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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/631,903	08/07/2012	8236145	3034.002	2825

36790 7590 07/18/2012
TILLMAN WRIGHT, PLLC
PO BOX 49309
CHARLOTTE, NC 28277-0076

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 228 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):

Frank PETROSINO, Concord, NC;

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/631,903	12/07/2009	Frank PETROSINO	3034.002	2825
36790 7590 07/07/2012 TILLMAN WRIGHT, PLLC PO BOX 49309 CHARLOTTE, NC 28277-0076			EXAMINER BELL, BRUCE F	
			ART UNIT 1759	PAPER NUMBER
			MAIL DATE 07/07/2012	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.

Response to Rule 312 Communication	Application No. 12/631,903	Applicant(s)
	Examiner	Art Unit

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

1. ☒ The amendment filed on 29 June 2012 under 37 CFR 1.312 has been considered, and has been:

a) ☒ entered.

b) ☐ entered as directed to matters of form not affecting the scope of the invention.

c) ☐ disapproved because the amendment was filed after the payment of the issue fee.

Any amendment filed after the date the issue fee is paid must be accompanied by a petition under 37 CFR 1.313(c)(1) and the required fee to withdraw the application from issue.

d) ☐ disapproved. See explanation below.

e) ☐ entered in part. See explanation below.



Publishing Division

PART B - FEE(S) TRANSMITTAL

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

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

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.

36790 7590 03/29/2012
TILLMAN WRIGHT, PLLC
PO BOX 49309
CHARLOTTE, NC 28277-0076

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.
12/631,903	12/07/2009	Frank PETROSINO	3034.002	2825

TITLE OF INVENTION: ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE

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	06/29/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
BELL, BRUCE F	1759	204-196370

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363). <input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached. <input type="checkbox"/> "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.	1 <u>Tillman Wright, PLLC</u> 2 <u>James D. Wright</u> 3 <u>Chad D. Tillman</u>
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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 _____ (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 /David R. Higgins/

Date June 29, 2012

Typed or printed name David R. Higgins

Registration No. 59,736

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	12/631,903	Confirmation No.	2825
Inventor	:	Petrosino, Frank		
Filed	:	December 7, 2009		
TC/AU	:	1759		
Examiner	:	Bell, Bruce F.		
Docket No.	:	3034.002		
Customer No.	:	36790		

June 29, 2012

Via EFS-Web

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RESPONSE TO NOTICE TO FILE CORRECTED APPLICATION PAPERS

Applicant submits this paper in response to the Notice to File Corrected Application Papers of May 3, 2012 and in conjunction with payment of the issue fee in response to the Notice of Allowance dated March 29, 2012.

The sections of this paper appear on the following pages.

<u>Section(s)</u>	<u>Page(s)</u>
Amendments to the Specification	2
Remarks	3

Amendments to the Specification

In paragraph [0020] of the specification as originally filed, please insert the following subparagraph after the subparagraph describing FIG. 3C and before the subparagraph describing FIG. 4A:

FIG. 3D is a front cross-sectional view of the inlet connection of FIG. 3A, taken along line 3D-3D and focusing on the inlet and inlet connection;

Remarks

Applicant submits this paper in response to the Notice to File Corrected Application Papers of May 3, 2012. In the Notice, it was noted that the drawings of the application included "FIG. 3D," but that there was no description of FIG. 3D in the section entitled "BRIEF DESCRIPTION OF THE DRAWINGS."

In response, the Applicant has inserted a new subparagraph, in the above-referenced section, between the subparagraphs describing FIG. 3C and FIG. 4A. The language of this subparagraph is taken directly from the specification, which (as originally filed) reads in part, in paragraph [0034]:

FIG. 3D is a front cross-sectional view of the inlet connection of FIG. 3A, taken along line 3D-3D and focusing on the inlet **17** and inlet connection **16**.

In accordance with 37 CFR §1.121(f), Applicant submits that no new matter is added by any of the amendments made herein.

Respectfully submitted,
Tillman Wright, PLLC

/James D. Wright/

James D. Wright

Reg. No. 43,291
Tel.: 704-248-6155
Fax: 877-248-5100



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/631,903	12/07/2009	Frank PETROSINO	3034.002	2825
36790 7590 05/03/2012 TILLMAN WRIGHT, PLLC PO BOX 49309 CHARLOTTE, NC 28277-0076			EXAMINER BELL, BRUCE F	
			ART UNIT 1759	PAPER NUMBER
			MAIL DATE 05/03/2012	DELIVERY MODE PAPER

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Application No. : 12631903
Applicant : Petrosino
Filing Date : 12/07/2009
Date Mailed : 05/03/2012

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Notice of Allowance Mailed

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given 2 month(s) from the mail date of this Notice, or the time remaining from the Notice of Allowance and Fee(s) Due, whichever is longer, within which to respond.

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED. **This period for reply is NOT extendable under 37 CFR 1.136(a).**

See attachment(s).

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/David Mertens/
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(571) 272-4200

IDENTIFICATION OF SPECIFICATION/DRAWING INCONSISTENCIES

- ☐ On Page of the specification there is a brief description of FIG. , but the drawings filed do not include a drawing with that designation. Applicant must respond either by supplying the omitted drawing or by amending the specification to remove all references to that drawing.
- ☒ The drawings filed 12/07/2009 include FIG. 3D, but the specification's brief description of the drawings does not describe a drawing with that designation. Applicant must respond either by amending the specification to add a brief description of that drawing or by correcting the drawings to remove the drawing in question.
- ☐ Drawings are present in the application and are referred to in the detailed description of the invention, but the specification does not contain a brief description of the drawings as required by 37 CFR 1.74 and 37 CFR 1.77(b)(8).
- ☐ Page of the specification refers to FIG. , but no drawing with that designation is described in the brief description of the drawings and no drawing with that designation is present in the application. Applicant must respond either by amending the specification to remove all references to that drawing, or by supplying that drawing and amending the specification to add a brief description of it.
- ☐ OTHER:
- ☐ COMMENTS:

Electronic Patent Application Fee Transmittal				
Application Number:		12631903		
Filing Date:		07-Dec-2009		
Title of Invention:		ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE		
First Named Inventor/Applicant Name:		Frank PETROSINO		
Filer:		David R. Higgins		
Attorney Docket Number:		3034.002		
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:	13141117
Application Number:	12631903
International Application Number:	
Confirmation Number:	2825
Title of Invention:	ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE
First Named Inventor/Applicant Name:	Frank PETROSINO
Customer Number:	36790
Filer:	David R. Higgins
Filer Authorized By:	
Attorney Docket Number:	3034.002
Receipt Date:	29-JUN-2012
Filing Date:	07-DEC-2009
Time Stamp:	13:21:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$1170
RAM confirmation Number	12192
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Issue Fee Payment (PTO-85B)	2012-06-29_3034-002_Issue-Fee-Payment.pdf	114603 10229ae157a12252c2a485ceef4de5701cc035c2	no	1
Warnings:					
Information:					
2		2012-06-29_3034-002_Response-to-NTFCAP.pdf	188584 eb79d88e906824e5fe5e7ce50d4cc40448e48a1f	yes	6
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Post Allowance Communication - Incoming		1	1	
	Specification		2	2	
	Applicant Arguments/Remarks Made in an Amendment		3	3	
	Post Allowance Communication - Incoming		4	6	
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	31791 30a7e7f97e8b7045a1294a615573220afa9057ee	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			334978		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					



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12/631,903	12/07/2009	Frank PETROSINO	3034.002	2825
36790 7590 05/03/2012 TILLMAN WRIGHT, PLLC PO BOX 49309 CHARLOTTE, NC 28277-0076			EXAMINER BELL, BRUCE F	
			ART UNIT 1759	PAPER NUMBER
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Application No. : 12631903
Applicant : Petrosino
Filing Date : 12/07/2009
Date Mailed : 05/03/2012

NOTICE TO FILE CORRECTED APPLICATION PAPERS

Notice of Allowance Mailed

This application has been accorded an Allowance Date and is being prepared for issuance. The application, however, is incomplete for the reasons below.

Applicant is given 2 month(s) from the mail date of this Notice, or the time remaining from the Notice of Allowance and Fee(s) Due, whichever is longer, within which to respond.

The informalities requiring correction are indicated in the attachment(s). If the informality pertains to the abstract, specification (including claims) or drawings, the informality must be corrected with an amendment in compliance with 37 CFR 1.121 (or, if the application is a reissue application, 37 CFR 1.173). Such an amendment may be filed after payment of the issue fee if limited to correction of informalities noted herein. See Waiver of 37 CFR 1.312 for Documents Required by the Office of Patent Publication, 1280 Off. Gaz. Patent Office 918 (March 23, 2004). In addition, if the informality is not corrected until after payment of the issue fee, for purposes of 35 U.S.C. 154(b)(1)(iv), "all outstanding requirements" will be considered to have been satisfied when the informality has been corrected. A failure to respond within the above-identified time period will result in the application being ABANDONED. **This period for reply is NOT extendable under 37 CFR 1.136(a).**

See attachment(s).

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- ☐ OTHER:
- ☐ COMMENTS:



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NOTICE OF ALLOWANCE AND FEE(S) DUE

36790 7590 03/29/2012
TILLMAN WRIGHT, PLLC
PO BOX 49309
CHARLOTTE, NC 28277-0076

EXAMINER

BELL, BRUCE F

ART UNIT

PAPER NUMBER

1759

DATE MAILED: 03/29/2012

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/631,903	12/07/2009	Frank PETROSINO	3034.002	2825

TITLE OF INVENTION: ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE

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	06/29/2012

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

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

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Certificate of Mailing or Transmission

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/631,903	12/07/2009	Frank PETROSINO	3034.002	2825

TITLE OF INVENTION: ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE

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	06/29/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
BELL, BRUCE F	1759	204-196370

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363). <input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached. <input type="checkbox"/> "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 <div style="display: flex; justify-content: space-between;"> <div style="width: 80%;"> (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. </div> <div style="width: 15%; text-align: right;"> 1 _____ 2 _____ 3 _____ </div> </div>
--	---

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 _____ (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.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/631,903	12/07/2009	Frank PETROSINO	3034.002	2825

36790 7590 03/29/2012
TILLMAN WRIGHT, PLLC
PO BOX 49309
CHARLOTTE, NC 28277-0076

EXAMINER

BELL, BRUCE F

ART UNIT	PAPER NUMBER
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1759

DATE MAILED: 03/29/2012

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 237 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 237 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)	
	12/631,903	PETROSINO, FRANK	
	Examiner	Art Unit	
	BRUCE BELL	1759	

-- 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 the amendment dated 2/29/12 and examiners amendment of 3/21/12.
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 1-12,20 and 21.
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)

<ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date ____ 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material 	<ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>3/21/12</u>. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other ____.
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Continuation of Identification of prior art discussed: Discussed that claims 22 -26 are directed to another invention and that an election/restriction would be needed unless these claims were cancelled in order to allow the remaining claims. Mr. Wright gave me authorization to cancel claims 22-26 to pass the application to issue.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. James Wright on March 21, 2012.

The application has been amended as follows:

Please cancel claims 22-26 without prejudice. Applicant retains the right to file these claims in a continuing application.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRUCE BELL whose telephone number is (571)272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey T. Barton can be reached on 571 272-1307. 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.

BFB
March 21, 2012

/Bruce F. Bell/
Primary Examiner, Art Unit 1759


Search Notes 	Application/Control No. 12631903	Applicant(s)/Patent Under Reexamination PETROSINO, FRANK
	Examiner BRUCE BELL	Art Unit 1759

SEARCHED			
Class	Subclass	Date	Examiner
204	196.1, 196.17, 196.18, 196.19, 196.21, 196.23, 196.24, 196.25, 196.3, 196.31, 196.36, 196.37	10/19/11	BB
205	730, 732, 733, 740	10/19/11	BB

SEARCH NOTES		
Search Notes	Date	Examiner
East Search	10/19/11	BB
Inventor Search	10/19/11	BB
updated search	3/21/12	BB

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner
204	196.1, 196.17, 196.18, 196.19, 196.21, 196.23, 196.24, 196.25, 196.3, 196.31, 196.36, 196.37	3/21/12	BB
205	730, 732, 733, 740	3/21/12	BB

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<i>Index of Claims</i> 	Application/Control No. 12631903	Applicant(s)/Patent Under Reexamination PETROSINO, FRANK
	Examiner BRUCE BELL	Art Unit 1759


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

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant				<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47	
CLAIM		DATE							
Final	Original	10/24/2011	03/22/2012						
1	1	✓	=						
2	2	✓	=						
3	3	✓	=						
4	4	✓	=						
5	5	✓	=						
6	6	✓	=						
7	7	✓	=						
8	8	✓	=						
9	9	✓	=						
10	10	✓	=						
11	11	✓	=						
12	12	✓	=						
	13	✓	-						
	14	✓	-						
	15	✓	-						
	16	✓	-						
	17	✓	-						
	18	✓	-						
	19	✓	-						
13	20		=						
14	21		=						
	22		-						
	23		-						
	24		-						
	25		-						
	26		-						

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

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	26	(engine heat exchange or radiator) with sacrificial anode	US-PGPUB; USPAT	ADJ	ON	2012/03/21 16:00
L2	0	(engine adj5 heat exchanger) with sacrificial anode	US-PGPUB; USPAT	ADJ	ON	2012/03/21 16:02
L3	104	(heat exchanger) with sacrificial anode	US-PGPUB; USPAT	ADJ	ON	2012/03/21 16:02
L4	10	(cooling system) with sacrificial anode	US-PGPUB; USPAT	ADJ	ON	2012/03/21 16:03
L5	12	(auto or automobile or car) with (radiator) with sacrificial anode	US-PGPUB; USPAT	ADJ	ON	2012/03/21 16:07
L6	7	(radiator) with metal core with (container or tank or vessel)	US-PGPUB; USPAT	ADJ	ON	2012/03/21 16:09
L7	7	(heat exchanger) with metal core with (container or tank or vessel)	US-PGPUB; USPAT	ADJ	ON	2012/03/21 16:09

3/ 21/ 2012 4:10:22 PM**C:\Users\bbell\Documents\EAST\Workspaces\Bruce's Default.wsp**

Issue Classification 	Application/Control No. 12631903	Applicant(s)/Patent Under Reexamination PETROSINO, FRANK
	Examiner BRUCE BELL	Art Unit 1759

ORIGINAL						INTERNATIONAL CLASSIFICATION													
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED								
204		196.37				C	2	3	F	13 / 10 (2006.01.01)									
CROSS REFERENCE(S)						C	2	3	F	13 / 18 (2006.01.01)									
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																		
204	196.1	196.17	196.18	196.19	196.21														
204	196.23	196.24	196.24	196.25	196.3														
204	196.36	196.15	196.2																
205	730	732	733	740															

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant <input type="checkbox"/> CPA <input type="checkbox"/> T.D. <input type="checkbox"/> R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1		17												
2	2		18												
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9	9		25												
10	10		26												
11	11														
12	12														
	13														
	14														
	15														
	16														

NONE		Total Claims Allowed:	
		14	
(Assistant Examiner)	(Date)		
/BRUCE BELL/ Primary Examiner.Art Unit 1759	3/21/12	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	12/631,903	Confirmation No.	2825
Inventor	:	Petrosino, Frank		
Filed	:	December 7, 2009		
TC/AU	:	1759		
Examiner	:	Bell, Bruce F.		
Docket No.	:	3034.002		
Customer No.	:	36790		

February 29, 2012

Via EFS-Web

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

AMENDMENT PURSUANT TO 37 C.F.R. § 1.111

Applicant submits this paper in response to the Office Action of October 31, 2011. A petition for a one month extension of time, and the appropriate fee, are submitted concurrently herewith.

The sections of this paper appear on the following pages.

<u>Section(s)</u>	<u>Page(s)</u>
Amendments to the Claims	2-4
Remarks	5-8

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the application.

Claim 1 (original): An electrolysis prevention device, for preventing corrosion caused by electrolysis, comprising:

- a sacrificial anode made of an active metal; and
 - an anode holder supporting the sacrificial anode;
- wherein the holder is adapted to fit around the inlet connection of an engine heat exchange component in such a way as to allow for a hose to be attached overtop the device.

Claim 2 (original): The electrolysis prevention device of claim 1 wherein the sacrificial anode is made of aluminum.

Claim 3 (original): The electrolysis prevention device of claim 1 wherein the sacrificial anode is made of magnesium.

Claim 4 (original): The electrolysis prevention device of claim 1 wherein the sacrificial anode is made of zinc.

Claim 5 (previously presented): The electrolysis prevention device of claim 1 wherein the anode holder is grounded to a vehicle.

Claim 6 (previously presented): The electrolysis prevention device of claim 1 wherein an end of the anode holder is attached to an additional wire positioning the sacrificial anode further down into the flow of liquid coolant within the engine heat exchange component.

Claim 7 (previously presented): The electrolysis prevention device of claim 1 wherein the anode holder is connected to the engine heat exchange component by a clamp.

Claim 8 (original): The electrolysis prevention device of claim 1 wherein the engine heat exchange component is a radiator.

Claim 9 (original): The electrolysis prevention device of claim 1 wherein the engine heat exchange component is a heater core.

Claim 10 (previously presented): A radiator with the electrolysis prevention device of claim 1 in proximity to an inlet connection thereof.

Claim 11 (previously presented): A heater core with the electrolysis prevention device of claim 1 in proximity to an inlet connection thereof.

Claim 12 (original): A method of preventing corrosion of an engine heat exchange component comprising adding or installing a sacrificial anode assembly within the heat exchange component adjacent an inlet thereof.

Claims 13-19 (canceled)

Claim 20 (new): An electrolysis prevention device, for preventing corrosion caused by electrolysis, comprising:

- a sacrificial anode made of an active metal; and

- an anode holder supporting the sacrificial anode;

- wherein the holder is adapted to fit through and around the inlet connection of an engine heat exchange component in such a way as to allow for a hose to be attached to and around the inlet connection without dislodging the holder.

Claim 21 (new): A engine heat exchange component with the electrolysis prevention device of claim 20 installed such that the holder of the device extends through, and is doubled back around, the inlet connection and the sacrificial anode is disposed in proximity to the inlet connection.

Claim 22 (new): An engine heat exchange component, comprising:

- a metal core and/or tank;
- a metal protrusion extending from the metal core or tank for mounting the engine heat exchange component to a metal vehicle frame; and
- a sheathing of durable insulating material surrounding the metal protrusion to prevent electrolysis between the metal protrusion and the metal vehicle frame.

Claim 23 (new): The engine heat exchange component of claim 22, further comprising an O-ring surrounding the sheathing and the protrusion to insulate the engine heat exchange component from vibration and other effects.

Claim 24 (original): The engine heat exchange component of claim 22, wherein the durable insulating material is rubber.

Claim 25 (original): The engine heat exchange component of claim 22, wherein the durable insulating material is plastic.

Claim 26 (new): The engine heat exchange component of claim 22, wherein the sheathing is shrink-wrapped around the protrusion.

Remarks

Applicant files these remarks in response to the Office Action of October 31, 2011. In the Office Action, Claims 1, 4-11, 15, 17, and 19 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 4,776,392 to Loyd (“Loyd”). Claims 12 and 13 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,649,591 to Green (“Green”). Finally, Claims 2, 3, 14, 16, and 18 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Loyd in combination with Green.

After the amendments made herein, Claims 1-12 and 20-26 are now presented for examination. Of these claims, only three claims are independent. Thus, no additional claim fees are believed due at this time.

In accordance with 37 CFR §1.121(f), Applicant submits that no new matter is added by any of the amendments made herein.

Independent Claim 1

Independent Claim 1 recites an electrolysis prevention device. In addition to “a sacrificial anode made of an active metal,” the device includes “an anode holder supporting the sacrificial anode.” The holder is further described as being “adapted to fit around the inlet connection of an engine heat exchange component in such a way as to allow for a hose to be attached overtop the device.”

The Examiner rejected Claim 1 as anticipated by Loyd. Loyd describes the use of sacrificial rods in the electrical grounding of marine engines. In the Office Action, the Examiner repeated quite a few sections of Loyd, but his analysis of Claim 1 itself is limited to the following statement:

The prior art of Loyd anticipates the applicant[']s instant invention as instantly claimed as seen by the disclosure to Loyd set forth above, where Loyd sets forth that the sacrificial anode (rod) is an active metal of zinc, and that the anode is supported within the plastic covers at an inlet connection of an engine heat exchange component. Feature 43 is an inlet and as can be seen a hose can be attached over top.¹

¹ Office Action dated October 31, 2011, p. 4, lines 17-21.

The Applicant respectfully submits that the Examiner's analysis fails to consider the specific recitation underlined above. First, the Examiner makes no mention of what element of the Loyd device, if anything, he considers to be an anode holder. However, even assuming *arguendo* that some element of Loyd could properly be characterized as an anode holder, the Examiner has failed to identify how any such element is "adapted to fit around the inlet connection" so "as to allow for a hose to be attached overtop the device."

In this regard, the Applicant directs the Examiner's attention to, for example, FIG. 1A, wherein a radiator hose (reference numeral 21) is shown installed around an inlet fitting (16). This arrangement is described, for example, in paragraph [0029] of the original specification. As shown in FIG. 3A, it may be clamped in place. This is described, for example, in paragraph [0034] of the specification.

Applicant respectfully requests reconsideration in view of the foregoing. If the Examiner still believes that Loyd teaches these specific recited limitations, then Applicant further requests that the Examiner provide a more detailed analysis of the prior art so that Applicant has a fair chance of understanding exactly how the Examiner believes Loyd relates to the claimed invention.

Independent Claim 20

New independent Claim 20 likewise recites an electrolysis prevention device. Like Claim 1, Claim 20 recites "a sacrificial anode made of an active metal" and "an anode holder supporting the sacrificial anode." Also like Claim 1, the holder is further described as being "adapted to fit...around the inlet connection of an engine heat exchange component in such a way as to allow for a hose to be attached." Applicant thus respectfully submits that Claim 20 is allowable for many of the same reasons as those outlined above with regard to Claim 1.

However, Claim 20 even more specifically recites the arrangement of the holder relative to the inlet connection and the hose. In particular, the holder is further described as being "adapted to fit through and around the inlet connection of an engine heat exchange component in such a way as to allow for a hose to be attached to and around the inlet connection without dislodging the holder." Clearly, no such element is shown "through and around" any "inlet connection" in Loyd. Moreover, there is no hose actually shown in Loyd, and it is impossible to

discern from Loyd alone how any hose would be attached to and around the inlet connection without dislodging a holder.

Thus, Applicant respectfully requests that the Examiner consider the allowability of Claim 20 as well.

Independent Claim 22

Independent Claim 22 recites an engine heat exchange component. The component, which may be understood to be a radiator, heater core, or the like, has “a metal core and/or tank” having “a metal protrusion extending [therefrom] for mounting the engine heat exchange component to a metal vehicle frame.” As with previous Claim 17, a “sheathing of durable insulating material” is utilized. The sheathing “surround[s] the metal protrusion to prevent electrolysis between the metal protrusion and the metal vehicle frame.”

Although the Examiner previously considered Claim 17, his rejection thereof is now rendered moot in view of the additional recitation.

Former Independent Claims 12 and 17

Applicant further does not acquiesce in the rejections of previous independent Claims 12 and 17, nor in the rejections of those claims depending therefrom, but in the interests of brevity, Applicant has canceled such claims for the time being.

The Dependent Claims

Applicant submits that each dependent claim is allowable as depending from an allowable independent claim. Applicant nevertheless respectfully submits that each of the dependent claims is further allowable based on the additional recitation found in such dependent claim, and Applicant requests consideration thereof as necessary. Applicant further does not acquiesce in the rejections of these dependent claims, but in the interests of brevity, Applicant does not *per se* address each such rejection herein.

Applicant nevertheless comments as follows. First, Applicant respectfully requests greater specificity with regard to the rejection of Claim 6 so that the Applicant has a fair chance of understanding exactly how the Examiner believes Loyd relates to the claimed invention. With

regard to Claim 14, Applicant notes that contrary to the Examiner's assertion, there is no disclosure whatsoever in Loyd of a heater core, and that the Examiner's rejection cannot properly be made under 35 U.S.C. §102(b). Finally, the Examiner's attention is specifically directed to Claims 21 and 23, each of which include recitations not previously presented or considered by the Examiner, but which Applicant believes are sufficient to clearly distinguish the present invention from the cited prior art.

Potential Preclusion of Finality

Applicant notes that independent Claim 1 and many of the claims depending therefrom have not been amended herein, and that, therefore, should such claims be rejected in the next Office Action based on a new ground of rejection, such rejection likely could not properly be made final.

Closing

In order to facilitate prosecution, it is respectfully requested that the Examiner contact the undersigned if any further action is deemed necessary by the Examiner in order to gain allowance of the present application, and if such further action may be accomplished through an Examiner's amendment or otherwise.

Respectfully submitted,
Tillman Wright, PLLC

/James D. Wright/

James D. Wright

Reg. No. 43,291
Tel.: 704-248-6155
Fax: 877-248-5100

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.

PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a)	Docket Number (Optional) 3034.002
Application Number 12/631,903	Filed December 7, 2009
For ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE	
Art Unit 1759	Examiner Bell, Bruce F.

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	<u>Fee</u>	<u>Small Entity Fee</u>	
<input checked="" type="checkbox"/> One month (37 CFR 1.17(a)(1))	\$150	\$75	\$ <u>75</u>
<input type="checkbox"/> Two months (37 CFR 1.17(a)(2))	\$560	\$280	\$ _____
<input type="checkbox"/> Three months (37 CFR 1.17(a)(3))	\$1270	\$635	\$ _____
<input type="checkbox"/> Four months (37 CFR 1.17(a)(4))	\$1980	\$990	\$ _____
<input type="checkbox"/> Five months (37 CFR 1.17(a)(5))	\$2690	\$1345	\$ _____

☐ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☐ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number _____.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the ☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☐ attorney or agent of record. Registration Number _____

☒ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

/James D. Wright/

Signature

James D. Wright

Typed or printed name

February 29, 2012

Date

(704) 248-6155

Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). 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 6 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.

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.

Electronic Patent Application Fee Transmittal				
Application Number:		12631903		
Filing Date:		07-Dec-2009		
Title of Invention:		ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE		
First Named Inventor/Applicant Name:		Frank PETROSINO		
Filer:		James D. Wright.		
Attorney Docket Number:		3034.002		
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	75	75

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				75

Electronic Acknowledgement Receipt

EFS ID:	12193327
Application Number:	12631903
International Application Number:	
Confirmation Number:	2825
Title of Invention:	ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE
First Named Inventor/Applicant Name:	Frank PETROSINO
Customer Number:	36790
Filer:	James D. Wright.
Filer Authorized By:	
Attorney Docket Number:	3034.002
Receipt Date:	29-FEB-2012
Filing Date:	07-DEC-2009
Time Stamp:	16:31:41
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$75
RAM confirmation Number	4116
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1		2012-02-29_3034-002_Response.pdf	104443 18f9d18cb4c8e6bf91daf2b90d5d5ff631bb5e51	yes	8
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Amendment/Req. Reconsideration-After Non-Final Reject		1	1	
	Claims		2	4	
	Applicant Arguments/Remarks Made in an Amendment		5	8	
Warnings:					
Information:					
2	Extension of Time	2012-02-29_3034-002_Petition-for-Ext-of-Time.pdf	287526 ef883e813c1dc9a9f20d97ac74ecd6748833c352	no	2
Warnings:					
Information:					
3	Fee Worksheet (SB06)	fee-info.pdf	30316 e7ad868ce086f315d7fb80f485df5dcce65d3397	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			422285		
<p>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.</p> <p><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.</p> <p><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.</p> <p><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.</p>					

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 12/631,903		Filing Date 12/07/2009		<input type="checkbox"/> To be Mailed		
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)			SMALL ENTITY <input checked="" type="checkbox"/> OR		OTHER THAN SMALL ENTITY		
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)		RATE (\$)	FEE (\$)			
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (j), or (m))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> 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 \$ =				
<input type="checkbox"/> 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).									
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL				
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)			SMALL ENTITY OR		OTHER THAN SMALL ENTITY		
AMENDMENT	02/29/2012	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	* 19	Minus	** 20	= 0	X \$30 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 4	Minus	*** 5	= 0	X \$125 =	0	OR	X \$ =	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> 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 (\$)		RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	X \$ =		OR	X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE							OR	TOTAL ADD'L FEE	
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>										

Legal Instrument Examiner:
/TAMMY ACREE/

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	12/631,903	Confirmation No.	2825
Inventor	:	PETROSINO, Frank		
Title	:	<i>ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE</i>		
Filed	:	2009-12-07		
TC/AU	:	1759		
Examiner	:	BELL, Bruce F.		
Docket No.	:	3034.002		
Customer No.	:	36790		

February 1, 2012

Via EFS-Web
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

**NOTICE RESCINDING ANY POSSIBLE DISCLAIMER MADE
IN COMMONLY-OWNED OR RELATED PATENT APPLICATION¹**

Any disclaimer of subject matter or claim scope made in any commonly-owned or related re-issue patent application—whether made explicitly through Applicant remarks, implicitly through claim amendments, or otherwise—is hereby rescinded for purposes of examination in the current application. Applicant respectfully requests that the Examiner neither consider applicable nor rely upon any such disclaimer, and that all prior art considered in any such related application be considered during examination of claims in the current application, in accordance with MPEP § 609.02, without regard to any possible disclaimer in such related application.

Respectfully submitted,
TILLMAN WRIGHT, PLLC

/ David R. Higgins /

David R. Higgins
Reg. No. 59,736
Tel.: (704) 248-2580
Fax: (877) 248-5100

¹ This notice is filed in view of *Hakim v. Cannon Avent Group, PLC*, 479 F3d 1313 (Fed. Cir. 2007).

Electronic Acknowledgement Receipt	
EFS ID:	12001240
Application Number:	12631903
International Application Number:	
Confirmation Number:	2825
Title of Invention:	ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE
First Named Inventor/Applicant Name:	Frank PETROSINO
Customer Number:	36790
Filer:	David R. Higgins/Teri Smith
Filer Authorized By:	David R. Higgins
Attorney Docket Number:	3034.002
Receipt Date:	04-FEB-2012
Filing Date:	07-DEC-2009
Time Stamp:	15:34:30
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Applicant Arguments/Remarks Made in an Amendment	3034-002-Hakim-Notice.pdf	45923 a7e7b3dcef112b901fde23ecffafbd551e7b0be9	no	1

Warnings:

Information:

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
12/631,903	12/07/2009	Frank PETROSINO	3034.002	2825

36790	7590	10/31/2011
TILLMAN WRIGHT, PLLC		
PO BOX 49309		
CHARLOTTE, NC 28277-0076		

EXAMINER	
BELL, BRUCE F	

ART UNIT	PAPER NUMBER
1759	

MAIL DATE	DELIVERY MODE
10/31/2011	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)	
	12/631,903	PETROSINO, FRANK	
	Examiner	Art Unit	
	BRUCE BELL	1759	

-- 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) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

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

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 07 December 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

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

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4-11, 15, 17, 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Loyd (4776392).

Loyd disclose sacrificial rods that are used in connection with shell and tube type heat exchangers to prevent corrosion of cooling cores. These rods can be employed with metallic heat exchanger components. The heat exchanger uses electrically non-conducting or plastic end covers which will not conduct a current flow. A grounded circuit is provided for the sacrificial rod. A reaction of an electrolyte and the rod prevents electrolytic damage to the core. See abstract. A heat exchanger includes a steel fabricated tank or housing having an inlet and an outlet through which the liquid to be cooled can flow. A plurality of threaded holes, one of which is provided at the end surfaces in the housing is shown in the figures. See col. 2, lines 33-40. A pair of non-metallic electrical non-conducting end covers are connected to the housing at the end surfaces. The end covers are constructed from a family of nylon resin plastics. A pair of gaskets are positioned on each side of a flange between the end surfaces and the covers. See col. 2, lines 52-66. A conducting member is positioned within the covers and is electrically insulated by the nylon resin used to form each cover. See col. 3, lines

20-22. First and second metallic brackets are used to attach the heat exchanger to an engine and provides a grounded connection for completing a circuit. The first bracket includes a threaded U-bolt straddling the housing and a support member connected to the housing and a support member connected to the engine to provide a grounded circuit. See col. 3, lines 33-39. A sacrificing rod is removably attached to each of the covers within each chamber and is positioned in spaced relationship to the cooling core. The rod has a zinc sacrificial material attached to a brass plug. The plug has an external thread and a head thereon. The thread of the plug is threadably attached to the threaded hole in the metallic insert. See col. 3, line 66 – col. 4, line 5. The heat exchanger is used in conjunction with a marine engine. A fluid to be cooled, in the engine coolant is pumped by the engine coolant pump into the inlet of the heat exchanger. The coolant to be cooled flows between the tubes, inside the inner surfaces of the housing between the end sheets and returns to the engine through the outlet. Heat from the coolant is thermally transmitted to the tubes and the end sheets. See col. 4, lines 24-32. A cooling media is circulated by an external pump and enters the inlet in the cover. See col. 4, lines 33-35. Galvanic corrosion or chemical attack between two dissimilar metals will normally occur in the presence of an electrolyte. The dissimilar metals are copper alloy tubes of the cooling core and the steel fabricated housing whereas the electrolyte is sea water. Since the copper alloy has a higher potential than the steel fabricated housing the tubes will become the anode and normally would tend to go into solution in the electrolyte, and therefore, corrode. Since, a zinc anode sacrificing rod is very unstable and has a higher potential as evidenced by its position in

the galvanic series, the rod when positioned in the covers, will corrode reducing the deterioration of the copper alloy tubes and thus extends the life of the tubes. See col. 4, lines 42-56. In order to insure proper operation of the sacrificial rods, a complete electric circuit must be provided. Therefore, the electrical non-conducting covers are provided with a path through which electrical current created in the system can be transmitted away from the cooling core preventing electrolytic damage thereof. To insure proper current flow from the sacrificing rods, the flow is directed through two flow paths. The first path is from the rod attached to the cover through the metallic insert, the conducting member, one of the metal sleeves, the washer, the bolt, the housing and into the grounded first bracket. The second current flow path is from the rod attached to the cover through the metallic insert, the conducting member, one of the metallic sleeves and into the grounded second bracket. See col. 4, line 57 – col. 5, line 7. The primary advantage of the corrosion resistant system is its ability to use lighter, less expensive plastic material in the end covers and still provide a current flow path from the zinc sacrificial rod away from the internal cooling core preventing electrolytic damage thereto.

The prior art of Loyd anticipates the applicants instant invention as instantly claimed as seen by the disclosure to Loyd set forth above, where Loyd sets forth that the sacrificial anode (rod) is an active metal of zinc, and that the anode is supported within the plastic covers at an inlet connection of an engine heat exchange component. Feature 43 is an inlet and as can be seen a hose can be attached over top. An additional wire 58 is shown to be connected to the sacrificial anode rod and the anode

holder is connected to the engine heat exchange component by a clamp (bolt/flange system). The Loyd patent discloses that the heat exchange component is a radiator or a heater core. The system has the sacrificial anode rod in proximity to an inlet connection thereof. The method of preventing corrosion of an engine heat exchange component by installing a sacrificial anode assembly with in the heat exchange component adjacent an inlet thereof is also taught. The installation of the sacrificial anode rod in a hole within a cover of the heat exchange device is shown in the figures and is shown to be adjacent the inlet connection. The sheathing of durable insulating material being configured to affixed to a protrusion of metal is shown with respect to the conducting member 58 that is positioned within the covers and is electrically insulated by the nylon resin used to form each of the covers. A grounding wire is shown to be connected to the sacrificial anode and is electrically connected to the bracket. Therefore, the prior art of Loyd meets the applicants instant claims as presented.

Claim Rejections - 35 USC § 102

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

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 12,13 are rejected under 35 U.S.C. 102(b) as being anticipated by Green (5649581).

Green discloses a radiator cap having an integral sacrificial anode that inhibits corrosion of metal within the radiator. The radiator cap is placed on the opening of the

radiator thereby immersing the sacrificial anode in coolant fluid contained within the radiator. The sacrificial anode is preferentially oxidized, thus providing cathodic protection. See abstract. A typical radiator is made up of a storage tank either above or to the side of the cooling tubes and exchanged cooling fins. This storage tank has an opening to the interior of the storage tank part, a core of cooling tubes which is where the coolant liquid flows and connected to these cooling tubes are fins which transfer heat to the air which is pulled or pushed through the fins and around the tubes for heat transfer from the coolant to the air passing through. See col. 1, lines 24-32. Sacrificial anodes are constructed of magnesium, aluminum, zinc or combinations thereof to be used as corrosion inhibitors. A sacrificial anode of specified composition bonded to a core metal to prevent the occurrence of pitting corrosion of core material in a heat exchanger such as a radiator or heater core is known. See col. 1, lines 46-52. Sacrificial anodes of zinc, magnesium, aluminum alloy or combinations thereof may be used. See col. 2, lines 40-42. The radiator includes an upper tank portion, a core portion and a lower tank portion. See col. 2, lines 49-51.

The prior art of Green anticipates the applicants instant invention as shown by the disclosure to Green above. As can be seen in the figures and the disclosure, the radiator cap with sacrificial anode is installed with in the heat exchange component adjacent an inlet thereof. The inlet and outlet are not set forth in the figures, however, a description of a typical radiator is given in the related art section of the patented document. The installed fitting hole is considered by the examiner to be that of the fill area of the radiator where the cap 10 is inserted and since the cap with sacrificial anode

is inserted into that fitting hole, it appears that applicants instant method has been inherently met. Therefore, the prior art of Green anticipates the applicants instant claims as presented.

Claim Rejections - 35 USC § 103

5. 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.

6. Claims 2, 3, 14, 16, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loyd (4776392) in combination with Green (5649591).

Loyd is as disclosed above in the 35 USC 102(b) rejection,

Green is as disclosed above in the 35 USC 102(b) rejection.

Loyd does not teach that the sacrificial anode is one of aluminum or magnesium or that the sacrificial anode is within 10 inches of a center of the inlet connection, a pigtail connection to a wiring harness or that a durable insulating material of rubber is used.

The subject matter as a whole would have been obvious to those of ordinary skill in the art at the time the instant invention was made because even though Loyd does not teach some of the aspects of the instant invention, it appears from the Green patent that the sacrificial anode is in the center of the heat exchanger and these heat exchangers are known for being about 20 inches long. Therefore, it appears that this aspect of the invention has been found in the art. With respect to the material for the

sacrificial anode, these are conventional materials known in the art to be used in galvanic systems as can be seen by the prior art of Green. With respect to the pigtail connection to a wiring harness, it appears that one having ordinary skill in the art has the ability to either hardwire a connection or make such pigtail connection in the advent that one needs to remove the sacrificial anode for replacement. Therefore, this aspect of the invention appear to be known to those of ordinary skill in the art. With respect to the rubber used to insulate, it is well known in the art to use rubber tubing to connect the heat exchanger cooling system into cars and that such rubber is used due to its ability to resist chemical attack. Therefore, one having ordinary skill in the art would recognize that either a chemically resistant plastic or a chemically resistant rubber may be used. Therefore, the prior art of Loyd in combination with Green renders the applicants instant invention as obvious for the reasons set forth above.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRUCE BELL whose telephone number is (571)272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey T. Barton can be reached on 571 272-1307. 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.

BFB
October 24, 2011

/Bruce F. Bell/
Primary Examiner, Art Unit 1759

Notice of References Cited	Application/Control No. 12/631,903	Applicant(s)/Patent Under Reexamination PETROSINO, FRANK	
	Examiner BRUCE BELL	Art Unit 1759	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-5,649,591	07-1997	Green, Michael Philip	165/134.1
*	B	US-4,776,392	10-1988	Loyd, Lee R.	204/196.16
	C	US-			
	D	US-			
	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.

EAST Search History


EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	4037	(cathodic\$4 adj5 protect\$3) or (galvanic\$4 adj5 protect\$3) or (sacrificial anode with protect\$3)	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:09
L2	2297	holder with anode	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:09
L3	23	1 and 2	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:09
L4	248714	radiator or heat exchang\$3	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:11
L5	5	3 and 4	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:11
L6	25	radiator with (galvanic or sacrificial) anode	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:15
L7	16	(radiator or heat exchanger or heater\$1cool\$3 device) with (automobile or car or vehicle) with (galvanic or sacrificial) anode	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:25
L8	8	prevent\$3 corrosion with (sacrificial anode or (anode adj5 (zinc or magnesium or aluminum))) with (radiator or heat exchanger)	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:27

L9	24403	engine with (heat exchanger or heat exchange component or radiator)	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:29
L10	4887	internal combustion engine with (heat exchanger or heat exchange component or radiator)	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:29
L11	24403	9 or 10	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:30
L12	15503	sacrificial anode or galvanic anode or magnesium anode or zinc anode or aluminum anode or ((magnesium or zinc or aluminum) adj10 anode)	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:31
L13	53	11 and 12	US-PGPUB; USPAT	ADJ	ON	2011/10/19 08:31
L14	0	fitting hole with radiator with sacrificial anode	US-PGPUB; USPAT	ADJ	ON	2011/10/19 09:04
L15	0	attachment hole with radiator with sacrificial anode	US-PGPUB; USPAT	ADJ	ON	2011/10/19 09:04
L16	0	hole adaptor with radiator with sacrificial anode	US-PGPUB; USPAT	ADJ	ON	2011/10/19 09:05
L17	0	adaptor with radiator with sacrificial anode	US-PGPUB; USPAT	ADJ	ON	2011/10/19 09:05
L18	25	radiator with sacrificial anode	US-PGPUB; USPAT	ADJ	ON	2011/10/19 09:05


10/ 19/ 11 9:25:20 AM

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<p align="center"><i>Index of Claims</i></p> 	Application/Control No. 12631903	Applicant(s)/Patent Under Reexamination PETROSINO, FRANK
	Examiner BRUCE BELL	Art Unit 1759

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

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant <input type="checkbox"/> CPA <input type="checkbox"/> T.D. <input type="checkbox"/> R.1.47										
CLAIM		DATE								
Final	Original	10/24/2011								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
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	17	✓								
	18	✓								
	19	✓								

Search Notes 	Application/Control No. 12631903	Applicant(s)/Patent Under Reexamination PETROSINO, FRANK
	Examiner BRUCE BELL	Art Unit 1759

SEARCHED			
Class	Subclass	Date	Examiner
204	196.1, 196.17, 196.18, 196.19, 196.21, 196.23, 196.24, 196.25, 196.3, 196.31, 196.36, 196.37	10/19/11	BB
205	730, 732, 733, 740	10/19/11	BB

SEARCH NOTES		
Search Notes	Date	Examiner
East Search	10/19/11	BB
Inventor Search	10/19/11	BB

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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BIB DATA SHEET

CONFIRMATION NO. 2825

SERIAL NUMBER 12/631,903	FILING or 371(c) DATE 12/07/2009 RULE	CLASS 204	GROUP ART UNIT 1759	ATTORNEY DOCKET NO. 3034.002		
APPLICANTS Frank PETROSINO, Concord, NC; ** CONTINUING DATA ***** This appln claims benefit of 61/120,296 12/05/2008 ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED *** SMALL ENTITY ** 12/18/2009						
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Verified and Acknowledged <u>/BRUCE F BELL/</u> Examiner's Signature		<input type="checkbox"/> Met after Allowance Initials	STATE OR COUNTRY NC	SHEETS DRAWINGS 27	TOTAL CLAIMS 19	INDEPENDENT CLAIMS 3
ADDRESS TILLMAN WRIGHT, PLLC PO BOX 49309 CHARLOTTE, NC 28277-0076 UNITED STATES						
TITLE ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE						
FILING FEE RECEIVED 462	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit			



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/631,903	12/07/2009	Frank PETROSINO	3034.002

CONFIRMATION NO. 2825

PUBLICATION NOTICE



OC000000042026302

36790
TILLMAN WRIGHT, PLLC
PO BOX 49309
CHARLOTTE, NC 28277-0076

Title:ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE

Publication No.US-2010-0140082-A1

Publication Date:06/10/2010

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
12/631,903	12/07/2009	1795	462	3034.002	19	3

CONFIRMATION NO. 2825

36790

TILLMAN WRIGHT, PLLC

PO BOX 49309

CHARLOTTE, NC 28277-0076

UPDATED FILING RECEIPT



0000000039897447

Date Mailed: 02/01/2010

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)

Frank PETROSINO, Concord, NC;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/120,296 12/05/2008

Foreign Applications

If Required, Foreign Filing License Granted: 12/18/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/631,903**

Projected Publication Date: 06/10/2010

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE

Preliminary Class

205

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	12/631,903	Confirmation No.	2825
Inventor	:	Petrosino, Frank		
Filed	:	December 7, 2009		
TC/AU	:	1795		
Examiner	:	TBD		
Docket No.	:	3034.002		
Customer No.	:	36790		

January 21, 2010

Via EFS-Web

Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

**PRELIMINARY AMENDMENT
PURSUANT TO 37 C.F.R. § 1.115**

Applicant hereby requests entry of the following preliminary amendments in the above-captioned patent application.

The sections of this paper appear on the following pages.

<u>Section(s)</u>	<u>Page(s)</u>
Amendments to the Claims	2-4
Remarks	5

Amendments to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the application.

Claim 1 (original): An electrolysis prevention device, for preventing corrosion caused by electrolysis, comprising:

- a sacrificial anode made of an active metal; and
 - an anode holder supporting the sacrificial anode;
- wherein the holder is adapted to fit around the inlet connection of an engine heat exchange component in such a way as to allow for a hose to be attached overtop the device.

Claim 2 (original): The electrolysis prevention device of claim 1 wherein the sacrificial anode is made of aluminum.

Claim 3 (original): The electrolysis prevention device of claim 1 wherein the sacrificial anode is made of magnesium.

Claim 4 (original): The electrolysis prevention device of claim 1 wherein the sacrificial anode is made of zinc.

Claim 5 (currently amended): The electrolysis prevention device of claim 1 wherein the anode holder is grounded to ~~[[the]]~~ a vehicle.

Claim 6 (currently amended): The electrolysis prevention device of claim 1 wherein an end of the anode holder is attached to an additional wire positioning the sacrificial anode further down into the flow of ~~[[the]]~~ liquid coolant within the engine heat exchange component.

Claim 7 (currently amended): The electrolysis prevention device of claim 1 wherein the anode holder is connected to the ~~radiator~~ engine heat exchange component by a clamp.

Claim 8 (original): The electrolysis prevention device of claim 1 wherein the engine heat exchange component is a radiator.

Claim 9 (original): The electrolysis prevention device of claim 1 wherein the engine heat exchange component is a heater core.

Claim 10 (currently amended): A radiator with ~~an internal sacrificial anode~~ the electrolysis prevention device of claim 1 in proximity to an inlet connection thereof.

Claim 11 (currently amended): A heater core with ~~an internal sacrificial anode~~ the electrolysis prevention device of claim 1 in proximity to an inlet connection thereof.

Claim 12 (original): A method of preventing corrosion of an engine heat exchange component comprising adding or installing a sacrificial anode assembly within the heat exchange component adjacent an inlet thereof.

Claim 13 (currently amended): The method of claim 12, wherein the engine heat exchange component has an inlet connection, the method further comprising:

installing a fitting hole into ~~[[the]]~~ a tank of the engine heat exchange component adjacent the inlet connection; and

filling said fitting hole with ~~[[a]]~~ the sacrificial anode of the sacrificial anode assembly.

Claim 14 (original): The method of claim 12, further comprising attaching the sacrificial anode to the engine heat exchange component within 10 inches of a center of the inlet connection.

Claim 15 (original): The method of claim 14, further comprising grounding the sacrificial anode by means of an attached ground wire.

Claim 16 (original): The method of claim 15, whereby the attached ground wire is a “pigtail” clip connecting the sacrificial anode to a wiring harness.

Claim 17 (currently amended): An electrolysis prevention shield, for preventing corrosion in an engine heat exchange component caused by electrolysis, comprising:

a sheathing of durable insulating material wherein the sheathing of durable insulating material is configured to affix to a protrusion of metal.

Claim 18 (original): The electrolysis prevention device of claim 17, wherein the durable insulating material is rubber.

Claim 19 (original): The electrolysis prevention device of claim 17, wherein the durable insulating material is plastic.

REMARKS

The present amendments are intended to clarify the original claims.

Applicant submits that no new matter is entered by any of the amendments made herein.

After the amendments herein, Claims 1-19 are now presented for examination. Of these claims, only three claims are independent. Thus, no additional claim fees are believed due at this time.

Respectfully submitted,
Tillman Wright, PLLC

/James D. Wright/

James D. Wright

Reg. No. 43,291
Tel.: 704-248-6155
Fax: 877-248-5100

Electronic Acknowledgement Receipt

EFS ID:	6857387
Application Number:	12631903
International Application Number:	
Confirmation Number:	2825
Title of Invention:	ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE
First Named Inventor/Applicant Name:	Frank PETROSINO
Customer Number:	36790
Filer:	Peter Joseph Mattei
Filer Authorized By:	
Attorney Docket Number:	3034.002
Receipt Date:	21-JAN-2010
Filing Date:	07-DEC-2009
Time Stamp:	17:22:11
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		2010-01-21_3034-002_Preliminary_Amendment.pdf	86034 <small>57838dbbcf0985bc0d1ec1babf43e083f0677504</small>	yes	5

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Preliminary Amendment	1	1
	Claims	2	4
	Applicant Arguments/Remarks Made in an Amendment	5	5
Warnings:			
Information:			
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/631,903		Filing Date 12/07/2009		<input type="checkbox"/> To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY <input checked="" type="checkbox"/> OR		OTHER THAN SMALL ENTITY			
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	OR	RATE (\$)	FEE (\$)			
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A			N/A				
<input type="checkbox"/> 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 \$ =				
<input type="checkbox"/> 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).									
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL			TOTAL				
APPLICATION AS AMENDED – PART II										
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AMENDMENT	01/21/2010	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	OR	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(j))	* 19	Minus	** 20	= 0	X \$26 =	0	OR	X \$ =	
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 5	= 0	X \$110 =	0	OR	X \$ =	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> 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)		(Column 3)		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(j))	*	Minus	**	=	X \$ =		OR	X \$ =	
	Independent (37 CFR 1.16(h))	*	Minus	***	=	X \$ =		OR	X \$ =	
	<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))									
	<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
	TOTAL ADD'L FEE							OR	TOTAL ADD'L FEE	
<p>* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.</p> <p>** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".</p> <p>*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".</p> <p>The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.</p>										

Legal Instrument Examiner:
/PAUL M. STANBACK/

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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
12/631,903	12/07/2009	1795	462	3034.002	19	5

CONFIRMATION NO. 2825

36790

TILLMAN WRIGHT, PLLC

PO BOX 49309

CHARLOTTE, NC 28277-0076

FILING RECEIPT



0000000039315114

Date Mailed: 12/28/2009

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)

Frank PETROSINO, Concord, NC;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This appln claims benefit of 61/120,296 12/05/2008

Foreign Applications

If Required, Foreign Filing License Granted: 12/18/2009

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 12/631,903**

Projected Publication Date: 06/10/2010

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE

Preliminary Class

205

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
12/631,903	12/07/2009	Frank PETROSINO	3034.002

CONFIRMATION NO. 2825

FORMALITIES LETTER

36790
TILLMAN WRIGHT, PLLC
PO BOX 49309
CHARLOTTE, NC 28277-0076



OC00000039315115

Date Mailed: 12/28/2009

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).

- Additional claim fees of **\$220** as a small entity, including any required multiple dependent claim fee, are required. Applicant must submit the additional claim fees or cancel the additional claims for which fees are due.

SUMMARY OF FEES DUE:

Total additional fee(s) required for this application is **\$220** for a small entity

- Total additional claim fee(s) for this application is **\$220**
 - **\$220** for **2** independent claims over 3.

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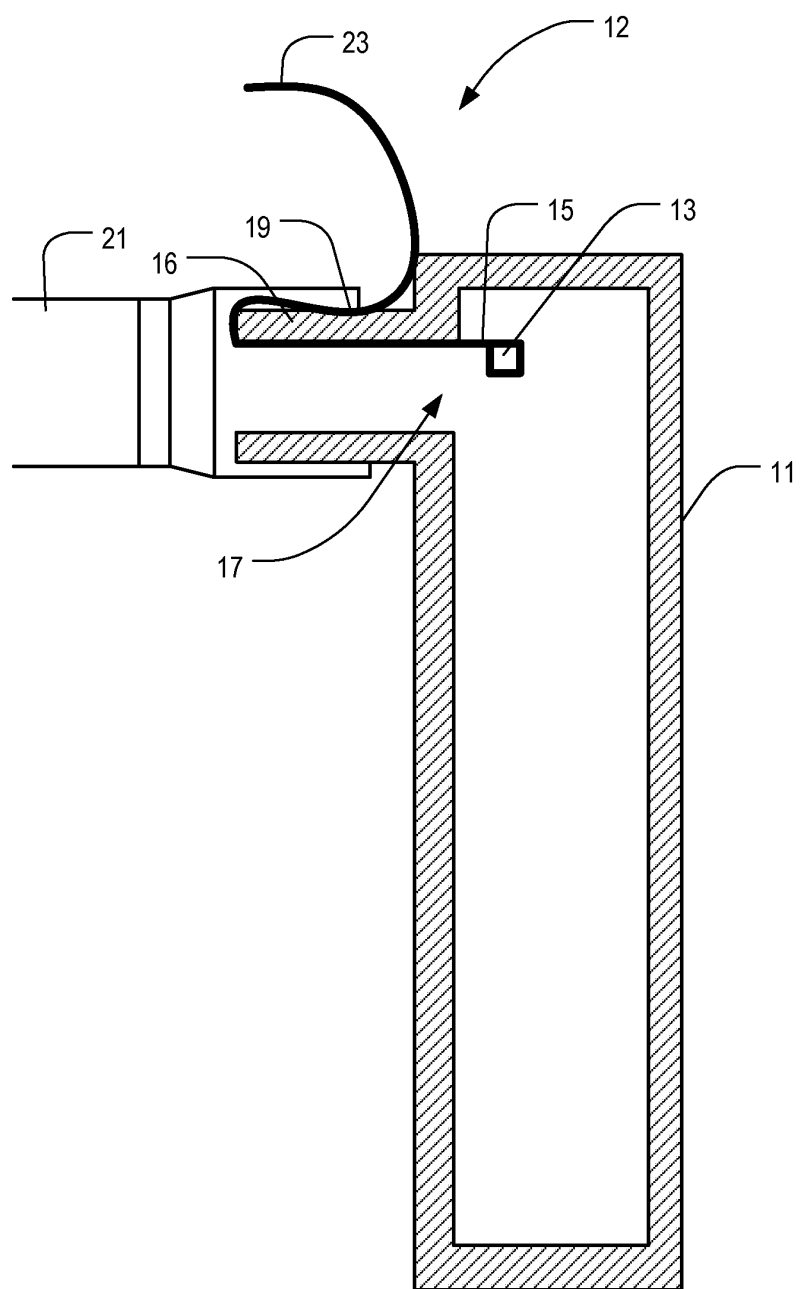


FIG. 1A

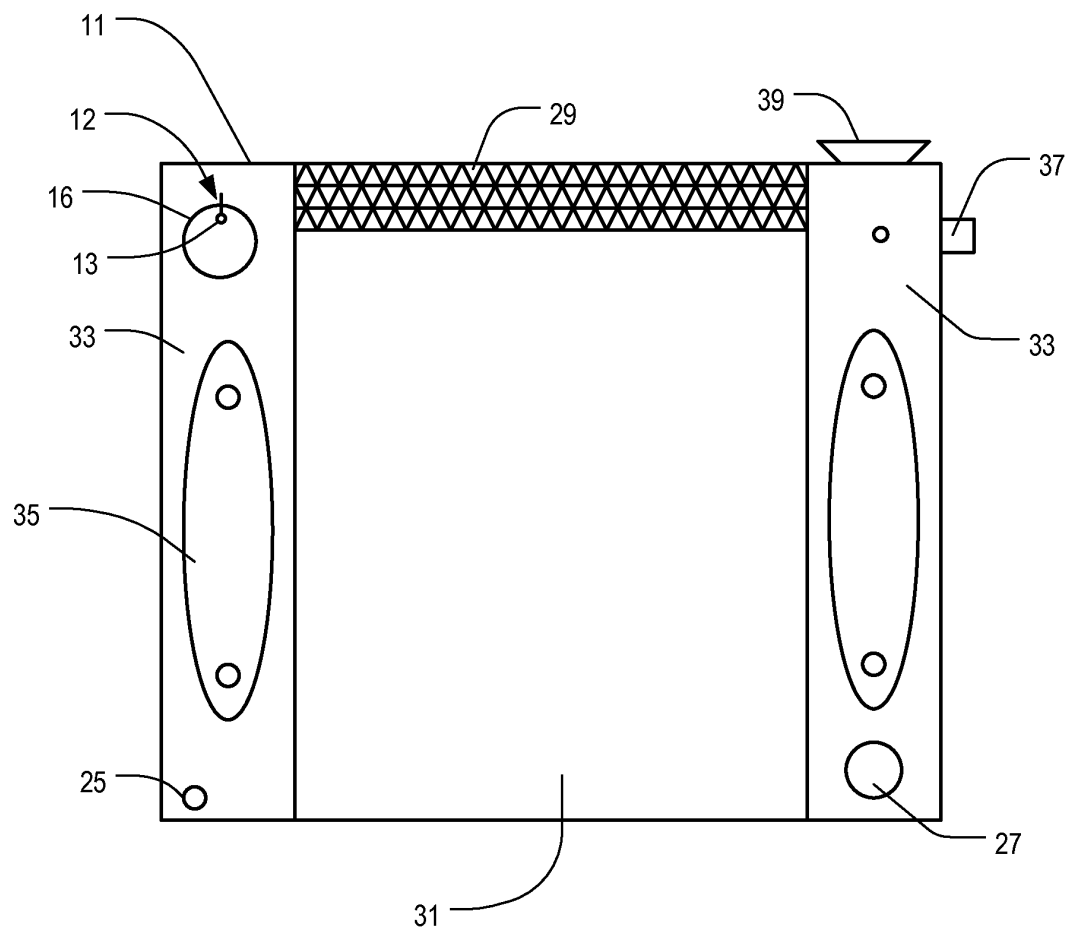


FIG. 1B

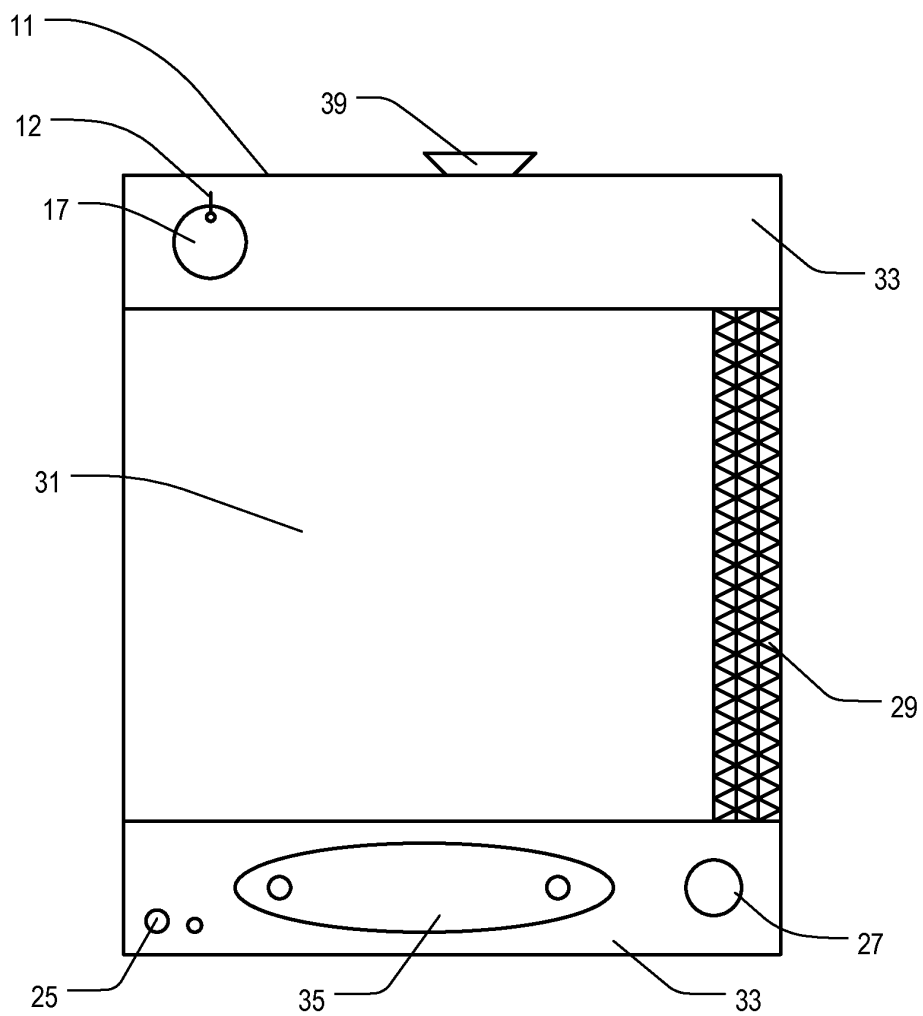


FIG. 1C

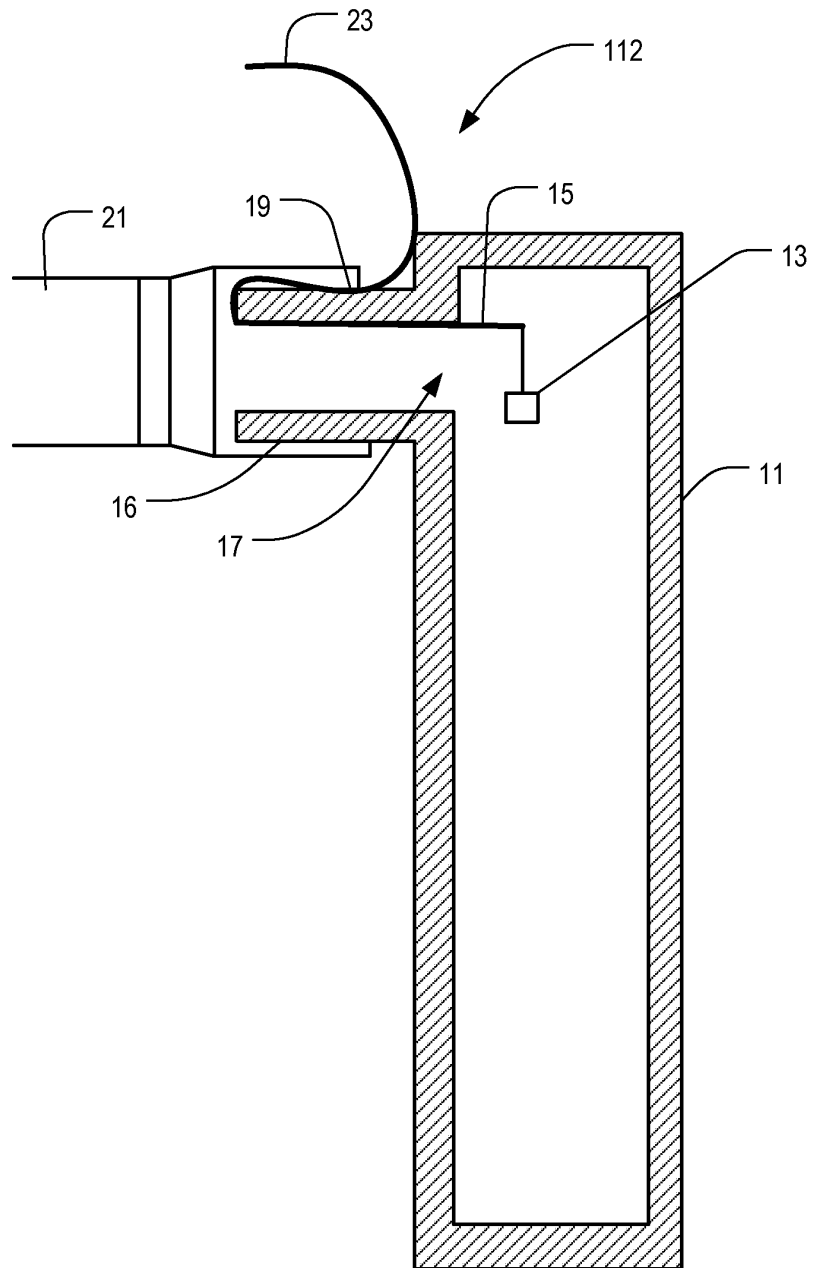


FIG. 2A

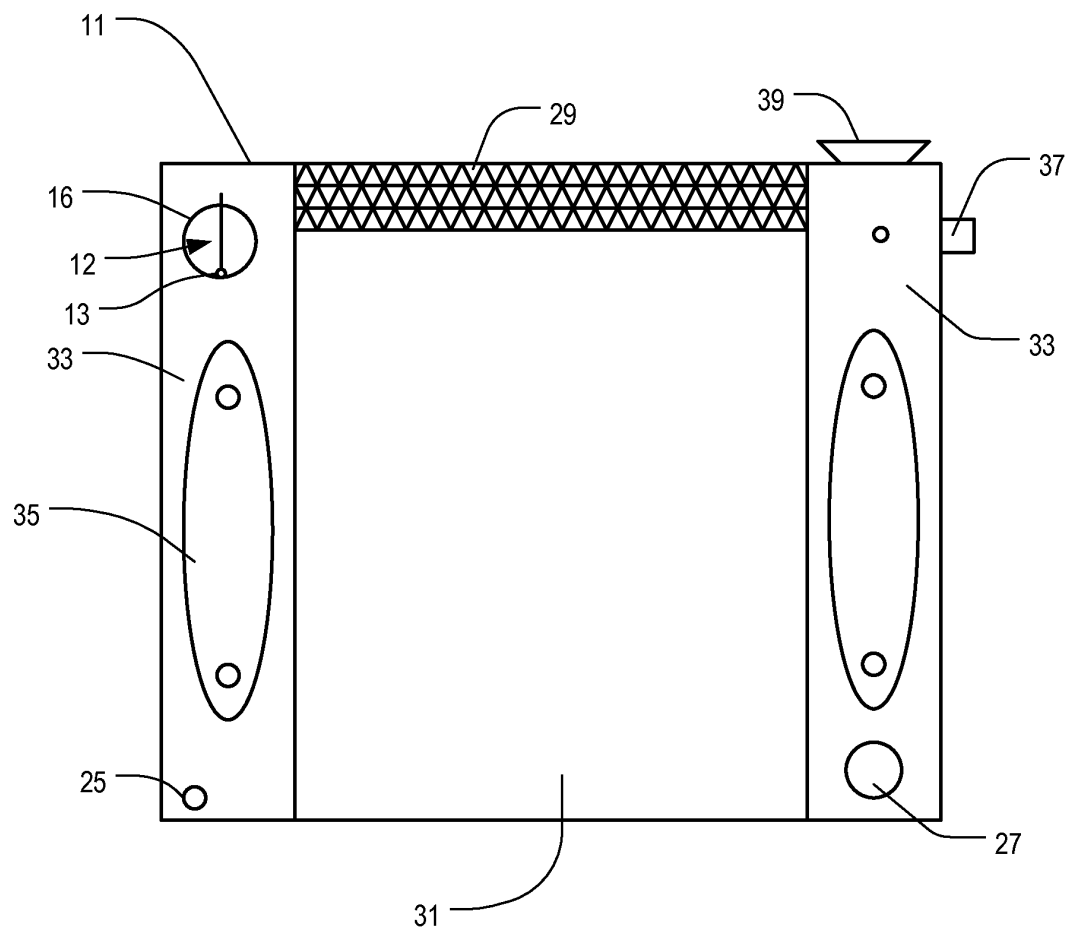


FIG. 2B

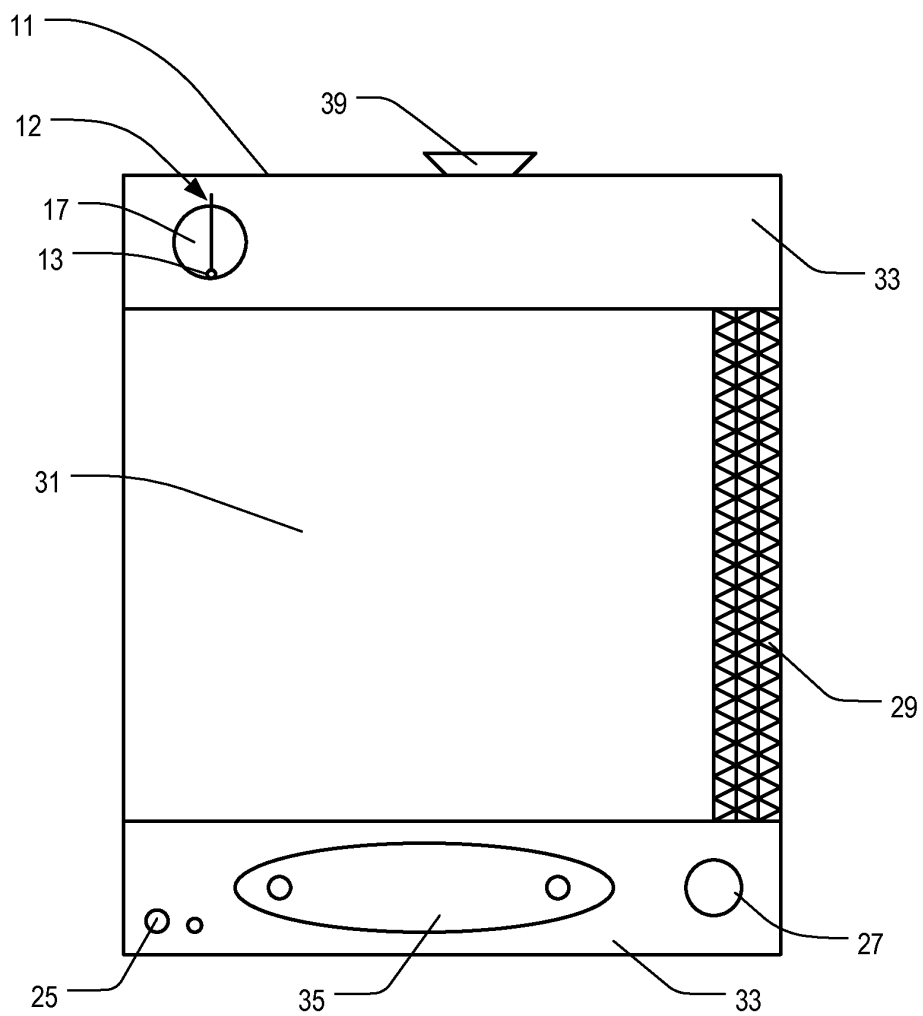


FIG. 2C

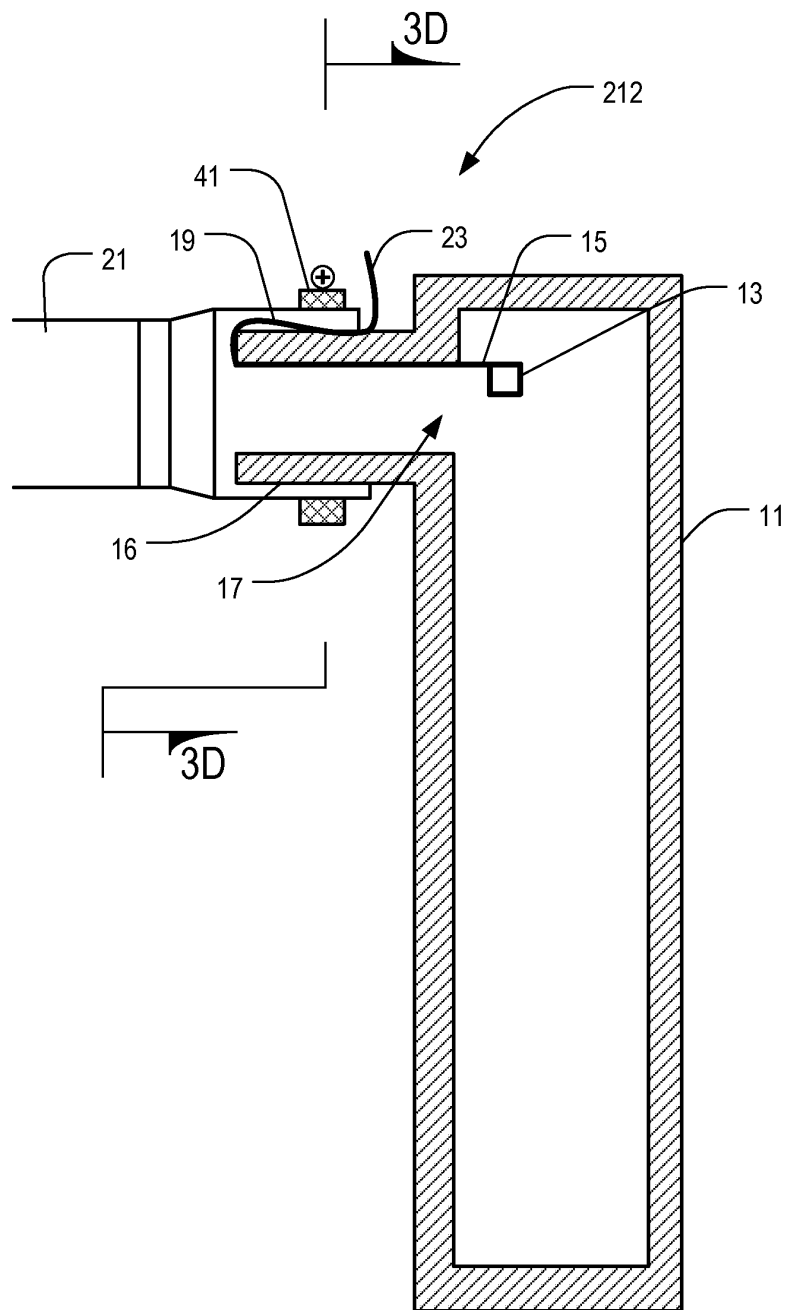


FIG. 3A

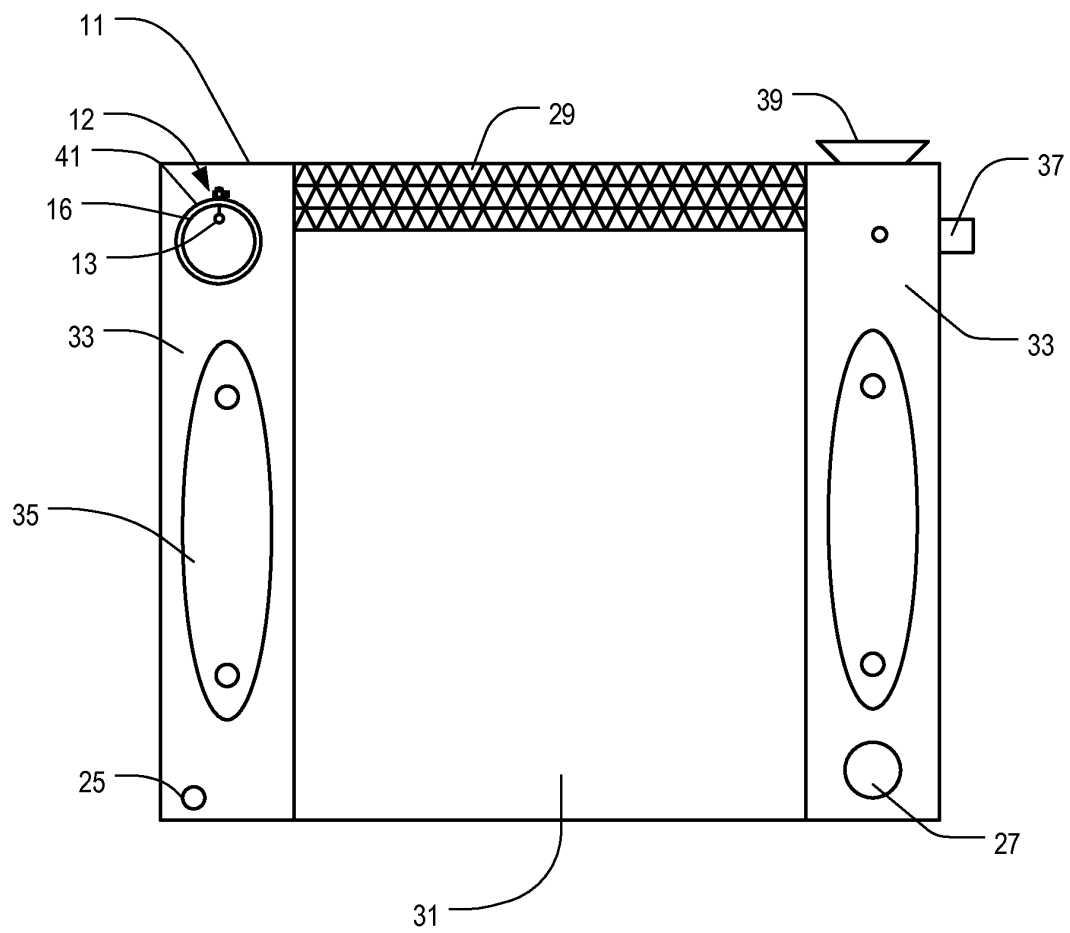


FIG. 3B

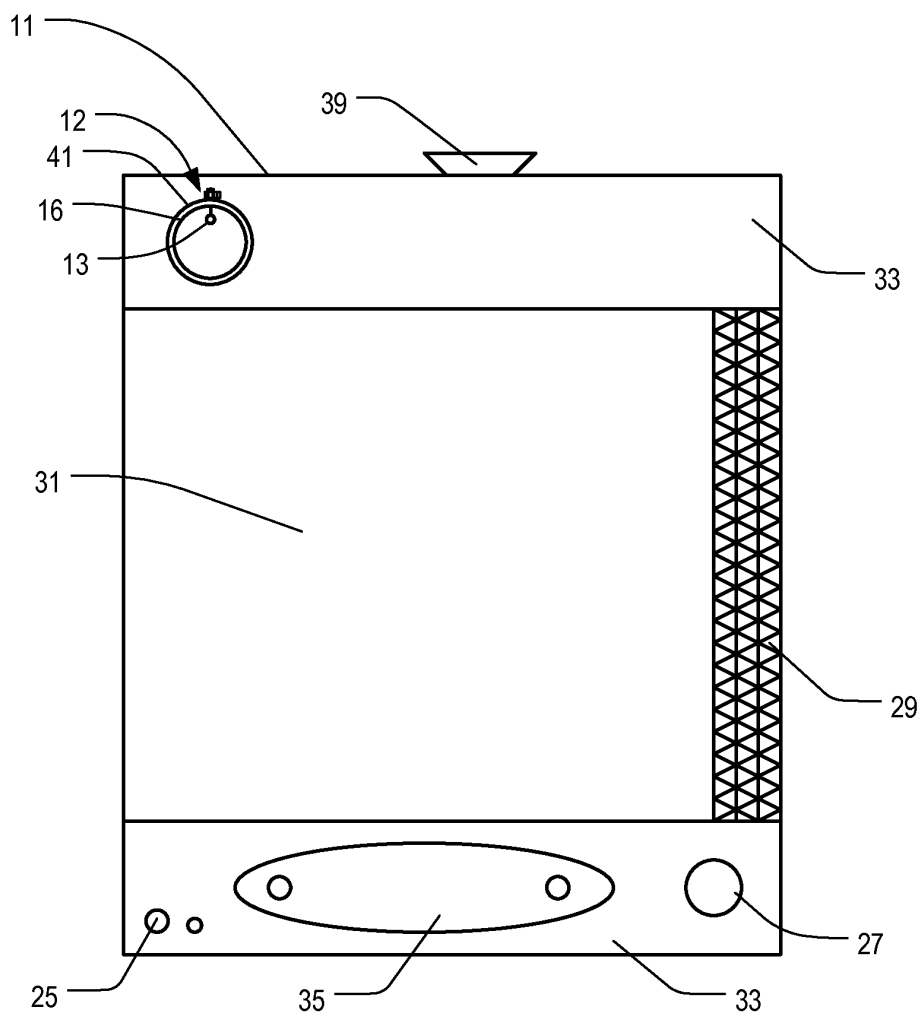


FIG. 3C

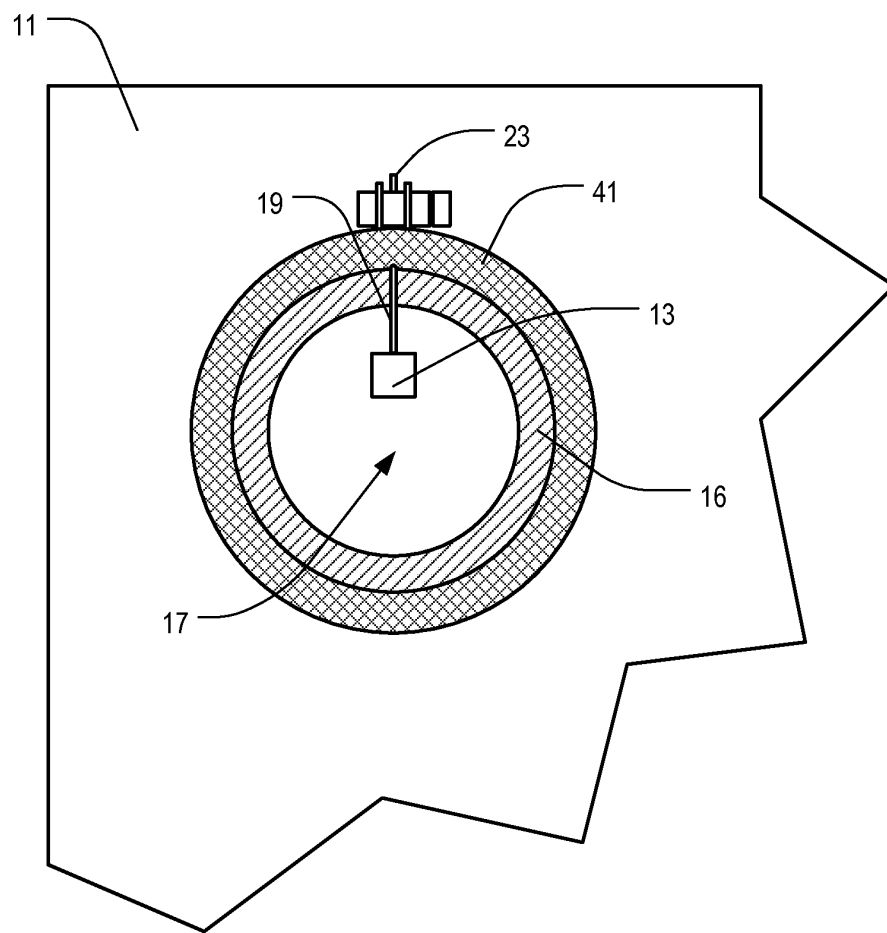


FIG. 3D

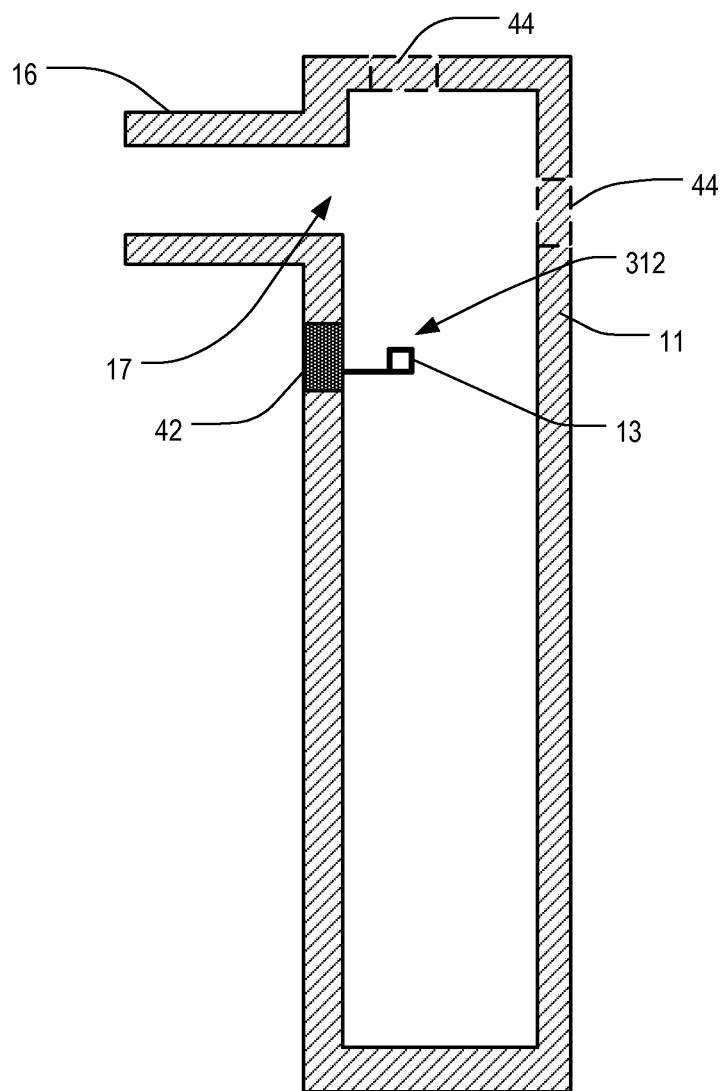


FIG. 4A

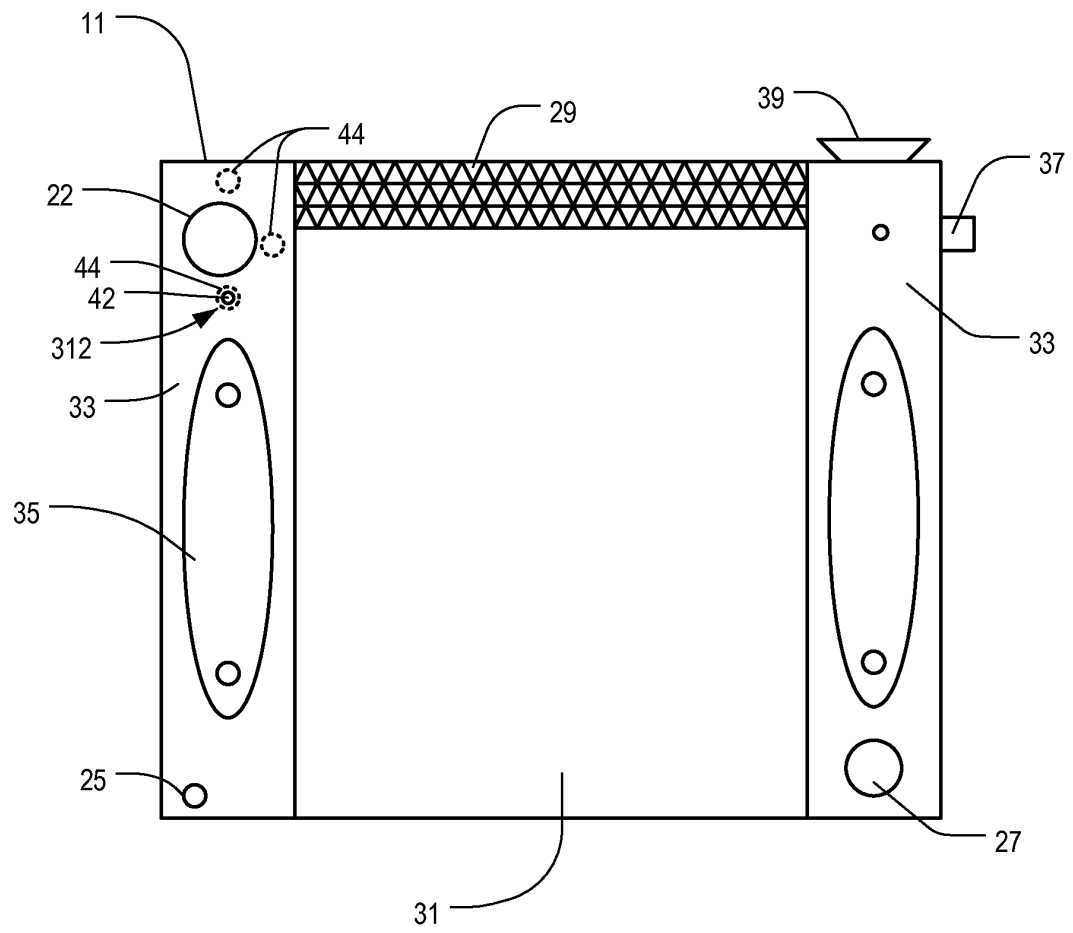


FIG. 4B

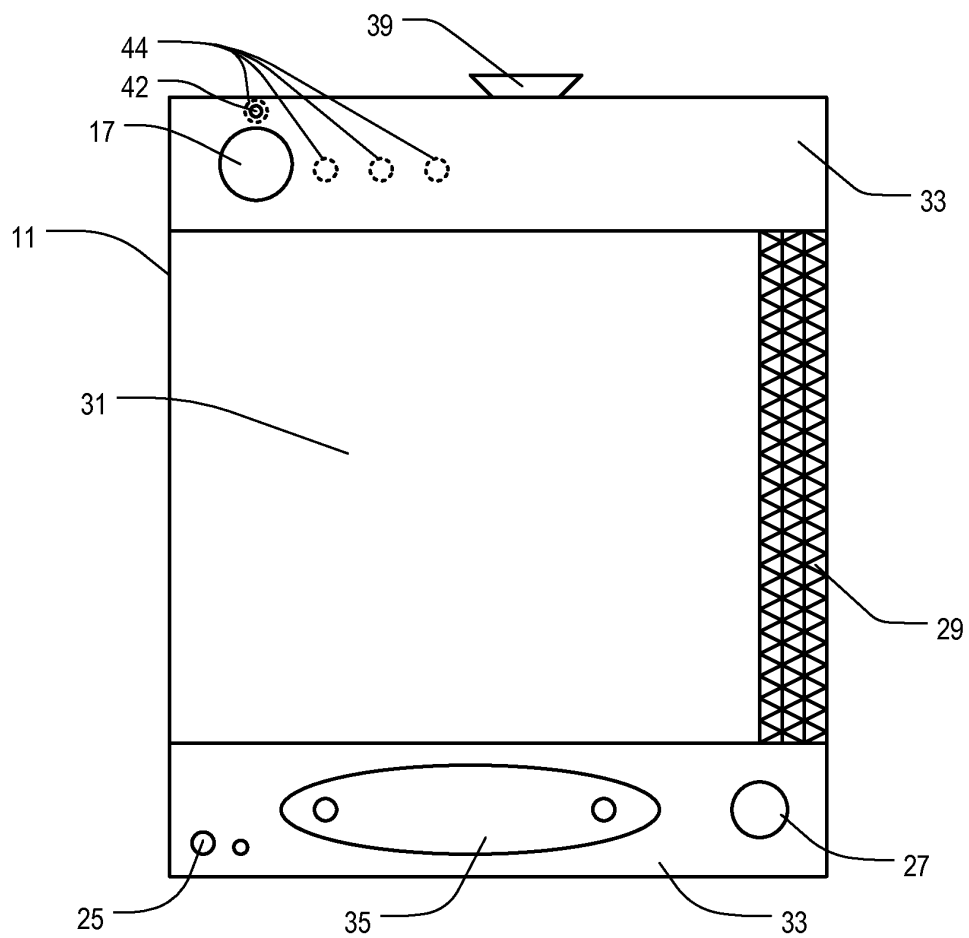


FIG. 4C

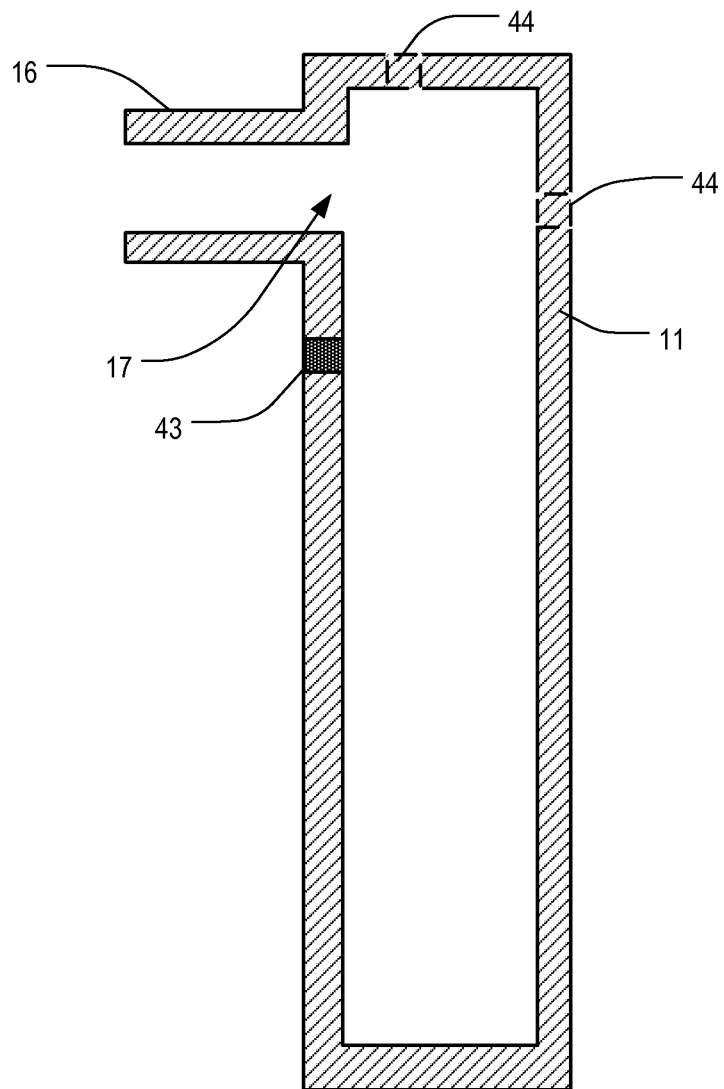


FIG. 5A

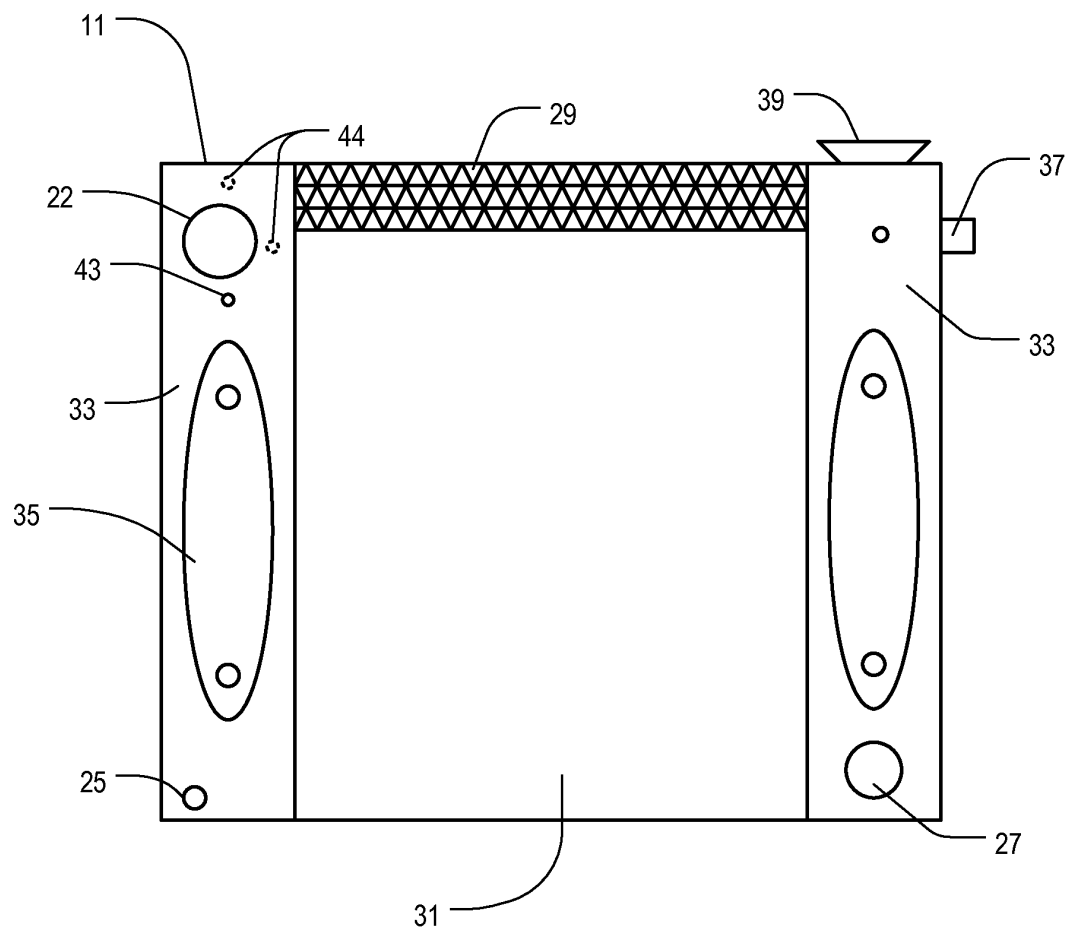


FIG. 5B

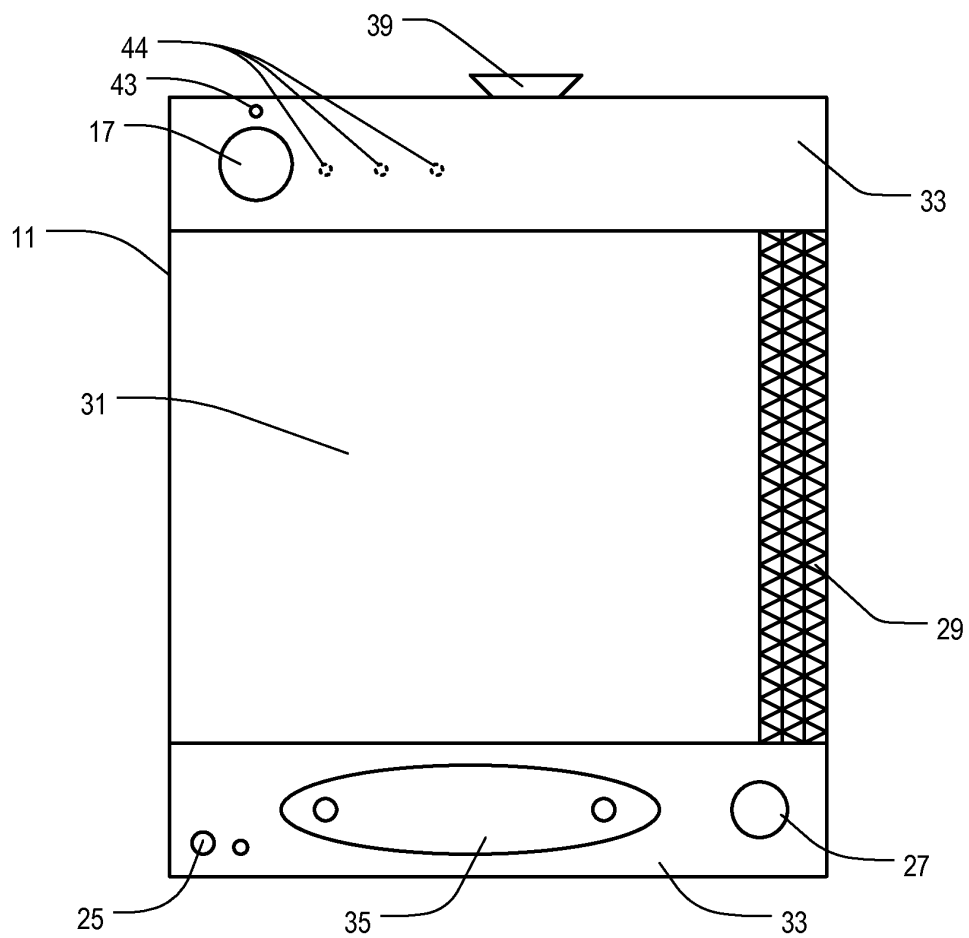


FIG. 5C

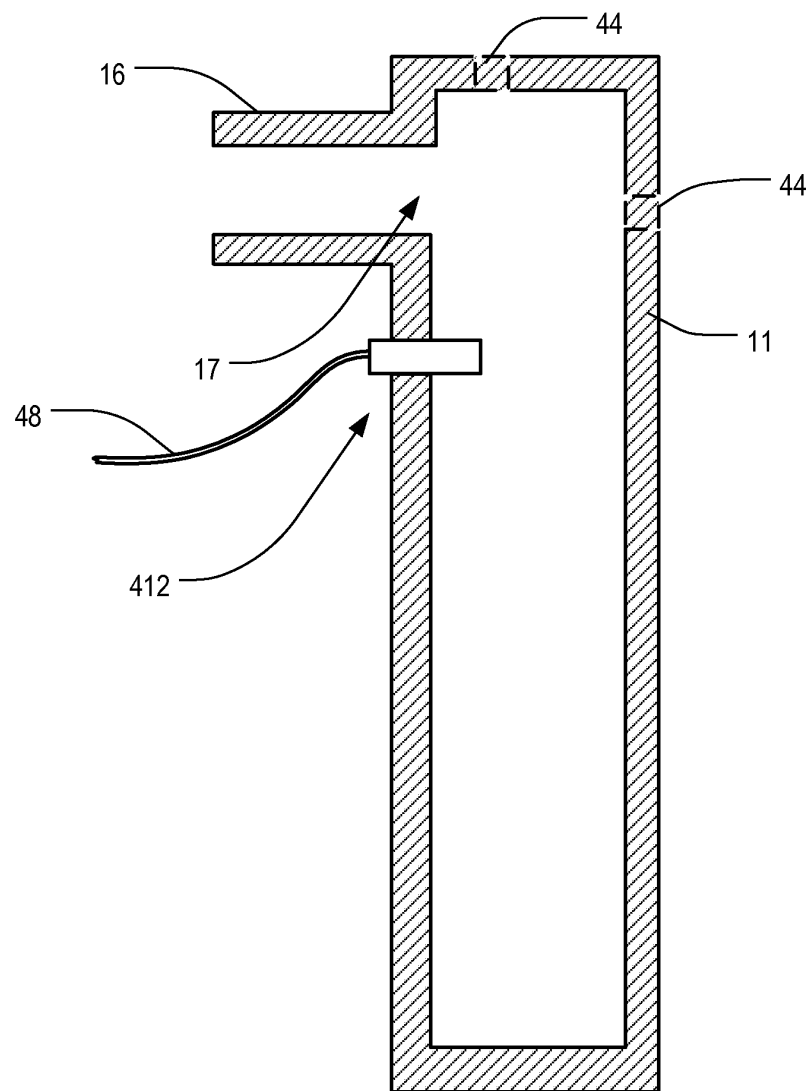


FIG. 6A

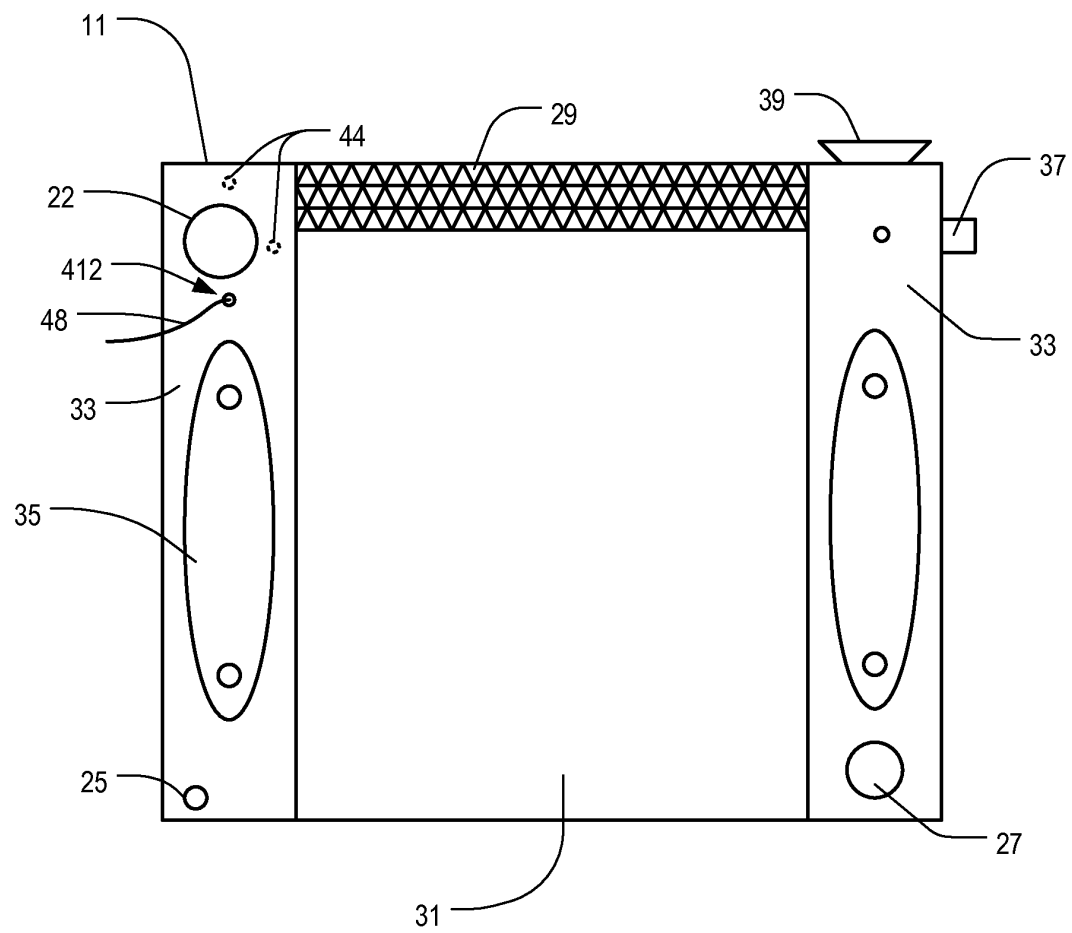


FIG. 6B

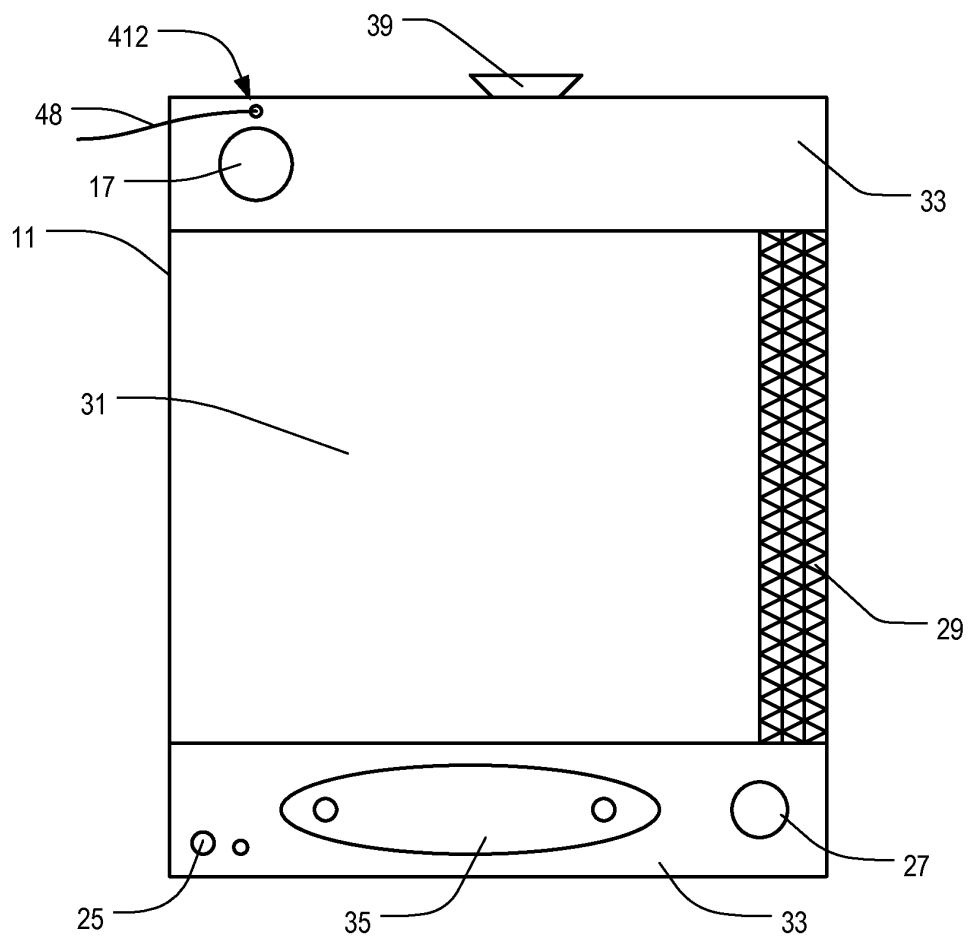


FIG. 6C

412

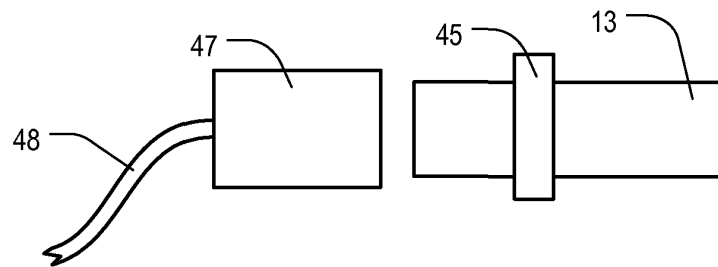


FIG. 7A

412

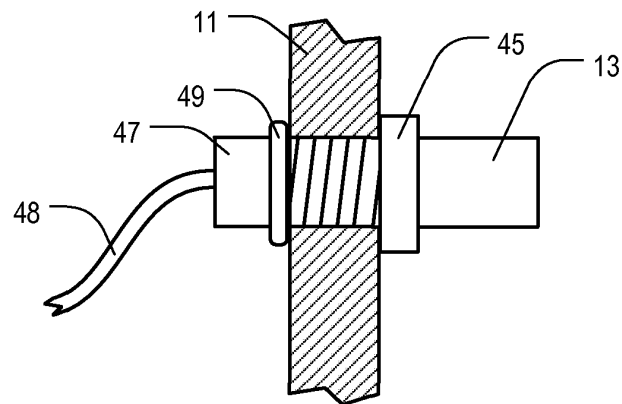


FIG. 7B

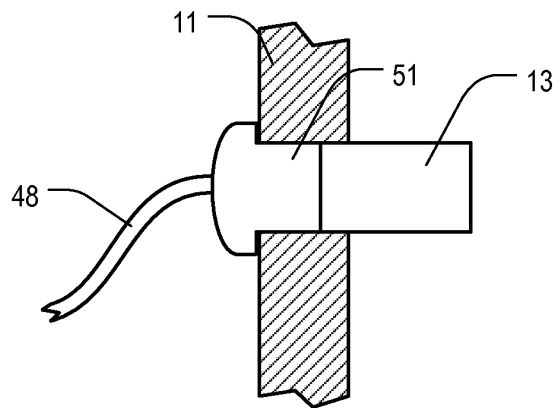


FIG. 7C

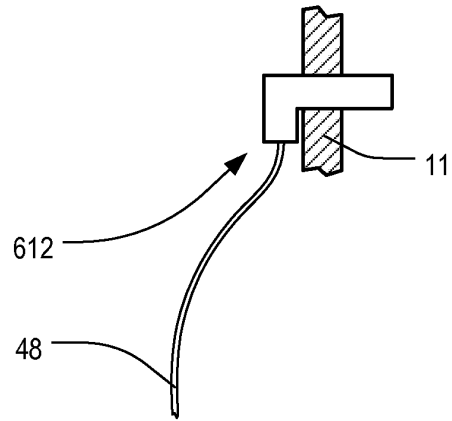


FIG. 8A

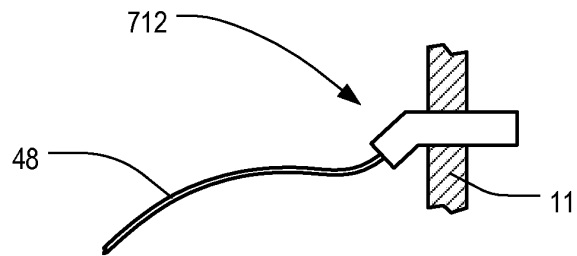


FIG. 8B

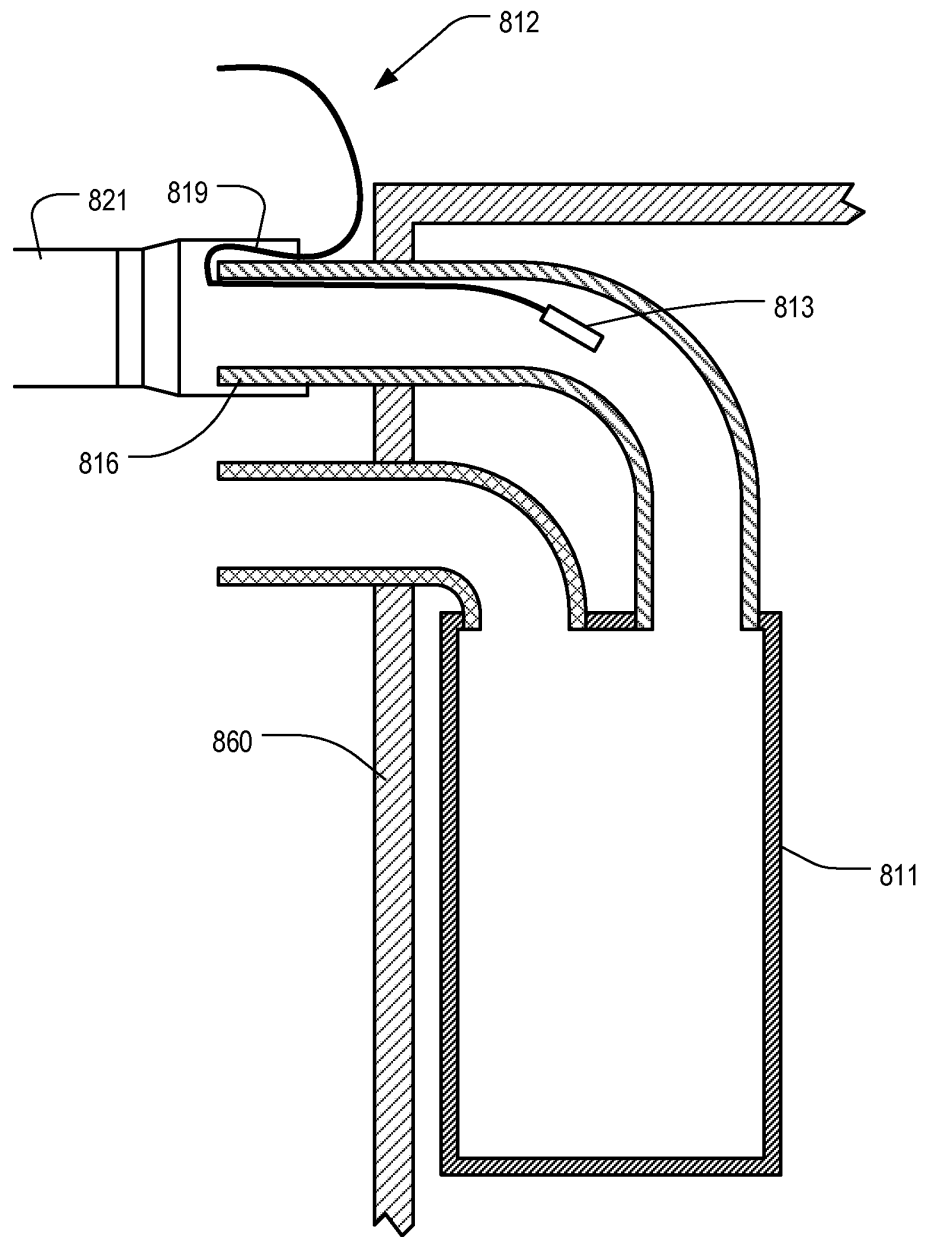


FIG. 9A

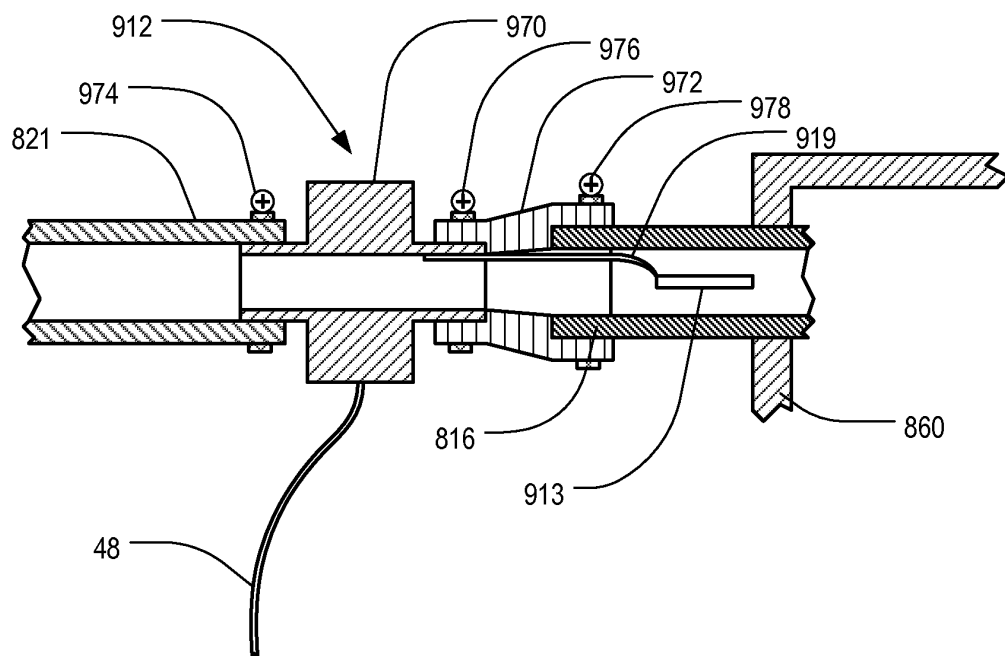


FIG. 9B

211

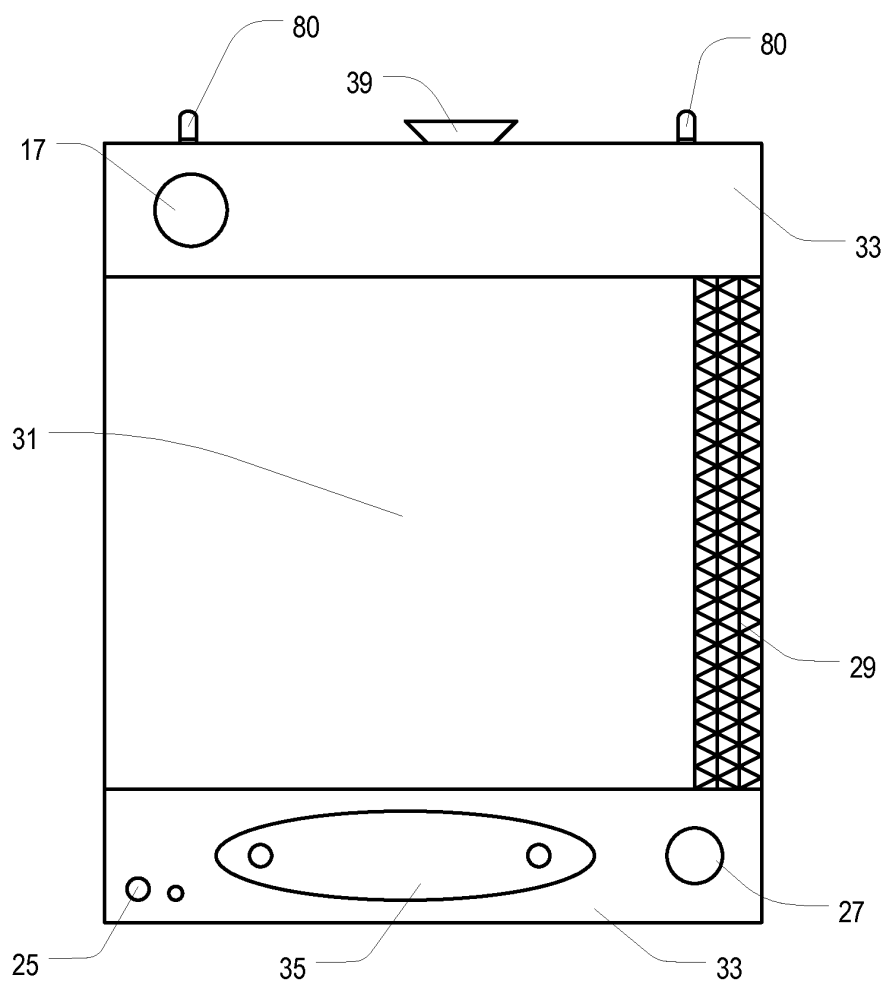


FIG. 10A

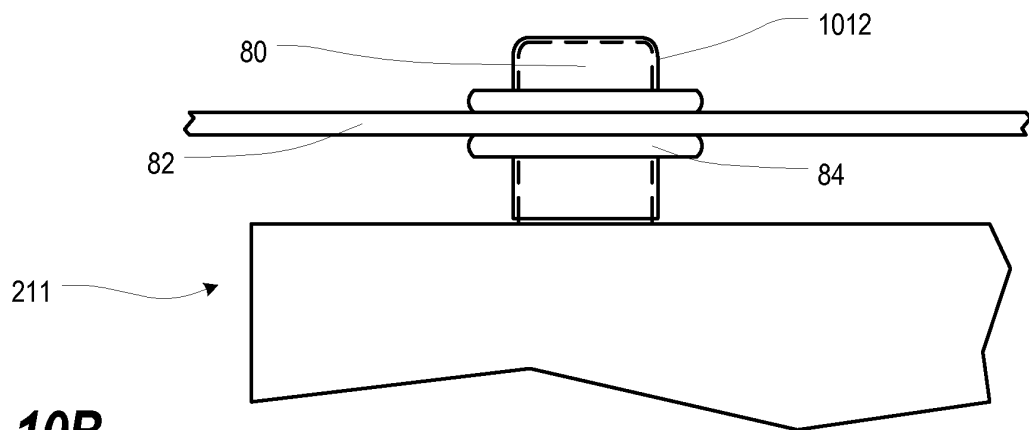


FIG. 10B

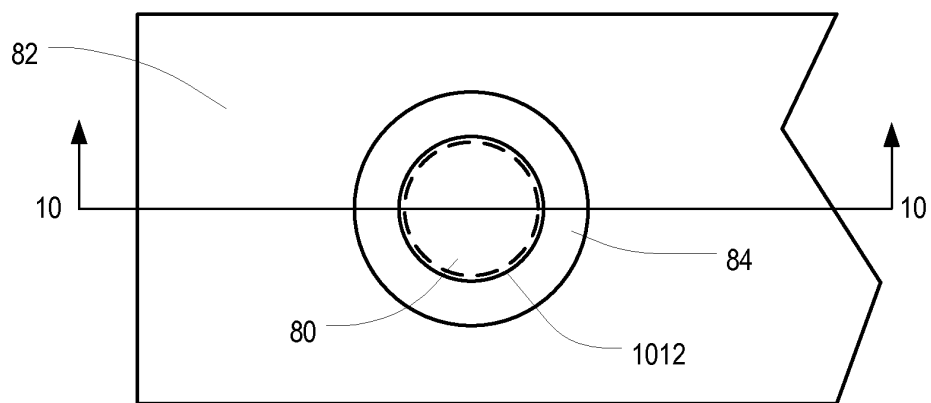


FIG. 10C

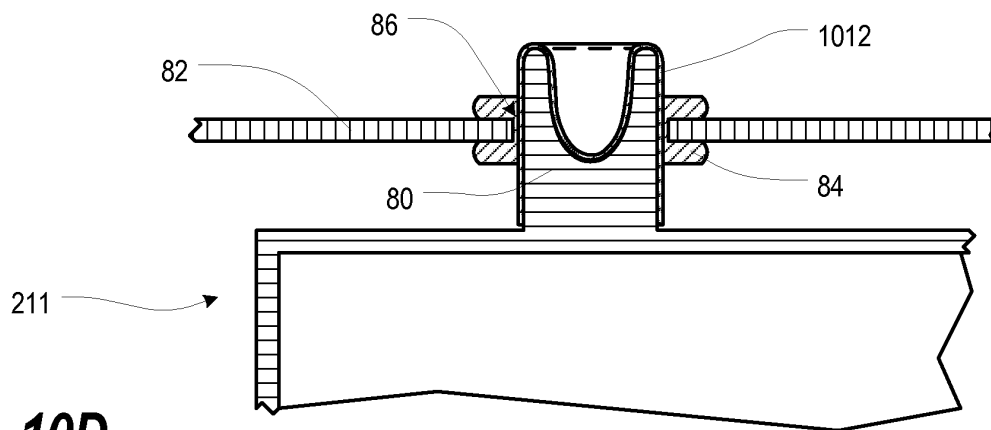


FIG. 10D

1112

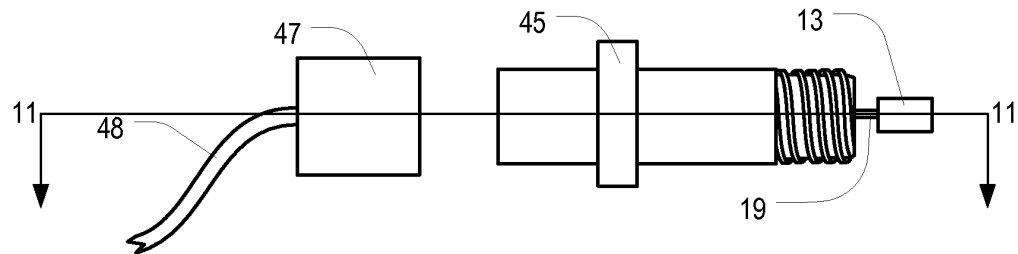


FIG. 11A

1112

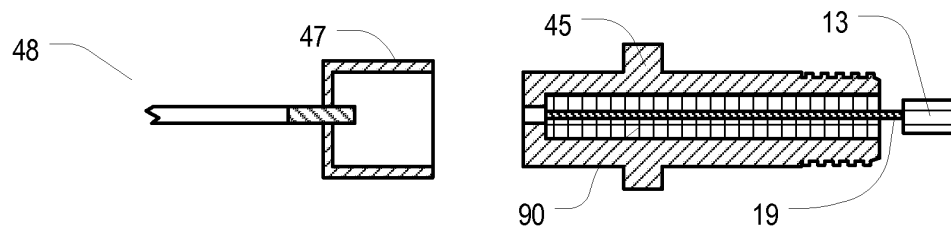


FIG. 11B

1112

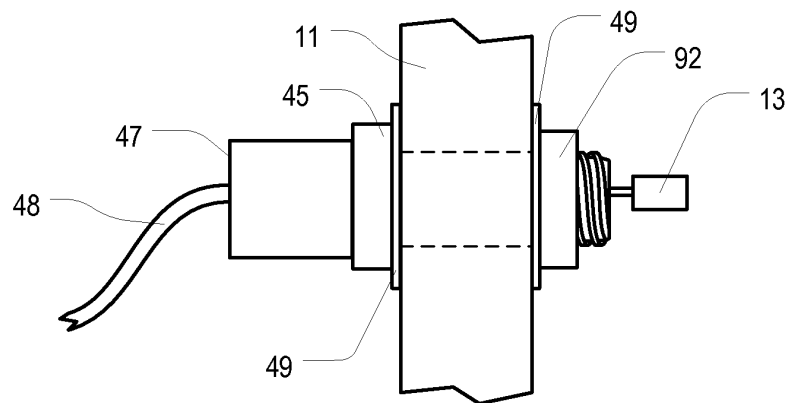


FIG. 11C

ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE

CROSS-REFERENCE TO RELATED APPLICATION

[0001] The present application is a U.S. nonprovisional patent application of, and claims priority under 35 U.S.C. § 119(e) to, U.S. provisional patent application serial number 61/120,296, filed December 5, 2008, which provisional patent application is incorporated by reference herein.

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BACKGROUND OF THE PRESENT INVENTION

Field of the Present Invention

[0003] This application relates generally to motor vehicles, whether powered by gas, diesel, electric battery, propane, natural gas, or any other like material, and in particular to radiators and engines and preventing corrosion in the cooling system of said vehicles, especially those with components of dissimilar metal construction which present most cooling system corrosion problems.

Background

[0004] Automobile cooling systems circulate water and coolant liquids through an engine's water jacket, head, and water pump to facilitate heat transfer. After absorbing the heat, the hot liquid is piped back to the radiator/storage tank which is a liquid to air heat exchanger. A typical radiator is made up of a storage tank either above or to the side of the cooling tubes and exchanged cooling fins. This storage tank has an opening to the interior of the storage tank part, a core of cooling tubes, which is where the coolant liquid flows, and fins, connected to these cooling tubes, which transfer heat to the air that is pulled or pushed through the fins and around the tubes for heat transfer from the coolant to the air passing through.

[0005] Radiators and engines were historically made of iron, steel, copper, and/or brass, which, as similar metals, have little corrosion caused by electrolytic activity. Over time, however, aluminum parts have been incorporated into engine thermal control devices, such as radiators and heater cores. While the use of aluminum offers several advantages, an unfortunate side effect of using dissimilar metals is an increase in electrolytic activity, leading to increased vulnerability to corrosion. In response to the electrolytic activity, also known as electrolysis, aluminum components corrode and become porous and may begin to leak in as little as two weeks.

[0006] During electrolysis, one of the metals in the system acts as an anode and corrodes. The other metal acts as a cathode and does not corrode. Chemical corrosion inhibitors have been developed to inhibit electrolysis, but they are toxic, present problems to the environment, and present problems of disposal. Alternatively, sacrificial anodes, constructed of active metals, that is metals that react with oxygen, such as magnesium, aluminum, zinc or combinations thereof, have also been used as corrosion inhibitors. Sacrificial anodes do not eliminate the flow of electric current, but instead attract the electric current, acting as a “lightning rod” that electricity clings to, thus relieving the anodic metal of the thermal control device from the corrosive damage of electrolysis.

[0007] U.S. Pat. No. 5,292,595 describes a sacrificial anode of specified composition bonded to the core metal to prevent the occurrence of pitting corrosion of core material in a heat exchanger such as a radiator or heater core. Unfortunately such an anode is hard to access to check its condition or replace it when it wears out. A need exists for a corrosion-inhibiting sacrificial anode which is easily accessible. Since a sacrificial anode is designed to be consumed, easy accessibility would allow verification of its effective working status and efficient replacement when depleted.

[0008] Furthermore, prior attempts at preventing corrosion in heat exchangers have failed due to the sacrificial anode being installed in undesirable locations. U.S. Pat. No. 5,649,591 describes a sacrificial anode built into a radiator cap. Such a solution is imperfect because some radiators lack caps and, for those that do have caps, the position of the cap is too far from the inlet to effectively prevent corrosion from occurring.

[0009] Thus, a need continues to exist to prevent corrosion in radiators and other engine thermal control devices. Current sacrificial anode devices are deficient in that they fail to

position the anode optimally to allow for maximal corrosion resistance and easy monitoring, removal, and replacement.

SUMMARY OF THE PRESENT INVENTION

[0010] In accordance with a preferred embodiment, the present invention comprises a device to prevent corrosion caused by electrolysis comprised of metal, preferably disposed in or near the inlet hose connection of a radiator, heater core, or other such engine thermal control device.

[0011] In features of this aspect, the corrosion prevention device is a sacrificial anode comprised of an active metal such as aluminum, magnesium, or zinc. In some preferred embodiments, the sacrificial anode is clipped to the inner wall of the radiator inlet. In different embodiments, the anode will hang at various distances from the upper lip of the radiator inlet. In other preferred embodiments, the sacrificial anode is constructed into the wall of the radiator near the inlet or built as a plug that may be inserted into a radiator plug opening.

[0012] Broadly defined, the present invention according to one aspect is an electrolysis prevention device, for preventing corrosion caused by electrolysis, including: a sacrificial anode made of an active metal; and an anode holder supporting the sacrificial anode; wherein the holder is adapted to fit around the inlet connection of an engine heat exchange component in such a way as to allow for a hose to be attached overtop the device.

[0013] In features of this aspect, the sacrificial anode is made of aluminum; the sacrificial anode is made of magnesium; the sacrificial anode is made of zinc; the anode holder is grounded to the vehicle; an end of the anode holder is attached to an additional wire positioning the sacrificial anode further down into the flow of the liquid coolant; the anode holder is connected to the radiator by a clamp; the engine heat exchange component is a radiator; and/or the engine heat exchange component is a heater core.

[0014] In another aspect, the present invention is a radiator with an internal sacrificial anode in proximity to an inlet connection thereof.

[0015] In yet another aspect, the present invention is a heater core with an internal sacrificial anode in proximity to an inlet connection thereof.

[0016] In still another aspect, the present invention is a method of preventing corrosion of an engine heat exchange component comprising adding or installing a sacrificial anode assembly within the heat exchange component adjacent an inlet thereof.

[0017] In a feature of this aspect, the engine heat exchange component has an inlet connection, and the method further includes: installing a fitting hole into the tank of the engine heat exchange component adjacent the inlet connection; and filling said fitting hole with a sacrificial anode of the sacrificial anode assembly. In another feature of this aspect, the method further includes attaching the sacrificial anode to the engine heat exchange component within 10 inches of a center of the inlet connection. In a further feature, the method further includes comprising grounding the sacrificial anode by means of an attached ground wire. In a still further feature, the attached ground wire is a “pigtail” clip connecting the sacrificial anode to a wiring harness.

[0018] In yet another aspect, the present invention is an electrolysis prevention shield for preventing corrosion caused by electrolysis. The electrolysis prevention shield includes a sheathing of durable insulating material wherein the sheathing of durable insulating material is configured to affix to a protrusion of metal. In a feature of this aspect, the durable insulating material is rubber. In an alternative feature, the durable insulating material is plastic.

[0019] Further areas of applicability of the present invention will become apparent from the detailed description provided hereinafter. It should be understood that the detailed description and specific examples, while indicating the preferred embodiment of the invention, are intended for purposes of illustration only and are not intended to limit the scope of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0020] Further features, embodiments, and advantages of the present invention will become apparent from the following detailed description with reference to the drawings, wherein:

FIG. 1A is a left side cross-sectional view of a radiator having an electrolysis prevention device in accordance with a first preferred embodiment of the present invention;

FIG. 1B is a front schematic view of a crossflow radiator having an electrolysis prevention device arranged as shown in FIG. 1A;

FIG. 1C is a front schematic view of a downflow radiator having an electrolysis prevention device arranged as shown in FIG. 1A;

FIG. 2A is a left side cross-sectional view of a radiator having an electrolysis prevention device in accordance with a second preferred embodiment of the present invention;

FIG. 2B is a front schematic view of a crossflow radiator having an electrolysis prevention device arranged as shown in FIG. 2A;

FIG. 2C is a front schematic view of a downflow radiator having an electrolysis prevention device arranged as shown in FIG. 2A;

FIG. 3A is a left side cross-sectional view of a radiator having an electrolysis prevention device in accordance with a third preferred embodiment of the present invention;

FIG. 3B is a front schematic view of a crossflow radiator having an electrolysis prevention device arranged as shown in FIG. 3A;

FIG. 3C is a front schematic view of a downflow radiator having an electrolysis prevention device arranged as shown in FIG. 3A;

FIG. 4A is a left side cross-sectional view of a radiator having an electrolysis prevention device in accordance with a fourth preferred embodiment of the present invention;

FIG. 4B is a front schematic view of a crossflow radiator having an electrolysis prevention device arranged as shown in FIG. 4A;

FIG. 4C is a front schematic view of a downflow radiator having an electrolysis prevention device arranged as shown in FIG. 4A;

FIG. 5A is a left side cross-sectional view of a radiator illustrating various locations for a removable plug that may be replaced with an electrolysis prevention device in accordance with a sixth preferred embodiment of the present invention;

FIG. 5B is a front schematic view of a crossflow radiator illustrating various locations for a removable plug that may be replaced with an electrolysis prevention device;

FIG. 5C is a front schematic view of a downflow radiator illustrating various locations for a removable plug that may be replaced with an electrolysis prevention device;

FIG. 6A is a left side cross-sectional view of the radiator of FIG. 5A, shown with an electrolysis prevention device installed in place of the removable plug;

FIG. 6B is a front schematic view of the crossflow radiator of FIG. 5B, shown with an electrolysis prevention device installed in place of the removable plug;

FIG. 6C is a front schematic view of the downflow radiator of FIG. 5C, shown with an electrolysis prevention device installed in place of the removable plug;

FIG. 7A is a side view of an electrolysis prevention device for use in the radiators of FIGS. 5A-5C;

FIG. 7B is a side view of the electrolysis prevention device of FIG. 7A;

FIG. 7C is a side view of another electrolysis prevention device for use in the radiators of FIGS. 5A-5C;

FIG. 8A is a side schematic view of an electrolysis prevention device arranged at a 90-degree angle for easy access;

FIG. 8B is a side schematic view of an electrolysis prevention device arranged at a 45-degree angle for easy access;

FIG. 9A is a side schematic of a heater core having an electrolysis prevention device in accordance with a sixth preferred embodiment of the present invention;

FIG. 9B is an enlarged view of a portion of the inlet hose and inlet pipe of the heater core of FIG. 9A but with an alternative electrolysis prevention device installed therein in accordance with a seventh preferred embodiment of the present invention.

FIG. 10A is a front schematic view of a downflow radiator having an electrolysis prevention shield in accordance with a seventh preferred embodiment of the present invention;

FIG. 10B is an enlarged fragmentary front schematic view of a portion of the radiator of FIG. 10A, detailing a mounting peg covered by the electrolysis prevention shield;

FIG. 10C is an enlarged fragmentary top schematic view of the portion of the radiator of FIG. 10A;

FIG. 10D is a front cross-sectional view of the portion of the radiator shown in FIG. 10C, taken along line 10-10;

FIG. 11A is a side view of an electrolysis prevention device for use in the radiators of FIGS. 5A-5C;

FIG. 11B is a top cross-sectional view of the electrolysis prevention device of FIG. 11A, taken along line 11-11; and

FIG. 11C is a side schematic view of the electrolysis prevention device of FIG. 11A, shown installed in a radiator.

DETAILED DESCRIPTION

[0021] As a preliminary matter, it will readily be understood by one having ordinary skill in the relevant art (“Ordinary Artisan”) that the present invention has broad utility and application. Furthermore, any embodiment discussed and identified as being “preferred” is considered to be part of a best mode contemplated for carrying out the present invention. Other embodiments also may be discussed for additional illustrative purposes in providing a full and enabling disclosure of the present invention. Moreover, many embodiments, such as adaptations, variations, modifications, and equivalent arrangements, will be implicitly disclosed by the embodiments described herein and fall within the scope of the present invention.

[0022] Accordingly, while the present invention is described herein in detail in relation to one or more embodiments, it is to be understood that this disclosure is illustrative and exemplary of the present invention, and is made merely for the purposes of providing a full and enabling disclosure of the present invention. The detailed disclosure herein of one or more embodiments is not intended, nor is to be construed, to limit the scope of patent protection afforded the present invention, which scope is to be defined by the claims and the equivalents thereof. It is not intended that the scope of patent protection afforded the present invention be defined by reading into any claim a limitation found herein that does not explicitly appear in the claim itself.

[0023] Thus, for example, any sequence(s) and/or temporal order of steps of various processes or methods that are described herein are illustrative and not restrictive. Accordingly, it should be understood that, although steps of various processes or methods may be shown and described as being in a sequence or temporal order, the steps of any such processes or methods

are not limited to being carried out in any particular sequence or order, absent an indication otherwise. Indeed, the steps in such processes or methods generally may be carried out in various different sequences and orders while still falling within the scope of the present invention. Accordingly, it is intended that the scope of patent protection afforded the present invention is to be defined by the appended claims rather than the description set forth herein.

[0024] Additionally, it is important to note that each term used herein refers to that which the Ordinary Artisan would understand such term to mean based on the contextual use of such term herein. To the extent that the meaning of a term used herein—as understood by the Ordinary Artisan based on the contextual use of such term—differs in any way from any particular dictionary definition of such term, it is intended that the meaning of the term as understood by the Ordinary Artisan should prevail.

[0025] Furthermore, it is important to note that, as used herein, “a” and “an” each generally denotes “at least one,” but does not exclude a plurality unless the contextual use dictates otherwise. Thus, reference to “a picnic basket having an apple” describes “a picnic basket having at least one apple” as well as “a picnic basket having apples.” In contrast, reference to “a picnic basket having a single apple” describes “a picnic basket having only one apple.”

[0026] When used herein to join a list of items, “or” denotes “at least one of the items,” but does not exclude a plurality of items of the list. Thus, reference to “a picnic basket having cheese or crackers” describes “a picnic basket having cheese without crackers,” “a picnic basket having crackers without cheese,” and “a picnic basket having both cheese and crackers.” Finally, when used herein to join a list of items, “and” denotes “all of the items of the list.” Thus, reference to “a picnic basket having cheese and crackers” describes “a picnic basket having cheese, wherein the picnic basket further has crackers,” as well as describes “a picnic basket having crackers, wherein the picnic basket further has cheese.”

[0027] As used herein, an “engine heat exchange component” refers to an engine radiator, heater core, or other device for exchanging heat in an engine.

[0028] Referring now to the drawings, in which like numerals represent like components throughout the several views, the preferred embodiments of the present invention are next described. The following description of one or more preferred embodiment(s) is merely exemplary in nature and is in no way intended to limit the invention, its application, or uses.

[0029] FIG. 1A is a left side cross-sectional view of a radiator **11** having an electrolysis prevention device **12** in accordance with a first preferred embodiment of the present invention. As shown therein, an electrolysis prevention device **12** includes a sacrificial anode **13** supported at the end of a sleeve wire, metal slide, clip **15** or the like such that the anode is disposed adjacent the radiator inlet **17**. The anode **13** should be comprised of a metal that reacts strongly with oxygen, also known as an active metal, such as magnesium, aluminum, zinc or combinations thereof. The anode support **19** extends through and out the radiator inlet and is doubled back around the inlet fitting **16**. The radiator hose **21** slides over the inlet fitting **16** and is clamped in place. The exposed end **23** of the anode support **19** optionally may be connected via ground wire (not shown) to the wiring harness, a suitable grounded location on the frame or cross member of the vehicle, or the like. However, grounding of the anode is not a necessary aspect of this embodiment, or any embodiment, of the present invention.

[0030] Such an assembly **12** can be installed very quickly and can be used in radiators having plastic tanks as well as in radiators having aluminum tanks. Furthermore, a smaller version may be utilized with heater cores (not shown). The radiators **11** can be of any conventional type, including the “crossflow” type, meaning the tanks **33** are on the sides (see FIG. 1B), the “downflow” type, meaning the tanks **33** are on top or bottom (see FIG. 1C), the “double pass” type, meaning that both connections (inlet and outlet) are on one side of the radiator (not shown), or the like. A similar assembly, appropriately adjusted in size, shape or the like, may likewise be utilized in heater cores (not shown). In each of these cases, the sacrificial anode **13** according to this embodiment is preferably disposed in the inlet hose connection of the radiator or heater core. Thus, this arrangement may be particularly useful as a “drop in” for aftermarket—i.e., for radiators and heater cores that are already produced or in service in vehicles already on the road.

[0031] FIG. 1B is a front schematic view of a crossflow radiator **11** having an electrolysis prevention device arranged as shown in FIG. 1A, while FIG. 1C is a front schematic view of a downflow radiator **11** having an electrolysis prevention device **12** arranged as shown in FIG. 1A. A typical radiator includes an aluminum core **31** and either plastic or all-aluminum tanks **33**. The specific inlet connection **16** varies by vehicle make, model and model year, but the inlet **17** is generally understood to refer to the vicinity of where hot water coming directly from the engine enters into the radiator **11**. The radiator **11** may include a fill cap **39** as shown in

FIG. 1C but is understood to be optional and is not present on many radiators **39**. Further, at least some radiators have a coolant reservoir.

[0032] Both downflow and crossflow radiators typically have a petcock **25** for draining fluid from the radiator, an outlet **27**, core fins and tubes **29**, and may optionally have a transmission and engine oil cooler/heater connection **35** and temperature sensor **37**.

[0033] FIG. 2A is a left side cross-sectional view of a radiator **11** having an electrolysis prevention device **112** in accordance with a second preferred embodiment of the present invention. The electrolysis prevention device **112** in this embodiment is generally similar to that of FIG. 1A, but the anode **13** itself hangs further down below the center axis of the radiator inlet **17** so as to be placed slightly lower into the flow of the water, coolant, or antifreeze. FIG. 2B is a front schematic view of a crossflow radiator **11** having an electrolysis prevention device **112** arranged as shown in FIG. 2A; and FIG. 2C is a front schematic view of a downflow radiator **11** having an electrolysis prevention device **112** arranged as shown in FIG. 2A. As with previous embodiments, the device **112** optionally may or may not be connected via ground wire to the wiring harness, a suitable grounded location on the frame or cross member of the vehicle, or the like.

[0034] FIG. 3A is a left side cross-sectional view of a radiator **11** having an electrolysis prevention device **212** in accordance with a third preferred embodiment of the present invention; FIG. 3B is a front schematic view of a crossflow radiator **11** having a sacrificial anode arranged as shown in FIG. 3A; and FIG. 3C is a front schematic view of a downflow radiator **11** having an electrolysis prevention device **212** arranged as shown in FIG. 3A. FIG. 3D is a front cross-sectional view of the inlet connection of FIG. 3A, taken along line 3D-3D and focusing on the inlet **17** and inlet connection **16**. In this preferred embodiment, the sacrificial anode **13** and support **19** are held in place with a clamp **41**. As with previous embodiments, the device **212** optionally may or may not be connected via ground wire to the wiring harness, a suitable grounded location on the frame or cross member of the vehicle, or the like.

[0035] FIG. 4A is a left side cross-sectional view of a radiator having an electrolysis prevention device **312** in accordance with a fourth preferred embodiment of the present invention; FIG. 4B is a front schematic view of a crossflow radiator having an electrolysis prevention device arranged as shown in FIG. 4A; and FIG. 4C is a front schematic view of a

downflow radiator having an electrolysis prevention device arranged as shown in FIG. 4A. In this embodiment, the electrolysis prevention device **312** is built into the radiator **11** when the radiator **11** is manufactured. The device **12** may be attached to the interior of the radiator **11** at any of a variety of locations **44** in the vicinity of the inlet **17**. In particular, this allows for an anode **13** to be attached by any way imaginable within 10 inches in any direction of the center axis of the inlet connection **16**. Preferably, attachment is to the aluminum tank **33** or the aluminum core **31** via weld **42**, but other attachment means and connection points may alternatively be used. As with previous embodiments, the device **312** optionally may or may not be connected via ground wire to the wiring harness, a suitable grounded location on the frame or cross member of the vehicle, or the like.

[0036] FIG. 5A is a left side cross-sectional view of a radiator illustrating various locations for a removable plug **43** that may be replaced with an electrolysis prevention device **412** in accordance with a fifth preferred embodiment of the present invention; FIG. 5B is a front schematic view of a crossflow radiator illustrating various locations for a removable plug **43** that may be replaced with an electrolysis prevention device; and FIG. 5C is a front schematic view of a downflow radiator illustrating various locations for a removable plug **43** that may be replaced with an electrolysis prevention device **412**. In at least one preferred embodiment, the removable plug may be a threaded pipe plug with a 3/8 pipe thread. It will be appreciated that although one plug **43** is illustrated, there are other locations **44** where the plug **43** can alternatively be installed. Regardless of where the plug **43** is located, it is installed at time of manufacture (or optionally replaced during a subsequent repair procedure) but can be removed and replaced with an electrolysis prevention device such as one of the devices **412,512** shown in FIGS. 7A-7C. In this regard, FIG. 6A is a left side cross-sectional view of the radiator of FIG. 5A, shown with an electrolysis prevention device **412** installed in place of the removable plug **43**; FIG. 6B is a front schematic view of the crossflow radiator of FIG. 5B, shown with an electrolysis prevention device **412** installed in place of the removable plug **43**; and FIG. 6C is a front schematic view of the downflow radiator of FIG. 5C, shown with an electrolysis prevention device **412** installed in place of the removable plug **43**.

[0037] Notably, in some embodiments, the radiator manufacturer provides the hole and the plug **43** for the hole, and the electrolysis prevention device **412** is installed by a mechanic

in an after-market process, while in other embodiments, the radiator manufacturer installs the electrolysis prevention device **412** at time of manufacture.

[0038] FIG. 7A is a side view of the electrolysis prevention device **412** of FIGS. 6A-6C, comprising the sacrificial anode **13** and an anode holder **45** with a “pigtail” connector **47** into which the anode attaches. The “pigtail” connector **47** grounds the device **12** by attaching it to the vehicle’s wiring harness, a suitable grounded location on the frame or cross member of the vehicle, or the like, via grounding wire **48**. As with previous embodiments, however, the device **412** optionally may or may not be grounded in this manner. FIG. 7B is a side view of an electrolysis prevention device shown in FIG. 7A wherein the anode **13** is attached into the anode holder **45** inserted in a hole in the wall of the radiator **11**. An o-ring **49** is also installed to protect against leaking. FIG. 7C is a side view of another electrolysis prevention device **512** for use in the radiators **11** of FIGS. 5A-5C, wherein a rubber seal **51** is utilized to hold the anode **13** in place in the hole of the radiator **11**.

[0039] FIGS. 11A-11C illustrate an alternative electrolysis prevention device **1112** for use in radiators **11** of FIGS. 5A-5C. FIG. 11A is a side view of the electrolysis prevention device **1112**, comprising a sacrificial anode **13** and an partially threaded anode holder **45** with a “pigtail” connector **47** into which the anode attaches. The sacrificial anode **13** is affixed to an anode support **19** which extends from one end of the anode holder **45**. The “pigtail” connector **47** grounds the device **1112** by attaching it to the vehicle’s wiring harness, a suitable grounded location on the frame, or cross member of the vehicle, or the like, via grounding wire **48**. As with previous embodiments, however, the device **1112** optionally may or may not be grounded in this manner.

[0040] FIG. 11B is a cross-sectional view of the electrolysis prevention device **1112** shown in FIG. 11A. As shown therein, the anode support **19** extends through the interior of the anode holder **45**, and is separated from the holder **45** by an insulating material **90**. Furthermore, in at least one preferred embodiment, the anode holder **45** has a small opening into which the ground wire **48** can extend, and thus be in electrical connection with the anode support **19**, grounding the device **1112**.

[0041] FIG. 11C is a side view of the electrolysis prevention device **1112** of FIGS. 11A-11B, wherein the device **1112** has been installed in a hole in a wall of a radiator **11**. An o-ring **49** is also installed on each side to seal the opening, thereby protecting against leakage. It

will be appreciated that the dashed lines in FIG. 11C illustrate where the anode holder passes through the radiator wall. The device **1112** is secured to the wall of the radiator **11** with a threaded nut **92** that has been screwed into the threaded end of the anode holder **45** such that the radiator wall is clamped between the threaded nut **92** and a flange on the anode holder **45**.

[0042] FIGS. 8A and 8B are side schematic views of two electrolysis prevention devices arranged at different angles to promote easy access. The first drawing depicts an electrolysis prevention device **612** arranged at a 90-degree angle. The second depiction is of an electrolysis prevention device **712** arranged at a 45-degree angle.

[0043] It will be appreciated that the various teachings described and illustrated herein may likewise be applied to protect a heater core from corrosion in a similar fashion. In this regard, it will be further appreciated that, because of their generally smaller size, heater cores may require the use of a sacrificial anode of different dimensions, and in particular may require the use of a thinner or slimmer anode and, in at least some cases, produce a correspondingly slimmer electrolysis prevention device. The change in dimension may be necessary to prevent damage to the heater core when mounted therein. FIG. 9A is a side schematic of a heater core **811** having an electrolysis prevention device **812** in accordance with a sixth preferred embodiment of the present invention. The heater core **811** is typically located near the firewall **860**, with an inlet pipe **816** to which an inlet hose **821** is attached. An outlet hose (not shown) is likewise provided. The heater core **811** may be constructed of aluminum with aluminum tanks or plastic tanks. The sacrificial anode **813** can be clipped in, welded on, clamped on, or fastened by any method to protect against corrosion. The anode support **819** can be constructed from any metal, plastic, or other material that is capable of securing a sacrificial anode and attaching to the inlet pipe **816** of the heater core **811**. The sacrificial anode **813** that is enclosed within the device is allowed to be dropped into the radiator heater core **811**. This device “shortens” the inlet radiator hose and/or heater inlet hose in efforts to replicate all of the before mentioned electrolysis prevention devices in any form. As with previous embodiments, the device **812** optionally may or may not be connected via ground wire to the wiring harness, a suitable grounded location on the frame or cross member of the vehicle, or the like.

[0044] FIG. 9B is an enlarged view of a portion of the inlet hose **821** and inlet pipe **816** of the heater core **811** of FIG. 9A but with an alternative electrolysis prevention device **912** installed therein in accordance with a seventh preferred embodiment of the present invention.

The device **912** includes a short pipe insert **970** connected to the inlet hose **821** and to which one end of an anode holder **919** is attached. A sacrificial anode **913** is disposed at the opposite end of the anode holder **919**. The pipe insert **970** is connected to the inlet pipe **816** via a short rubber sleeve **972**. Clamps **974,976,978** are used to connect the hose **821** to the pipe insert **970** and the sleeve **972** to the pipe insert **970** and to the inlet pipe **816**. This device “shortens” the inlet radiator hose and/or heater inlet hose in efforts to replicate all of the before mentioned sacrificial anodes in any form. It will be appreciated that a similar device may be utilized with radiators **11**. As with previous embodiments, the device **912** optionally may or may not be connected via ground wire to the wiring harness, a suitable grounded location on the frame or cross member of the vehicle, or the like.

[0045] FIGS. 10A-10D illustrate a radiator **211** having an electrolysis prevention shield **1012** in accordance with an eighth preferred embodiment of the present invention. FIG. 10A is a front schematic view of a downflow aluminum radiator **211** with two vertically extending, metal mounting pegs **80**, each of which is covered by an electrolysis prevention shield **1012**. FIG. 10B is an enlarged fragmentary front schematic view of a portion of the radiator **211** of FIG. 10A showing the radiator **211** secured to a vehicle frame **82** via the mounting peg **80**. FIG. 10C is an enlarged fragmentary top view of the portion of the radiator **211** of FIG. 10B, further illustrating the radiator **211** secured to the vehicle frame **82**. FIG. 10D is a front cross-sectional view of the portion of the radiator **211** of FIGS. 10B and 10C taken along line 10-10. The electrolysis prevention shield **1012** comprises a sheathing of durable insulating material, such as rubber or plastic, that can be molded or otherwise affixed to a metal component of a radiator or heater core that is electrically exposed to metal components in the vehicle. The insulating material of the electrolysis prevention device **1012** acts as a barrier to prevent metal-on-metal contact which leads to electrolysis and eventually corrosion of portions of a radiator, thereby causing leaks. In at least one preferred embodiment, the device **1012** is comprised of insulating material, such as polyolefin or other “shrink wrap” polymers, that shrinks tightly over whatever it is covering when heat is applied.

[0046] As shown in FIGS. 10B-10D, the mounting peg **80** secures the radiator **211** to an appropriate vehicle frame **82** by extending through a circular opening **86** in the frame **82** that is slightly larger than the diameter of the mounting peg **80**. In order to insulate the radiator **211** from vibration and other effects, the interface between the mounting peg **80** and the opening **86**

is conventionally sealed with an o-ring **84**. However, it is believed that small electrical currents may continue to flow between the metal material of the frame **82** and the metal material of the mounting pegs **80**, and that such currents contribute the electrolysis problems described elsewhere herein. The electrolysis prevention shield **1012** shown herein aids in preventing this by completely surrounding the mounting peg **80**, shielding the mounting peg **80** from direct contact with both the o-ring **84** and the vehicle frame **82** and otherwise preventing current flow between the elements **80,82**. The electrolysis prevention shield **1012** is perhaps best utilized with one or more of the various electrolysis prevention devices described elsewhere. In this regard, it will be appreciated that the broken lines of FIGS. 10B-10D illustrate the portion of the mounting peg **80** that may be hidden beneath the electrolysis prevention shield **1012**, and that FIG. 10D shows a cross-section of the electrolysis prevention shield **1012** “shrink-wrapped” or otherwise molded or assembled to tightly fit the shape and contour of the mounting peg **80**. The tight fit afforded thereby prevents the shield **1012** from becoming separated or disconnected from the mounting peg **80** and thus provides better protection against any direct metal-on-metal contact.

[0047] Based on the foregoing information, it will be readily understood by those persons skilled in the art that the present invention is susceptible of broad utility and application. Many embodiments and adaptations of the present invention other than those specifically described herein, as well as many variations, modifications, and equivalent arrangements, will be apparent from or reasonably suggested by the present invention and the foregoing descriptions thereof, without departing from the substance or scope of the present invention.

[0048] Accordingly, while the present invention has been described herein in detail in relation to one or more preferred embodiments, it is to be understood that this disclosure is only illustrative and exemplary of the present invention and is made merely for the purpose of providing a full and enabling disclosure of the invention. The foregoing disclosure is not intended to be construed to limit the present invention or otherwise exclude any such other embodiments, adaptations, variations, modifications or equivalent arrangements; the present invention being limited only by the claims appended hereto and the equivalents thereof.

CLAIMS

What is claimed is:

1. An electrolysis prevention device, for preventing corrosion caused by electrolysis, comprising:
 - a sacrificial anode made of an active metal; and
 - an anode holder supporting the sacrificial anode;
 - wherein the holder is adapted to fit around the inlet connection of an engine heat exchange component in such a way as to allow for a hose to be attached overtop the device.
2. The electrolysis prevention device of claim 1 wherein the sacrificial anode is made of aluminum.
3. The electrolysis prevention device of claim 1 wherein the sacrificial anode is made of magnesium.
4. The electrolysis prevention device of claim 1 wherein the sacrificial anode is made of zinc.
5. The electrolysis prevention device of claim 1 wherein the anode holder is grounded to the vehicle.
6. The electrolysis prevention device of claim 1 wherein an end of the anode holder is attached to an additional wire positioning the sacrificial anode further down into the flow of the liquid coolant.
7. The electrolysis prevention device of claim 1 wherein the anode holder is connected to the radiator by a clamp.

8. The electrolysis prevention device of claim 1 wherein the engine heat exchange component is a radiator.
9. The electrolysis prevention device of claim 1 wherein the engine heat exchange component is a heater core.
10. A radiator with an internal sacrificial anode in proximity to an inlet connection thereof.
11. A heater core with an internal sacrificial anode in proximity to an inlet connection thereof.
12. A method of preventing corrosion of an engine heat exchange component comprising adding or installing a sacrificial anode assembly within the heat exchange component adjacent an inlet thereof.
13. The method of claim 12, wherein the engine heat exchange component has an inlet connection, the method further comprising:
 - installing a fitting hole into the tank of the engine heat exchange component adjacent the inlet connection; and
 - filling said fitting hole with a sacrificial anode of the sacrificial anode assembly.
14. The method of claim 12, further comprising attaching the sacrificial anode to the engine heat exchange component within 10 inches of a center of the inlet connection.
15. The method of claim 14, further comprising grounding the sacrificial anode by means of an attached ground wire.
16. The method of claim 15, whereby the attached ground wire is a “pigtail” clip connecting the sacrificial anode to a wiring harness.

17. An electrolysis prevention shield, for preventing corrosion caused by electrolysis, comprising:
a sheathing of durable insulating material wherein the sheathing of durable insulating material is configured to affix to a protrusion of metal.
18. The electrolysis prevention device of claim 17, wherein the durable insulating material is rubber.
19. The electrolysis prevention device of claim 17, wherein the durable insulating material is plastic.

ABSTRACT OF THE DISCLOSURE

An electrolysis prevention device, for preventing corrosion caused by electrolysis, includes a sacrificial anode made of an active metal and an anode holder supporting the sacrificial anode. The holder is adapted to fit around the inlet connection of an engine heat exchange component, such as a radiator or heater core, in such a way as to allow for a hose to be attached overtop the device. The device may be included in an originally-manufactured engine heat exchange component or may be installed later.

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR 1.63)		Attorney Docket Number	3034.002	
		First Named Inventor	Frank PETROSINO	
		<i>COMPLETE IF KNOWN</i>		
<input checked="" type="checkbox"/> Declaration Submitted With Initial Filing	OR	<input type="checkbox"/> Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16(f)) required)	Application Number	tbd
			Filing Date	tbd
			Art Unit	tbd
			Examiner Name	tbd

I hereby declare that: (1) Each inventor's residence, mailing address, and citizenship are as stated below next to their name; and (2) I believe the inventor(s) named below to be the original and first inventor(s) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE

(Title of the Invention)

the application of which

☒ is attached hereto
OR

☐ was filed on (MM/DD/YYYY) _____ as United States Application Number or PCT International

Application Number _____ and was amended on (MM/DD/YYYY) _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified application, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

Authorization To Permit Access To Application by Participating Offices

☐ If checked, the undersigned hereby grants the USPTO authority to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), and any other intellectual property offices in which a foreign application claiming priority to the above-identified application is filed access to the above-identified patent application. See 37 CFR 1.14(c) and (h). This box should not be checked if the applicant does not wish the EPO, JPO, KIPO, or other intellectual property office in which a foreign application claiming priority to the above-identified application is filed to have access to the application.

In accordance with 37 CFR 1.14(h)(3), access will be provided to a copy of the application-as-filed with respect to : 1) the above-identified application, 2) any foreign application to which the above-identified application claims priority under 35 USC 119(a)-(d) if a copy of the foreign application that satisfies the certified copy requirement of 37 CFR 1.55 has been filed in the above-identified US application, and 3) any U.S. application from which benefit is sought in the above-identified application.

In accordance with 37 CFR 1.14(c), access may be provided to information concerning the date of filing the Authorization to Permit Access to Application by Participating Offices.

[Page 1 of 3]

This collection of information is required by 35 U.S.C. 115 and 37 CFR 1.63. 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 21 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.**

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DECLARATION — Utility or Design Patent Application


Claim of Foreign Priority Benefits

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto.

DECLARATION – Utility or Design Patent Application

Direct all correspondence to: <input checked="" type="checkbox"/>	The address associated with Customer Number: 36790	OR <input type="checkbox"/>	Correspondence address below
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NAME OF SOLE OR FIRST INVENTOR:		<input type="checkbox"/> A petition has been filed for this unsigned inventor	
Given Name (first and middle [if any])		Family Name or Surname	
Frank		PETROSINO	
Inventor's Signature 		Date	
Residence: City	State	Country	Citizenship
Concord	North Carolina	US	US
Mailing Address			
3929 Amarillo Dr.			
City	State	Zip	Country
Concord	North Carolina	28027	US
<input type="checkbox"/> Additional inventors or a legal representative are being named on the supplemental sheet(s) PTO/SB/02A or 02LR attached hereto.			

[Page 3 of 3]

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE		
First Named Inventor/Applicant Name:		Frank PETROSINO		
Filer:		Peter Joseph Mattei		
Attorney Docket Number:		3034.002		
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:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				462

Electronic Acknowledgement Receipt

EFS ID:	6581477
Application Number:	12631903
International Application Number:	
Confirmation Number:	2825
Title of Invention:	ELECTROLYSIS PREVENTION DEVICE AND METHOD OF USE
First Named Inventor/Applicant Name:	Frank PETROSINO
Customer Number:	36790
Filer:	Peter Joseph Mattei
Filer Authorized By:	
Attorney Docket Number:	3034.002
Receipt Date:	07-DEC-2009
Filing Date:	
Time Stamp:	10:28:51
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$462
RAM confirmation Number	7433
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Drawings-only black and white line drawings	2009-12-03_3034-002_FIGS.pdf	125338 79822899c879204784249dbd1bd1d18df3e5bfa7	no	27
Warnings:					
Information:					
2		2009-12-03_3034-002_Specification.pdf	139283 d73b11ffe82b7ab633710921c8e162034202304a	yes	19
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	15	
	Claims		16	18	
	Abstract		19	19	
Warnings:					
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3	Oath or Declaration filed	2009-12-03_3034-002_Declaration-signed.pdf	237016 1ae775de5c7dae68a0e27cad3998d6bd748dbae0	no	3
Warnings:					
Information:					
4	Fee Worksheet (PTO-875)	fee-info.pdf	32890 fa7416a346e3cea929ee0190208f9f9387d11f90	no	2
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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

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Filing Date: 12/07/09

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

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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 12/631,903	
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	82	N/A	
SEARCH FEE (37 CFR 1.16(k), (l), 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(i))	19	minus 20 =	x\$26		x\$52	
INDEPENDENT CLAIMS (37 CFR 1.16(h))	5	minus 3 =	x\$110	220	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 \$260 (\$130 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	682	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)		(Column 3)		
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)
	Total (37 CFR 1.16(i))	Minus **	=	X =		X =
	Independent (37 CFR 1.16(h))	Minus ***	=	X =		X =
	Application Size Fee (37 CFR 1.16(s))			N/A		N/A
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			TOTAL ADD'T FEE		TOTAL ADD'T FEE
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)
	Total (37 CFR 1.16(i))	Minus **	=	X =		X =
	Independent (37 CFR 1.16(h))	Minus ***	=	X =		X =
	Application Size Fee (37 CFR 1.16(s))			N/A		N/A
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))			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.						

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