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NOTICE OF ALLOWANCE AND FEE(S) DUE

67050 7590 06/30/2026
KASHA LAW LLC
14532 Dufief Mill Road
North Potomac, MD 20878

EXAMINER

LOTTER, DAVID E

ART UNIT

PAPER NUMBER

2845

DATE MAILED: 06/30/2026

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
19/088,627	03/24/2025	Sang Hoon LEE	AQC0001-CON6	9015

TITLE OF INVENTION: SMARTPHONE WITH WIRELESS POWER CHARGING ANTENNA

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$516	\$0.00	\$0.00	\$516	09/30/2026

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 ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 40% the amount of undiscounted fees, and micro entity fees are 20% the amount of undiscounted fees.

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. 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: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via the USPTO patent electronic filing system.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 6 should be completed where appropriate. All further correspondence will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications. **Because electronic patent issuance may occur shortly after issue fee payment, any desired continuing application should preferably be filed prior to payment of this issue fee in order not to jeopardize copendency.**

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

67050 7590 06/30/2026

KASHA LAW LLC
14532 Duffief Mill Road
North Potomac, MD 20878

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

Certificate of Mailing or Transmission

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

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
19/088,627	03/24/2025	Sang Hoon LEE	AQC0001-CON6	9015

TITLE OF INVENTION: SMARTPHONE WITH WIRELESS POWER CHARGING ANTENNA

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nonprovisional	SMALL	\$516	\$0.00	\$0.00	\$516	09/30/2026

EXAMINER	ART UNIT	CLASS-SUBCLASS
LOTTER, DAVID E	2845	343-867000

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

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

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/AIA/47 or 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 _____

2 _____

3 _____

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

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). 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. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required)

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

☐ Electronic Payment via the USPTO patent electronic filing system ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

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

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

6. Courtesy Ceremonial Copy

☐ Applicant requests a courtesy ceremonial copy of the electronic patent grant. Applicant understands that the electronic patent grant is the official statutory patent grant.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



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KASHA LAW LLC			LOTTER, DAVID E	
14532 Dufief Mill Road			ART UNIT	
North Potomac, MD 20878			PAPER NUMBER	
			2845	
DATE MAILED: 06/30/2026				

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

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

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.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B 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 30 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.

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. The United States Patent and Trademark Office (USPTO) collects the information in this record under authority of 35 U.S.C. 2. The USPTO's system of records is used to manage all applicant and owner information including name, citizenship, residence, post office address, and other information with respect to inventors and their legal representatives pertaining to the applicant's/owner's activities in connection with the invention for which a patent is sought or has been granted. The applicable Privacy Act System of Records Notice for the information collected in this form is COMMERCE/PAT-TM-7 Patent Application Files, available in the Federal Register at 78 FR 19243 (March 29, 2013).

<https://www.govinfo.gov/content/pkg/FR-2013-03-29/pdf/2013-07341.pdf>

Routine uses of the information in this record may include disclosure to:

- 1) law enforcement, in the event that the system of records indicates a violation or potential violation of law;
- 2) a federal, state, local, or international agency, in response to its request;
- 3) a contractor of the USPTO having need for the information in order to perform a contract;
- 4) the Department of Justice for determination of whether the Freedom of Information Act (FOIA) requires disclosure of the record;
- 5) a Member of Congress submitting a request involving an individual to whom the record pertains, when the individual has requested the Member's assistance with respect to the subject matter of the record;
- 6) a court, magistrate, or administrative tribunal, in the course of presenting evidence, including disclosures to opposing counsel in the course of settlement negotiations;
- 7) the Administrator, General Services Administration (GSA), or their designee, during an inspection of records conducted by GSA under authority of 44 U.S.C. 2904 and 2906, in accordance with the GSA regulations and any other relevant (i.e., GSA or Commerce) directive, where such disclosure shall not be used to make determinations about individuals;
- 8) 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));
- 9) the Office of Personnel Management (OPM) for personnel research purposes; and
- 10) the Office of Management and Budget (OMB) for legislative coordination and clearance.

If you do not furnish the information requested on this form, the USPTO may not be able to process and/or examine your submission, which may result in termination of proceedings, abandonment of the application, and/or expiration of the patent.

Notice of Allowability	Application No. 19/088,627	Applicant(s) LEE et al.	
	Examiner DAVID E LOTTER	Art Unit 2845	AIA (First Inventor to File) Status Yes

-- 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 2/15/2026.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

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 1-36. As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
Certified copies:
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. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ 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).

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

Attachment(s)

1. ☒ Notice of References Cited (PTO-892) 2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date <u>6/16/2026</u> . 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____. 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	5. ☐ Examiner's Amendment/Comment 6. ☒ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____.
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/DAVID E LOTTER/ Primary Examiner, Art Unit 2845	
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DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Information Disclosure Statement

The information disclosure statement (IDS) submitted 6/16/2026 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Terminal Disclaimer

The terminal disclaimer filed on 6/16/2026 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Allowable Subject Matter

Claims 1-36 allowed.

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

Regarding independent claim 1, patentability exists, at least in part, with the claimed features of a smartphone antenna device comprising: a substrate having a first major surface and a second major surface facing away from the first major surface; the first major surface comprising a first central portion, a first inner ring portion surrounding the first central portion, and a first outer ring portion surrounding the first inner ring portion; the second major surface comprising a second central portion overlapping the first central portion, a second inner ring portion surrounding the second central portion

and overlapping the first inner ring portion, and a second outer ring portion surrounding the second inner ring portion and overlapping the first outer ring portion; a first antenna pattern formed on the first major surface and comprising an inner coil formed on the first inner ring portion and an outer coil surrounding on the inner coil formed on the first outer ring portion; a second antenna pattern formed on the second major surface and comprising an inner antenna pattern formed on the second inner ring portion, and an outer antenna pattern formed on the second outer ring portion; the inner antenna pattern comprising a plurality of curved lines at least part of which are generally parallel to each other and form a radially-extending inner gap on the second inner ring portion; the outer antenna pattern comprising a plurality of curved lines at least part of which are generally parallel to each other and form a radially-extending outer gap on the second outer ring portion; wherein the radially-extending outer gap on the second outer ring portion and the radially- extending inner gap on the second inner ring portion are connected and aligned in a radial direction; an inner extension line formed on the second major surface such that the inner extension line extends along the radial direction through both the radially-extending inner gap and the radially-extending outer gap; an outer extension line formed on the second major surface such that the outer extension line extends along the radial direction through the radially-extending outer gap; wherein the inner extension line and the outer extension line are extending substantially in parallel; wherein each of the inner extension line and the outer extension line formed on the second major surface overlaps the outer coil formed on the first outer ring portion of the first major surface.

Orihara (US 2016/0336645) and Kobayashi (US 2010/0309081) are both cited as teaching some elements of the claimed invention including a substrate, a first antenna pattern, and a second antenna pattern.

However, the prior art, when taken alone, or, in combination, cannot be construed as reasonably teaching or suggesting all of the elements of the claimed invention as arranged, disposed, or provided in the manner as claimed by the Applicant.

Regarding independent claim 11, patentability exists, at least in part, with the claimed features of a smartphone antenna device comprising: an antenna substrate having a first major surface and a second major surface facing away from the first major surface; a first antenna pattern formed on the first major surface and comprising an inner conductive coil and an outer conductive coil surrounding the inner conductive coil, wherein the first major surface comprises a first central area surrounded by the inner conductive coil; a second antenna pattern formed on the second major surface and comprising an inner pattern, an outer pattern, and an extension pattern, the inner pattern comprising a plurality of curved conductive lines and defining a radially- extending inner channel, wherein the plurality of curved conductive lines of the inner pattern does not extend into the radially-extending inner channel, wherein at least part of the curved conductive lines of the inner pattern overlaps the inner conductive coil formed on the first major surface and is electrically connected to the inner conductive coil through vias; the outer pattern comprising a plurality of curved conductive lines and defining a radially- extending outer channel, wherein the plurality of curved conductive lines of the outer pattern generally surrounds the plurality of curved conductive lines of the inner pattern and does not extend into the radially-extending outer channel, wherein at least part of the curved conductive lines of the outer pattern overlaps the outer conductive coil formed on the first major surface and is electrically connected to the outer conductive coil through vias; and the extension pattern comprising an inner conductive extension line and an outer conductive extension line, wherein the inner conductive extension line extends through the radially- extending outer channel and through at least part of the radially-extending inner channel, whereas the outer conductive extension line extends through at least part of the radially-

extending outer channel but does not extend through the radially-extending inner channel, wherein the smartphone antenna device is configured to form an electrically parallel connection between the inner conductive coil and the outer conductive coil using at least the inner conductive extension line and the outer conductive extension line.

Orihara and Kobayashi are both cited as teaching some elements of the claimed invention including a substrate, a first antenna pattern, and a second antenna pattern.

However, the prior art, when taken alone, or, in combination, cannot be construed as reasonably teaching or suggesting all of the elements of the claimed invention as arranged, disposed, or provided in the manner as claimed by the Applicant.

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

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DAVID E LOTTER whose telephone number is (571)270-7422. The examiner can normally be reached M-F 10am-6pm.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dameon Levi can be reached at 571-272-2105. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: <https://patentcenter.uspto.gov>. Visit <https://www.uspto.gov/patents/apply/patent-center> for more information about Patent Center and <https://www.uspto.gov/patents/docx> for information about filing in DOCX format. For additional questions, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DAVID E. LOTTER
Primary Examiner
Art Unit 2845

/DAVID E LOTTER/
Primary Examiner, Art Unit 2845

<i>Notice of References Cited</i>	Application/Control No. 19/088,627		Applicant(s)/Patent Under Reexamination LEE et al.	
	Examiner DAVID E LOTTER		Art Unit 2845	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Name	CPC Classification	US Classification
*	A	US-20160336645-A1	2016-11-17	ORIHARA; Katsuhisa	G06K19/077	1/1
*	B	US-20100309081-A1	2010-12-09	KOBAYASHI; Eiichi	H01Q1/2225	343/788
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date YYYY-MM-DD	Country	Name	CPC 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 YYYY-MM-DD format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
PTO-892 (Rev. 11-2023)

Notice of References Cited

Part of Paper No. 20260623A

Issue Classification 	Application/Control No. 19/088,627	Applicant(s)/Patent Under Reexamination LEE et al.
	Examiner DAVID E LOTTER	Art Unit 2845

CPC						
Symbol					Type	Version
H01Q	/	1	/	243	F	2013-01-01
H01Q	/	1	/	38	I	2013-01-01
H01Q	/	7	/	00	I	2013-01-01

CPC Combination Sets					
Symbol				Type	Version
/		/			

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	36	
/DAVID E LOTTER/ Primary Examiner, Art Unit 2845	23 June 2026	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	6

U.S. Patent and Trademark Office

Part of Paper No.: 20260623A

Issue Classification 	Application/Control No. 19/088,627	Applicant(s)/Patent Under Reexamination LEE et al.
	Examiner DAVID E LOTTER	Art Unit 2845

INTERNATIONAL CLASSIFICATION			
CLAIMED			
H01Q		1	24
NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	36	
/DAVID E LOTTER/ Primary Examiner, Art Unit 2845	23 June 2026	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	6

U.S. Patent and Trademark Office

Part of Paper No.: 20260623A

Issue Classification 	Application/Control No. 19/088,627	Applicant(s)/Patent Under Reexamination LEE et al.
	Examiner DAVID E LOTTER	Art Unit 2845

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10	19	19	28	28								
2	2	11	11	20	20	29	29								
3	3	12	12	21	21	30	30								
4	4	13	13	22	22	31	31								
5	5	14	14	23	23	32	32								
6	6	15	15	24	24	33	33								
7	7	16	16	25	25	34	34								
8	8	17	17	26	26	35	35								
9	9	18	18	27	27	36	36								

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 36	
/DAVID E LOTTER/ Primary Examiner, Art Unit 2845 (Primary Examiner) _____ (Date) 23 June 2026		O.G. Print Claim(s) 1	O.G. Print Figure 6

U.S. Patent and Trademark Office

Part of Paper No.: 20260623A

<i>Search Notes</i> 	Application/Control No. 19/088,627	Applicant(s)/Patent Under Reexamination LEE et al.
	Examiner DAVID E LOTTER	Art Unit 2845

CPC - Searched*		
Symbol	Date	Examiner
H01Q1/243	05/29/2026	dl
H01Q1/38	05/29/2026	dl
H01Q7/00	05/29/2026	dl
H01Q1/085	05/29/2026	dl
H01Q1/248	05/29/2026	dl
H01Q21/28	05/29/2026	dl

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

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Search Notes		
Search Notes	Date	Examiner
inventor search	05/29/2026	dl
assignee search	05/29/2026	dl
CPC search with text	05/29/2026	dl
ip.com search	05/29/2026	dl
AI search	05/29/2026	dl
Allowability search	06/23/2026	dl

/DAVID E LOTTER/ Primary Examiner, Art Unit 2845	
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<i>Search Notes</i> 	Application/Control No. 19/088,627	Applicant(s)/Patent Under Reexamination LEE et al.
	Examiner DAVID E LOTTER	Art Unit 2845

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
See SEARCH history		05/30/2026	dl
See SEARCH histor		06/23/2026	dl

/DAVID E LOTTER/ Primary Examiner, Art Unit 2845	
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Bibliographic Data

Application No: 19/088,627

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No ☐ Met After Allowance

Verified and Acknowledged:
Examiner's Signature Initials

Title:

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
03/24/2025	343	2845	AQC0001-CON6
RULE			

APPLICANTS

AQ Corporation, Seongnam-si, KOREA, REPUBLIC OF

INVENTORS

Sang Hoon LEE, Gwangju-si, KOREA, REPUBLIC OF

Kyoung Jun CHOI, Seoul, KOREA, REPUBLIC OF

Sae Rom LEE, Incheon, KOREA, REPUBLIC OF

CONTINUING DATA

This application is a CON of 18676162 05/28/2024 PAT 12278421

18676162 is a CON of 18216409 06/29/2023 PAT 12003018

18216409 is a CON of 17955126 09/28/2022 PAT 11728564

17955126 is a CON of 17864078 07/13/2022 PAT 11495875

17864078 is a CON of 17546893 12/09/2021 PAT 11437712

17546893 is a CON of 17105012 11/25/2020 PAT 11303011

17105012 has PRO of 62941636 11/27/2019

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

03/28/2025

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STATE OR COUNTRY

KOREA, REPUBLIC OF

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KASHA LAW LLC
14532 Dufief Mill Road
North Potomac, MD 20878

UNITED STATES
FILING FEE RECEIVED
\$2,170

Doc code: IDS

PTO/SB/08 (03-26)

Doc description: Information Disclosure Statement (IDS) Filed

Approved for use through 11/30/2027. OMB 0651-0031

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application Number		19088627	
	Filing Date		2025-03-24	
	First Named Inventor	Sang Hoon Lee		
	Art Unit	2845		
	Examiner Name	David E. Lotter		
	Attorney Docket Number	AQC0001-CON6		

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Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Inventor of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	
	1	10269005	B2	2019-04-23	Lee et al.	Entire document	
	2	649621		1900-05-15	Tesla	Entire document	
	3	1119732		1914-12-01	Tesla	Entire document	
	4	4937585		1990-06-26	Shoemaker	Entire document	
	5	4313152		1982-01-26	Vranken	Entire document	
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STATEMENT BY APPLICANT**

Application Number	19088627
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First Named Inventor	Sang Hoon Lee
Art Unit	2845
Examiner Name	David E. Lotter
Attorney Docket Number	AQC0001-CON6

1	20190109373	A1	2019-04-11	AHN et al.	Entire document
2	20170228721	A1	2017-08-10	Lee et al.	Entire document
3	20180198209	A1	2018-07-12	Kang et al.	Entire document
4	20100090824	A1	2010-04-15	Rowell et al.	Entire document

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	1	2017175886	WO	A1	2017-10-12	Seong	Entire document	☒
	2	20170093670	KR	A	2017-08-16	Samsung Electro-Mechanics Co., Ltd.	Entire document	☒
	3	209266128	CN		2019-08-16	Jian Fenglong et al.	Entire document	☐
	4	20180113064	KR		2018-10-15	Hansol Technics, Co., Ltd.	Entire document	☐
	5	2019070090	WO	A1	2019-04-11	OH et al.	Entire document	☐

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	Examiner Name	David E. Lotter		
	Attorney Docket Number	AQC0001-CON6		

	6	101832344	KR		2018-02-26	Lee, Jae Goon	Entire document	☐
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NON-PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	Comparison of the specifications of U.S. Patent No. 11,495,875 ("875 Patent") and U.S. Pat. App. Pub. 2018/0198209 ("Kang") filed in IPR2026-00232 and IPR2026-00234	☐
	2	Exhibit B to Patent Owner's Disclosure of Asserted Claims and Infringement Contentions in AQ Corporation v. Samsung Electronics Co., Ltd. et al., Case No. 2:25-cv-01012-JRG (EDTX)	☐
	3	William H. Hayt, Jr. and Jack E. Kemmerly, Engineering Circuit Analysis (1993)	☐
	4	Mohamed M. El Rayes, et al., "A Review on Wireless Power Transfer," IJETT Vol. 40. No. 5 (2016)	☐
	5	Sung-Gu Kang, et al., "Near-Field Communication in Biomedical Applications," Sensors (2021)	☐
	6	Zebra, RFID Inlay Placement/Power Guidelines (2014)	☐
	7	Constantine A. Balanis, "The Evolution of Antenna Technology," IEEE Antenna & Propagation Magazine (2024)	☐
	8	G. Stojanovic and Lj. Zivanov, "Comparison of Optimal Design of Different Spiral Inductors," MIEL Vol. 2 (2004)	☐

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9	Chandrasekharan Nataraj, et al., "General Analysis of Resonance Coupled Wireless Power Transfer (WPT) Using Inductive Coils," Technical Gazette 25, 3 (2018).	☐
10	Zachariah Peterson, "How to Design a Printed Circuit Board in 10 Easy Steps," (2025), https://resources.altium.com/p/10-easy-steps-comprehensively-designing-circuit-board-altium-designer	☐
11	"The Discovery of Radio Waves – 1888," Spark Museum, http://www.sparkmuseum.com/BOOK_HERTZ.HTM	☐
12	"How Do Checkpoint Labels and Hard Tags work?," Loss Prevention Systems, https://www.losspreventionsystems.com/checkpoint-labels-hard-tags-work/	☐
13	"Qi: Mobile Charging Empowered," Wireless Power Consortium, https://www.wirelesspowerconsortium.com/standards/qi-wireless-charging/	☐
14	"Wireless Charging," NFC Forum, https://nfc-forum.org/build/specifications/wireless-charging/	☐
15	Performance Specification: MIL-PRF-55110F (1993)	☐
16	PETITION FOR INTER PARTES REVIEW, IPR2026-00232	☐
17	PETITION FOR INTER PARTES REVIEW, IPR2026-00234	☐

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Examiner Signature	/DAVID E LOTTER/	Date Considered	06/23/2026
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	First Named Inventor	Sang Hoon Lee
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	Examiner Name	David E. Lotter
	Attorney Docket Number	AQC0001-CON6

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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**

Application Number	19088627
Filing Date	2025-03-24
First Named Inventor	Sang Hoon Lee
Art Unit	2845
Examiner Name	David E. Lotter
Attorney Docket Number	AQC0001-CON6

TIMING STATEMENT

Please see 37 CFR 1.97(e) to make the appropriate selection(s):

- ☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

- ☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

- ☐ See attached timing statement under 37 CFR 1.97(e).
- ☒ A timing statement under 37 CFR 1.97(e) is not submitted herewith.

TIMING FEE

- ☐ The fee set forth in 37 CFR 1.17(p) has been submitted herewith.

COPIES

- ☐ An identification of an earlier application pursuant to 37 CFR 1.98(d)(1) is attached.

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Please see 37 CFR 1.17(v) and the [IDS Auto-Load Instructions](#) for completing this form to make the appropriate selection of an assertion under 37 CFR 1.98. For the information disclosure statement (IDS) submitted herewith, the applicant or patent owner certifies the following with respect to the cumulative number of applicant-provided or patent-owner provided items of information submitted to date including those in the accompanying IDS (select only one):

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SIGNATURE

A signature of the applicant or representative is required in accordance with 37 CFR 1.33 and 11.18. Please see 37 CFR 1.4(d) for the form of the signature.

Signature	/Kelly L. Kasha/	Date (YYYY-MM-DD)	2026-06-16
Name/Print	Kelly L. Kasha	Registration Number	47743

INFORMATION DISCLOSURE STATEMENT BY APPLICANT	Application Number	19088627
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	First Named Inventor	Sang Hoon Lee
	Art Unit	2845
	Examiner Name	David E. Lotter
	Attorney Docket Number	AQC0001-CON6

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