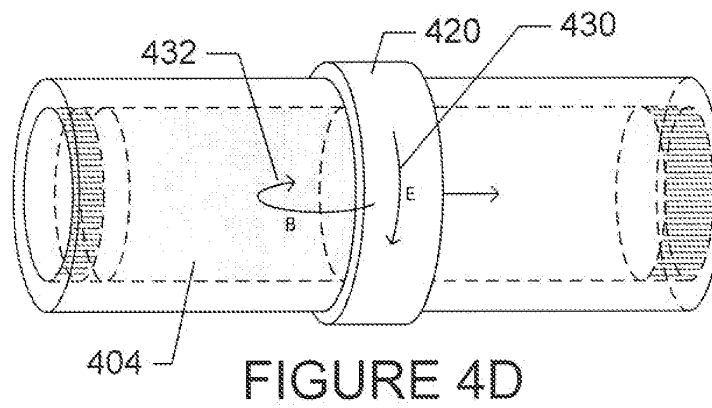
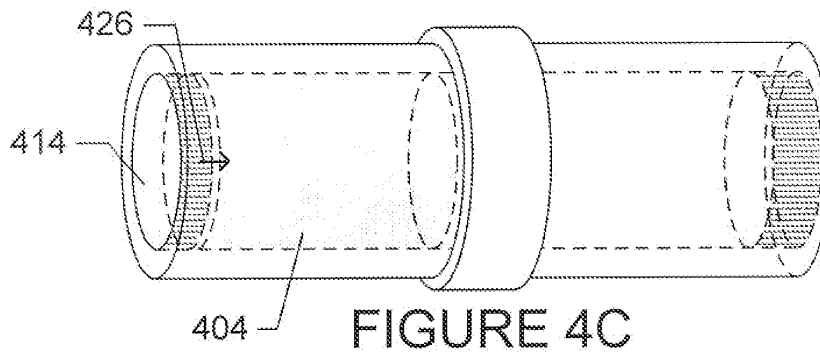
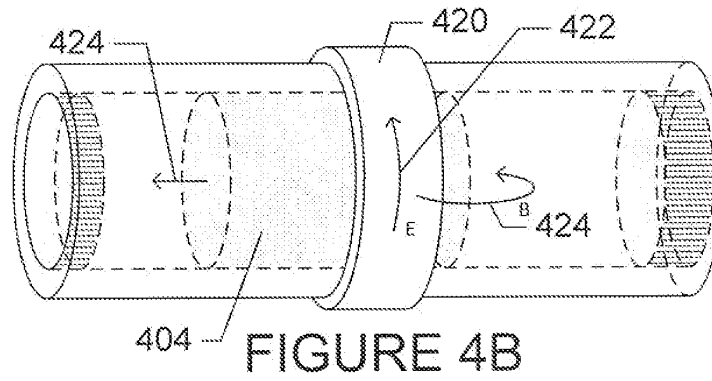
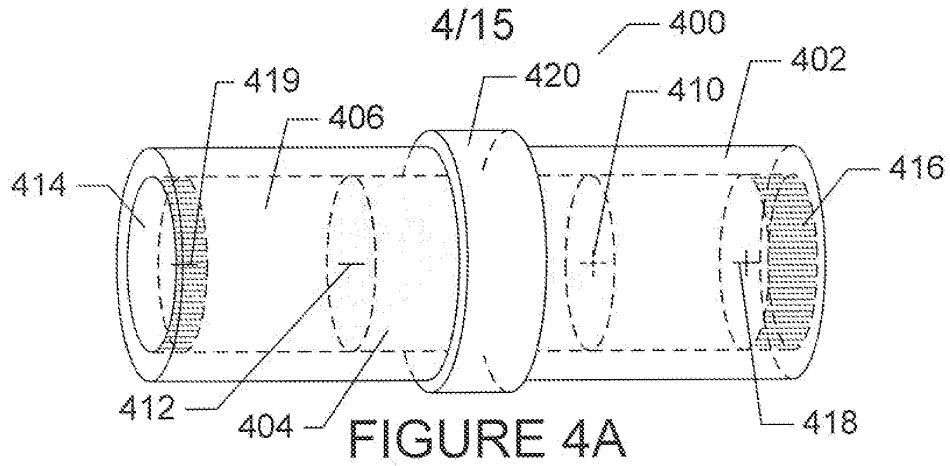


FIGURE 3
--Prior Art--



5/15

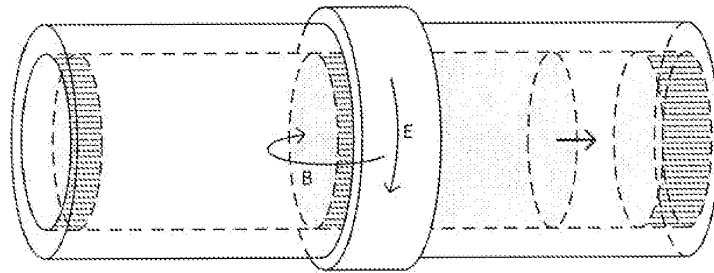


FIGURE 4E

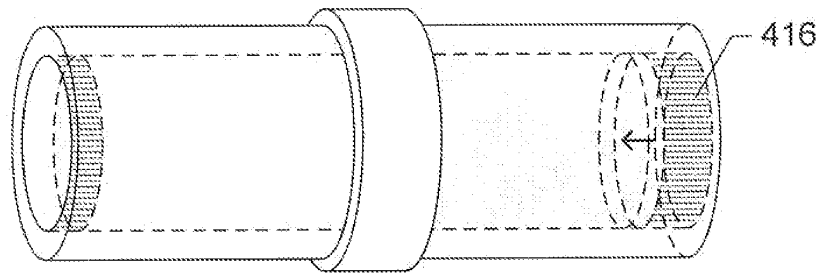


FIGURE 4F

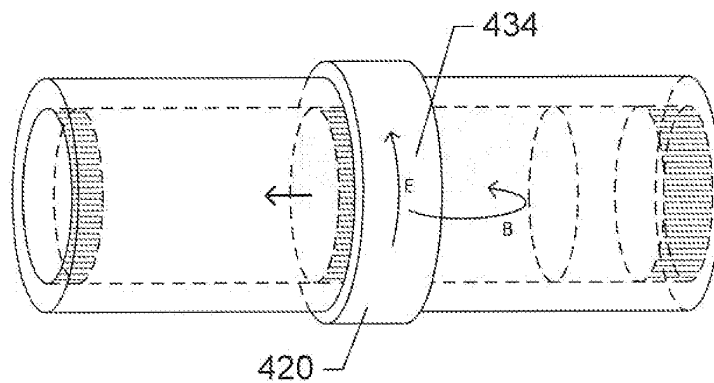


FIGURE 4G

6/15

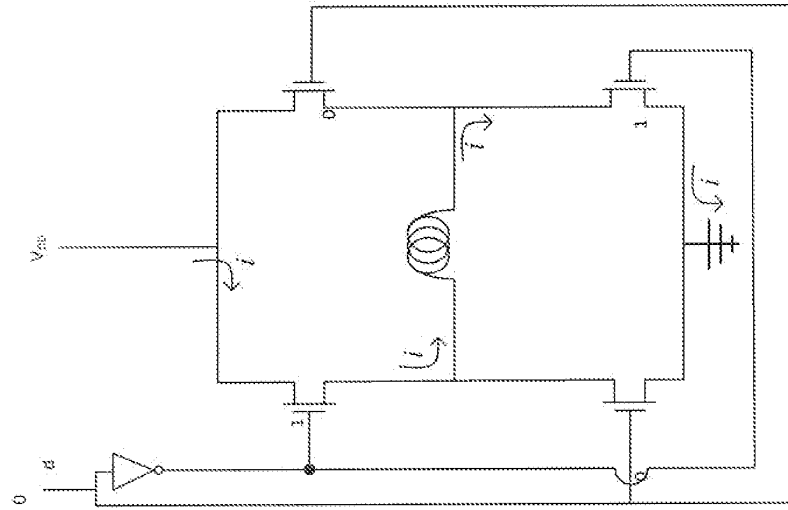


FIGURE 5B

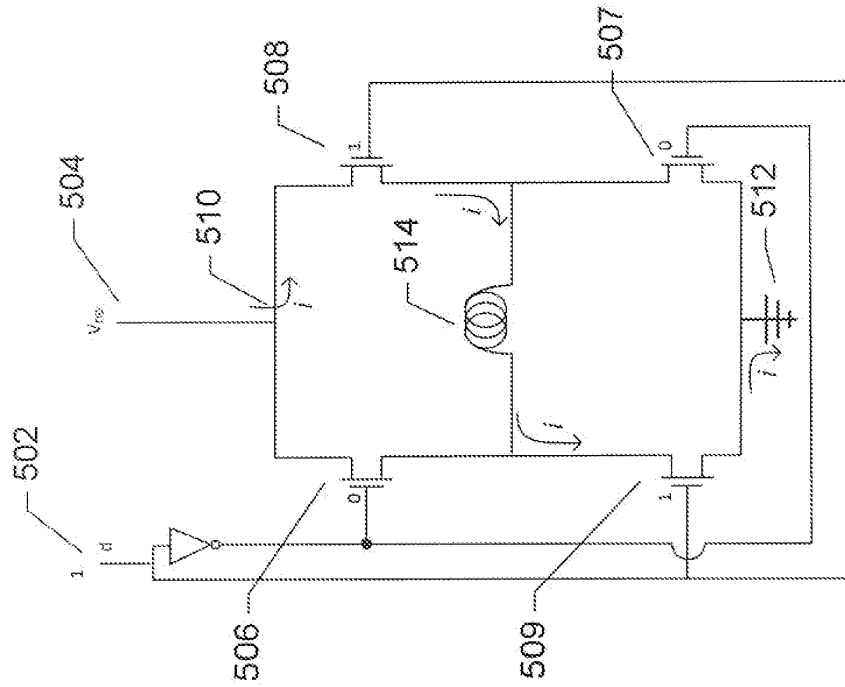


FIGURE 5A

7/15

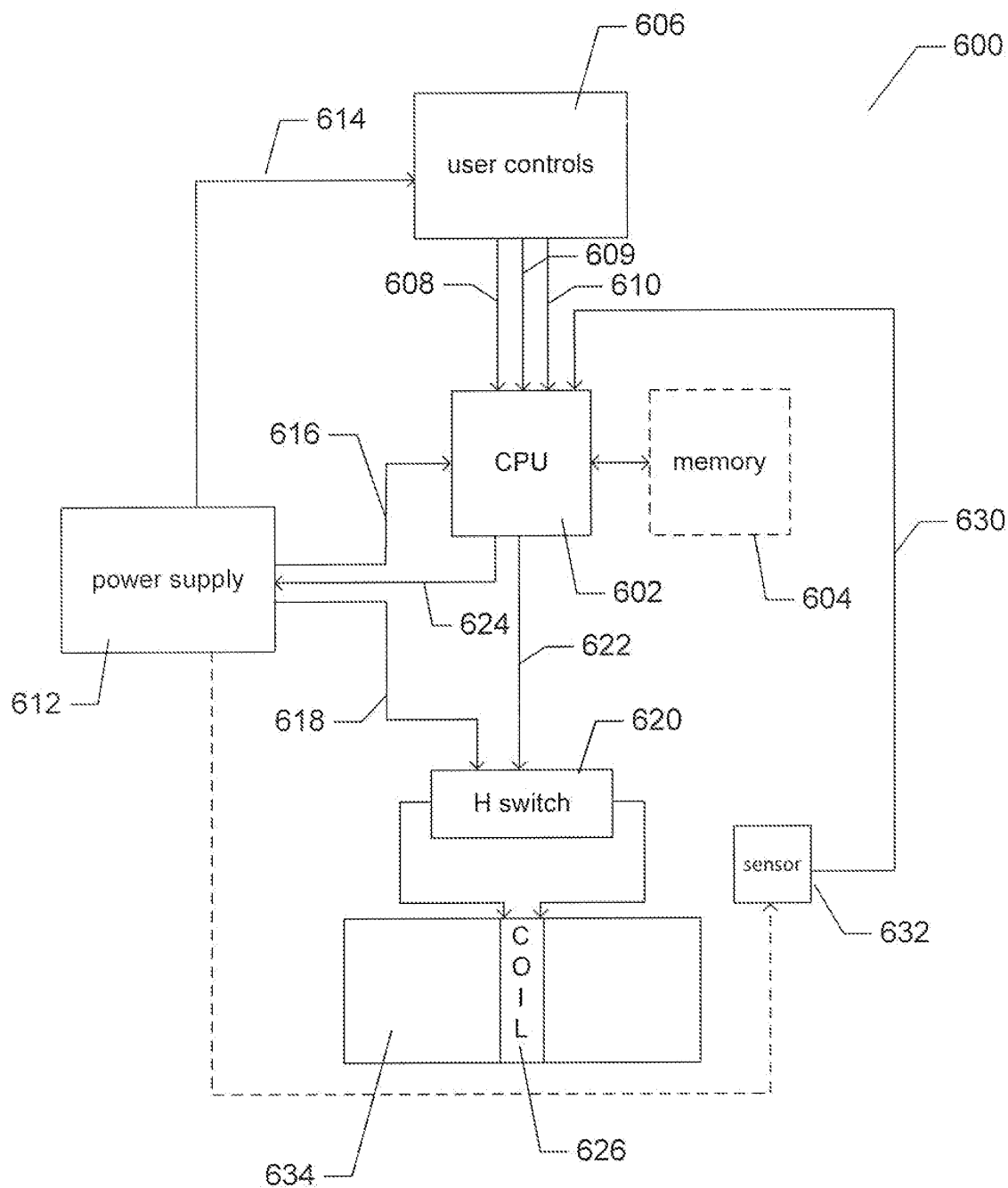


FIGURE 6

8/15

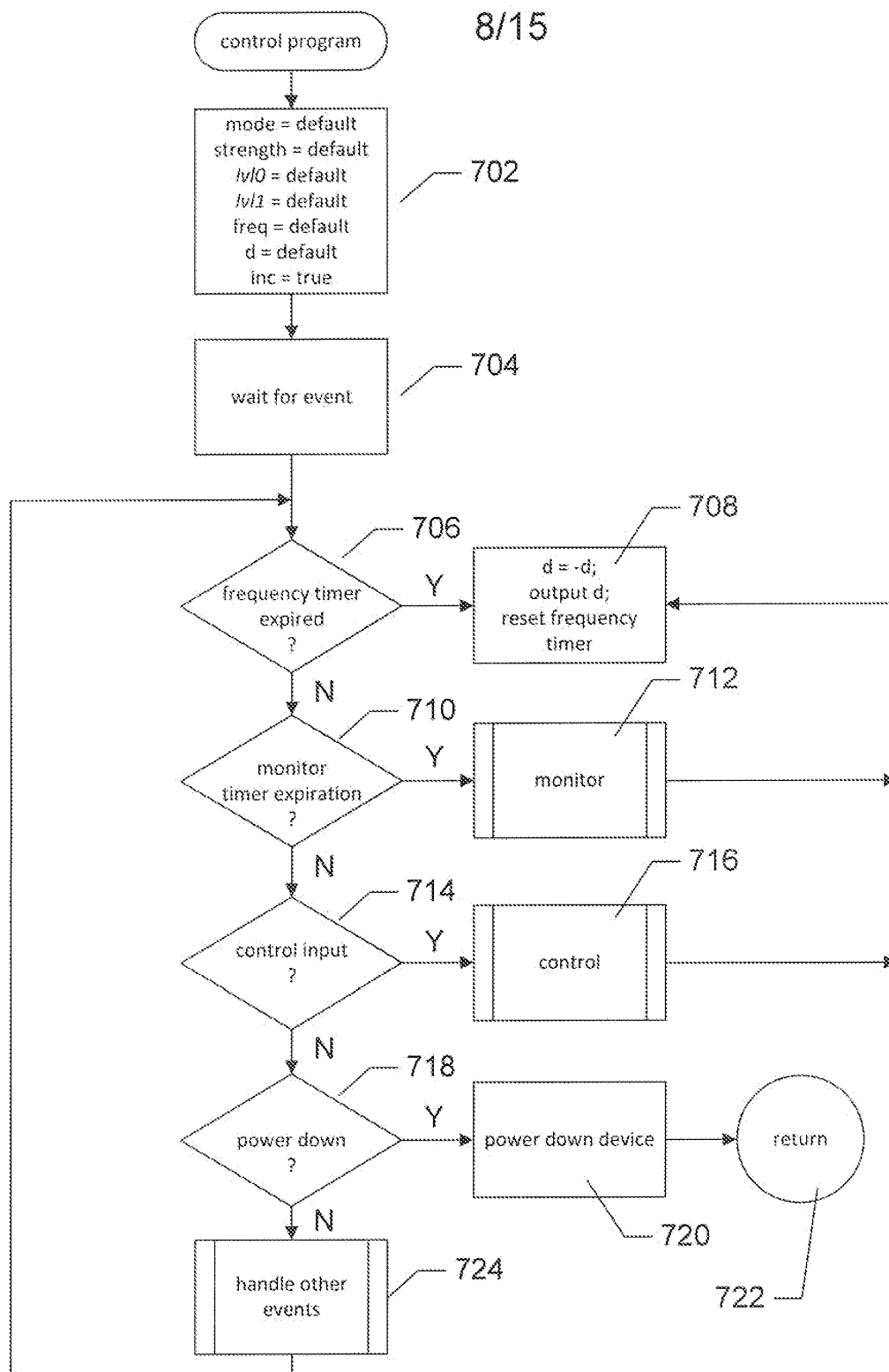


FIGURE 7A

9/15

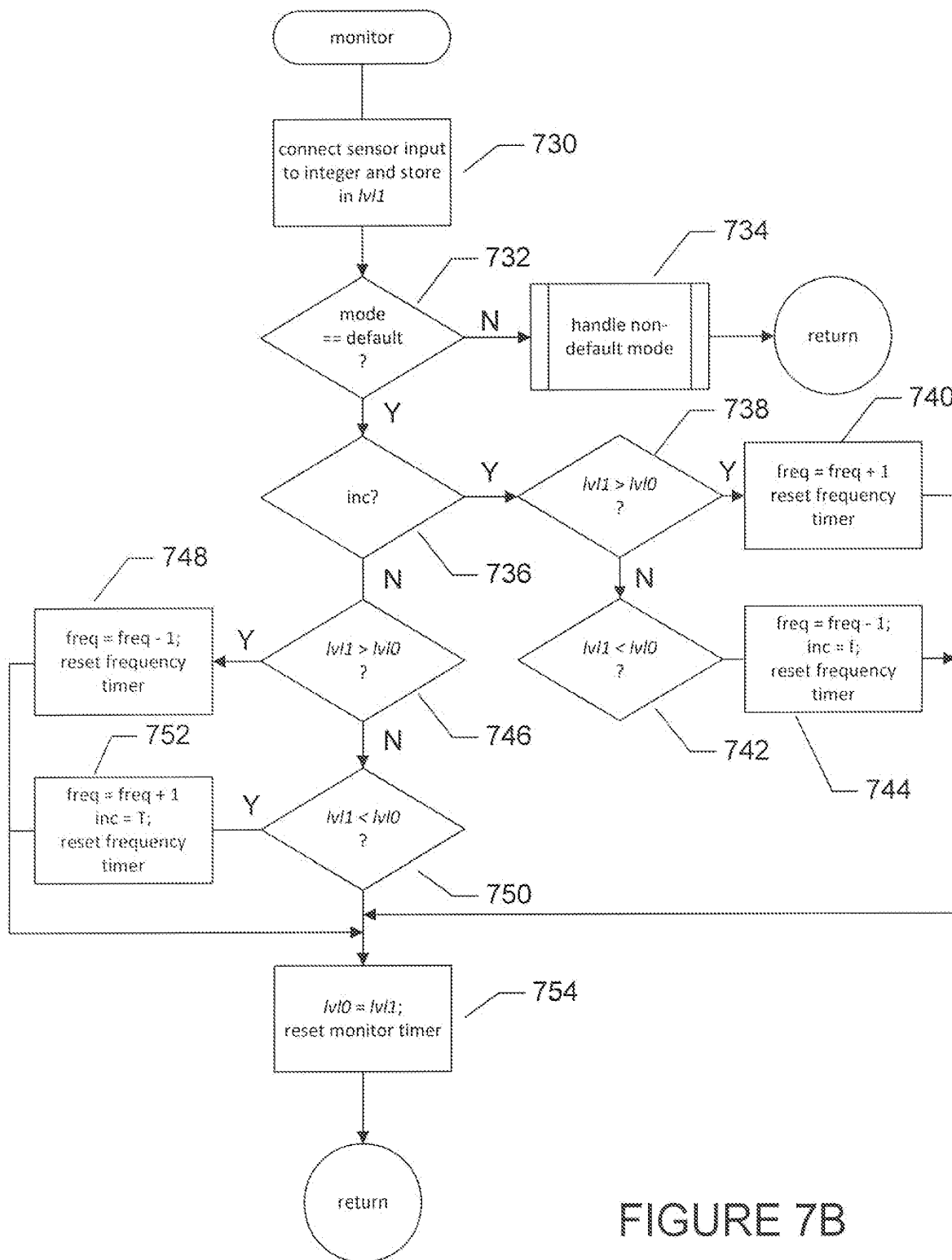


FIGURE 7B

10/15

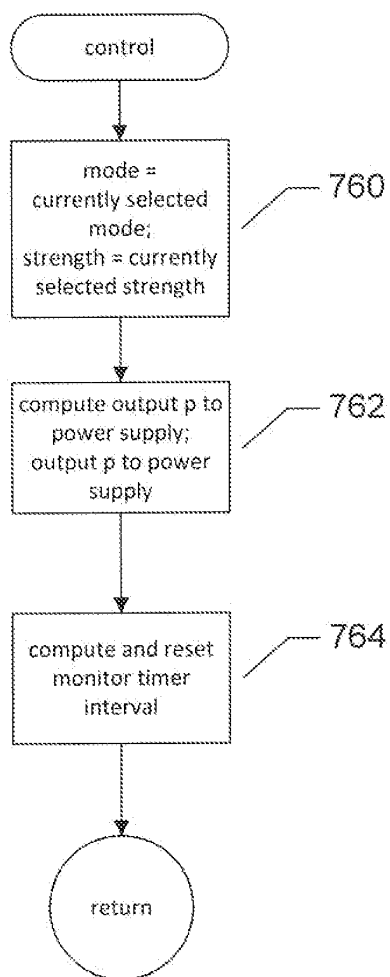


FIGURE 7C

11/15

ELENGA, Robin F.

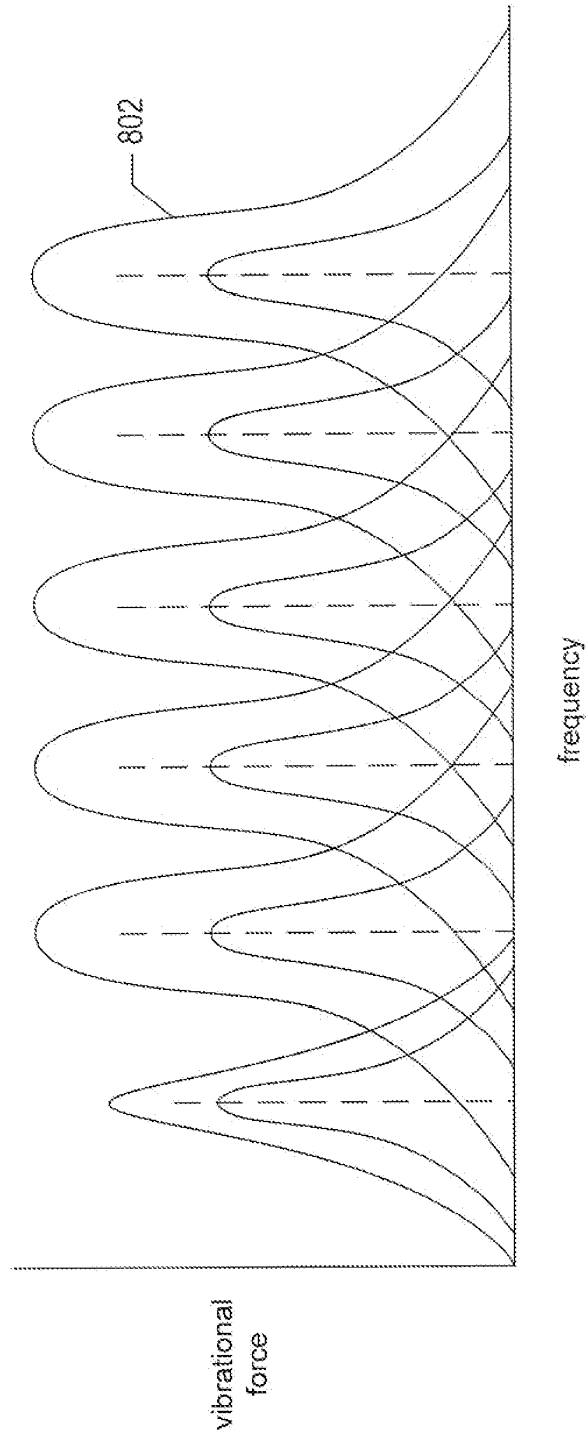


FIGURE 8

12/15

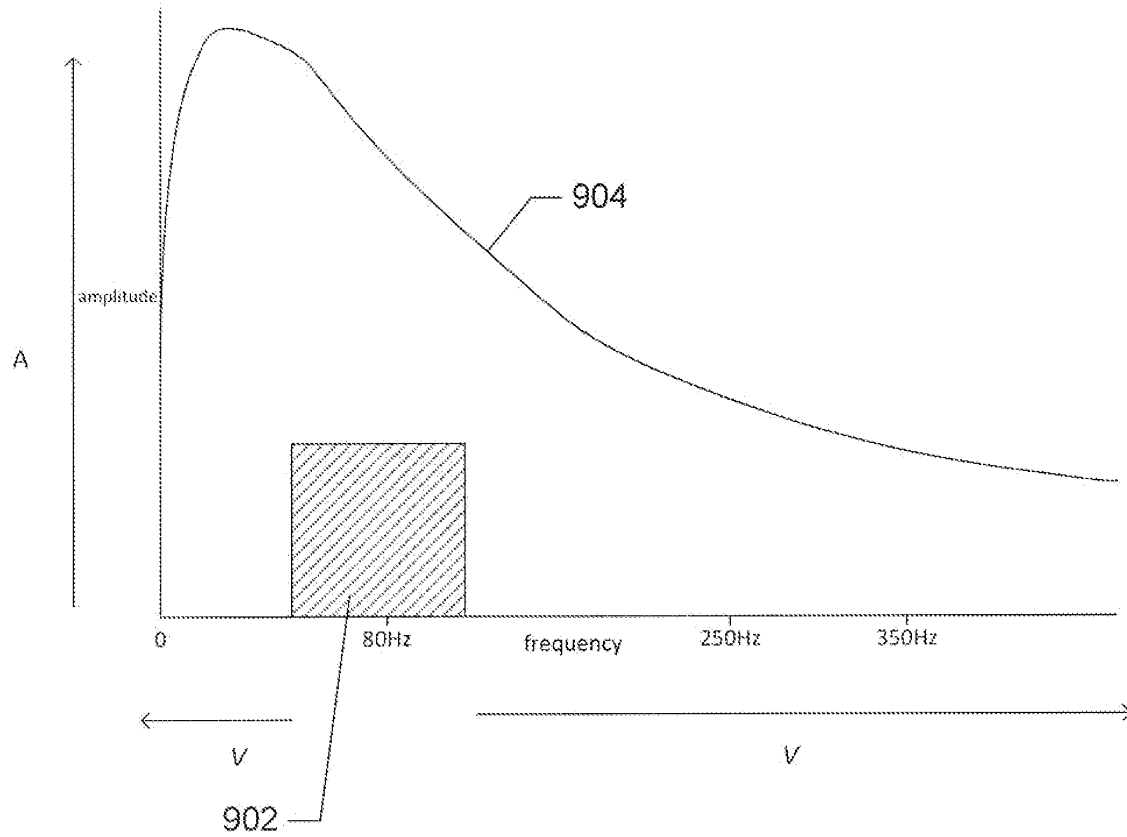


FIGURE 9

13/15

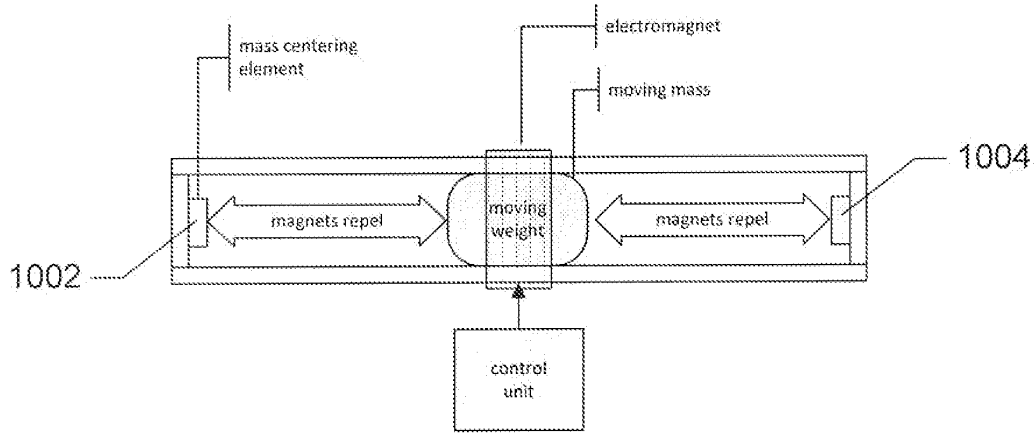


FIGURE 10

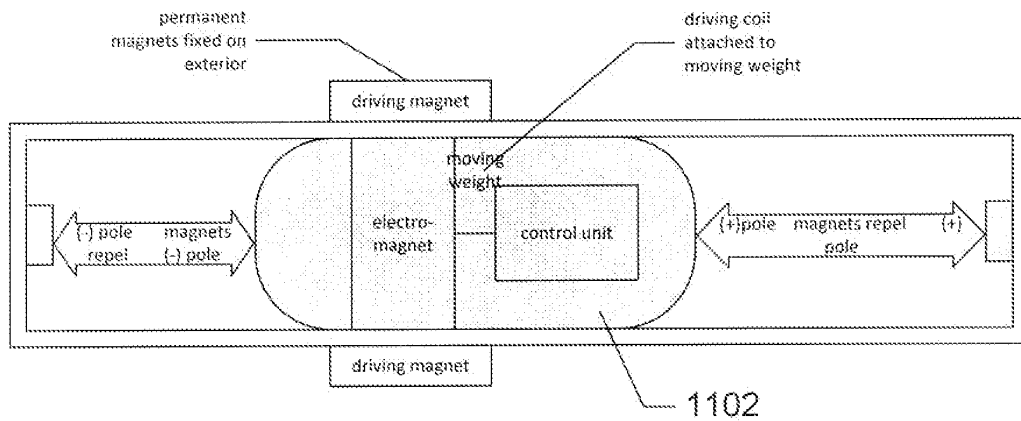


FIGURE 11

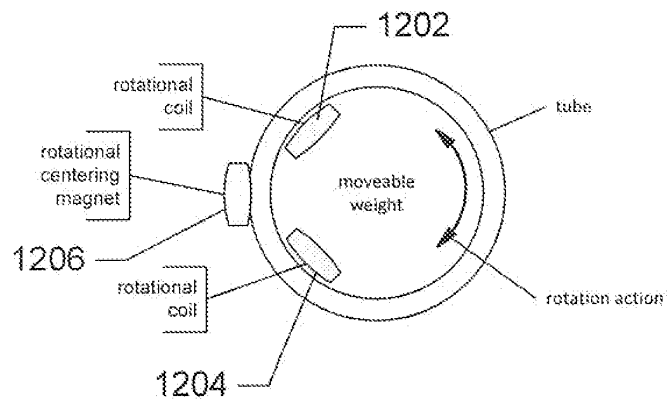


FIGURE 12

14/15

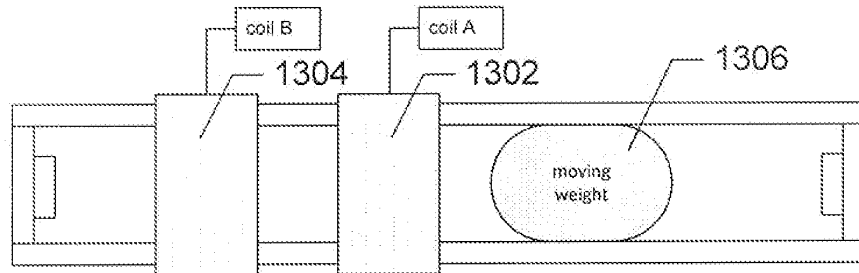


FIGURE 13

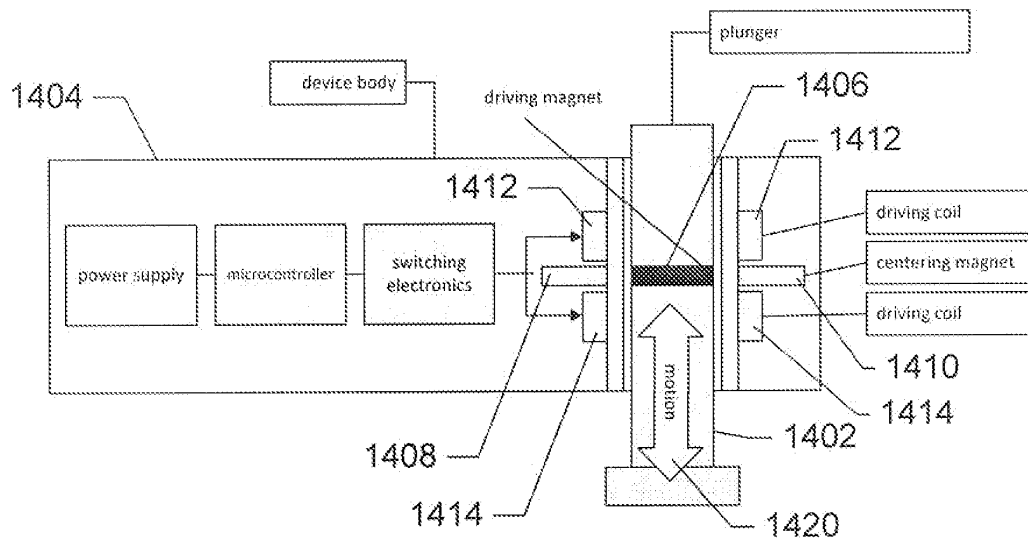


FIGURE 14

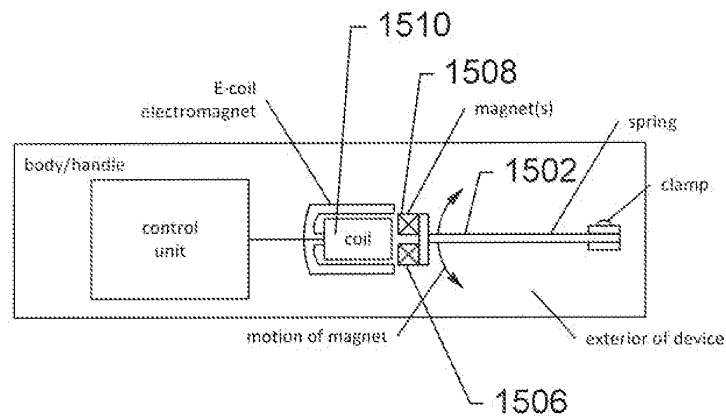


FIGURE 15

15/15

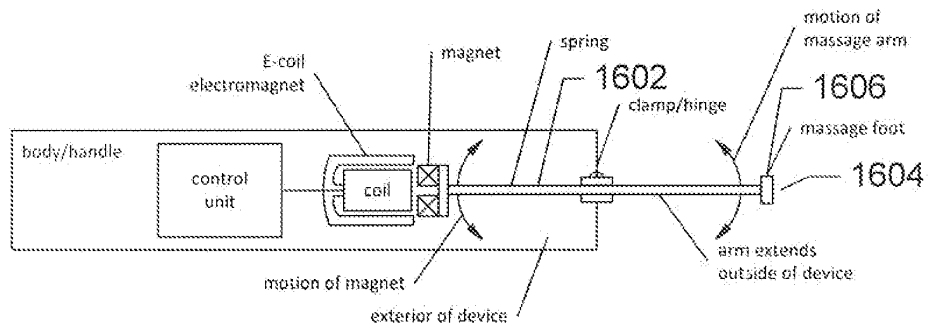


FIGURE 16

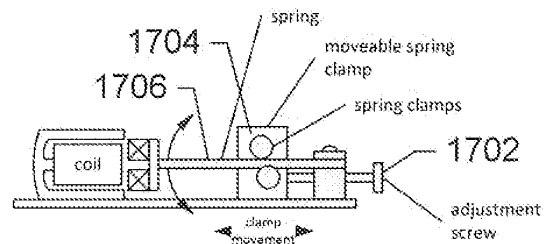


FIGURE 17

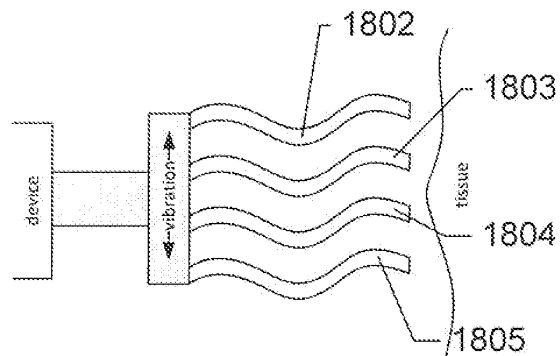


FIGURE 18

Electronic Patent Application Fee Transmittal				
Application Number:		12782697		
Filing Date:		18-May-2010		
Title of Invention:		LINEAR-RESONANT VIBRATION MODULE		
First Named Inventor/Applicant Name:		Brian Marc Pepin		
Filer:		Robert Walter Bergstrom/Joanne Bourguignon		
Attorney Docket Number:		35099.001		
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with \$0 paid	2251	1	65	65

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				65

Electronic Acknowledgement Receipt	
EFS ID:	9461248
Application Number:	12782697
International Application Number:	
Confirmation Number:	5211
Title of Invention:	LINEAR-RESONANT VIBRATION MODULE
First Named Inventor/Applicant Name:	Brian Marc Pepin
Customer Number:	34395
Filer:	Robert Walter Bergstrom/Joanne Bourguignon
Filer Authorized By:	Robert Walter Bergstrom
Attorney Docket Number:	35099.001
Receipt Date:	16-FEB-2011
Filing Date:	18-MAY-2010
Time Stamp:	17:09:02
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$65
RAM confirmation Number	3934
Deposit Account	502976
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		35099-001-E-AMEND.pdf	2992676	yes	26
			7703a77c4b5ec8cd0b5736a6f54d37461093910		
	Multipart Description/PDF files in .zip description				
	Document Description	Start	End		
	Transmittal Letter	1	1		
	Amendment/Req. Reconsideration-After Non-Final Reject	2	2		
	Specification	3	4		
	Claims	5	9		
	Applicant Arguments/Remarks Made in an Amendment	10	11		
	Drawings-only black and white line drawings	12	26		
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	30557	no	2
			041285723ab009cc9eb90e83939a5435b5e41dc1		
Warnings:					
Information:					
Total Files Size (in bytes):			3023233		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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.

OLYMPIC PATENT WORKS [®]LLC

705 SECOND AVE., SUITE 1111
SEATTLE, WA 98104

MAILING ADDRESS:
P.O. Box 4277
SEATTLE, WA 98104

206.621.1933 (MAIN)
206.621.5302 (FAX)

Docket No.: 35099.001
Date: February 16, 2011

In re application of **Brian Marc Pepin et al.**
Application No.: **12/782,697**
Filed: **May 18, 2010**
For: **LINEAR-RESONANT VIBRATION MODULE**

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

Sir:

Transmitted herewith is an amendment in the above-identified application.

☒ A Petition for an Extension of Time for onemonth.

☒ No additional claim fee is required.

☐ The fee has been calculated as shown.

	(Col. 1)		(Col. 2)	(Col. 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST PREV. PAID FOR	PRESENT EXTRA
TOTAL	*	MINUS	**	
INDEP.	*	MINUS	***	
☐ FIRST PRESENTATION OF MULTIPLE CLAIMS				
EXTENSION OF TIME FEE				
TOTAL ADDITIONAL FEE				

SMALL ENTITY	
RATE	ADDITIONAL FEE
x 25	\$
x 105	\$
+ 185	\$
	\$ 65
	\$

OR

OTHER THAN A SMALL ENTITY	
RATE	ADDITIONAL FEE
x 50	\$
x 210	\$
+ 370	\$
	\$
	\$

OR

TOTAL	
	\$

* If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space.

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found from the equivalent box in Col. 1 of a prior amendment or the number of claims originally filed.

☒ Please charge my Deposit Account No. 50-2976 in the amount of \$ 65. A duplicate copy of this sheet is enclosed.

☐ A check in the amount of \$ is attached.

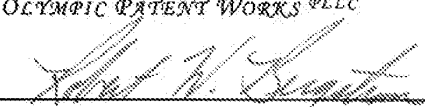
☒ The Commissioner is hereby authorized to charge payment of the following additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-2976. A duplicate copy of this sheet is enclosed.

☒ Any filing fees under 37 CFR 1.16 for the presentation of extra claims.

☒ Any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,
Brian Marc Pepin et al.

OLYMPIC PATENT WORKS [®]LLC


Robert W. Bergstrom
Registration No. 39,906

AMENDMENTS TO THE SPECIFICATION

Please amend the Paragraph beginning on Page 12, line 5, as follows:

Figure 8 represents the range of frequencies and vibrational forces that can be achieved by different implementations of LRVM and LRVM control programs that represent embodiments of the present invention. Figure 8 has the same axes as the graph shown in Figure 3. However, unlike Figure 3, Figure 8 includes many different curves, such as curve 802, each representing the vibrational forces and frequencies that can be obtained from a particular LRVM implementation. Again, the LRVMs that represent embodiments of the present invention generally have a resonant frequency that is characteristic of the geometry and weights of various components of the LRVM, and each LRVM is naturally operated at a frequency close to this resonant frequency in order to achieve maximum vibrational force. Thus, rather than being restricted, over all possible implementations, to a relatively narrow range of frequencies and vibrational forces, as in the case of unbalanced electrical motors, LRVMs that represent embodiments of the present invention can be designed and implemented to produce desired vibrational forces over a wide range of vibrational frequencies, and desired vibrational frequencies over a wide range of desired vibrational forces. The contrast is perhaps best seen in Figure 9. Figure 9 shows a plot of the amplitude/frequency space and regions in that space that can be operationally achieved by unbalanced electrical motors and by LRVMs that represent embodiments of the present invention. Unbalanced electric motors can be implemented to produce amplitude/frequency combinations roughly within the cross-hatched square region 902 within amplitude/frequency space. By contrast, LRVMs can be designed and implemented to produce amplitude/frequency combinations underlying curve 904. Thus, LRVMs can achieve much higher operational frequencies and much lower operational frequencies than can be practically obtained by unbalanced electric motors, and can produce much higher amplitudes and vibrational forces than can be achieved by relatively low-powered unbalanced electrical motors used in hand-held appliances and other commonly encountered devices and systems. Furthermore, when larger vibrational forces are needed, balanced electrical motors are

generally impractical or infeasible, due to the destructive forces produced within the electrical motors.

Please amend the Paragraph beginning on Page 15, line 3, as follows:

Figure 17 shows a mechanical vibration adjustment feature that can be added to either of the embodiments shown in Figures 15 and 16. An adjustment screw 1702 can be manipulated to alter the position of a movable spring clamp 1704 that acts as a movable clamping point for the spring-like member 1706. Moving the movable spring clamp 1704 leftward, in Figure 17, shortens the length of the spring-like member and thus tends to increase the ~~vibrational~~ resonant frequency at a particular power-consumption level. Conversely, moving the movable spring clamp rightward, in Figure 17, lengthens the spring-like member and decreases the vibrational frequency.

AMENDMENTS TO THE CLAIMS

1. Cancelled.
2. A linear resonant vibration module comprising:
 - a housing;
 - a moveable component;
 - a power supply;
 - a driving component that drives the moveable component in each of two opposite directions; and
 - a control component that includes a microprocessor and that controls supply of power from the power supply to the driving component to cause the moveable component to linearly oscillate.
3. The linear resonant vibration module of claim 2 wherein the control component receives output signals from sensors within the linear resonant vibration module during operation of the linear resonant vibration module and adjusts one or more operational control outputs of the control component according to the received output signals from the sensors.
4. The linear resonant vibration module of claim 2 wherein the control component adjusts the one or more operational control outputs of the control component according to the received output signals from the sensors in order that subsequent operation of linear resonant vibration module produces desired outputs from the one or more sensors corresponding to one or more operational control parameters.
5. The linear resonant vibration module of claim 4
 - wherein the one or more operational control parameters is a strength of vibration produced by the linear oscillation of the moveable component; and

wherein the one or more operational control outputs is a frequency at which the control component drives the moveable component to linearly oscillate, the control component dynamically adjusting the power supplied to the driving component to produce linear oscillation of the moveable component at a resonant frequency for the linear resonant vibration module.

6. The linear resonant vibration module of claim 4

wherein the one or more operational control parameters include both a strength of vibration produced by the linear oscillation of the moveable component and a current operational mode; and

wherein the one or more operational control outputs is a control output that determines a current supplied by the power supply to the driving component and a frequency at which the control component drives the moveable component to linearly oscillate.

7. The linear resonant vibration module of claim 4 wherein the control components include:

the microprocessor;

a control program, stored in one of a separated electronic memory or within the processor, that is executed by the microprocessor, to control operation of the linear resonant vibration module; and

a switch that receives a directional signal d from the processor and that selects a corresponding direction of the two opposite directions in which the driving component drives the moveable component.

8. The linear resonant vibration module of claim 7 wherein the switch comprises:

a directional-signal d input;

a voltage input;

a directional-signal splitter/inverter that generates two complementary internal signals, d and $\bar{d}$, corresponding to directional-signal d ; and

two pairs of solid-state switches, a first switch of each pair controlled by internal signal d and a second switch of the pair controlled by internal signal $\bar{d}$, that apply the input voltage in a first direction to the driving component when the d is in a first voltage state and that apply the input voltage in a second direction to the driving component when the d is in a second voltage state.

9. The linear resonant vibration module of claim 8
wherein the linear resonant vibration module further includes a vibration sensor;
and

wherein the control program continuously monitors output from the vibration sensor in order to adjust the frequency at which the control program changes the voltage state of the directional signal d .

10. The linear resonant vibration module of claim 8
wherein the control program receives user input from one or more input features, including one or more of buttons, dials, switches, and other user-input features.

11. The linear resonant vibration module of claim 10
wherein, when the control program receives user input directing a change in vibration strength, the control program changes the current provided from a power supply to the driving component; and

wherein, when the control program receives user input directing a change in vibration frequency, the control program changes the frequency at which the control program changes the voltage state of the directional signal d .

12. The linear resonant vibration module of claim 2 wherein the driving component comprises one or more electromagnetic coils that generate magnetic fields parallel to the directions in which the moveable component is driven by the driving component.

13. The linear resonant vibration module of claim 2

wherein the housing is a linear tube, capped at both ends by moveable-component-repelling components selected from one of mechanical springs and magnets;
 wherein the moveable component is a magnet shaped to slide within the linear tube; and
 wherein the driving component is an electromagnetic coil.

14. The linear resonant vibration module of claim 2

wherein the housing is a linear tube, capped at both ends by moveable-component-repelling components; and
 wherein the moveable component includes an electromagnetic-coil driving component and microprocessor.

15. The linear resonant vibration module of claim 2 further including rotational driving components that induce rotational motion of the moveable component in addition to translational motion induced by the driving component.

16. The linear resonant vibration module of claim 2 wherein the linear resonant vibration module further includes two or more driving components, each, when activated, driving the moveable component to linearly oscillate with an amplitude particular to the activated driving component.

17. The linear resonant vibration module of claim 2

wherein housing includes a power supply, the microprocessor, and a moveable-component track orthogonal to a long axis of the housing;

wherein the moveable component is a plunger that moves a first direction and a second direction opposite from the first direction within the moveable-component-track;
 and

wherein the driving component comprising two electromagnetic driving coils and a centering magnet.

18. The linear resonant vibration module of claim 2

wherein the moveable component is a clamped mechanical arm to which two magnets are attached; and

wherein the driving component comprising an electromagnetic coil that, when opposite currents are applied at a particular frequency to the electromagnetic coil, causes the mechanical arm to vibrate.

19. A method for applying a vibrational force to a target surface, the method comprising:

applying a linear resonant vibration module to the target surface, the linear resonant vibration module comprising a housing, a moveable component, a power supply, a driving component that drives the moveable component in each of two opposite directions, and a control component that includes a microprocessor and that controls supply of power from the power supply to the driving component to cause the moveable component to linearly oscillate, the control component monitoring sensors within the linear resonant vibration module during operation of the linear resonant vibration module to adjust one or more operational control outputs of the control component to seek to optimize one or more operational control parameters; and

activating the linear resonant vibration module to produce a vibrational force that is transmitted to the target surface.

20. The method of claim 19

wherein the one or more operational control parameters is a strength of vibration produced by the linear oscillation of the moveable component; and

wherein the one or more operational control outputs is a frequency at which the control component drives the moveable component to linearly oscillate, the control component dynamically adjusting the power supplied to the driving component to produce linear oscillation of the moveable component at a resonant frequency for the linear resonant vibration module.

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (01-10)

Approved for use through 07/31/2012. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		12782697	
	Filing Date		2010-05-18	
	First Named Inventor	Brian Marc Pepin et al.		
	Art Unit	2834		
	Examiner Name	Jose A. Gonzalez Quirones		
	Attorney Docket Number	35099.001		

U.S. PATENTS								
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Patent citation information please click the Add button.								
U.S. PATENT APPLICATION PUBLICATIONS								
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1							
If you wish to add additional U.S. Published Application citation information please click the Add button.								
FOREIGN PATENT DOCUMENTS								
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ^{2j}	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1	9819383	WO	A1	1998-05-07	OMRON TATEISI ELEC.		☐
	2	10164809	JP	A	1998-06-19	OMRON TATEISI ELEC.		☐
	3	11018395	JP	A	1999-01-22	OMRON TATEISI ELEC.		☐

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	12782697
Filing Date	2010-05-18
First Named Inventor	Brian Marc Pepin et al.
Art Unit	2834
Examiner Name	Jose A. Gonzalez Quinones
Attorney Docket Number	35099.001

If you wish to add additional Foreign Patent Document citation information please click the Add button

NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1		☐

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	Date Considered
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2010/035334

A. CLASSIFICATION OF SUBJECT MATTER

H02K 33/14(2006.01)i, H02K 33/12(2006.01)i, H02K 33/04(2006.01)i, H02K 33/00(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

H02K 33/14; H02K 33/02; H02K 33/12; H02K 33/06; B06B 1/04

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) & Keywords: linear, resonant, magnet, electromagnet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98-19383 A1 (OMRON CORP.) 07 May 1998 See pages 7-8 and figures 1-3.	1
X	JP 10-164809 A (OMRON CORP.) 19 June 1998 See paragraphs 8-12 and figures 1-5.	1
X	JP 11-018395 A (OMRON CORP.) 22 January 1999 See paragraphs 7-8 and figures 1-3	1



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

24 DECEMBER 2010 (24.12.2010)

Date of mailing of the international search report

29 DECEMBER 2010 (29.12.2010)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-
gu, Daejeon 302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

HAN, SANG IL

Telephone No. 82-42-481-8185



VIBRATION GENERATOR

Publication number: WO9819383 (A1)

Publication date: 1998-05-07

Inventor(s): NAKAZAKI HIDEO [JP]; NAKAMURA NOBUTAKA [JP]; MOURI MASAYUKI [JP]; YAMAMOTO TAKAFUMI [JP]; MATSUOKA KAZUSHIGE [JP]; UEDA TAISUKE [JP] +

Applicant(s): OMRON TATEISI ELECTRONICS CO [JP]; NAKAZAKI HIDEO [JP]; NAKAMURA NOBUTAKA [JP]; MOURI MASAYUKI [JP]; YAMAMOTO TAKAFUMI [JP]; MATSUOKA KAZUSHIGE [JP]; UEDA TAISUKE [JP] +

Classification:

- international: H02K33/16; (IPC1-7): H02K33/02

- European: H02K33/16

Application number: WO1997JP03886 19971027

Priority number(s): JP19960286273 19961030; JP19960347164 19961226; JP19970185286 19970711; JP19970270268 19971003

Cited documents:

JP54094812U (U)

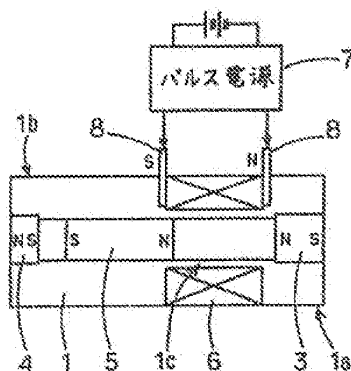
JP6315255 (A)

JPH0451077U (U)

JP62070675U (U)

Abstract of WO 9819383 (A1)

An inexpensive vibration generator which does not consume much electric power and has a small size and a long service life is provided with fixed permanent magnets (3 and 4) fixed to both ends of a cylindrical enclosure (1), a mobile permanent magnet (5) housed in the hollow section (2) of the enclosure (1), and a driving coil (6) which is provided on the outer circumference of the enclosure (1) to generate magnetism when the coil (6) is energized with electric power from a pulsative power source (7). The generator vibrates when a driving force generated by the changes of the magnetism generated from the coil (6) and magnetic fluxes from the fixed permanent magnets (3 and 4) and mobile permanent magnet (5) is applied to the mover (5) of the mobile permanent magnet (5) to allow the magnet (5) to make reciprocating motions in the hollow section (2) of the enclosure (1).



7 ... pulsative power sources

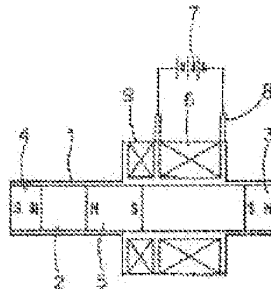
Data supplied from the *espacenet* database — Worldwide

VIBRATION GENERATOR

Publication number: JP10164809 (A)
 Publication date: 1998-06-19
 Inventor(s): NAKASAKI HIDEO; NANZAKI TAIRA; TANAKA KATSUMI; MORI MASAYUKI +
 Applicant(s): OMRON TATEISI ELECTRONICS CO +
 Classification:
 - international: B06B1/04; G08B6/00; H02K33/02; B06B1/02; G08B6/00; H02K33/00; (IPC1-7): B06B1/04; G08B6/00; H02K33/02
 - European:
 Application number: JP19960315828 19961127
 Priority number(s): JP19960315828 19961127

Abstract of JP 10164809 (A)

PROBLEM TO BE SOLVED: To obtain a vibration generator which is small in size, long in life and low in cost. SOLUTION: Fixed permanent magnets 3 and 4 are provided on both the ends of a housing 1. A permanent magnet mover 5 is housed in the inner hollow part 2 of the housing 1. A 1st coil 6 to which a current is applied by a DC power supply 7 to induce a magnetic field and a 2nd coil 9 which is provided near the 1st coil 6 are provided on the outer circumference of the housing 1. The permanent magnet mover 5 is moved reciprocally, i.e., made to vibrate, in the inner hollow part 2 by the attractive force between the magnetic field induced by the 1st coil 6 and the permanent magnet mover 5, and by the repulsive forces between the permanent magnet mover 5 and by the fixed permanent magnets 3 and 4. The attractive force between the permanent magnet mover 5 and the 1st coil when the permanent magnet mover 5 is moved in the reverse direction is cancelled by the magnetic force of the 2nd coil, to make the permanent magnet mover 5 vibrate fully in the inner hollow part 2 to ensure the vibration region efficiently.



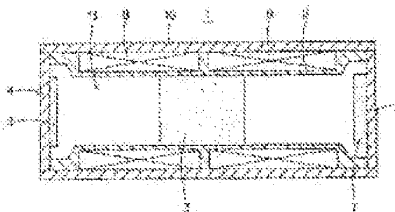
.....
 Data supplied from the **espacenet** database ----- Worldwide

VIBRATION GENERATOR

Publication number: JP11018395 (A)
 Publication date: 1999-01-22
 Inventor(s): MORI MASAYUKI, NAKASAKI HIDEO +
 Applicant(s): OMRON TATEISI ELECTRONICS CO +
 Classification:
 - international: H02K33/06; H02K33/12; H02K33/00; (IPC1-7): H02K33/06; H02K33/12
 - European:
 Application number: JP19970168404 19970625
 Priority number(s): JP19970168404 19970625

Abstract of JP 11018395 (A)

PROBLEM TO BE SOLVED. To provide a vibration generator whose production process is simple and which can be manufactured at low costs.
 SOLUTION: A vibration generator is composed of a tube 2, a moving permanent magnet 3 which can be moved back and forth inside the tube 2, of fixed permanent magnets 6, 7 which are installed at both ends of the tube 2, a vibration part 13 which comprises coils 8, 9 to be wound on the tube 2 and of a shielding plate 10 which covers the circumference of the vibration part 13 and which prevents magnetism from being leaked to the outside. In the vibration generator, the fixed permanent magnets 6, 7 are sintered to the shield plate 10 at the inside of the tube 2 at lid parts 4, 5, and it is integrally formed in advance.



.....
 Data supplied from the *espacenet* database — Worldwide

Electronic Acknowledgement Receipt	
EFS ID:	9269942
Application Number:	12782697
International Application Number:	
Confirmation Number:	5211
Title of Invention:	LINEAR-RESONANT VIBRATION MODULE
First Named Inventor/Applicant Name:	Brian Marc Pepin
Customer Number:	34395
Filer:	Robert Walter Bergstrom/Joanne Bourguignon
Filer Authorized By:	Robert Walter Bergstrom
Attorney Docket Number:	35099.001
Receipt Date:	20-JAN-2011
Filing Date:	18-MAY-2010
Time Stamp:	14:02:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		35099-001-E-IDS.pdf	1223736	yes	7
			cd56c658494ad11194ae21c668d42bcd827ae679		

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Transmittal Letter	1	1
	Information Disclosure Statement (IDS) Filed (SB/08)	2	3
	Foreign Reference	4	4
	Foreign Reference	5	5
	Foreign Reference	6	6
	Foreign Reference	7	7
Warnings:			
Information:			
Total Files Size (in bytes):		1223736	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> 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. <u>National Stage of an International Application under 35 U.S.C. 371</u> 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. <u>New International Application Filed with the USPTO as a Receiving Office</u> 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.			

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Brian Marc Pepin et al.

Application No.: 12/782,697

Filed: May 18, 2010

Title: LINEAR-RESONANT VIBRATION MODULE

Examiner: Jose A. Gonzalez Quinones

Art Unit: 2834

Docket No.: 35099.001

Date: January 20, 2011

COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

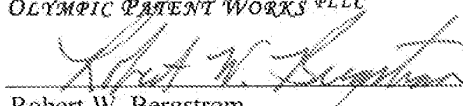
Sir:

In accordance with 37 C.F.R. 1.97(b), applicants wish to make known to the Patent and Trademark Office the references set forth on the attached form PTO/SB/08A. Although the aforesaid references are made known to the Patent and Trademark Office in compliance with applicants' duty to disclose all information they are aware of which is believed relevant to the examination of the above-identified application, applicants believe that their invention is patentable.

Please acknowledge receipt of this Information Disclosure Statement and kindly make the cited reference of record in the above-identified application.

At anytime during the pendency of this application, please charge any fees required or credit any overpayment to Deposit Account No. 50-2976 pursuant to 37 CFR 1.25. Additionally, please charge any fees to Deposit Account No. 50-2976 under 37 CFR 1.16 through 1.21 inclusive, and any other sections in Title 37 of the Code of Federal Regulations that may regulate fees.

Respectfully submitted,
Brian Marc Pepin et al.
OLYMPIC PATENT WORKS PLLC


Robert W. Bergstrom
Registration No. 39,906



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/782,697	05/18/2010	Brian Marc Pepin	35099.001	5211
34395	7590	11/30/2010	EXAMINER	
OLYMPIC PATENT WORKS PLLC			GONZALEZ QUINONES, JOSE A	
P.O. BOX 4277			ART UNIT	PAPER NUMBER
SEATTLE, WA 98104			2834	
			MAIL DATE	DELIVERY MODE
			11/30/2010	PAPER

Notice of Erroneous Early Release of Patent Application Information on November 11, 2010

On November 11, 2010, the United States Patent and Trademark Office (USPTO), unintentionally and as a result of a processing error, made available to subscribers of patent application data the patent application publications that were not scheduled to publish under 35 U.S.C. 122(b) until November 18, 2010. The USPTO's subscription service allows a member of the public to obtain copies of all patents or application publications from the USPTO on the date of grant or publication for a fee. One subscriber who had access to the early-published data made these premature patent application publications available on its free Web service, known as Free Patents Online, on November 11, 2010 - one week prior to the scheduled publication date. At the USPTO's request, the subscriber removed access to the patent application publications dated November 18, 2010 on November 15, 2010 until November 18, 2010. While the premature release of application information on November 11, 2010, is not considered a publication of such applications under 35 U.S.C. 122(b), the USPTO acknowledges that there are potential international ramifications in certain very limited circumstances such as where an applicant whose application information was released early did not file a foreign application within the Paris Convention priority period but did file in a foreign country between November 11, 2010 and November 18, 2010.

The USPTO did not post the publications on its Web site until November 18, 2010, and it did not provide access to the public Patent Application Information Retrieval (PAIR) System based on the early release of the publication data. Moreover, the USPTO did not record in its records that a publication occurred until November 18, 2010. Copies of, and access to, any of the affected applications described in this document were not provided by the USPTO under 37 CFR 1.14 based on the error described in this document. The USPTO regrets this error and is instituting controls to prevent similar processing errors in the future.

Inquiries regarding this matter may be directed to Mark Polutta, Senior Legal Advisor, Office of Patent Legal Administration at (571) 272-7709 or via email addressed to mark.polutta@uspto.gov.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/782,697	05/18/2010	Brian Marc Pepin	35099.001

CONFIRMATION NO. 5211

34395
OLYMPIC PATENT WORKS PLLC
P.O. BOX 4277
SEATTLE, WA 98104

PUBLICATION NOTICE



Title:LINEAR-RESONANT VIBRATION MODULE

Publication No.US-2010-0289346-A1

Publication Date:11/18/2010

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

The publication may be accessed through the USPTO's publically available Searchable Databases via the Internet at www.uspto.gov. The direct link to access the publication is currently <http://www.uspto.gov/patft/>.

The publication process established by the Office does not provide for mailing a copy of the publication to applicant. A copy of the publication may be obtained from the Office upon payment of the appropriate fee set forth in 37 CFR 1.19(a)(1). Orders for copies of patent application publications are handled by the USPTO's Office of Public Records. The Office of Public Records can be reached by telephone at (703) 308-9726 or (800) 972-6382, by facsimile at (703) 305-8759, by mail addressed to the United States Patent and Trademark Office, Office of Public Records, Alexandria, VA 22313-1450 or via the Internet.

In addition, information on the status of the application, including the mailing date of Office actions and the dates of receipt of correspondence filed in the Office, may also be accessed via the Internet through the Patent Electronic Business Center at www.uspto.gov using the public side of the Patent Application Information and Retrieval (PAIR) system. The direct link to access this status information is currently <http://pair.uspto.gov/>. Prior to publication, such status information is confidential and may only be obtained by applicant using the private side of PAIR.

Further assistance in electronically accessing the publication, or about PAIR, is available by calling the Patent Electronic Business Center at 1-866-217-9197.

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/782,697	05/18/2010	Brian Marc Pepin	35099.001	5211
34395 7590 11/09/2010 OLYMPIC PATENT WORKS PLLC P.O. BOX 4277 SEATTLE, WA 98104			EXAMINER GONZALEZ QUINONES, JOSE A	
			ART UNIT 2834	PAPER NUMBER
			MAIL DATE 11/09/2010	DELIVERY MODE 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.

Office Action Summary	Application No. 12/782,697	Applicant(s) PEPIN ET AL.	
	Examiner JOSE A. GONZALEZ QUINONES	Art Unit 2834	

-- 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 ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ 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

- 4) ☒ Claim(s) 1 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 May 2010 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).
- 11) ☐ 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

- 12) ☐ 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 Draftsperson'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 ____. | 6) ☐ Other: ____. |

DETAILED ACTION

Drawings

Figure 1A-1B, 2A-2B and 3 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

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.

Claim 1 recites the limitation "the coil" in the second and third lines from bottom.

There is insufficient antecedent basis for this limitation in the claim.

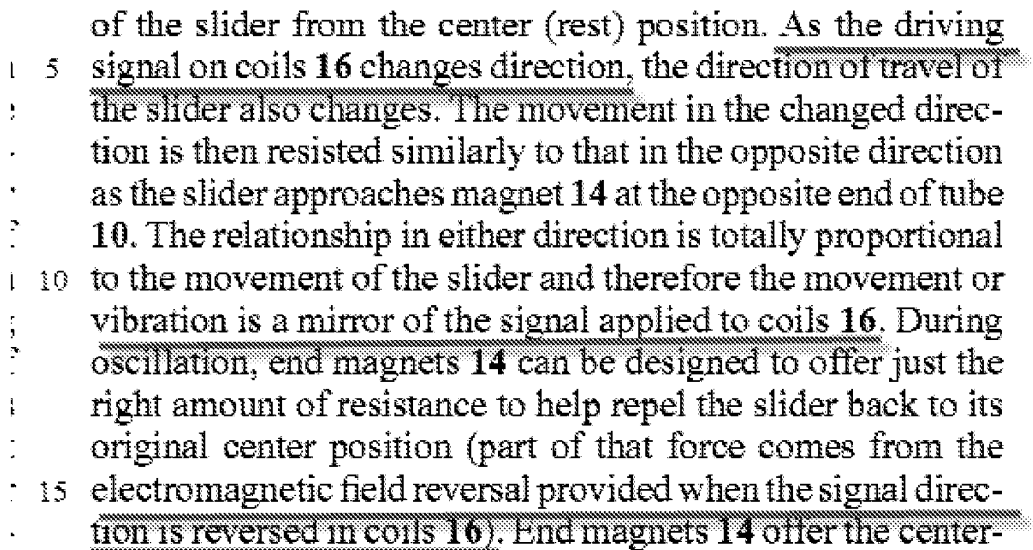
Claim Rejections - 35 USC § 103

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.

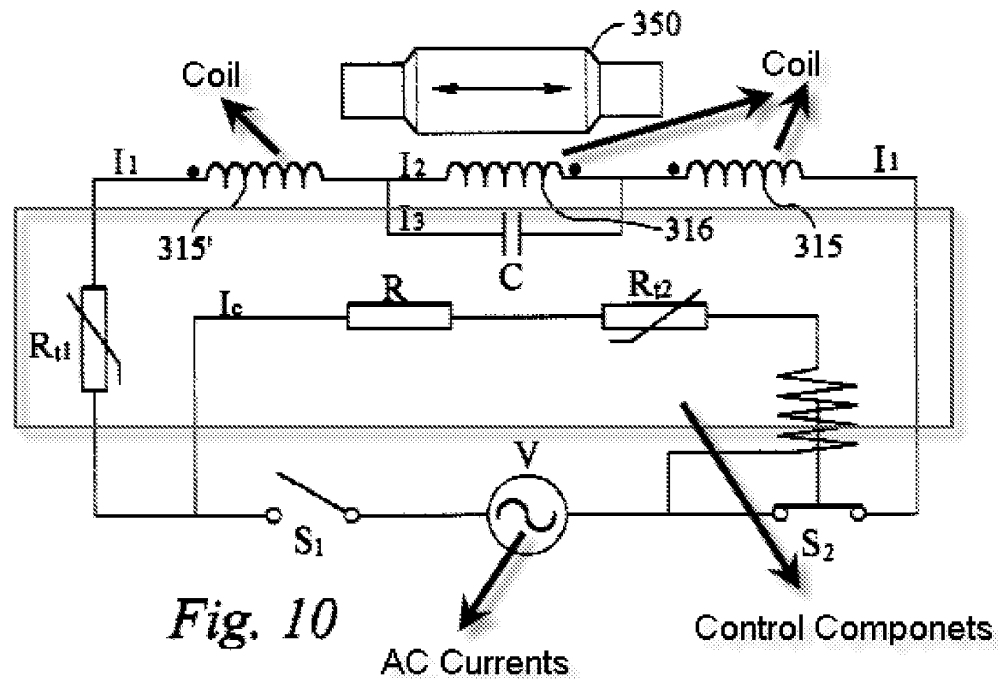
Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sahyoun (US PG Pub 2006/0208600) in view of Zhang (6,326,706).

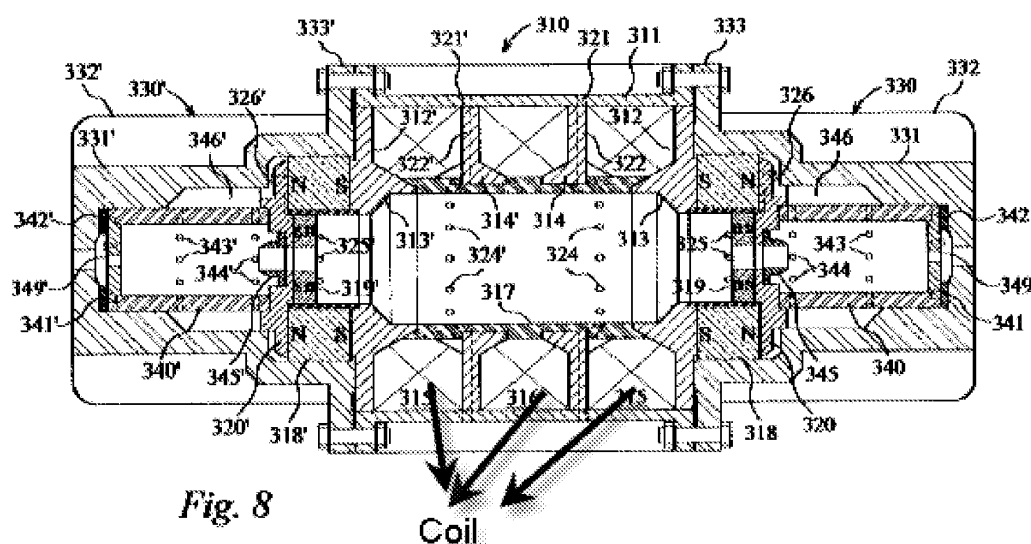
As to claim 1, Sahyoun teaches a linear module comprising: a housing (tube 10 including a chamber (inherent to tube 10 in which magnetic weight resides, see annotated figure 4): a magnetic weight (see annotated figure 4) that moves linearly within the chamber: a first end magnet (14) oriented to repel (inherent due to N pole of 14 and N pole of the magnetic weight 20, see annotated figure 4), closing a first end of the chamber (see annotation in figure 4); a second end magnet (14) oriented to repel (inherent due to S pole of 14 and S pole of the magnetic weight 20 see annotated figure 4), closing the second end of the chamber (see annotation in figure 4); a driving electromagnet (magnetic weight 20 & 18), fixed to the housing (tube 10) as shown in figure 4 and a driving signal apply to the coil to linearly oscillate the slider (include the magnetic weight 20, see annotated in figure 4) in order to produce vibrational forces (Column 6, Line 4-16).



However Sahyoun fails to disclose control components that apply current that periodically alternates AC current, to the coil.

Zhang teaches control components that apply current that periodically alternates AC current, to the coil to linear motor (See Title) as shown in figure 10 and 8, for the advantageous benefit of not damaging the system efficiency; instead it improving the overall efficiency (column 11, Line 40).





It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Sahyoun by employing control components that apply current that periodically alternates AC current, to the coil, as taught by Zhang, to improve the overall efficiency system.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Cheung et al. (6,809,427) and Erixon et al. (US PG Pub 2008/0174187) teach using a housing including a chamber with a first end magnet and

second end magnet to oriented to repel the magnetic weight, wherein the first end magnet and second end magnet closing the chamber.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSE A. GONZALEZ QUINONES whose telephone number is (571)270-7850. The examiner can normally be reached on 1 st week Monday to Friday 7:30 AM to 5:00 PM and 2nd week Monday to Thursday 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Quyen P. Leung can be reached on 571-272-8188. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2834

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.

/Quyen Leung/
Supervisory Patent Examiner, Art Unit 2834

/JOSE A GONZALEZ QUINONES/
Examiner, Art Unit 2834
October 31, 2010

Notice of References Cited	Application/Control No. 12/782,697	Applicant(s)/Patent Under Reexamination PEPIN ET AL.	
	Examiner JOSE A. GONZALEZ	Art Unit 2834	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2008/0174187	07-2008	Erixon et al.	310/15
*	B	US-6,809,427	10-2004	Cheung et al.	290/1R
*	C	US-2006/0208600	09-2006	Sahyoun, Joseph Y.	310/254
*	D	US-6,326,706	12-2001	Zhang, Wei-Min	310/12.31
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

<i>Index of Claims</i> 	Application/Control No. 12782697	Applicant(s)/Patent Under Reexamination PEPIN ET AL.
	Examiner JOSE A GONZALEZ QUINONES	Art Unit 2834

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

☐ Claims renumbered in the same order as presented by applicant				☐ CPA				☐ T.D.				☐ R.1.47			
CLAIM			DATE												
Final	Original	10/31/2010													
	1	✓													

Search Notes 	Application/Control No. 12782697	Applicant(s)/Patent Under Reexamination PEPIN ET AL.
	Examiner JOSE A GONZALEZ QUINONES	Art Unit 2834

SEARCHED			
Class	Subclass	Date	Examiner
310	13-15	10/31/2010	JAG

SEARCH NOTES		
Search Notes	Date	Examiner
Limited Text Search and Inventor Name	10/31/2010	JAG
See Est Note Attached	10/31/2010	JAG

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

--	--



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

BIB DATA SHEET

CONFIRMATION NO. 5211

SERIAL NUMBER 12/782,697	FILING or 371(c) DATE 05/18/2010 RULE	CLASS ~~514~~ 310	GROUP ART UNIT 2834	ATTORNEY DOCKET NO. 35099.001
APPLICANTS Brian Marc Pepin, Oakland, CA; /JAG/ Robin Elenga, Seattle, WA;				
** CONTINUING DATA ***** This appln claims benefit of 61/179,109 05/18/2009 /JAG/				
** FOREIGN APPLICATIONS ***** None /JAG/				
** IF REQUIRED, FOREIGN FILING LICENSE GRANTED *** SMALL ENTITY ** 05/27/2010				
Foreign Priority claimed ☐ Yes ☒ No 35 USC 119(a-d) conditions met ☐ Yes ☒ No Verified and /JOSE A GONZALEZ QUINONES/ Acknowledged Examiner's Signature	☐ Met after Allowance Initials	STATE OR COUNTRY CA	SHEETS DRAWINGS 15	TOTAL CLAIMS 1
ADDRESS OLYMPIC PATENT WORKS PLLC P.O. BOX 4277 SEATTLE, WA 98104 UNITED STATES				
TITLE LINEAR-RESONANT VIBRATION MODULE				
FILING FEE RECEIVED 527	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		☐ All Fees ☐ 1.16 Fees (Filing) ☐ 1.17 Fees (Processing Ext. of time) ☐ 1.18 Fees (Issue) ☐ Other _____ ☐ Credit	

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	37	pepin near2 brian	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:49
L2	37	pepin near2 brian.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:49
L3	0	elenga near2 robin.in.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:50
L4	94	thumper near2 device	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:54
L5	31	thumper near2 vibrator	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:55
L6	0	linear near2 thumper	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:57

L7	0	linear near2 pattycake	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:59
L8	1400	310/15.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 18:59
L9	1607	310/13-14.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 19:11
L10	30	"6768230"	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	ON	2010/10/31 19:26

EAST Search History (Interference)

< This search history is empty >

10/ 31/ 2010 8:14:54 PM**C:\ Documents and Settings\ jgonzalez\ My Documents\ EAST\ Workspaces\ 12782697.
wsp**



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
12/782,697	05/18/2010	1614	527	35099.001	1	1

CONFIRMATION NO. 5211

34395
OLYMPIC PATENT WORKS PLLC
P.O. BOX 4277
SEATTLE, WA 98104

UPDATED FILING RECEIPT



OC000000042980437

Date Mailed: 08/12/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Brian Marc Pepin, Oakland, CA;
Robin Elenga, Seattle, WA;

Power of Attorney:

Robert Bergstrom--39906
Richard Bell--54614

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/179,109 05/18/2009

Foreign Applications

If Required, Foreign Filing License Granted: 05/27/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/782,697**

Projected Publication Date: 11/18/2010

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

LINEAR-RESONANT VIBRATION MODULE

Preliminary Class

514

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER**Title 35, United States Code, Section 184****Title 37, Code of Federal Regulations, 5.11 & 5.15****GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as

set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign Assets Control, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Robin F. Elenga et al.
Application No. : 12/782,697
Filed : May 18, 2010
For : LINEAR-RESONANT VIBRATION MODULE

Docket No. : 35099.001
Date : August 2, 2010

MAIL STOP AMENDMENT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRELIMINARY AMENDMENT

Sir:

Please amend the above-identified application as follows:

REMARKS

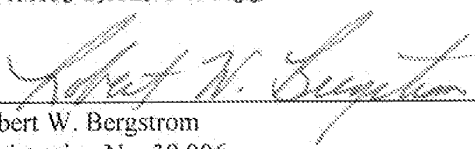
The first above-identified paragraph has been amended to correctly identify Reference No. 419 in Figure 4A and the second above-identified has been amended to clearly identify Reference No. 424 in Figure 4B.

The application is clearly in order for examination.

Respectfully submitted,

Robin F. Elenga et al.

OLYMPIC PATENT WORKS PLLC



Robert W. Bergstrom
Registration No. 39,906

DECLARATION AND POWER OF ATTORNEY

As the below-named inventors, we declare that:

Our residences, post office addresses, and citizenships are as stated below under our names.

We believe we are the original, first, and joint inventors of the invention entitled "LINEAR-RESONANT VIBRATION MODULE," which is described and claimed in the specification and claims of Patent Application No. 12/782,697, which we filed in the United States Patent and Trademark Office on May 18, 2010 for which a patent is sought, and which claims the benefit of provisional application no. 61/179,109, filed May 18, 2009.

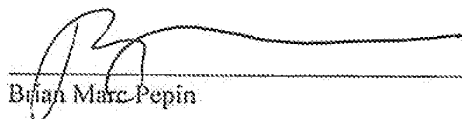
We have reviewed and understand the contents of the above-entitled specification, including the claims, as amended by any amendment specifically referred to herein (if any).

We acknowledge our duty to disclose information of which we are aware which is material to the patentability and examination of this application in accordance with 37 C.F.R. § 1.56.

We hereby appoint ROBERT W. BERGSTROM, Registration No. 39,906; and RICHARD L. BELL, Registration No. 54,614 comprising the firm of OLYMPIC PATENT WORKS PLLC, 705 Second Ave. Suite 1111, P.O. Box 4277, Seattle, Washington 98194-0277, as our attorneys to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. Please direct all telephone calls to (206) 621-1933 and telecopies to (206) 621-5302.

We further declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that the making of willfully false statements and the like is punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and may jeopardize the validity of any patent issuing from this patent application.

Even though the attorneys are listed, please direct all correspondence associated with this case to Olympic Patent Works Customer Number 34395.



Brian Marc Pepin

Date 7/26/2010
Residence : City of Oakland,
State of California
Citizenship : United States of America
P.O. Address : 275 Fairmont Ave., Apt. 8
Oakland, CA 94611

Robin Elenga

Date _____
Residence : City of Seattle,
State of Washington
Citizenship : United States of America
P.O. Address : 3420 - 10th Ave. West
Seattle, WA 98119

DECLARATION AND POWER OF ATTORNEY

As the below-named inventors, we declare that:

Our residences, post office addresses, and citizenships are as stated below under our names.

We believe we are the original, first, and joint inventors of the invention entitled "LINEAR-RESONANT VIBRATION MODULE," which is described and claimed in the specification and claims of Patent Application No. 12/782,697, which we filed in the United States Patent and Trademark Office on May 18, 2010 for which a patent is sought, and which claims the benefit of provisional application no. 61/179,109, filed May 18, 2009.

We have reviewed and understand the contents of the above-entitled specification, including the claims, as amended by any amendment specifically referred to herein (if any).

We acknowledge our duty to disclose information of which we are aware which is material to the patentability and examination of this application in accordance with 37 C.F.R. § 1.56.

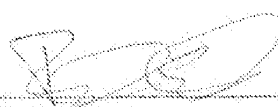
We hereby appoint ROBERT W. BERGSTROM, Registration No. 39,906; and RICHARD L. BELL, Registration No. 54,614 comprising the firm of OLYMPIC PATENT WORKS PLLC, 705 Second Ave. Suite 1111, P.O. Box 4277, Seattle, Washington 98194-0277, as our attorneys to prosecute this application and transact all business in the Patent and Trademark Office connected therewith. Please direct all telephone calls to (206) 621-1933 and telecopies to (206) 621-5302.

We further declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that the making of willfully false statements and the like is punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and may jeopardize the validity of any patent issuing from this patent application.

Even though the attorneys are listed, please direct all correspondence associated with this case to Olympic Patent Works Customer Number 34395.

Brian Marc Pepin

Date _____
Residence : City of Oakland,
State of California
Citizenship : United States of America
P.O. Address : 275 Fairmont Ave., Apt. 8
Oakland, CA 94611



Robin Elenga

Date 7/26/10
Residence : City of Seattle,
State of Washington
Citizenship : United States of America
P.O. Address : 3420 - 10th Ave. West
Seattle, WA 98119

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants : Robin F. Elenga et al.
Application No. : 12/782,697
Filed : May 18, 2010
For : LINEAR-RESONANT VIBRATION MODULE
Docket No. : 35099.001
Date : August 2, 2010

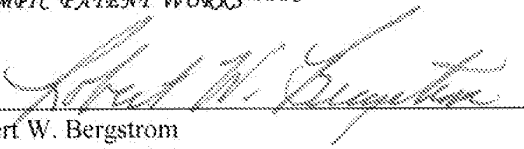
Mail Stop PGPUB - Drawings
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

FILING FORMAL DRAWINGS

Sir:

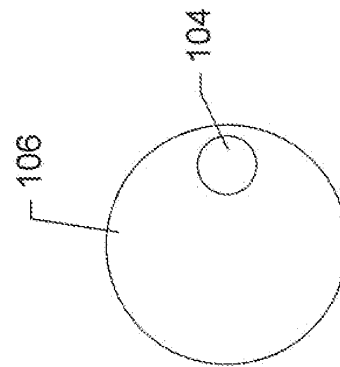
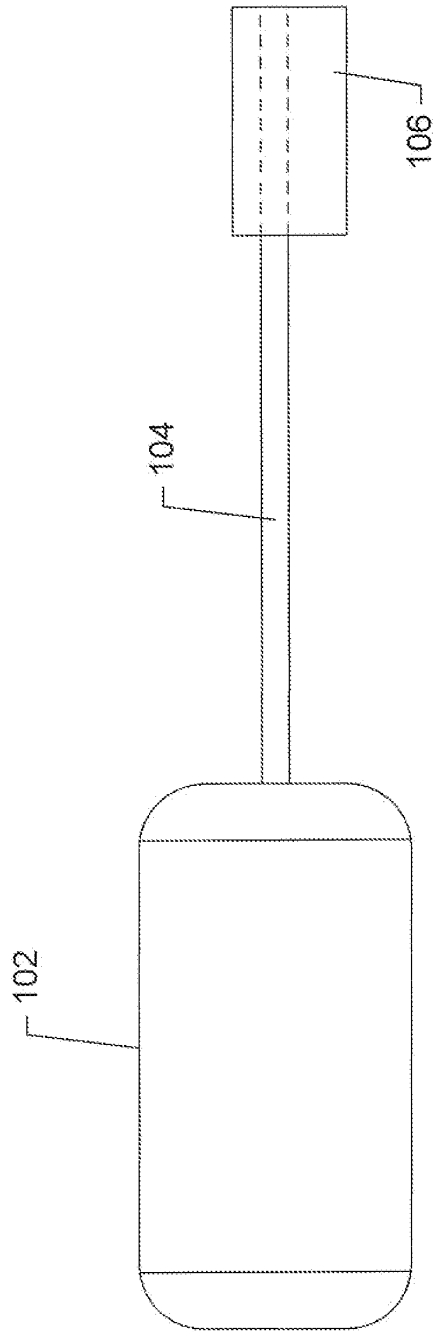
Enclosed are fifteen sheets of formal drawings, Figures 1-18, for filing in the above-identified application. Please substitute these formal drawings for the informal drawings previously filed.

Respectfully submitted,
Robin F. Elenga et al.
OLYMPIC PATENT WORKS LLC


Robert W. Bergstrom
Registration No. 39,906

Replacement Sheet
RESONANT SYSTEMS 35099.001

1/15



2/15

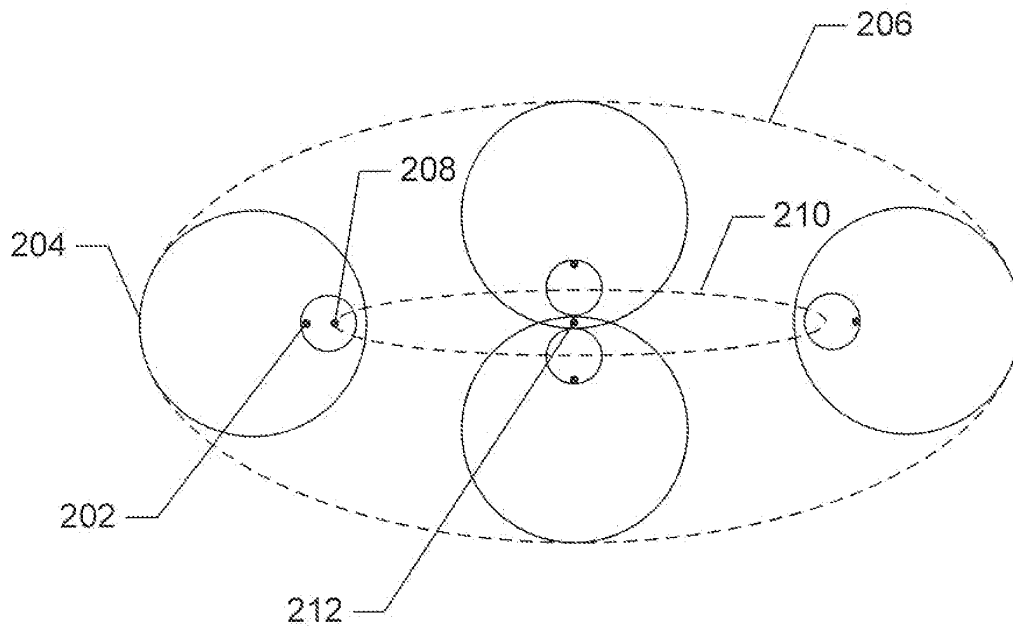


FIGURE 2A

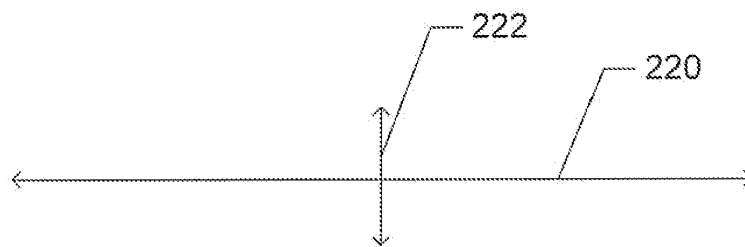


FIGURE 2B

Replacement Sheet
 RESONANT SYSTEMS 35099.001

3/15

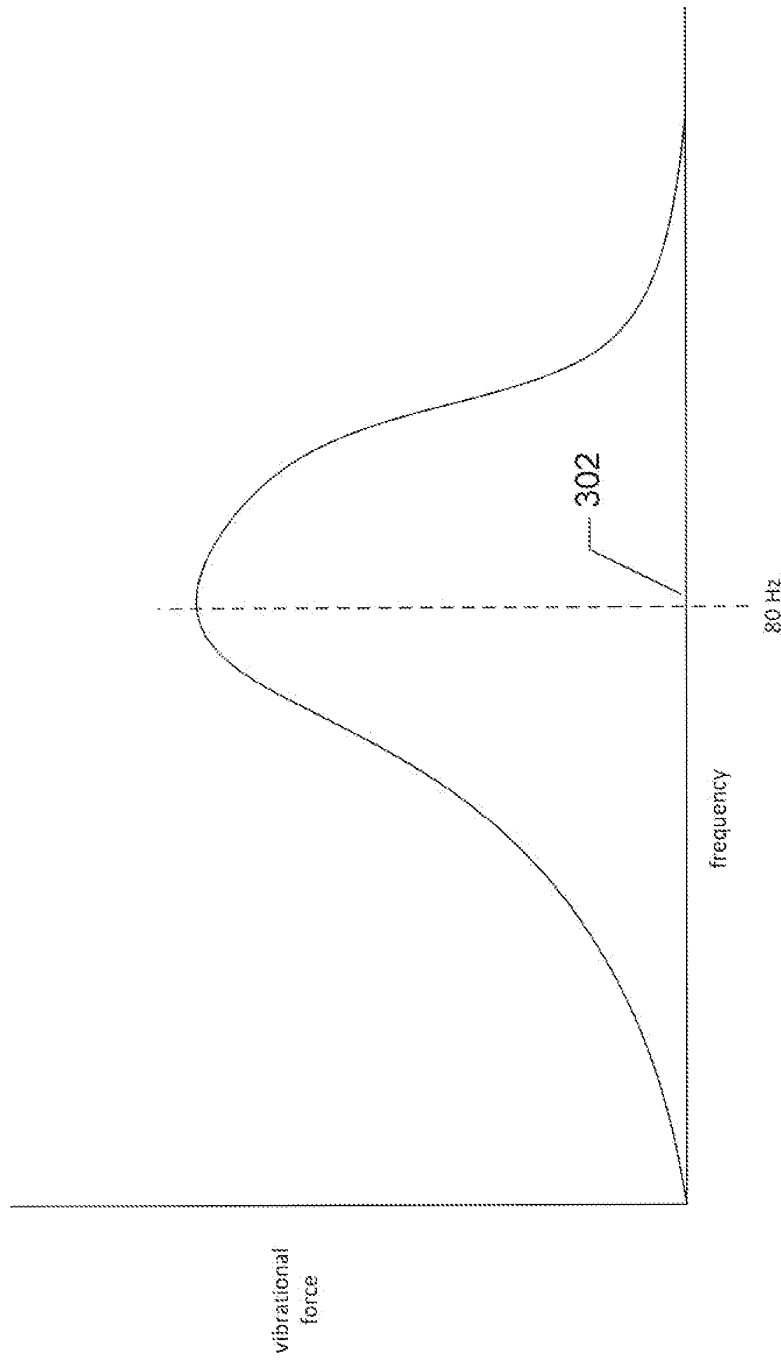
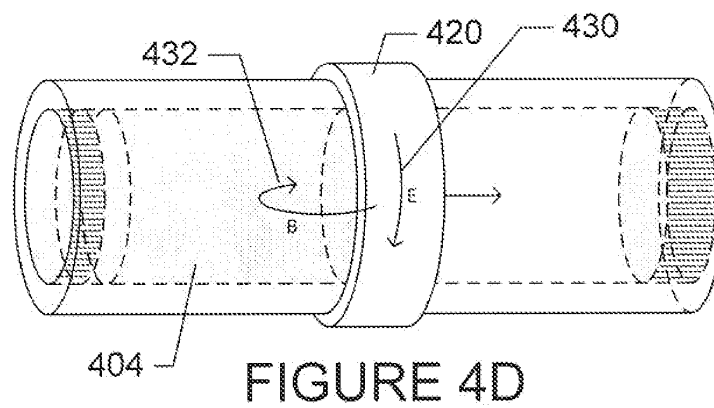
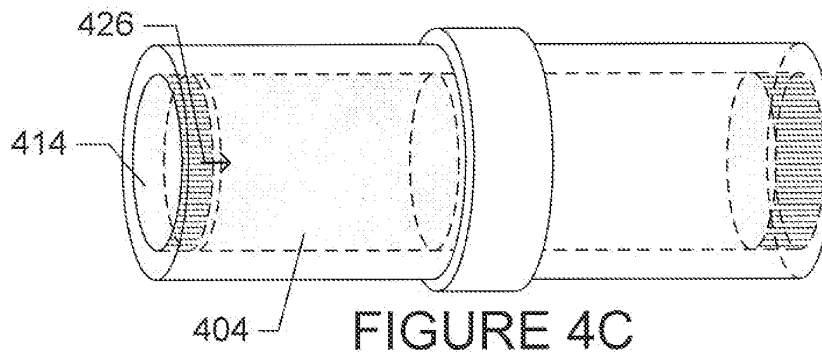
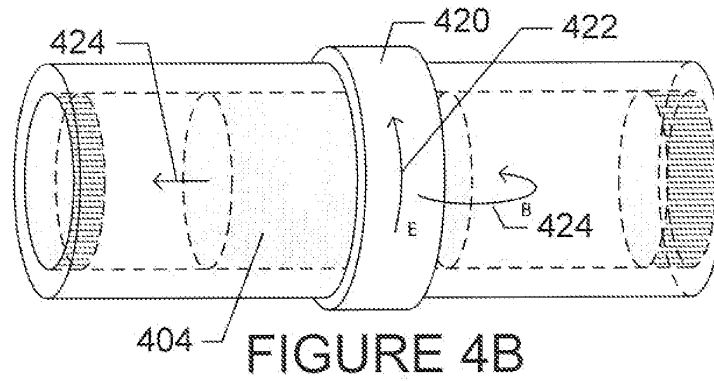
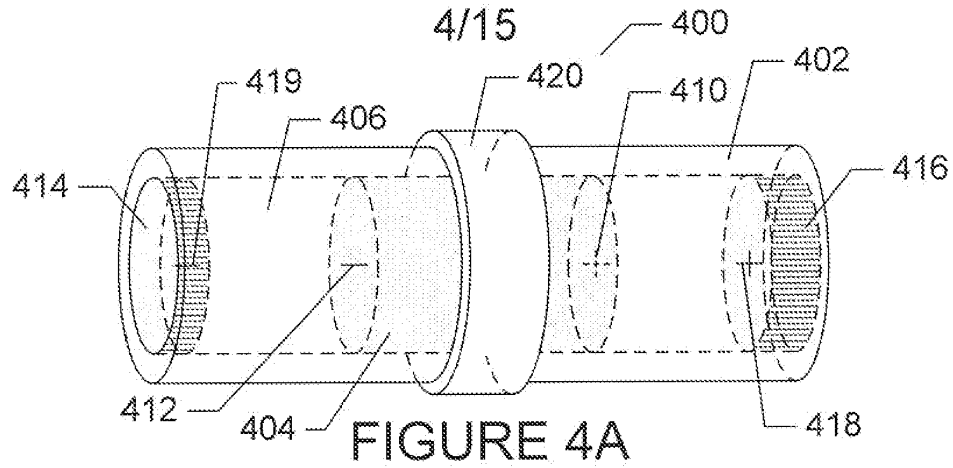


FIGURE 3



5/15

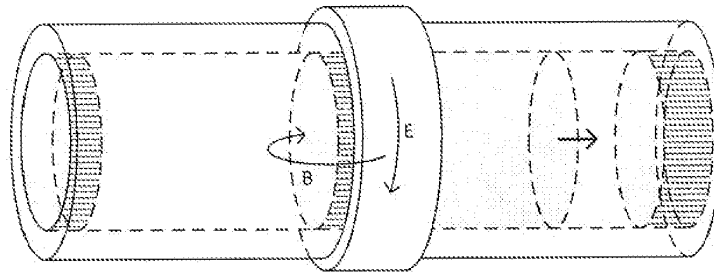


FIGURE 4E

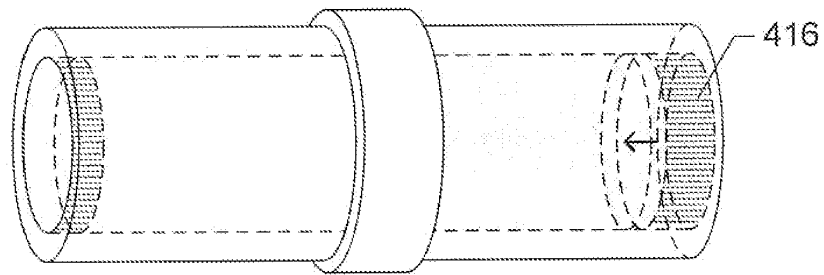


FIGURE 4F

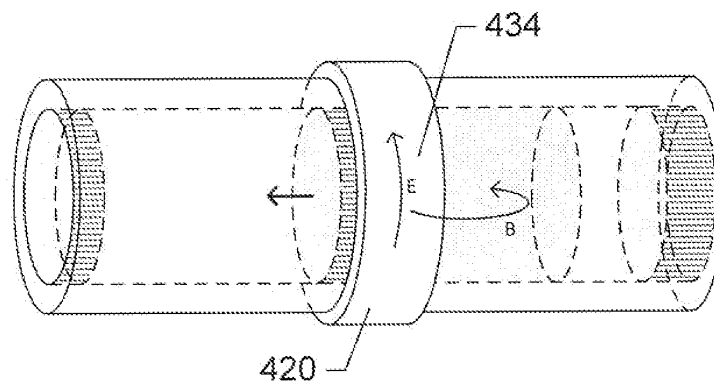


FIGURE 4G

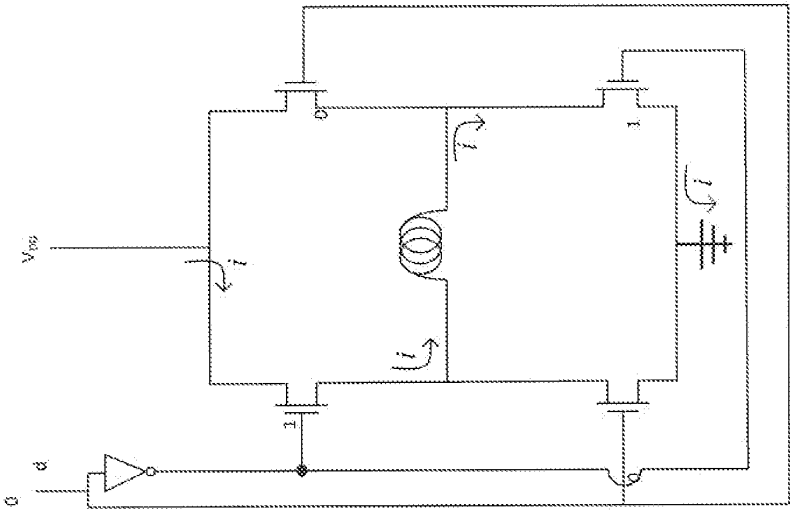


FIGURE 5B

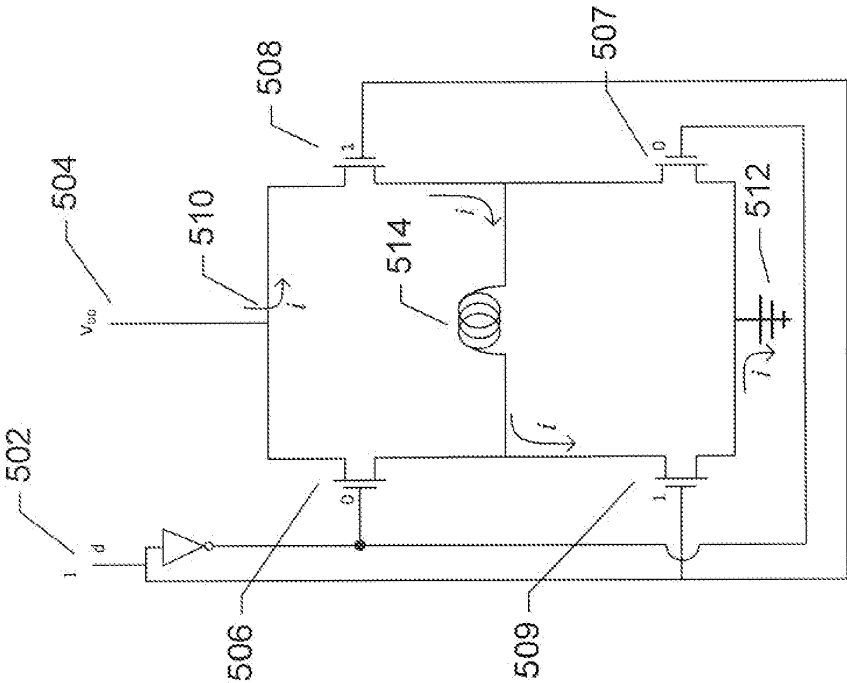


FIGURE 5A

7/15

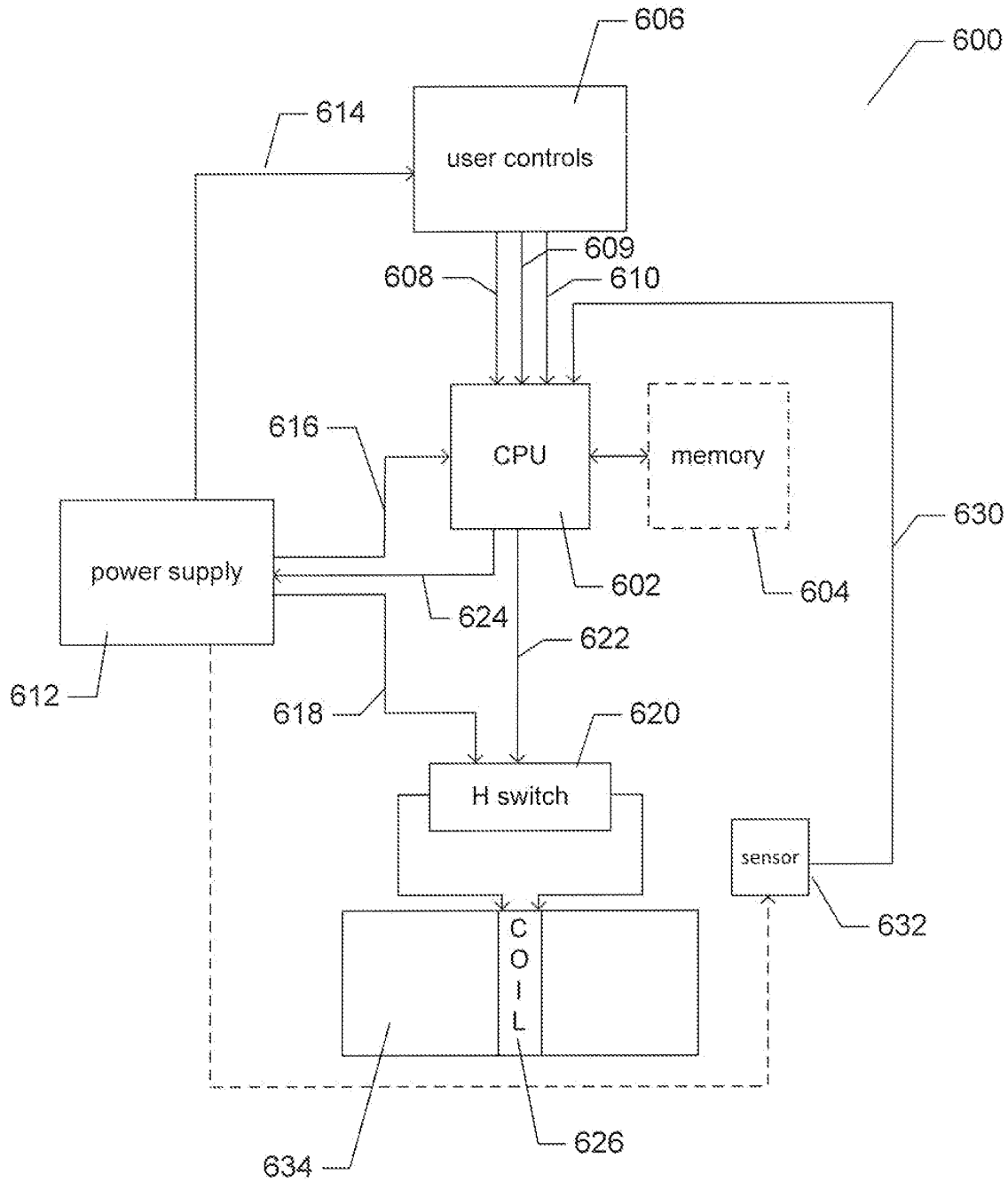


FIGURE 6

8/15

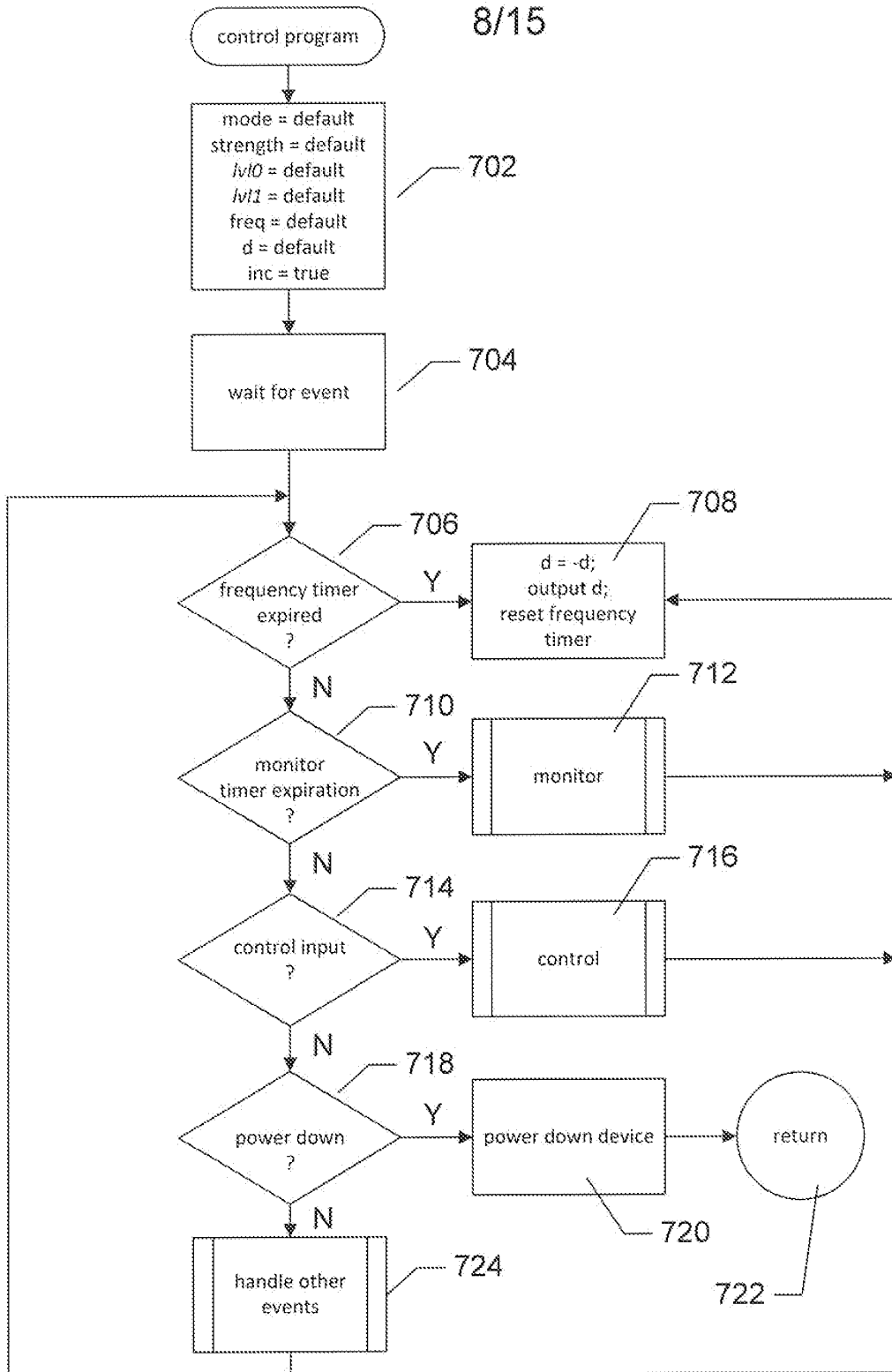


FIGURE 7A

9/15

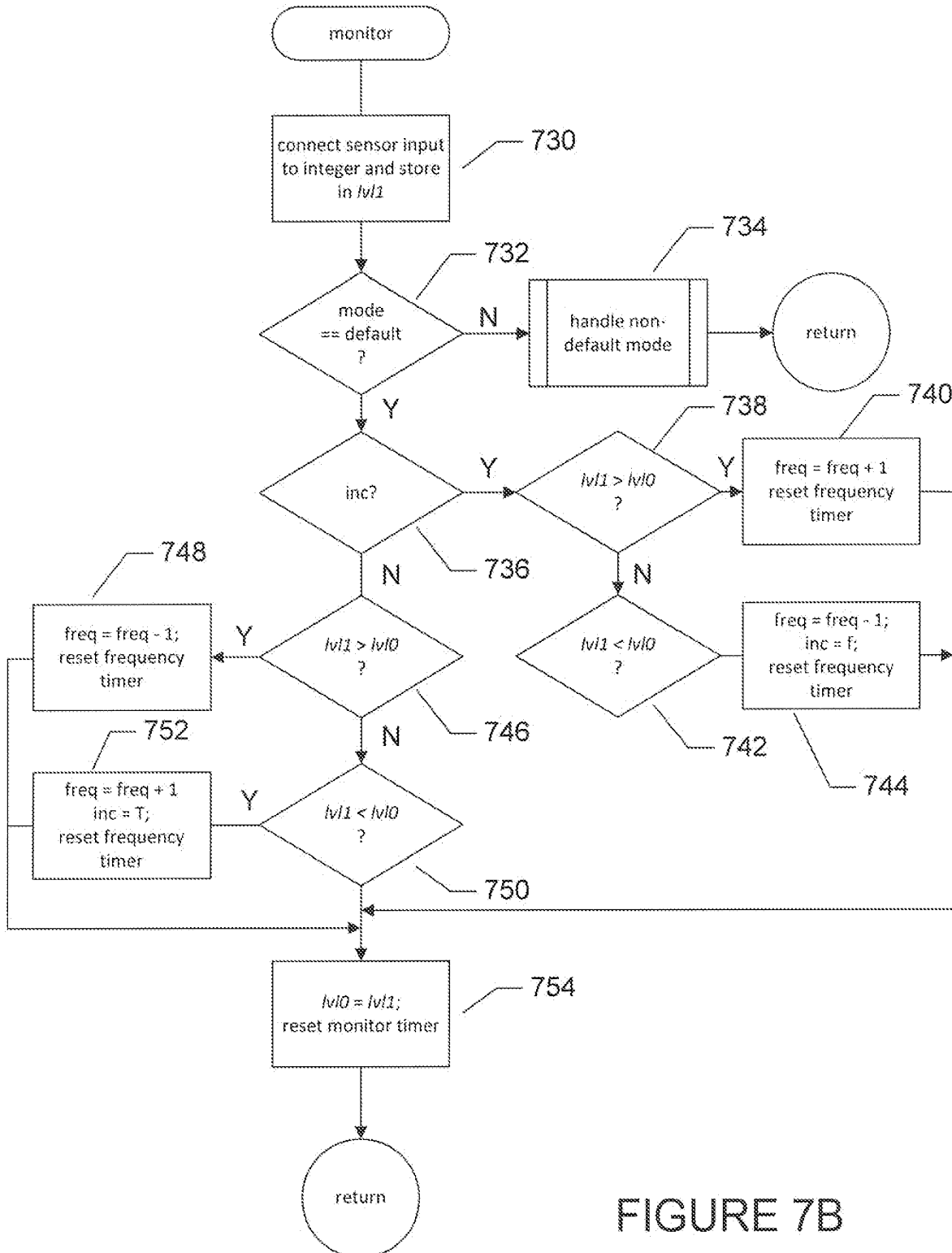


FIGURE 7B

10/15

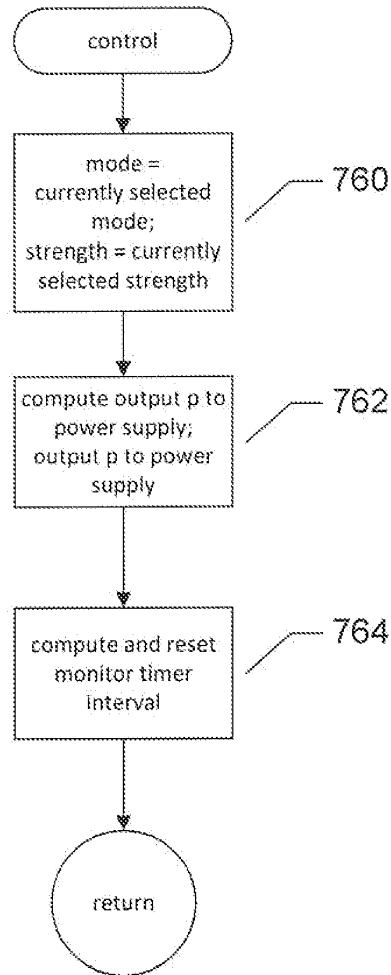


FIGURE 7C

11/15



WELCH

12/15

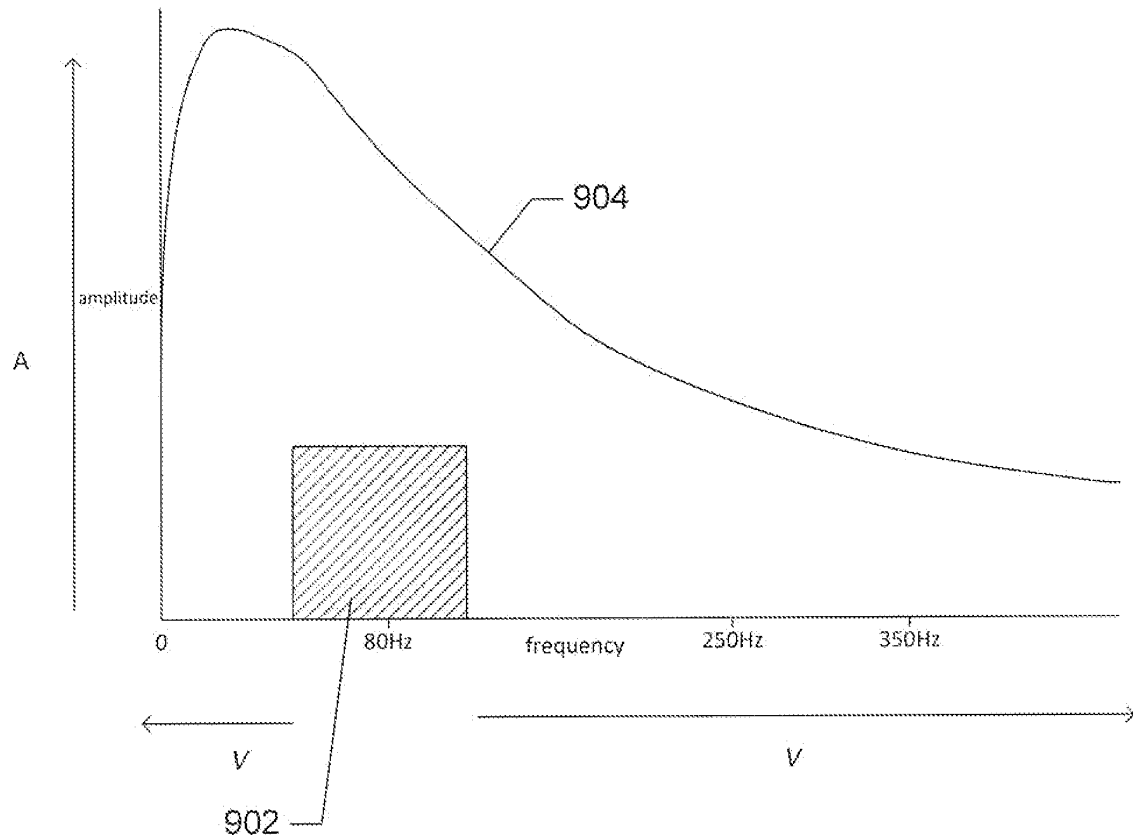


FIGURE 9

13/15

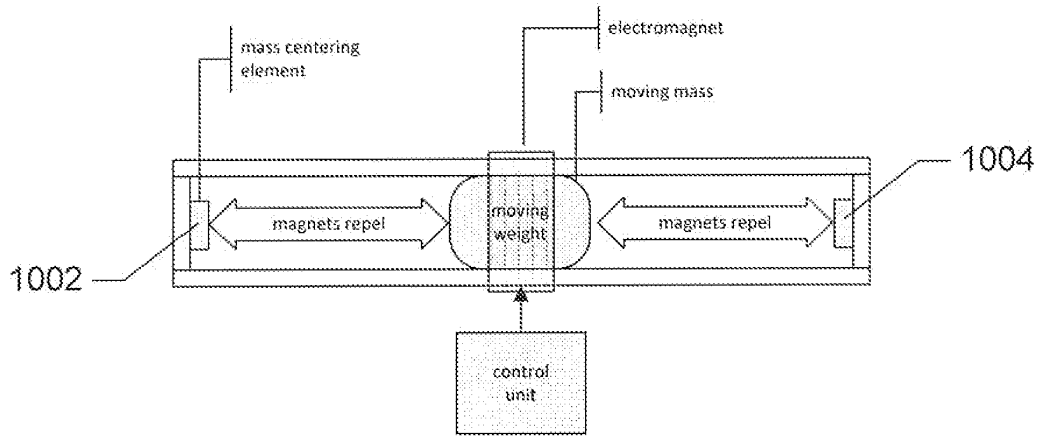


FIGURE 10

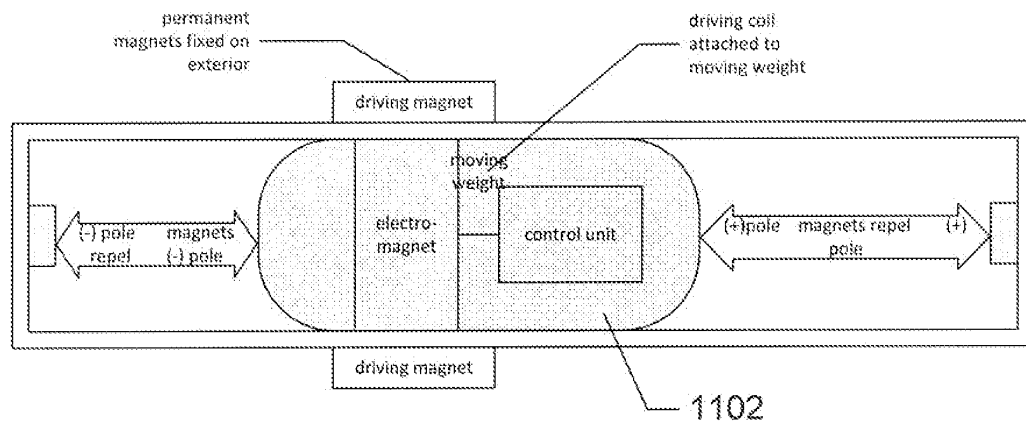


FIGURE 11

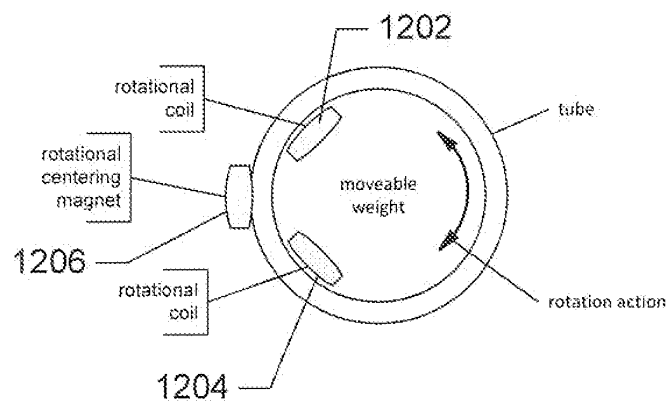


FIGURE 12

14/15

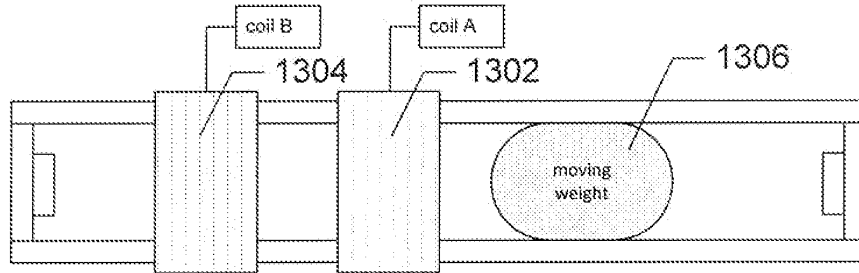


FIGURE 13

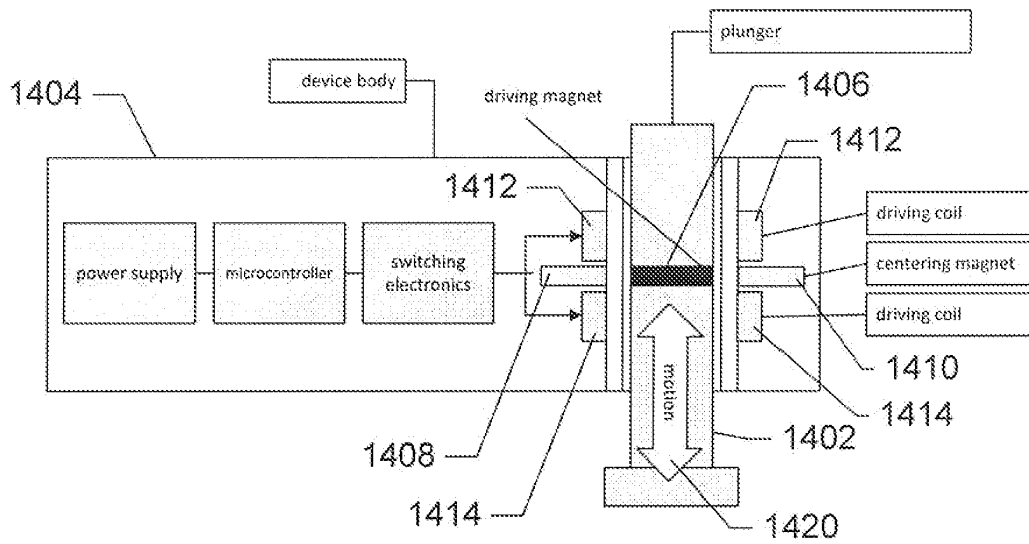


FIGURE 14

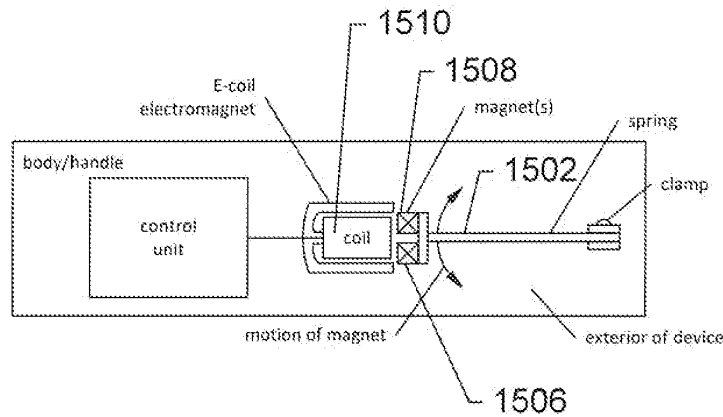


FIGURE 15

15/15

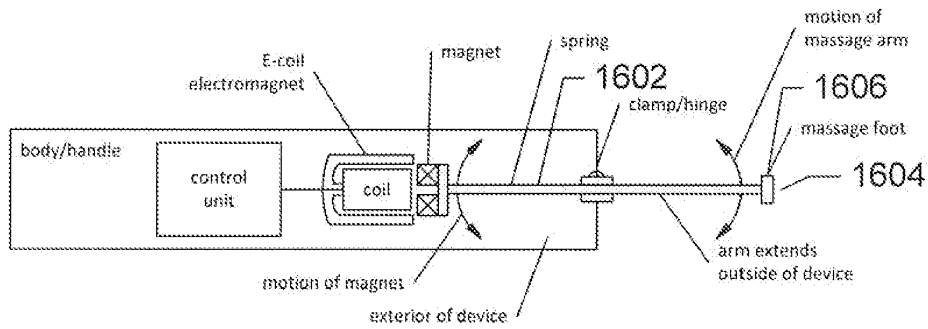


FIGURE 16

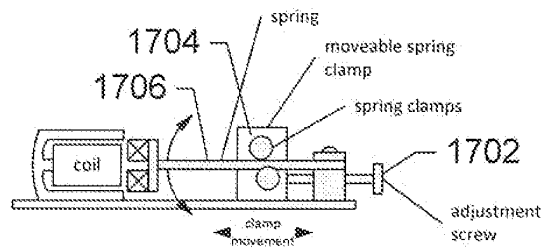


FIGURE 17

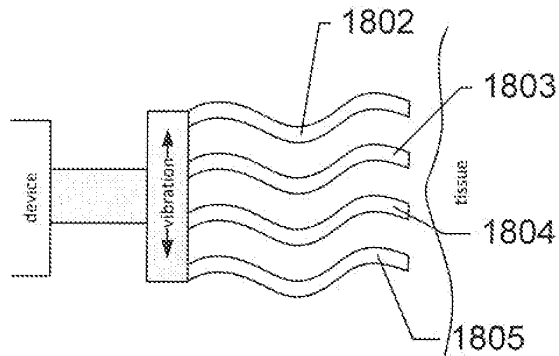


FIGURE 18

Electronic Patent Application Fee Transmittal				
Application Number:		12782697		
Filing Date:		18-May-2010		
Title of Invention:		LINEAR-RESONANT VIBRATION MODULE		
First Named Inventor/Applicant Name:		Robin F. Elenga		
Filer:		Robert Walter Bergstrom/Joanne Bourguignon		
Attorney Docket Number:		35099.001		
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Utility filing Fee (Electronic filing)	4011	1	82	82
Utility Search Fee	2111	1	270	270
Utility Examination Fee	2311	1	110	110
Pages:				
Claims:				
Miscellaneous-Filing:				
Late filing fee for oath or declaration	2051	1	65	65
Petition:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				527

Electronic Acknowledgement Receipt	
EFS ID:	8139410
Application Number:	12782697
International Application Number:	
Confirmation Number:	5211
Title of Invention:	LINEAR-RESONANT VIBRATION MODULE
First Named Inventor/Applicant Name:	Robin F. Elenga
Customer Number:	34395
Filer:	Robert Walter Bergstrom/Joanne Bourguignon
Filer Authorized By:	Robert Walter Bergstrom
Attorney Docket Number:	35099.001
Receipt Date:	02-AUG-2010
Filing Date:	18-MAY-2010
Time Stamp:	18:35:16
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Deposit Account
Payment was successfully received in RAM	\$ 527
RAM confirmation Number	5446
Deposit Account	502976
Authorized User	
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: Charge any Additional Fees required under 37 C.F.R. Section 1.16 (National application filing, search, and examination fees) Charge any Additional Fees required under 37 C.F.R. Section 1.17 (Patent application and reexamination processing fees)	

Charge any Additional Fees required under 37 C.F.R. Section 1.19 (Document supply fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.20 (Post Issuance fees)					
Charge any Additional Fees required under 37 C.F.R. Section 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		35099-001-E-MP.pdf	2638129	yes	25
			205913b6c27791e6c3e4da1a094ea2ccc271fb		
	Multipart Description/PDF files in .zip description				
	Document Description	Start	End		
	Transmittal Letter	1	1		
	Preliminary Amendment	2	2		
	Specification	3	4		
	Applicant Arguments/Remarks Made in an Amendment	5	5		
	Oath or Declaration filed	6	9		
	Applicant Response to Pre-Exam Formalities Notice	10	10		
	Drawings-only black and white line drawings	11	25		
Warnings:					
Information:					
2	Fee Worksheet (PTO-875)	fee-info.pdf	36804	no	2
			835ab48e48e28969f6a38d472939d5de8eeefb49		
Warnings:					
Information:					
Total Files Size (in bytes):			2674933		

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

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.

OLYMPIC PATENT WORKS [®]LLC

705 SECOND AVE., SUITE 1111
SEATTLE, WA 98104

MAILING ADDRESS:
P.O. BOX 4277
SEATTLE, WA 98104

206.621.1933 (MAIN)
206.621.5302 (FAX)

Docket No.: **35099.001**
Date: **August 2, 2010**

In re application of **Robin F. Elegna et al.**
Application No.: **12/782,697**
Filed: **May 18, 2010**
For: **LINEAR-RESONANT VIBRATION MODULE**

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

Sir:

Transmitted herewith is a **preliminary amendment** in the above-identified application.

☐ A Petition for an Extension of Time for onemonth is enclosed.

☒ No additional claim fee is required.

☐ The fee has been calculated as shown.

	(Col. 1)		(Col. 2)	(Col. 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST PREV. PAID FOR	PRESENT EXTRA
TOTAL	*	MINUS	**	
INDEP.	*	MINUS	***	
☐ FIRST PRESENTATION OF MULTIPLE CLAIMS				
EXTENSION OF TIME FEE				
TOTAL ADDITIONAL FEE				

SMALL ENTITY		OR	OTHER THAN A SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
x 25	\$		x 50	\$
x 105	\$		x 210	\$
+ 185	\$	OR	+ 370	\$
	\$			\$
	\$	TOTAL		\$

* If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space.

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found from the equivalent box in Col. 1 of a prior amendment or the number of claims originally filed.

☐ Please charge my Deposit Account No. 50- in the amount of \$. A duplicate copy of this sheet is enclosed.

☐ A check in the amount of \$ is attached.

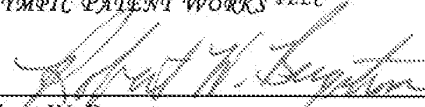
☒ The Commissioner is hereby authorized to charge payment of the following additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-2976. A duplicate copy of this sheet is enclosed.

☒ Any filing fees under 37 CFR 1.16 for the presentation of extra claims.

☒ Any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,
Robin F. Elegna et al.

OLYMPIC PATENT WORKS [®]LLC


Robert W. Bergstrom
Registration No. 39,906

OLYMPIC PATENT WORKS ^{PLLC}

705 SECOND AVE., SUITE 1111
SEATTLE, WA 98104

MAILING ADDRESS:
P.O. BOX 4277
SEATTLE, WA 98104

206.621.1933 (MAIN)
206.621.5302 (FAX)

Docket No.: **35099.001**
Date: **August 2, 2010**

In re application of **Robin F. Elegna et al.**
Application No.: **12/782,697**
Filed: **May 18, 2010**
For: **LINEAR-RESONANT VIBRATION MODULE**

MAIL STOP AMENDMENT
COMMISSIONER FOR PATENTS
P.O. BOX 1450
ALEXANDRIA, VA 22313-1450

Sir:

Transmitted herewith is a **preliminary amendment** in the above-identified application.

☐ A Petition for an Extension of Time for onemonth is enclosed.

☒ No additional claim fee is required.

☐ The fee has been calculated as shown.

	(Col. 1)		(Col. 2)	(Col. 3)
	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST PREV. PAID FOR	PRESENT EXTRA
TOTAL	*	MINUS	**	
INDEP.	*	MINUS	***	
☐ FIRST PRESENTATION OF MULTIPLE CLAIMS				
EXTENSION OF TIME FEE				
TOTAL ADDITIONAL FEE				

SMALL ENTITY		OR	OTHER THAN A SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
x 25	\$		x 50	\$
x 105	\$		x 210	\$
+ 185	\$	OR	+ 370	\$
	\$			\$
	\$	TOTAL		\$

* If the entry in Col. 1 is less than the entry in Col. 2, write "0" in Col. 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, write "20" in this space.

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, write "3" in this space.

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found from the equivalent box in Col. 1 of a prior amendment or the number of claims originally filed.

☐ Please charge my Deposit Account No. 50- in the amount of \$. A duplicate copy of this sheet is enclosed.

☐ A check in the amount of \$ is attached.

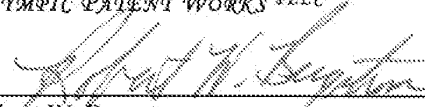
☒ The Commissioner is hereby authorized to charge payment of the following additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-2976. A duplicate copy of this sheet is enclosed.

☒ Any filing fees under 37 CFR 1.16 for the presentation of extra claims.

☒ Any patent application processing fees under 37 CFR 1.17.

Respectfully submitted,
Robin F. Elegna et al.

OLYMPIC PATENT WORKS ^{PLLC}


Robert W. Bergstrom
Registration No. 39,906

AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning on Page 6, line 6, as follows:

Figures 4A-G illustrate one particular LRVM, and operation of the particular LRVM, that represents one embodiment of the present invention. Figures 4A-G all use the same illustration conventions, next discussed with reference to Figure 4A. The LRVM includes a cylindrical housing 402 within which a solid, cylindrical mass 404, or weight, can move linearly along the inner, hollow, cylindrically shaped chamber 406 within the cylindrical housing or tube 402. The weight is a magnet, in the described embodiment of the present invention, with polarity indicated by the "+" sign 410 on the right-hand end and the "-" sign 412 on the left-hand end of the weight 404. The cylindrical chamber 406 is capped by two magnetic disks 414 and 416 with polarities indicated by the "+" sign 418 and the "-" sign 420 ~~sign 419~~. The disk-like magnets 414 and 418 are magnetically oriented opposite from the magnetic orientation of the weight 404, so that when the weight moves to either the extreme left or extreme right sides of the cylindrical chamber, the weight is repelled by one of the disk-like magnets at the left or right ends of the cylindrical chamber. In other words, the disk-like magnets act much like springs, to facilitate deceleration and reversal of direction of motion of the weight and to minimize or prevent mechanical-impact forces of the weight and the end caps that close off the cylindrical chamber. Finally, a coil of conductive wire 420 girdles the cylindrical housing, or tube 402 at approximately the mid-point of the cylindrical housing.

Please amend the paragraph beginning on Page 6, line 25, as follows:

Figures 4B-G illustrate operation of the LRVM shown in Figure 4A. When an electric current is applied to the coil 420 in a first direction 422, a corresponding magnetic force 424 is generated in a direction parallel to the axis of the cylindrical chamber, which accelerates the weight 404 ~~in a first direction~~ in the direction of the magnetic force 424. When the weight reaches a point at or close to the corresponding disk-like magnet 414, as shown in Figure 4C, a magnetic force due to the repulsion of the disk-like magnet 414 and the weight 404, 426, is generated in the opposite direction, decelerating the weight and reversing its direction. As the weight reverses direction, as shown in Figure 4D, current is applied in an opposite direction 430 to the coil 420, producing a magnetic force 432 in an opposite

direction from the direction of the magnetic force shown in Figure 4B, which accelerates the weight 404 in a direction opposite to the direction in which the weight is accelerated in Figure 4B. As shown in Figure 4E, the weight then moves rightward until, as shown in Figure 4F, the weight is decelerated, stopped, and then accelerated in the opposite direction by repulsion of the disk-like magnet 416. An electrical current is then applied to the coil 420 in the same direction 434 as in Figure 4B, again accelerating the solid cylindrical mass in the same direction as in Figure 4B. Thus, by a combination of a magnetic field with rapidly reversing polarity, generated by alternating the direction of current applied to the coil, and by the repulsive forces between the weight magnet and the disk-like magnets at each end of the hollow, cylindrical chamber, the weight linearly oscillates back and forth within the cylindrical housing 402, imparting a direction force at the ends of the cylindrical chamber with each reversal in direction.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
12/782,697	05/18/2010	1614	0.00	35099.001	1	1

CONFIRMATION NO. 5211

34395
OLYMPIC PATENT WORKS PLLC
P.O. BOX 4277
SEATTLE, WA 98104

FILING RECEIPT



OC000000041853586

Date Mailed: 06/01/2010

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Applicant(s)

Robin F. Elenga, Residence Not Provided;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/179,109 05/18/2009

Foreign Applications

If Required, Foreign Filing License Granted: 05/27/2010

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/782,697**

Projected Publication Date: To Be Determined - pending completion of Missing Parts

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

LINEAR-RESONANT VIBRATION MODULE

Preliminary Class

514

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4158).

LICENSE FOR FOREIGN FILING UNDER**Title 35, United States Code, Section 184****Title 37, Code of Federal Regulations, 5.11 & 5.15****GRANTED**

The applicant has been granted a license under 35 U.S.C. 184, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" followed by a date appears on this form. Such licenses are issued in all applications where the conditions for issuance of a license have been met, regardless of whether or not a license may be required as

set forth in 37 CFR 5.15. The scope and limitations of this license are set forth in 37 CFR 5.15(a) unless an earlier license has been issued under 37 CFR 5.15(b). The license is subject to revocation upon written notification. The date indicated is the effective date of the license, unless an earlier license of similar scope has been granted under 37 CFR 5.13 or 5.14.

This license is to be retained by the licensee and may be used at any time on or after the effective date thereof unless it is revoked. This license is automatically transferred to any related applications(s) filed under 37 CFR 1.53(d). This license is not retroactive.

The grant of a license does not in any way lessen the responsibility of a licensee for the security of the subject matter as imposed by any Government contract or the provisions of existing laws relating to espionage and the national security or the export of technical data. Licensees should apprise themselves of current regulations especially with respect to certain countries, of other agencies, particularly the Office of Defense Trade Controls, Department of State (with respect to Arms, Munitions and Implements of War (22 CFR 121-128)); the Bureau of Industry and Security, Department of Commerce (15 CFR parts 730-774); the Office of Foreign AssetsControl, Department of Treasury (31 CFR Parts 500+) and the Department of Energy.

NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/782,697	05/18/2010	Robin F. Elenga	35099.001

34395
OLYMPIC PATENT WORKS PLLC
P.O. BOX 4277
SEATTLE, WA 98104

CONFIRMATION NO. 5211
FORMALITIES LETTER



Date Mailed: 06/01/2010

NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

Filing Date Granted

Items Required To Avoid Abandonment:

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The statutory basic filing fee is missing.
Applicant must submit \$82 to complete the basic filing fee for a small entity.
- The oath or declaration is missing.
A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.
Note: If a petition under 37 CFR 1.47 is being filed, an oath or declaration in compliance with 37 CFR 1.63 signed by all available joint inventors, or if no inventor is available by a party with sufficient proprietary interest, is required.

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Replacement drawings in compliance with 37 CFR 1.84 and 37 CFR 1.121(d) are required. The drawings submitted are not acceptable because:
 - Numbers, letters, and reference characters on the drawings must measure at least 0.32 cm (1/8 inch) in height. See Figure(s) 7A-7C,9,10,11,17,18.
 - The drawings submitted to the Office are not electronically reproducible because portions of figures 1A-18 are missing and/or blurry.

Applicant is cautioned that correction of the above items may cause the specification and drawings page count to exceed 100 pages. If the specification and drawings exceed 100 pages, applicant will need to submit the required application size fee.

The applicant needs to satisfy supplemental fees problems indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- To avoid abandonment, a surcharge (for late submission of filing fee, search fee, examination fee or oath or declaration) as set forth in 37 CFR 1.16(f) of **\$65** for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this notice.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **\$527** for a small entity

- **\$82** Statutory basic filing fee.
- **\$65** Surcharge.
- The application search fee has not been paid. Applicant must submit **\$270** to complete the search fee.
- The application examination fee has not been paid. Applicant must submit **\$110** to complete the examination fee for a small entity in compliance with 37 CFR 1.27.

Replies should be mailed to:

Mail Stop Missing Parts
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Registered users of EFS-Web may alternatively submit their reply to this notice via EFS-Web.

<https://sportal.uspto.gov/authenticate/AuthenticateUserLocalEPF.html>

For more information about EFS-Web please call the USPTO Electronic Business Center at **1-866-217-9197** or visit our website at <http://www.uspto.gov/ebc>.

If you are not using EFS-Web to submit your reply, you must include a copy of this notice.

/fberhane/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

UTILITY PATENT APPLICATION TRANSMITTAL (Only for new nonprovisional applications under 37 CFR 1.53(b))	Attorney Docket No.	35089.001
	First Inventor	Robin F. Elenga
	Title	Linear-Resonant Vibration...
	Express Mail Label No.	VIA EPS-WEB

APPLICATION ELEMENTS <i>See MPEP chapter 600 concerning utility patent application contents.</i>	ADDRESS TO: Commissioner for Patents P.O. Box 1450 Alexandria VA 22313-1450
--	---

1. ☐ Fee Transmittal Form (e.g., PTO/GB/17) 2. ☒ Applicant claims small entity status. See 37 CFR 1.27. 3. ☒ Specification [Total Pages: _____] Both the claims and abstract must start on a new page (For information on the preferred arrangement, see MPEP 608.01(a)) 4. ☒ Drawing(s) (35 U.S.C. 113) [Total Sheets: 15 _____] 5. Oath or Declaration [Total Sheets: 18 _____] a. ☐ Newly executed (original or copy) b. ☐ A copy from a prior application (37 CFR 1.53(d)) (for continuation/divisional with Box 18 completed) c. ☐ DELETION OF INVENTOR(S) Signed statement attached deleting inventor(s) name in the prior application, see 37 CFR 1.53(d)(2) and 1.53(b) 6. ☐ Application Data Sheet, See 37 CFR 1.76 7. ☐ CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix) ☐ Landscape Table on CD 8. Nucleotide and/or Amino Acid Sequence Submission (if applicable, items a. - c. are required) a. ☐ Computer Readable Form (CRF) b. Specification Sequence Listing on: i. ☐ CD-ROM or CD-R (2 copies); or ii. ☐ Paper c. ☐ Statements verifying identity of above copies	ACCOMPANYING APPLICATION PARTS 9. ☐ Assignment Papers (cover sheet & document(s)) Name of Assignee: _____ 10. ☐ 37 CFR 3.73(b) Statement [Power of Attorney] (when there is an assignee) 11. ☐ English Translation Document (if applicable) 12. ☐ Information Disclosure Statement (PTO/GB/08 or PTO-1449) ☐ Copies of citations attached 13. ☐ Preliminary Amendment 14. ☐ Return Receipt Postcard (MPEP 503) (Should be specifically itemized) 15. ☐ Certified Copy of Priority Document(s) (if foreign priority is claimed) 16. ☐ Nonpublication Request under 35 U.S.C. 122(b)(2)(B)(i). Applicant must attach form PTO/GB/35 or equivalent. 17. ☐ Other: _____
--	--

18. If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in the first sentence of the specification following the title, or in an Application Data Sheet under 37 CFR 1.76:

☐ Continuation ☐ Divisional ☐ Continuation-in-part (CIP) of prior application No.: _____

Prior application information: Examiner: _____ Art Unit: _____

19. CORRESPONDENCE ADDRESS

☒ The address associated with Customer Number: 34395 OR ☐ Correspondence address below

Name			
Address			
City	State	Zip Code	
Country	Telephone	Email	
Signature	Date		May 18, 2010
Name (Print/Type)	Robert W. Bergstrom	Registration No. (Attorney/Agent)	69,505

This collection of information is required by 37 CFR 1.53(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.
If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

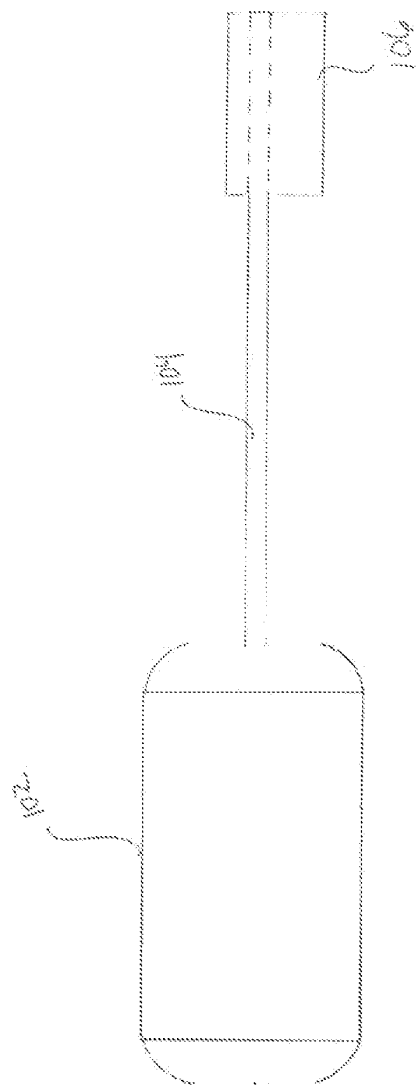


Figure 1A

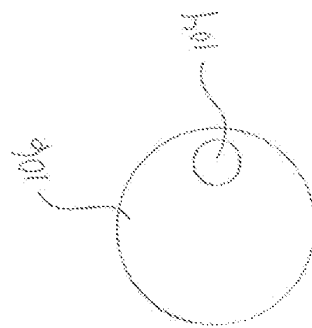
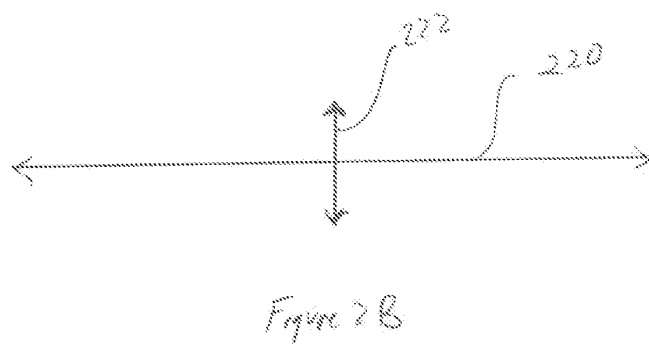
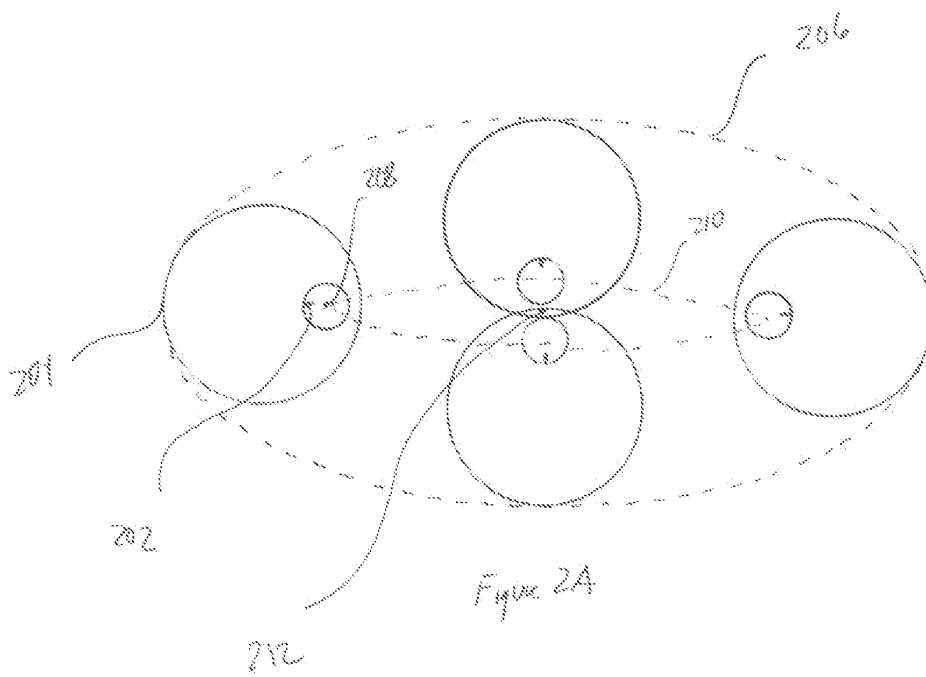


Figure 1B



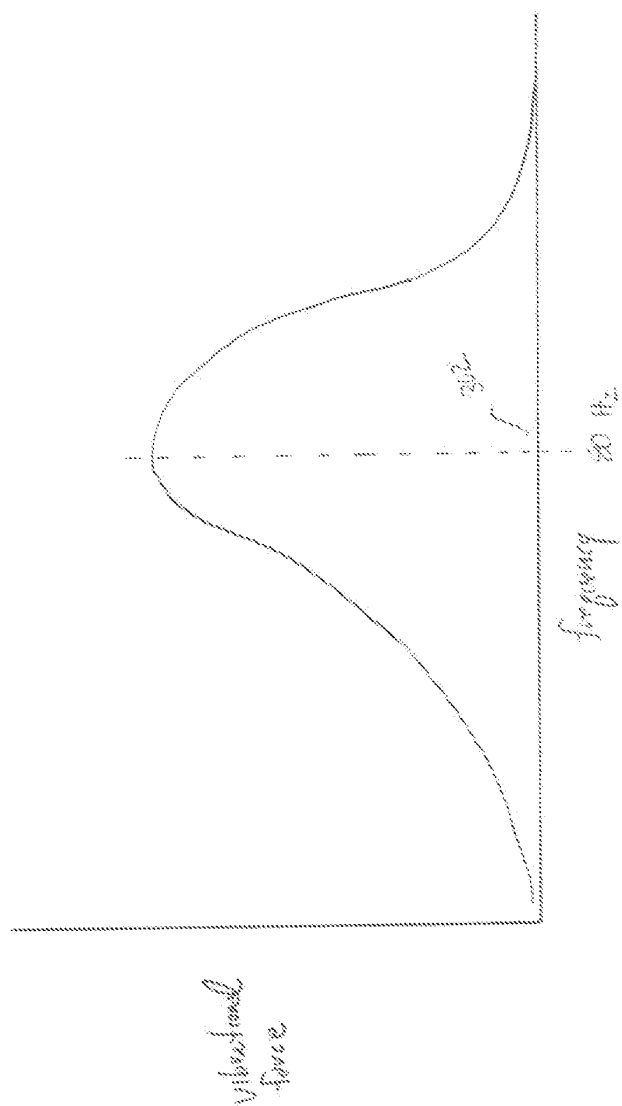
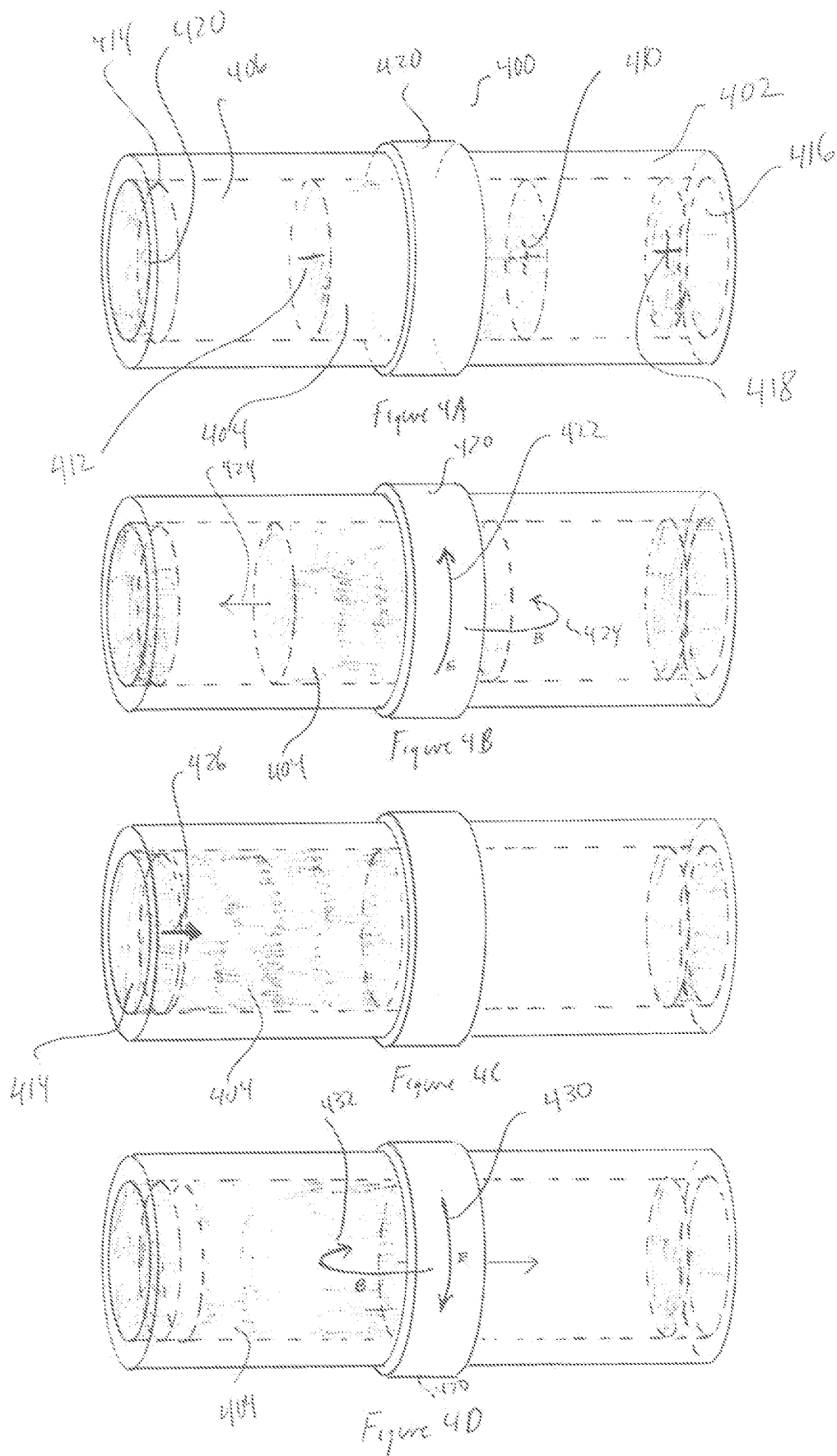


Figure 3



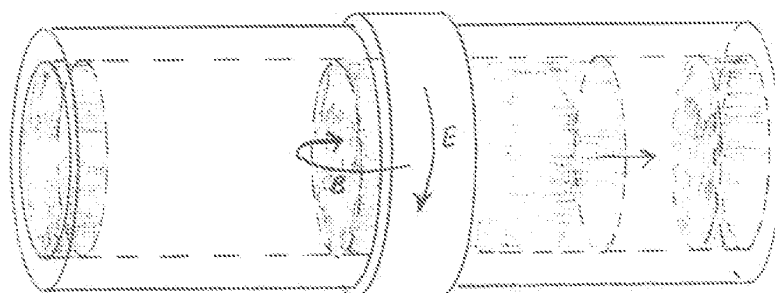


FIGURE 4E

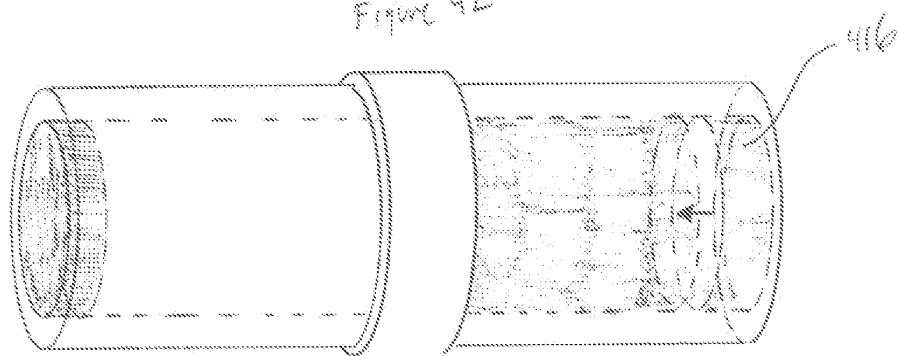


FIGURE 4F

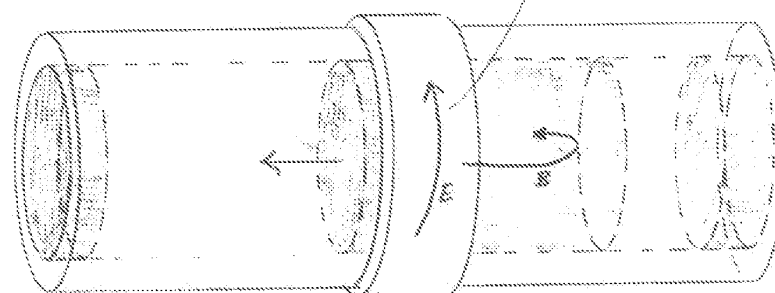


FIGURE 4G

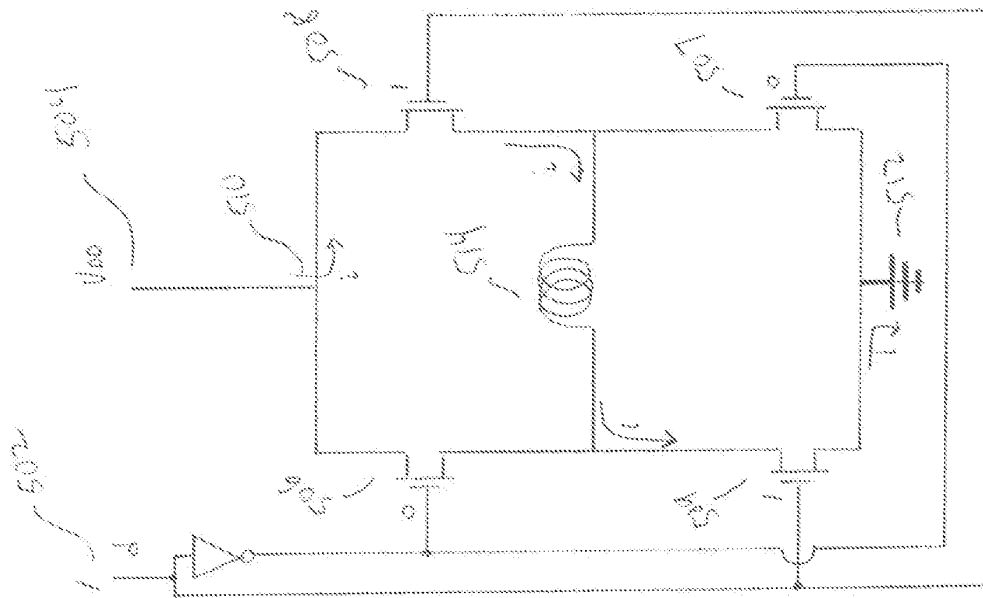


Figure 5A

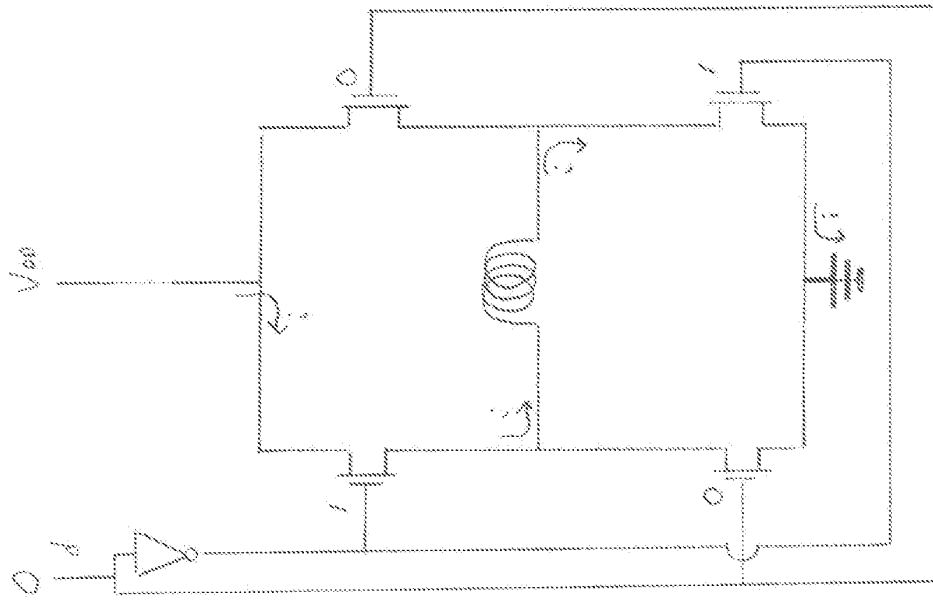


Figure 5B

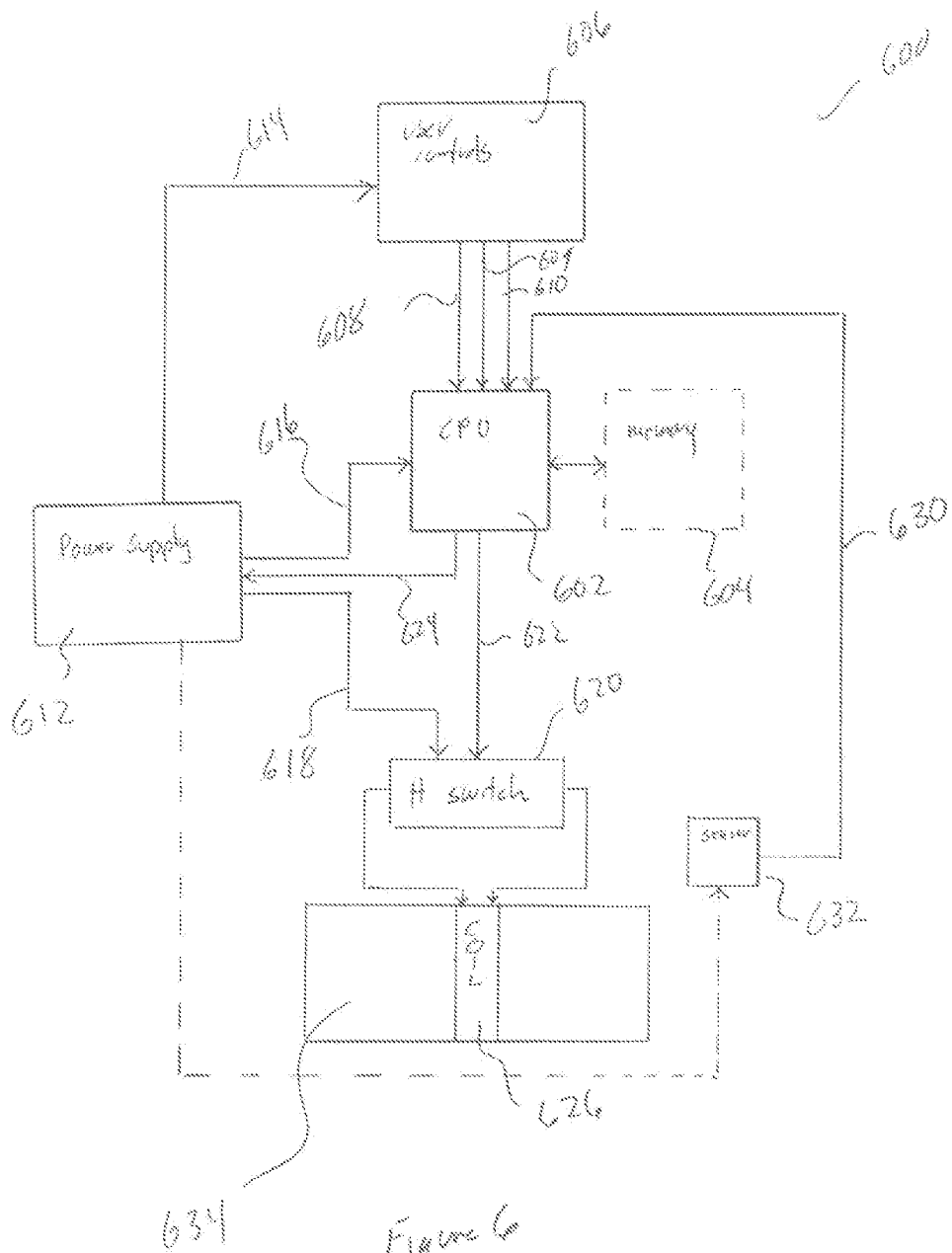


Figure 6

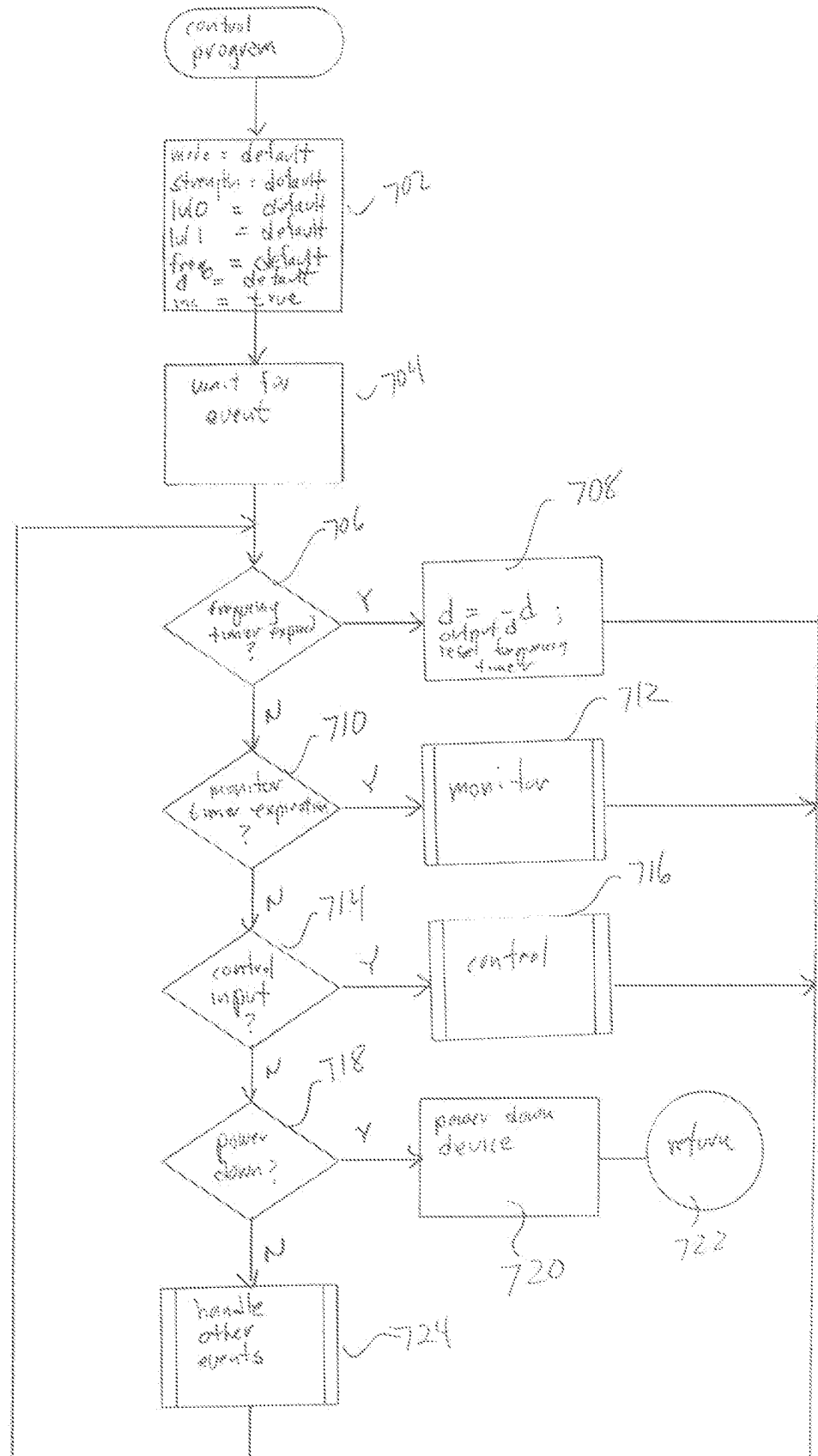
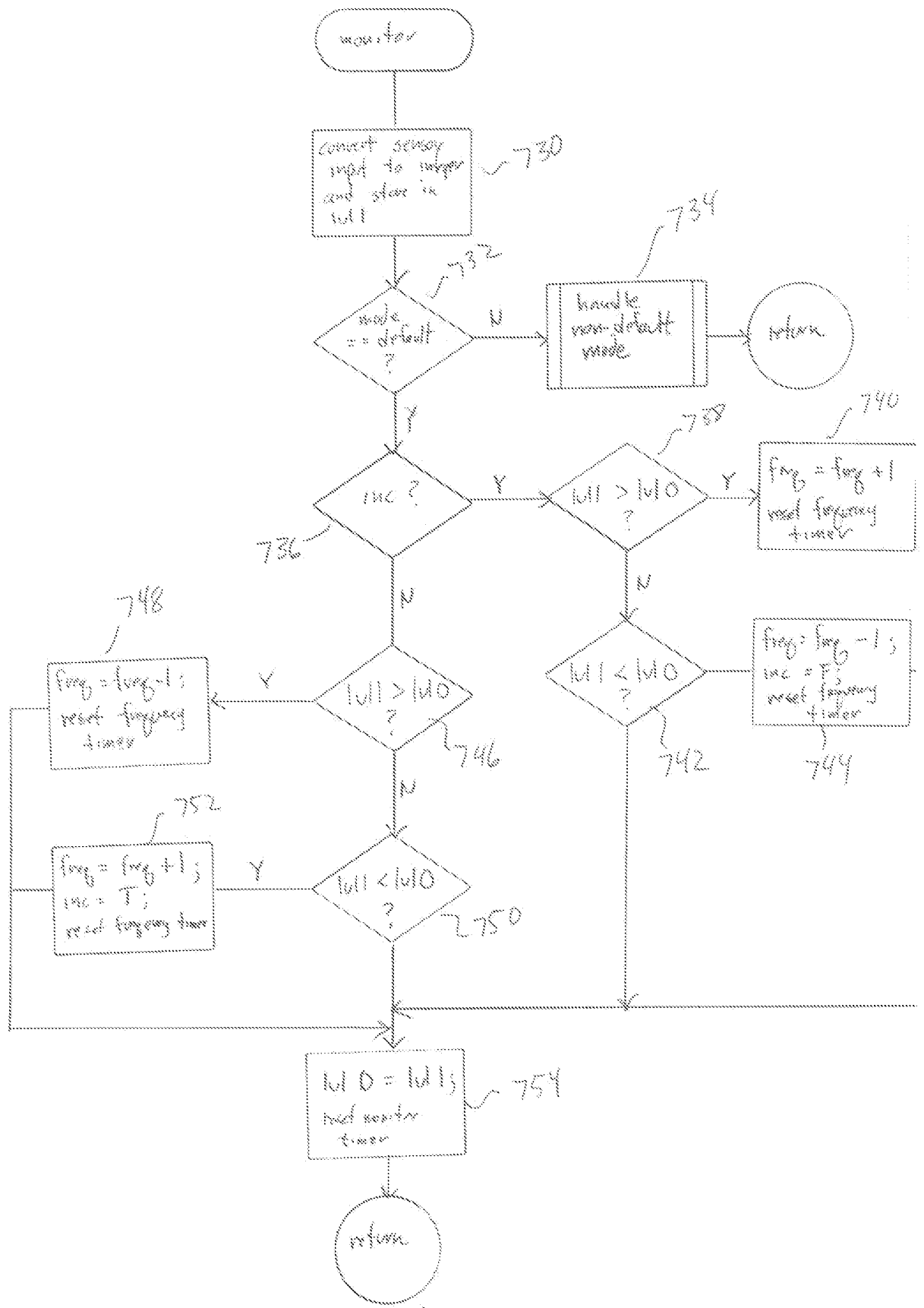


Figure 7A



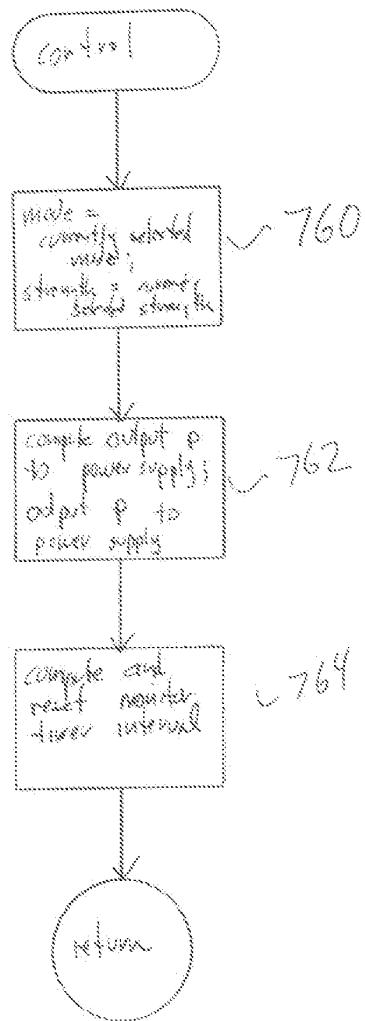


Figure 7C

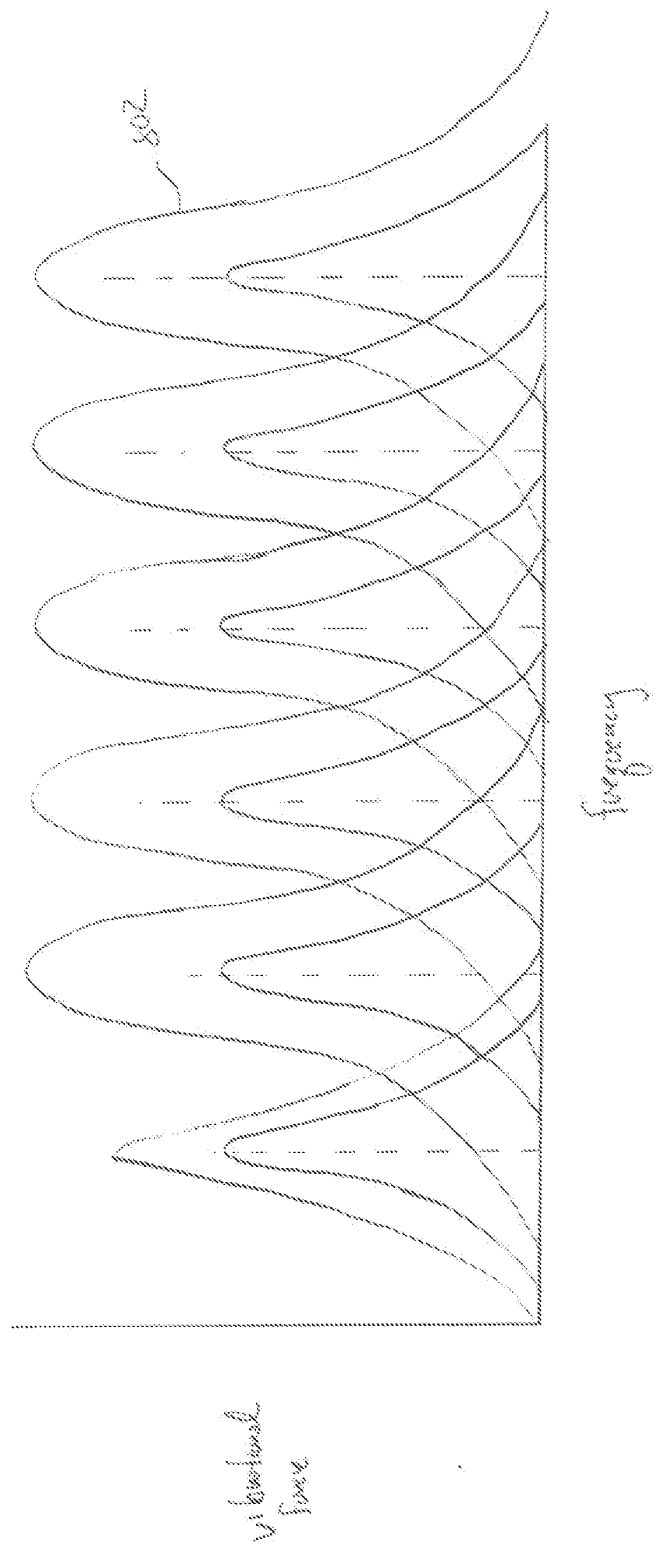


Figure 8

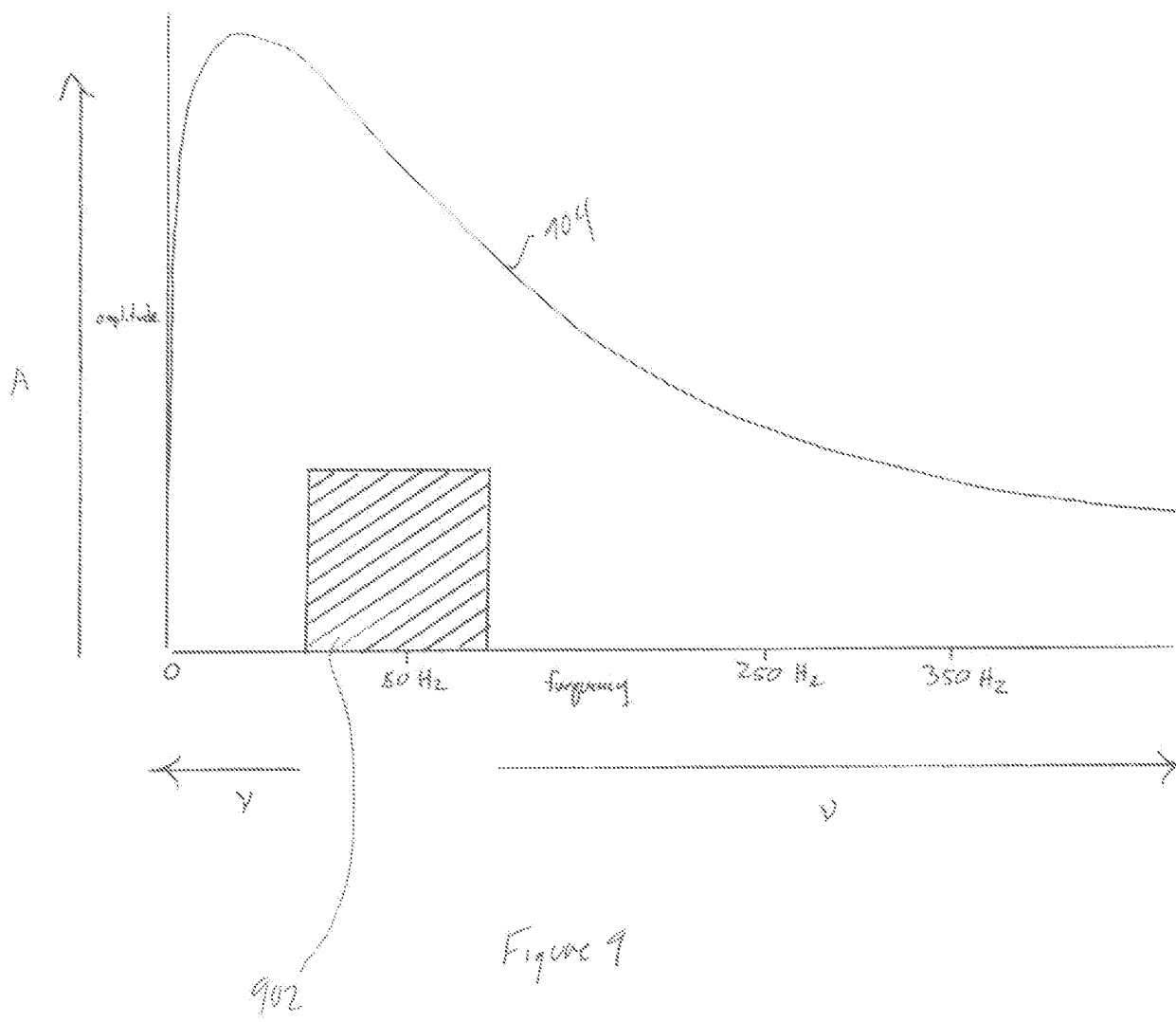


Figure 9

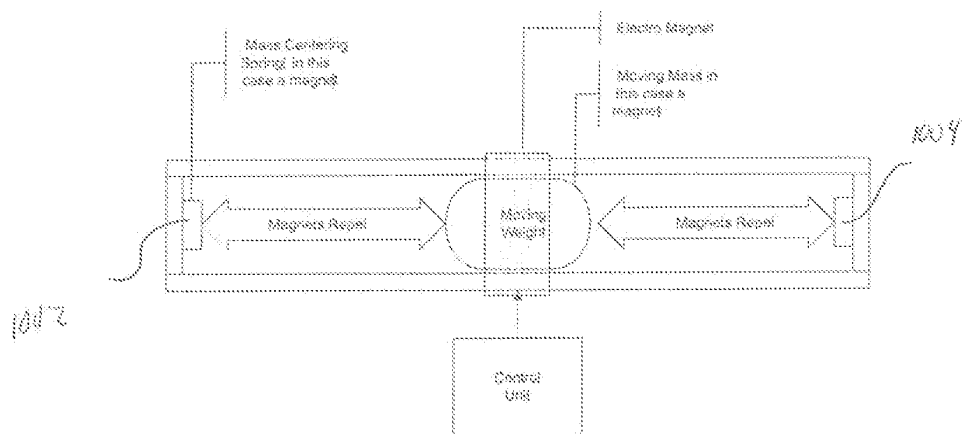


Figure 10

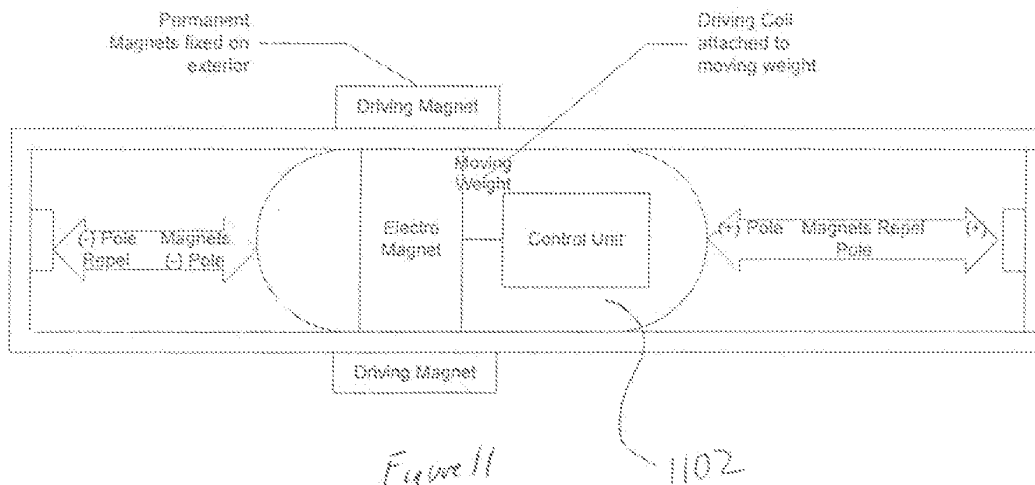


Figure 11

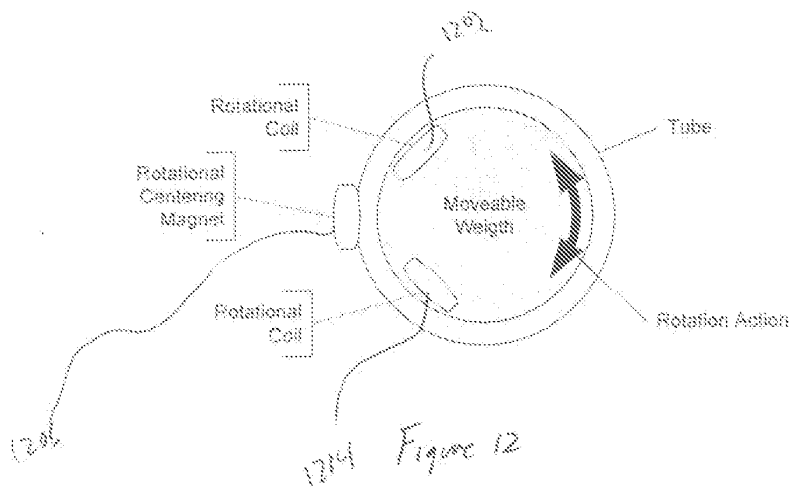
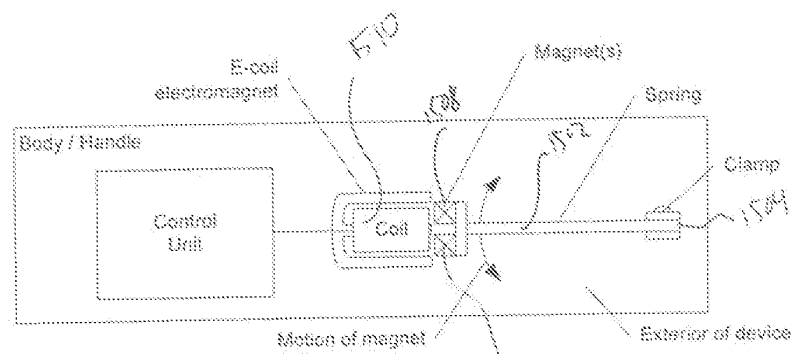
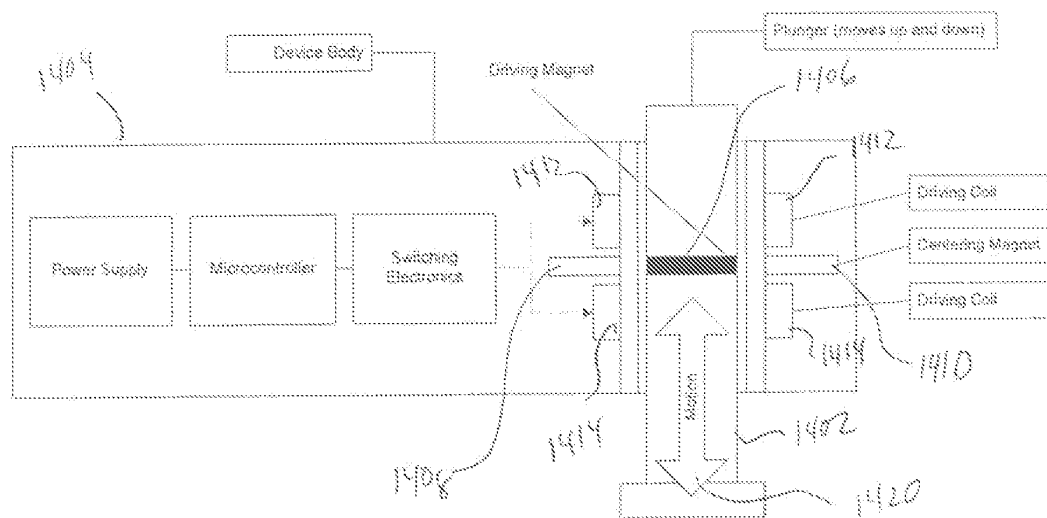
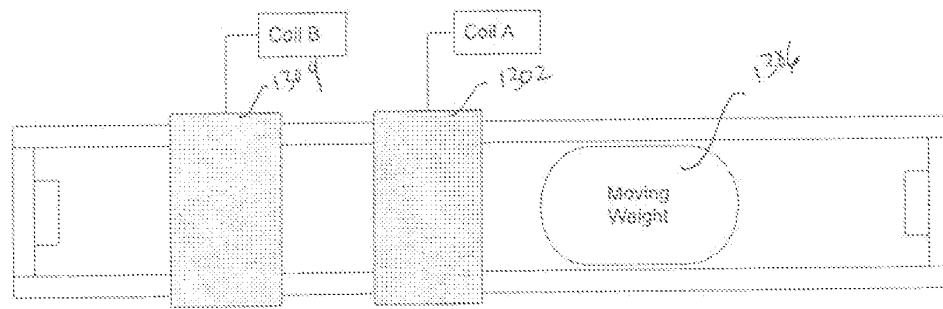
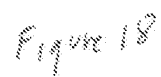
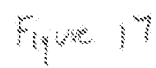
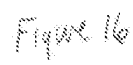


Figure 12





Electronic Acknowledgement Receipt	
EFS ID:	7639440
Application Number:	12782697
International Application Number:	
Confirmation Number:	5211
Title of Invention:	LINEAR-RESONANT VIBRATION MODULE
First Named Inventor/Applicant Name:	Robin F. Elenga
Customer Number:	34395
Filer:	Robert Walter Bergstrom/Joanne Bourguignon
Filer Authorized By:	Robert Walter Bergstrom
Attorney Docket Number:	35099.001
Receipt Date:	18-MAY-2010
Filing Date:	
Time Stamp:	22:55:04
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		35099-001-E-APP.pdf	4229744	yes	34
			b7aa7b0ec5979fa1bf9d38a59db242a8699da125		

Multipart Description/PDF files in .zip description			
Document Description		Start	End
Transmittal of New Application		1	1
Specification		2	17
Claims		18	18
Abstract		19	19
Drawings-only black and white line drawings		20	34
Warnings:			
Information:			
Total Files Size (in bytes):		4229744	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> 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. <u>National Stage of an International Application under 35 U.S.C. 371</u> 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. <u>New International Application Filed with the USPTO as a Receiving Office</u> 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.			

LINEAR-RESONANT VIBRATION MODULE

CROSS-REFERERNCCE TO RELATED APPLICATION

This application claims the benefit of Provisional Patent Application
5 No. 61/179,109, filed May 18, 2009.

TECHNICAL FIELD

The present invention is related to vibration-generating devices and, in particular, to vibration modules that can be incorporated into a wide variety of
10 different types of electromechanical devices and systems to produce vibrations of selected amplitudes and frequencies over a wide range amplitude/frequency space.

BACKGROUND

Vibration-inducing motors and mechanisms have been used for many
15 years in a wide variety of different consumer appliances, toys, and other devices and systems. Examples include vibration signals generated by pagers, vibration-driven appliances, such as hair-trimming appliances, electric toothbrushes, electric toy football games, and many other appliances, devices, and systems. The most common electromechanical system used for generating vibrations is an intentionally
20 unbalanced electric motor.

Figures 1A-B illustrate an unbalanced electric motor typically used for generating vibrations in a wide variety of different devices. As shown in Figure 1A, a small, relatively low-power electric motor 102 rotates a cylindrical shaft 104 onto which a weight 106 is asymmetrically or mounted. Figure 1B shows the weight
25 asymmetrically mounted to the shaft, looking down at the weight and shaft in the direction of the axis of the shaft. As shown in Figure 1B, the weight 106 is mounted off-center on the electric-motor shaft 104. Figures 2A-B illustrate the vibrational motion produced by the unbalanced electric motor shown in Figures 1A-B. As shown in Figures 2A-B, the asymmetrically-mounted weight creates an elliptical oscillation
30 of the end of the shaft, normal to the shaft axis, when the shaft is rotated at relatively high speed by the electric motor. Figure 2A shows displacement of the weight and shaft from the stationary shaft axis as the shaft is rotated, looking down on the weight

and shaft along the shaft axis, as in Figure 1B. In Figure 2A, a small mark 202 is provided at the periphery of the disk-shaped end of electric-motor shaft to illustrate rotation of the shaft. When the shaft rotates at high speed, a point 204 on the edge of the weight traces an ellipsoid 206 and the center of the shaft 208 traces a narrower and smaller ellipsoid 210. Were the shaft balanced, the center of the shaft would remain at a position 212 in the center of the diagram during rotation, but the presence of the asymmetrically-mounted weight attached to the shaft, as well as other geometric and weight-distribution characteristics of the electric motor, shaft, and unbalanced weight together create forces that move the end of the shaft along the elliptical path 210 when the shaft is rotated at relatively high speed. The movement can be characterized, as shown in Figure 2B, by a major axis 220 and minor axis 222 of vibration, with the direction of the major axis of vibration equal to the direction of the major axis of the ellipsoids, shown in Figure 2A, and the length of the major axis corresponding to the amplitude of vibration in this direction. In many applications, in which a linear oscillation is desired, designers seek to force the major-axis-amplitude/minor-axis-amplitude ratio to be as large as possible, but, because the vibration is produced by a rotational force, it is generally not possible to achieve linear oscillation. In many cases, the path traced by the shaft center may be close to circular. The frequency of vibration of the unbalanced electric motor is equal to the rotational frequency of the electric-motor shaft, and is therefore constrained by the rate at which the motor can rotate the shaft. At low rotational speeds, little vibration is produced.

While effective in producing vibrations, there are many problems associated with the unbalanced-electric-motor vibration-generating units, such as that shown in Figure 1A, commonly used in the various devices, systems, and applications discussed above. First, unbalancing the shaft of an electric motor not only produces useful vibrations that can be harnessed for various applications, but also produces destructive, unbalanced forces within the motor that contribute to rapid deterioration of motor parts. Enormous care and effort is undertaken to precisely balance rotating parts of motors, vehicles, and other types of machinery, and the consequences of unbalanced rotating parts are well known to anyone familiar with automobiles.

machine tools, and other such devices and systems. The useful lifetimes of many devices and appliances, particularly hand-held devices and appliances, that employ unbalanced electric motors for generating vibrations may range from a few tens of hours to a few thousands of hours of use, after which the vibrational amplitude produced by the devices declines precipitously as the electric motor and other parts deteriorate.

A second problem with unbalanced electric motors is that they are relatively inefficient at producing vibrational motion. A far greater amount of power is consumed by an unbalanced electrical motor to produce a given vibrational force than the theoretical minimum power required to produce the given vibrational force. As a result, many hand-held devices that employ unbalanced electric motors for generating vibrations quickly consume batteries during use.

A third problem with unbalanced electric motors, discussed above, is that they generally produce elliptical vibrational modes. Although such modes may be useful in particular applications, many applications can better use a linear oscillation, with greater directional concentration of vibrational forces. Linear oscillation cannot generally be produced by unbalanced electric motors.

A fourth, and perhaps most fundamental, problem associated with using unbalanced electric motors to generate vibrations is that only a very limited portion of the total vibrational-force/frequency space is accessible to unbalanced electric motors. Figure 3 shows a graph of vibrational force with respect to frequency for various types of unbalanced electric motors. The graph is shown as a continuous hypothetical curve, although, of course, actual data would be discrete. As shown in Figure 3, for relatively low-power electric motors used in hand-held appliances, only a fairly narrow range of frequencies centered about 80 Hz (302 in Figure 3) generate a significant vibrational force. Moreover, the vibrational force is relatively modest. The bulk of energy consumed by an unbalanced electric motor is used to spin the shaft and unbalanced weight and to overcome frictional and inertial forces within the motor. Only a relatively small portion of the consumed energy is translated into desired vibrational forces.

Because of the above-discussed disadvantages with the commonly employed unbalanced-electric-motor vibration-generation units, designers, manufacturers, and, ultimately, users of a wide variety of different vibration-based devices, appliances, and systems continue to seek more efficient and capable vibration-generating units for incorporation into many consumer appliances, devices, and systems.

SUMMARY

Various embodiments of the present invention comprise linear-resonant vibration modules that can be incorporated in a wide variety of appliances, devices, and systems to provide vibrational forces. The vibrational forces are produced by linear oscillation of a weight or member, in turn produced by rapidly alternating the polarity of one or more driving electromagnets. Feedback control is used to maintain the vibrational frequency of linear-resonant vibration module at or near the resonant frequency for the linear-resonant vibration module. Linear-resonant vibration modules can be designed to produce vibrational amplitude/frequency combinations throughout a large region of amplitude/frequency space.

BRIEF DESCRIPTION OF THE DRAWINGS

Figures 1A-B illustrate an unbalanced electric motor typically used for generating vibrations in a wide variety of different devices.

Figures 2A-B illustrate the vibrational motion produced by the unbalanced electric motor shown in Figures 1A-B.

Figure 3 shows a graph of vibrational force with respect to frequency for various types of unbalanced electric motors.

Figures 4A-G illustrate one particular LRVM, and operation of the particular LRVM, that represents one embodiment of the present invention.

Figures 5A-B illustrate an H-bridge switch that can be used, in various embodiments of the present invention, to change the direction of current applied to the coil that drives linear oscillation within a linear-resonance vibration module ("LRVM").

Figure 6 provides a block diagram of the LRVM, illustrated in Figures 4A-G, that represents one embodiment of the present invention.

Figures 7A-C provide control-flow diagrams that illustrate the control program, executed by the CPU, that controls operation of an LRVM that represents one embodiment of the present invention.

Figure 8 represents the range of frequencies and vibrational forces that can be achieved by different implementations of LRVM and LRVM control programs that represent embodiments of the present invention.

Figure 9 shows a plot of the amplitude/frequency space and regions in that space that can be operationally achieved by unbalanced electrical motors and by LRVMs that represent embodiments of the present invention.

Figures 10-17 show a variety of different alternative implementations of LRVMs that represent different embodiments of the present invention.

Figure 18 illustrates an enhancement of the embodiment of the present invention shown in Figure 16.

DETAILED DESCRIPTION

Embodiments of the present invention include various types of linear-resonant vibration modules ("LRVMs") that can be used within a wide variety of different types of appliances, devices, and systems, to generate vibrational forces. The LRVMs that represent embodiments of the present invention are linear in the sense that the vibrational forces are produced by a linear oscillation of a weight or component within the LRVM, rather than as a by-product of an unbalanced rotation, as in the case of currently employed unbalanced electric motors. The linear nature of the LRVM vibration-inducing motion allows the problems associated with unbalanced-electric-motor vibrators, discussed above, to be effectively addressed. An oscillating linear motion does not produce destructive forces that quickly degrade and wear out an unbalanced electric motor. A linearly oscillating mechanism is characterized by parameters that can be straightforwardly varied in order to produce vibrations of a desired amplitude and frequency over a very broad region of amplitude/frequency space. Combining a linearly oscillating vibration-inducing

mechanism with feedback control, so that the frequency of vibration falls close to the resonant frequency of the LRVM, results in optimal power consumption with respect to the amplitude and frequency of vibration produced by the LRVM. Clearly, linear oscillation within a LRVM translates into highly direction vibrational forces produced
5 by an appliance or device that incorporates the LRVM.

Figures 4A-G illustrate one particular LRVM, and operation of the particular LRVM, that represents one embodiment of the present invention. Figures 4A-G all use the same illustration conventions, next discussed with reference to Figure 4A. The LRVM includes a cylindrical housing 402 within which a solid,
10 cylindrical mass 404, or weight, can move linearly along the inner, hollow, cylindrically shaped chamber 406 within the cylindrical housing or tube 402. The weight is a magnet, in the described embodiment of the present invention, with polarity indicated by the "+" sign 410 on the right-hand end and the "-" sign 412 on the left-hand end of the weight 404. The cylindrical chamber 406 is capped by two
15 magnetic disks 414 and 416 with polarities indicated by the "+" sign 418 and the "-" sign 420. The disk-like magnets 414 and 418 are magnetically oriented opposite from the magnetic orientation of the weight 404, so that when the weight moves to either the extreme left or extreme right sides of the cylindrical chamber, the weight is repelled by one of the disk-like magnets at the left or right ends of the cylindrical
20 chamber. In other words, the disk-like magnets act much like springs, to facilitate deceleration and reversal of direction of motion of the weight and to minimize or prevent mechanical-impact forces of the weight and the end caps that close off the cylindrical chamber. Finally, a coil of conductive wire 420 girdles the cylindrical housing, or tube 402 at approximately the mid-point of the cylindrical housing.

25 Figures 4B-G illustrate operation of the LRVM shown in Figure 4A. When an electric current is applied to the coil 420 in a first direction 422, a corresponding magnetic force 424 is generated in a direction parallel to the axis of the cylindrical chamber, which accelerates the weight 404 in a first direction 424. When the weight reaches a point at or close to the corresponding disk-like magnet 414, as
30 shown in Figure 4C, a magnetic force due to the repulsion of the disk-like magnet 414 and the weight 404, 426, is generated in the opposite direction, decelerating the

weight and reversing its direction. As the weight reverses direction, as shown in Figure 4D, current is applied in an opposite direction 430 to the coil 420, producing a magnetic force 432 in an opposite direction from the direction of the magnetic force shown in Figure 4B, which accelerates the weight 404 in a direction opposite to the direction in which the weight is accelerated in Figure 4B. As shown in Figure 4E, the weight then moves rightward until, as shown in Figure 4F, the weight is decelerated, stopped, and then accelerated in the opposite direction by repulsion of the disk-like magnet 416. An electrical current is then applied to the coil 420 in the same direction 434 as in Figure 4B, again accelerating the solid cylindrical mass in the same direction as in Figure 4B. Thus, by a combination of a magnetic field with rapidly reversing polarity, generated by alternating the direction of current applied to the coil, and by the repulsive forces between the weight magnet and the disk-like magnets at each end of the hollow, cylindrical chamber, the weight linearly oscillates back and forth within the cylindrical housing 402, imparting a direction force at the ends of the cylindrical chamber with each reversal in direction.

Clearly, the amplitude of the vibration and vibrational forces produced are related to the length of the hollow chamber in which the weight oscillates, the current applied to the coil, the mass of the weight, the acceleration of the weight produced by the coil, and the mass of the entire LRVM. All of these parameters are essentially design parameters for the LRVM, and thus the LRVM can be designed to produce a wide variety of different amplitudes.

The frequency of the oscillation of the solid, cylindrical mass is determined by the frequency at which the direction of the current applied to the coil is changed. Figures 5A-B illustrate an H-bridge switch that can be used, in various embodiments of the present invention, to change the direction of current applied to the coil that drives linear oscillation within an LRVM. Figures 5A-B both use the same illustration conventions, described next with respect to Figure 5A. The H-bridge switch receives, as input, a directional signal *d* 502 and direct-current ("DC") power 504. The direction-control signal *d* 502 controls four switches 506-509, shown as transistors in Figure 5A. When the input control signal *d* 502 is high, or "1," as shown in Figure 5A, switches 508 and 509 are closed and switches 506 and 507 are

open, and therefore current flows, as indicated by curved arrows, such as curved arrow 510, from the power-source input 504 to ground 512 in a leftward direction through the coil 514. When the input-control signal *d* is low, or "0," as shown in Figure 5B, the direction of the current through the coil is reversed. The H-bridge switch, shown in Figures 5A-B, is but one example of various different types of electrical and electromechanical switches that can be used to rapidly alternate the direction of current within the coil of an LRVM.

Figure 6 provides a block diagram of the LRVM, illustrated in Figures 4A-G, that represents one embodiment of the present invention. The LRVM, in addition to the cylindrical housing, coil, and internal components shown in Figure 4A, includes a power supply, a user interface, generally comprising electromechanical buttons or switches, the H-bridge switch, discussed above with reference to Figures 5A-B, a central processing unit ("CPU"), generally a small, low-powered microprocessor, and one or more electromechanical sensors. All of these components are packaged together as an LRVM within a vibration-based appliance, device, or system.

As shown in Figure 6, the LRVM 600 is controlled by a control program executed by the CPU microprocessor 602. The microprocessor may contain sufficient on-board memory to store the control program and other values needed during execution of the control program, or, alternatively, may be coupled to a low-powered memory chip 604 or flash memory for storing the control program. The CPU receives inputs from the user controls 606 that together comprise a user interface. These controls may include any of various dials, pushbuttons, switches, or other electromechanical-control devices. As one example, the user controls may include a dial to select a strength of vibration, which corresponds to the current applied to the coil, a switch to select one of various different operational modes, and a power button. The user controls generate signals input to the CPU 608-610. A power supply 612 provides power, as needed, to user controls 614, to the CPU 616 and optional, associated memory, to the H-bridge switch 618, and, when needed, to one or more sensors 632. The voltage and current supplied by the power supply to the various components may vary, depending on the operational characteristics and

requirements of the components. The H-bridge switch 620 receives a control-signal input *d* 622 from the CPU. The power supply 612 receives a control input 624 from the CPU to control the current supplied to the H-bridge switch 618 for transfer to the coil 626. The CPU receives input 630 from one or more electromechanical sensors
5 632 that generate a signal corresponding to the strength of vibration currently being produced by the linearly oscillating mass 634. Sensors may include one or more of accelerometers, piezoelectric devices, pressure-sensing devices, or other types of sensors that can generate signals corresponding to the strength of desired vibrational forces.

10 Figures 7A-C provide control-flow diagrams that illustrate the control program, executed by the CPU, that controls operation of an LRVM that represents one embodiment of the present invention. Figure 7A provides a control-flow diagram for the high-level control program. The program begins execution, in step 702, upon a power-on event invoked by a user through a power button or other user control. In
15 step 702, various local variables are set to default values, including the variables: (1) *mode*, which indicates the current operational mode of the device; (2) *strength*, a numerical value corresponding to the current user-selected strength of operation, corresponding to the electrical current applied to the coil; (3) *lv/0*, a previously sensed vibrational strength; (4) *lv/1*, a currently sensed vibrational strength; (5) *freq*, the
20 current frequency at which the direction of current is alternated in the coil; (6) *d*, the control output to the H-bridge switch; and (7) *inc*, a Boolean value that indicates that the frequency is currently being increased. Next, in step 704, the control program waits for a next event. The remaining steps represent a continuously executing loop, or event handler, in which each event that occurs is appropriately handled by the
25 control program. In certain implementations of the control program, events may be initiated by interrupt-like mechanisms and stacked for execution while, in more primitive implementations, certain events that overlap in time may be ignored or dropped. In the implementation illustrated in Figures 7A-C, two timers are used, one for controlling the change in direction of the current applied to the coil, at a currently
30 established frequency, and the other for controlling a monitoring interval at which the control program monitors the vibrational force currently produced. Rather than using

a formal timer mechanism, certain implementations may simply employ counted loops or other simple programming techniques for periodically carrying out tasks. When an event occurs, the control program begins a series of tasks, the first of which is represented by the conditional step 706, to determine what event has occurred and

5 appropriately handle that event. When the frequency timer has expired, as determined in step 706, the value of the output signal *d* is flipped, in step 708, and output to the H-bridge switch, with the frequency timer being reset to trigger a next frequency-related event. The frequency-timer interval is determined by the current value of the variable *freq*. Otherwise, when the event is a monitor timer expiration event, as

10 determined in step 710, then a routine "monitor" is called in step 712. Otherwise, when the event corresponds to a change in the user input through the user interface, as determined in step 714, the routine "control" is called in step 716. Otherwise, when the event is a power-down event, as determined in step 718, resulting from deactivation of a power button by the user, then the control program appropriately

15 powers down the device, in step 720, and the control program terminates in step 722. Any other of various types of events that may occur are handled by a default event handler 724. These events may include various error conditions that arise during operation of the device.

Figure 7B provides a control-flow diagram for the routine "monitor,"

20 called in step 712 of Figure 7A. In step 730, the routine "monitor" converts the sensor input to an integer representing the current vibrational force produced by the LRVM and stores the integer value in the variable *h/v*. Next, in step 732, the routine "monitor" determines whether or not the LRVM is currently operating in the default mode. In the default mode, the LRVM uses continuous feedback control to optimize

25 the vibrational force produced by the LRVM by continuously seeking to operate the LRVM at a frequency as close as possible to the resonant frequency for the LRVM. Other, more complex operational modes may be handled by various more complex routines, represented by step 734 in Figure 7B. More complex vibrational modes may systematically and/or periodically alter the frequency or produce various complex,

30 multi-component vibrational modes useful in certain applications, appliances, devices, and systems. These more complex modes are application dependent, and are

not further described in the control-flow diagrams. In the case that the operational mode is the default mode, in which the control program seeks to optimize the vibrational force generated by the device, in step 736, the routine "monitor" determines whether the local variable *inc* is set to TRUE. If so, then the control program is currently increasing the frequency at which the device operates in order to obtain the resonance frequency. When *lv1* is greater than *lv0*, as determined in step 738, then the vibrational force has been recently increased by increasing the frequency, and so the routine "monitor" increases the frequency again, in step 740, and correspondingly resets the frequency timer. Otherwise, when *lv1* is less than *lv0*, as determined in step 742, then the control program has increased the frequency past the resonance frequency, and therefore, in step 744, the control program decreases the frequency, sets the variable *inc* to FALSE, and correspondingly resets the frequency timer. In similar fashion, when the variable *inc* is initially FALSE, as determined in step 736, and when *lv1* is greater than *lv0*, as determined in step 746, the routine "monitor" decreases the value stored in the variable *freq*, in step 748 and resets the frequency timer. Otherwise, when *lv1* is less than *lv0*, as determined in step 750, then the routine "monitor" increases the value stored in the variable *freq*, sets the variable *inc* to TRUE, and resets the frequency timer in step 752. Finally, the value in *lv1* is transferred to *lv0* and the monitor timer is reset, in step 754.

Figure 7C provides a control-flow diagram for the routine "control," called in step 716 in Figure 7A. This routine is invoked when a change in the user controls has occurred. In step 760, the variables *mode* and *strength* are set to the currently selected mode and vibrational strength, represented by the current states of control features in the user interface. Next, in step 762, the routine "control" computes an output value *p* corresponding to the currently selected strength, stored in the variable *strength*, and outputs the value *p* to the power supply so that the power supply outputs an appropriate current to the coil. Finally, in step 764, the routine "control" computes a new monitor timer interval and resets the monitor timer accordingly.

The control program described with reference to Figures 7A-C is one example of many different implementations of the control program that can be carried

out, depending on requirements of the LRVM, the parameters and characteristics inherent in a particular LRVM, the types of control inputs received from a particular user interface, the nature of the power supply, and the types of operational modes that are implemented for the LRVM.

5 Figure 8 represents the range of frequencies and vibrational forces that can achieved by different implementations of LRVM and LRVM control programs that represent embodiments of the present invention. Figure 8 has the same axes as the graph shown in Figure 3. However, unlike Figure 3, Figure 8 includes many different curves, such as curve 802, each representing the vibrational forces and
10 frequencies that can be obtained from a particular LRVM implementation. Again, the LRVMs that represent embodiments of the present invention generally have a resonant frequency that is characteristic of the geometry and weights of various components of the LRVM, and each LRVM is naturally operated at a frequency close to this resonant frequency in order to achieve maximum vibrational force. Thus,
15 rather than being restricted, over all possible implementations, to a relatively narrow range of frequencies and vibrational forces, as in the case of unbalanced electrical motors, LRVMs that represent embodiments of the present invention can be designed and implemented to produce desired vibrational forces over a wide range of vibrational frequencies, and desired vibrational frequencies over a wide range of
20 desired vibrational forces. The contrast is perhaps best seen in Figure 9. Figure 9 shows a plot of the amplitude/frequency space and regions in that space that can be operationally achieved by unbalanced electrical motors and by LRVMs that represent embodiments of the present invention. Unbalanced electric motors can be implemented to produce amplitude/frequency combinations roughly within the cross-hatched square region 902 within amplitude/frequency space. By contrast, LRVMs
25 can be designed and implemented to produce amplitude/frequency combinations underlying curve 904. Thus, LRVMs can achieve much higher operational frequencies and much lower operational frequencies than can be practically obtained by unbalanced electric motors, and can produce much higher amplitudes and
30 vibrational forces than can be achieved by relatively low-powered unbalanced electrical motors used in hand-held appliances and other commonly encountered

devices and systems. Furthermore, when larger vibrational forces are needed, balanced electrical motors are generally impractical or infeasible, due to the destructive forces produced within the electrical motors.

Figures 10-17 show a variety of different alternative implementations of LRVMs that represent different embodiments of the present invention. Figure 10 provides a schematic illustration of an LRVM similar to that discussed above with reference to Figure 4A. Note that, in place of the end magnets 1002 and 1004, mechanical springs may alternatively be used. These may be traditional helical springs made from metal or springs made from a compressible and durable material or mechanical device that seeks to restore its initial shape when depressed or compressed. Note that the weight and chamber may be cylindrical, in cross section, as discussed above with reference to Figure 4A, or may have other shapes, including rectangular or hexagonal cross-sections.

Figure 11 shows a similar implementation in which the control unit and power supply are incorporated into the moving mass 1102. In this implementation, the relative masses of the moving mass 1102 and remaining components of the LRVM is maximized, thus maximizing the vibrational forces produced at a given level of power consumption.

Figure 12 shows yet an alternative LRVM embodiment of the present invention. In this alternative implementation, additional coils 1202 and 1204 are incorporated in the moving mass, and a centering magnet or coil 1206 is positioned in a fixed location on the housing so that, when the direction of the current applied to the coils 1202 and 1204 is alternated, an oscillating rotational force is generated to cause the movable weight to oscillate both in a plane perpendicular to the axis of the chamber as well as linearly oscillating the direction of the chamber.

Figure 13 illustrates an embodiment in which multiple electromagnetic coils are employed. In Figure 13, two coils 1302 and 1304 are placed in two different positions on the housing. The first coil 1302 may be used to drive linear oscillation of the moving mass 1306, while the second coil may be activated in order to shorten the length of the chamber within which the moving mass linearly oscillates, essentially serving as a second repelling magnet. In this implementation of the LRVM, the

LRVM, the moving mass may linearly oscillate with at least two different amplitudes, depending on whether or not the second coil 1304 is activated to repel the moving mass. Additionally more complex patterns of current reversal in the two coils can be employed to produce complex multi-component vibrational modes of the moving
5 mass.

When the housing is fully enclosed, air within the chamber serves to dampen oscillation of the moving mass. This dampening may be minimized by providing channels, on the sides of the moving mass, to allow air to pass from one side of the moving mass to the other, by channels through the moving mass, or by
10 providing openings in the housing to allow air to be forced from the housing and drawn into the housing. Additionally, different fluids or liquids may be employed within the chamber to change the dampening effect produced by displacement of the fluids and gasses as the moving mass linearly oscillates.

Figure 14 illustrates an alternative LRVM embodiment of the present
15 invention in which a plunger linearly oscillates to produce a vibration. The plunger 1402 is oriented orthogonally to a main housing 1404 of the LRVM that includes the power supply, microcontroller, and other control components. The plunger is girdled by, or includes, a driving magnet 1406 that is attracted to, and seeks to be positioned in alignment with, a centering magnet 1408 mounted within the housing. Applying
20 current to one of two driving coils 1412 and 1414 forces the driving magnet away from the equilibrium position shown in Figure 14. By rapidly switching the direction of current applied to the driving coils, the microcontroller can control the plunger to linearly oscillate in an up-and-down fashion, as indicated by arrow 1420.

Figure 15 shows yet another LRVM embodiment of the present
25 invention. In this embodiment of the present invention, a spring-like member 1502 is clamped at one end 1504 to the housing. Driving magnets 1506 and 1508 are fixed to the spring-like member 1502, and when current is rapidly reversed in a coil 1510, the spring-like member 1502 is induced to vibrate at a relatively high frequency.

Figure 16 shows an alternative embodiment of the present invention
30 similar to the embodiment shown in Figure 15. In this embodiment, the spring member 1602 is extended to provide an external massage arm 1604 that extends out

from the housing to provide a linearly oscillating massage-foot member 1606 for massaging human skin or some other substrate, depending on the application.

Figure 17 shows a mechanical vibration adjustment feature that can be added to either of the embodiments shown in Figures 15 and 16. An adjustment screw 1702 can be manipulated to alter the position of a movable spring clamp 1704 that acts as a movable clamping point for the spring-like member 1706. Moving the movable spring clamp 1704 leftward, in Figure 17, shortens the length of the spring-like member and thus tends to increase the vibrational frequency at a particular power-consumption level. Conversely, moving the movable spring clamp rightward, in Figure 17, lengthens the spring-like member and decreases the vibrational frequency.

Figure 18 illustrates an enhancement of the embodiment of the present invention shown in Figure 16. In this embodiment, the massage foot is enhanced to include elastomer bristles 1802-1805 to transfer the linear oscillation of the massage foot to human skin or another substrate.

Although the present invention has been described in terms of particular embodiments, it is not intended that the invention be limited to these embodiments. Modifications will be apparent to those skilled in the art. For example, as discussed above, LRVMs can be designed to produce desired vibrational amplitudes and frequencies over a wide region of amplitude/frequency space by varying various different design parameters and characteristics, including the amplitude of a moving mass that linearly oscillates within the LRVM, altering the dimensions of the LRVM and internal components of the LRVM, altering the weight of the moving mass and other components of the LRVM, changing the ratio of the moving mass to the ratio of the remaining components of the LRVM, increasing or decreasing the number of turns in the coil or coils used to drive linear oscillation, increasing or decreasing the current supply to the coils, altering the dampening produced by displacement of fluid or gas by the moving mass within the LRVM as well as by various additional frictional forces, altering the strength of the end-cap magnets or mechanical springs used to facilitate reversal of direction of the moving mass, and by changing any of various additional parameters and characteristics. Any

of various different microprocessors and other microcontrollers can be used in alternative embodiments of the LRVM, as well as different power supplies, current-switching devices, and other components. The control program executed by the LRVM can be implemented in many different ways by varying any of many different design parameters, including programming language, control structures, data structures, modular organization, and other such design parameters. The components of the LRVM, including the housing, moving mass, fixed magnets, and electromagnets, can be fashioned from many different types of materials, from polymers and plastics to metals and alloys in various composite materials. LRVMs may contain one, two, or more electromagnets and/or permanent magnets in order to produce linear oscillation of a moving mass or spring-like mass, and various different control programs can be implemented to produce many different types of single-component and multi-component vibrational modes, some of which may regularly or erratically change, over time, to produce a wide variety of different types of vibrational characteristics. An additional housing made from a material with a relatively large magnetic permeability can be added to various embodiments of the present invention to concentrate and increase the linear magnetic forces produced by the various coils.

The foregoing description, for purposes of explanation, used specific nomenclature to provide a thorough understanding of the invention. However, it will be apparent to one skilled in the art that the specific details are not required in order to practice the invention. The foregoing descriptions of specific embodiments of the present invention are presented for purpose of illustration and description. They are not intended to be exhaustive or to limit the invention to the precise forms disclosed. Many modifications and variations are possible in view of the above teachings. The embodiments are shown and described in order to best explain the principles of the invention and its practical applications, to thereby enable others skilled in the art to best utilize the invention and various embodiments with various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the following claims and their equivalents:

CLAIMS

1. A linear resonant vibration module comprising:
 - a housing including a chamber;
 - 5 a magnetic weight that moves linearly within the chamber;
 - a first end magnet oriented to repel the magnetic weight, closing a first end of the chamber;
 - a second end magnet oriented to repel the magnetic weight, closing a second end of the chamber;
 - 10 a driving electromagnet, fixed to the housing; and
 - control components that apply current that periodically alternates, in direction, to the coil to linearly oscillate the magnetic weight within the chamber in order to produce vibrational forces.

ABSTRACT OF THE DISCLOSURE

Various embodiments of the present invention comprise linear-resonant
5 vibration modules that can be incorporated in a wide variety of appliances, devices, and
systems to provide vibrational forces. The vibrational forces are produced by linear
oscillation of a weight or member, in turn produced by rapidly alternating the polarity of one
or more driving electromagnets. Feedback control is used to maintain the vibrational
frequency of linear-resonant vibration module at or near the resonant frequency for the linear-
10 resonant vibration module. Linear-resonant vibration modules can be designed to produce
vibrational amplitude/frequency combinations throughout a large region of
amplitude/frequency space.

Date: 05/18/10

PTO/SB/06 (12-04)

Approved for use through 7/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD					Application or Docket Number 12/782,697	
Substitute for Form PTO-875						
APPLICATION AS FILED – PART I						
(Column 1)		(Column 2)		SMALL ENTITY		OR
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	82	N/A	
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	270	N/A	
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	110	N/A	
TOTAL CLAIMS (37 CFR 1.16(j))	4		x\$26		x\$52	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	1	minus 3 = *	x\$110		x\$220	
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$270 (\$135 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR					
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))			195		390	
			TOTAL	462	TOTAL	
* If the difference in column 1 is less than zero, enter "0" in column 2.						
APPLICATION AS AMENDED – PART II						
(Column 1)		(Column 2)		SMALL ENTITY		OR
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OTHER THAN SMALL ENTITY
Total (37 CFR 1.16(j))	*	Minus **	=	X =		X =
Independent (37 CFR 1.16(h))	*	Minus ***	=	X =		X =
Application Size Fee (37 CFR 1.16(s))						
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))				N/A		N/A
				TOTAL ADD'T FEE		TOTAL ADD'T FEE
(Column 1)		(Column 2)		SMALL ENTITY		OR
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OTHER THAN SMALL ENTITY
Total (37 CFR 1.16(j))	*	Minus **	=	X =		X =
Independent (37 CFR 1.16(h))	*	Minus ***	=	X =		X =
Application Size Fee (37 CFR 1.16(s))						
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))				N/A		N/A
				TOTAL ADD'T FEE		TOTAL ADD'T FEE
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.						

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.