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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
17/131,113	12/22/2020	Calvin Shiening Wang	10737-1-CON-4	8694
22442	7590	03/07/2023	EXAMINER	
Sheridan Ross PC			LEVIN, NAUM B	
1560 Broadway				
Suite 1200				
Denver, CO 80202				
			ART UNIT	PAPER NUMBER
			2851	
			NOTIFICATION DATE	DELIVERY MODE
			03/07/2023	ELECTRONIC

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

The time period for reply, if any, is set in the attached communication.

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

e-docket@sheridanross.com

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.

DETAILED ACTION

1. This office action is in response to application 17/131,113 and Response filed on 02/23/2023. Applicant provisionally elected claims 22-26 without traverse. Claims 7-21 must be canceled pursuant to 37 CFR 1.142(b), as being drawn to nonelected claims. Claims 1-6 has been previously canceled. Claims 7-26 remain pending in the application.

Specification

2. The disclosure is objected to because of the following informalities: the cross-reference information must be updated by including information about issued patent/s. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

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

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 22-25 are rejected under 35 U.S.C. 103 as being unpatentable over Krieger et al. (U.S. Patent 7,345,450 B2) in view of Thomason (U.S. Pub. No.: 20050110467 A1).

5. As to **claim 22** Krieger describes **a method for a device to charge an automobile battery** (Abstract; col.3, ll.41-48) **comprising:**

detecting a voltage level of a power supply (by way of a feedback circuit or other means, the microprocessor 60 can monitor the voltage being supplied from the booster/boosting battery 2 (power supply), a resistive divider may be used to provide the voltage measurements to the microprocessor's A/D input (detecting a voltage level of a power supply) – col.8, ll.48-55; col.10, ll.30-38; Fig.5);

detecting a connection and a type of connection between the power supply and the automobile battery (a polarity sensing circuit 16 is coupled to the booster/boosting battery 2 (power supply) and to the depleted battery 11 (automobile battery) when the clamps 8, 10 are connected to the depleted battery 11 (detecting a connection between the power supply and the automobile battery); the polarity sensing circuit 16 senses the polarity of the connection between the booster/boosting battery 2 (power supply) and the depleted battery 11 (automobile battery) and provides a signal indicating the proper/correct or improper/incorrect state of the connection (detecting a

type of connection between the power supply and the automobile battery) - col.5, ll.49-59; col.6, ll.6-23; col.6, ll.33-40; col.7, ll.40-50; Figs.4-5);

generating, by a microcontroller receiving power from the power supply, an output signal based on the voltage level of the power supply, the connection to the automobile battery and the type of connection of the automobile battery (by way of a feedback circuit or other means, the microprocessor 60 can monitor the voltage and/or current being supplied to the depleted battery 11 from the booster battery 2; microprocessor 60 is used to control the switch 12, opto-isolator 16 is coupled to clamps 8, 10 via resistor 62 such that LED 26 is forward biased when a correct polarity connection between the boosting battery 2 and the depleted battery 11 is made; when forward biased, LED 26 turns on phototransistor 22; the collector 23 of the phototransistor 22 is coupled to a supply voltage via internal circuitry in the microprocessor 60; when the phototransistor 22 is on, a first signal of a first voltage is present at the collector 23 and is sensed by the microprocessor 60; when the phototransistor 22 is off, a second signal of a second voltage is present at the collector 23 and is sensed by the microprocessor 60; the microprocessor 60 provides output signals to activate the switch 12 into a conducting state when it receives the first signal and provides an output signal to deactivate the switch 12 into a non-conducting state when it receives the second signal; the output signals from the microprocessor 60 to control switch 12 are provided to control electrodes 14a-14d of transistors 12a-12d, as shown in FIG. 5; the control electrodes 14a-14d of the transistors are electrically connected to the microprocessor 60 via a level translator 68; microprocessors normally run on low voltages, e.g., 5 volts; a low voltage power supply is provided to the

microprocessor 60 from battery 2 (power supply) via a voltage regulator 70; the low voltage output signals from the microprocessor 60 should be translated to higher voltages before being supplied to the transistors 12a-12d; if the polarity connections of clamps 8, 10 to the depleted battery 11 are not correct, the switch 12 remains off; the microprocessor 60 can be programmed to detect if clamps 8, 10 are connected to a battery or have been disconnected; to perform the detection, the microprocessor 60 deactivates the switch 12 into a non-conducting state; via the feedback circuit or other means, the microprocessor detects whether clamps 8,10 are connected to a battery, if no battery is present, the switch 12 is placed in a non-conducting state, that is, all the FETs 12a-12d are placed in a non-conducting state, if a battery is present, the jump starting process continues - col.8, ll.40-67; col.9, ll.1-45; Fig.5); **and**

based on the output signal, selectively connecting the power supply to the automobile battery by activating a plurality of FETs (the microprocessor 60 provides output signals to activate the switch 12 comprising a plurality FETs into a conducting state when it receives the first signal and provides an output signal to deactivate the switch 12 comprising a plurality FETs into a non-conducting state when it receives the second signal; the output signals from the microprocessor 60 to control switch 12 comprising a plurality FETs are provided to control electrodes 14a-14d of FET transistors 12a-12d, as shown in FIG. 5 - col.8, ll.66-67; col.9, ll.1-8; Fig.5).

With respect to claim 22 Krieger does not explicitly describe that a plurality of FETs are MOSFETs and selectively disconnecting the power supply from the automobile battery to prevent damage caused by over-discharging of the power supply.

As to **claim 22** Thomason in combination with Krieger teaches **a method for a device to charge an automobile battery** (Abstract; ¶ 3) **comprising a plurality of MOSFETs** (¶¶ 17; 29-33; Figs.2-4) **and based on the output signal, selectively disconnecting the power supply from the automobile battery to prevent damage caused by over-discharging of the power supply** (the present invention limits the amount of power that is allowed to flow out of the internal battery in the jump-start device; this prevents a battery of the jump-start device from continuing to conduct electricity until the internal battery is discharged and also prevents the jump starter from self-destructing in the event that the jumper cables are connected together; the present invention utilizes a microcontroller to measure and detect this condition, and in the event that the condition is noted, the condition can be corrected by turning off the MOSFETs H bridge bias - ¶ 36).

It would have been obvious to a person of ordinary skills in the art before effective filing date of claimed invention to employ Thomason's teaching that a plurality of FETs are MOSFETs and selectively disconnecting the power supply from the automobile battery to prevent damage caused by over-discharging of the power supply to modify Krieger's invention by selecting MOSFETs based on their inherently low leakage current and because a power absorbed by MOSFETs is minimal and does not significantly affect the overall efficiency, and preventing the battery of charging device from continuing to conduct electricity until the internal battery is discharged, thereby prolonging the life of the battery (¶¶ 30, 36, 41).

6. As to claims 23-25 Thomason in combination with Krieger recites:

Claim 23 The method, wherein a boost device boosts the gate voltage of

the plurality of MOSFETs (§§ 41-42);

Claim 24 The method, wherein: the type of connection of the automobile battery is a correct polarity connection or an incorrect polarity connection

(Abstract; §§ 13; 14-16; 25; 31; 33; 38-39; 43);

Claim 25 The method, wherein the output signal: causes the plurality of MOSFETs to connect the power supply to the automobile battery when the type of connection is a correct polarity connection and the voltage level of the power supply is above a threshold; and cause the plurality of MOSFETs to disconnect the power supply from the automobile battery when i) the level of the power supply is below the threshold, or ii) the type of connection is an incorrect polarity connection (Abstract; §§ 13; 14-16; 25; 31; 33; 38-39; 43).

Claim Rejections - 35 USC § 102

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 –

(a)(1) the claimed invention was patented, described in a printed publication, or in public use, on sale, or otherwise available to the public before the effective filing date of the claimed invention.

7. Claim 26 is rejected under 35 U.S.C. 102(a)(1) as being anticipated by Krieger et al. (U.S. Patent 7,345,450 B2).

As to **claim 26** Krieger describes **a system for jumpstarting an automobile battery** (col.2, ll.8-17; col.3, ll.21-40) **comprising:**

a power supply (a booster/boosting battery 2 - col.8, ll.49-51; Fig.5);

means for detecting a voltage level of the power supply (by way of a feedback circuit or other means, the microprocessor 60 can monitor the voltage being supplied from the booster/boosting battery 2 (power supply), a resistive divider may be used to provide the voltage measurements to the microprocessor's A/D input (means for detecting a voltage level of a power supply) – col.8, ll.48-55; Fig.5);

means for detecting whether a connection with an automobile battery is a correct polarity connection or an incorrect polarity connection (a polarity sensing circuit 16 senses the polarity of the connection between the booster/boosting battery 2 (power supply) and the depleted battery 11 (automobile battery) and provides a signal indicating the proper/correct or improper/incorrect state of the connection (means for detecting a type of connection between the power supply and the automobile battery) - col.5, ll.49-59; col.6, ll.6-23; col.6, ll.33-40; col.7, ll.40-50; Figs.4-5);

a microcontroller configured to generate an output signal based on the voltage level of the power supply and whether the connection with the automobile battery is a correct polarity connection or an incorrect polarity connection (a microprocessor 60 is used to control the switch 12, opto-isolator 16 is coupled to clamps 8, 10 via resistor 62 such that LED 26 is forward biased when a correct polarity connection between the booster/boosting battery 2 and the depleted battery 11 is made; when forward biased, LED 26 turns on phototransistor 22; the collector 23 of the phototransistor 22 is coupled to a supply voltage via internal circuitry in the microprocessor 60; when the phototransistor 22 is on, a first signal of a first voltage is present at the collector 23 and is sensed by the microprocessor 60; when the phototransistor 22 is off, a second signal of a second voltage is present at the collector

23 and is sensed by the microprocessor 60; the microprocessor 60 provides output signals to activate the switch 12 into a conducting state when it receives the first signal and provides an output signal to deactivate the switch 12 into a non-conducting state when it receives the second signal; the output signals from the microprocessor 60 to control switch 12 are provided to control electrodes 14a-14d of transistors 12a-12d, as shown in FIG. 5; the control electrodes 14a-14d of the transistors are electrically connected to the microprocessor 60 via a level translator 68; microprocessors normally run on low voltages, e.g., 5 volts; a low voltage power supply is provided to the microprocessor 60 from battery 2 (power supply) via a voltage regulator 70; the low voltage output signals from the microprocessor 60 should be translated to higher voltages before being supplied to the transistors 12a-12d; if the polarity connections of clamps 8, 10 to the depleted battery 11 are not correct, the switch 12 remains off; the microprocessor 60 can be programmed to detect if clamps 8, 10 are connected to a battery or have been disconnected; to perform the detection, the microprocessor 60 deactivates the switch 12 into a non-conducting state; via the feedback circuit or other means, the microprocessor detects whether clamps 8,10 are connected to a battery, if no battery is present, the switch 12 is placed in a non-conducting state, that is, all the FETs 12a-12d are placed in a non-conducting state, if a battery is present, the jump starting process continues - col.8, ll.40-67; col.9, ll.1-45; Fig.5); **and**

means for selectively enabling current to flow from the power supply to the automobile battery based on the output signal (a switch 12, comprising a plurality of FETs 12a-12d (means for selectively enabling current to flow from the power supply to

the automobile battery based on the output signal), is activated into a conducting state by a first output signal provided by the microprocessor 60 to enable current flow to the depleted battery of the vehicle, when correct/proper polarity connection is identified; the switch 12, comprising a plurality of FETs 12a-12d (means for selectively enabling current to flow from the power supply to the automobile battery based on the output signal), is deactivated into a non-conducting state by an output signal provided by the microprocessor 60 to not provide current flow to the depleted battery of the vehicle, when incorrect/improper polarity connection is identified - col.3, ll.7-10; col.6, ll.6-54; col.8, ll.59-67; col.9, ll.1-10; Fig.5); **and**

a boost device for boosting a voltage associated with the means (a level translator 68 (boost device) translates/boosts the low voltage output signals from the microprocessor 60 to higher voltages being supplied to the transistors 12a-12d/means (boosting a voltage associated with the means) - col.9, ll.11-26; Fig.5) **for selectively enabling current to flow from the power supply to the automobile battery based on the output signal** (a switch 12, comprising a plurality of FETs 12a-12d (means for selectively enabling current to flow from the power supply to the automobile battery based on the output signal), is activated into a conducting state by a first output signal provided by the microprocessor 60 to enable current flow to the depleted battery of the vehicle, when correct/proper polarity connection is identified; the switch 12, comprising a plurality of FETs 12a-12d (means for selectively enabling current to flow from the power supply to the automobile battery based on the output signal), is deactivated into a non-conducting state by an output signal provided by the microprocessor 60 to not provide current flow to the depleted battery of the vehicle, when incorrect/improper

polarity connection is identified - col.3, ll.7-10; col.6, ll.6-54; col.8, ll.59-67; col.9, ll.1-10; Fig.5).

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the claims at issue are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the reference application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP §§ 706.02(I)(1) - 706.02(I)(3) for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit www.uspto.gov/forms/. The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to <http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-l.jsp>.

8. Claim 26 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 20 of U.S. Patent No. U.S.

10,875,410 B2. Independent claim 26 in the instant application are similar to claim 20 in the reference because they recite various scope of invention.

Claim 26 in the instant application discloses a system for jumpstarting an automobile battery. Claim 20 in the reference recites the similar system for jumpstarting the automobile battery and additionally includes means for generating an output signal.

Although the conflicting claims are not identical, they are not patentably distinct from each other because it would have been obvious to a person of ordinary skills in the art before effective filing date of claimed invention to employ U.S. Patent No. 10,875,410 B2 teaching the system for jumpstarting the automobile battery to modify the instant application by using means to generate the output signal based on output signal provided from a microcontroller.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAUM B LEVIN whose telephone number is (571)272-1898. The examiner can normally be reached on M-F 8 am-6 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. 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.

/NAUM LEVIN/
Primary Examiner, Art Unit 2851

Notice of References Cited	Application/Control No. 17/131,113		Applicant(s)/Patent Under Reexamination Wang et al.	
	Examiner NAUM B LEVIN		Art Unit 2851	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-5189359-A	02-1993	Kronberg; James W.	H02J7/0034	320/DIG.15
*	B	US-20100173182-A1	07-2010	Baxter; Michael	H01M10/4257	429/61
*	C	US-20050110467-A1	05-2005	Thomason, Lincoln	H02J7/0031	320/165
*	D	US-11104236-B2	08-2021	Wang; Calvin Shiening	H02J7/342	1/1
	E					
	F					
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	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	CPC Classification
*	N	EP-1107419-A2	06-2001	EP	ALKSNAT H	H02J7/0034
*	O	DE-10001485-A1	07-2001	DE	HUEBNER-OBENLAND F	H02H11/003
	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.

Search Notes 	Application/Control No. 17/131,113	Applicant(s)/Patent Under Reexamination Wang et al.
	Examiner NAUM B LEVIN	Art Unit 2851

CPC - Searched*		
Symbol	Date	Examiner
H02J 7/342, 0034, 0036, 0068	03/02/2023	N L
B60L 53/00, 53	03/02/2023	N L
H02J9/005	03/02/2023	N L
H02J 2207/20	03/02/2023	N L

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
H02J 7/342 Searched 21280	03/02/2023	N L
H02J7/0034 H02J7/0036 H02J7/0068 B60L53/00 B60L53/53 H02J9/005 H02J2207/20 Cursory Review	03/02/2023	N L
IPR2021-01235 Reviewed Petition for Inter Parted Review of U.S. Patent 10,328,806 B2	03/02/2023	N L

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<i>Search Notes</i> 	Application/Control No. 17/131,113	Applicant(s)/Patent Under Reexamination Wang et al.
	Examiner NAUM B LEVIN	Art Unit 2851

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
	USPGPUB, USPAT, EPO, JPO, DERWENT, IBM_TBD,USOCR, FIT, FPRS, NPL text search - 03/02/23, seeinterference search printout	03/02/2023	N L

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<i>Index of Claims</i> 	Application/Control No. 17/131,113	Applicant(s)/Patent Under Reexamination Wang et al.
	Examiner NAUM B LEVIN	Art Unit 2851

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

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	12/15/2022	03/02/2023							
	1	-	-							
	2	-	-							
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	24	÷	✓							
	25	÷	✓							
	26	÷	✓							

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	Naum B. Levin
Sheet	1	of	3	Attorney Docket Number	8523WANG-1-CON-4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	6459175	10-01-2002	Potega	
	2	7002265	02-21-2006	Potega	
	3	7839117	11-23-2010	Elder et al.	
	4	2005/0212521	09-29-2005	Bertness	
	5	2006/0244412	11-02-2006	Bonzer et al.	
	6	2011/0216451	09-08-2011	Haines et al.	
	7	2013/0241498	09-19-2013	Koebler	
	8	2016/0079776	03-17-2016	Iguchi et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ ; Number ⁴ ; Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	9	CN 203211234 U	09-25-2013	HUIZHOU HUAYITONG TECHNOLOGY CO LTD		(Includes an English Translation of the Application)

OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)		
Examiner Initials*	Cite No. ¹	
	10	PR WEB Online Visibility from Vocus "Groundbreaking NOCO Genius® Boost™ Car Starter Available Commercially Beginning October 6, 2014" Published September 23, 2014
	11	Office Action for US Application No. 17/236,260 mailed June 24, 2021 (Attorney Ref. No. 8523WANG-1-CON-5)
	12	Notice of Allowance for US Application No. 17/236,260 mailed July 12, 2021 (Attorney Ref. No. 8523WANG-1-CON-5)

Examiner Signature	/NAUM LEVIN/	Date Considered	03/02/2023
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /N L/

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	Naum B. Levin
Sheet	2	of	3	Attorney Docket Number	8523WANG-1-CON-4

13	Office Action for US Application No. 17/236,279, mailed July 30, 2021 (Attorney Ref. No. 8523WANG-1-CON-6)
14	Office Action for US Application No. 17/236,302, mailed June 23, 2021 (Attorney Ref. No. 8523WANG-1-CON-7)
15	Office Action for US Application No. 17/236,339, mailed June 18, 2021 (Attorney Ref. No. 8523WANG-1-CON-8)
16	Notice of Allowance for US Application No. 17/236,339, mailed July 7, 2021 (Attorney Ref. No. 8523WANG-1-CON-8)
17	Patent Owner the NOCO Company's Supplemental Response (Including Exhibit 2024) for SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed April 22, 2021 (124 pages)
18	Petitioner's Reply to Patent Owner's Response (Including Exhibits 1024 - 1050) for SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed April 29, 2021 (1,601 pages)
19	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed from May 3, 2021 - July 12, 2021 (236 pages)
20	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on July 22, 2021 (439 pages)
21	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on August 5, 2021 (16 pages)
22	Documents filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-00777 ; Filed between April 14 - April 30, 2021 (27 pages)
23	Petition for Inter Partes Review of U.S. Patent No. 10,046,653 including Exhibits 1001-1011; Case No. IPR 2021-01232 , filed July 17, 2021 (737 pages)
24	Documents filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed between July 28, 2021 - August 5, 2021 (15 pages)
25	Petition for Inter Partes Review of U.S. Patent No. 10,328,806 including Exhibits 1001-1012; Case No. IPR 2021-01235 , filed July 7, 2021 (479 pages)
26	Documents filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01235 ; Filed between July 19 - July 29, 2021 (14 pages)

Examiner Signature	/NAUM LEVIN/	Date Considered	03/02/2023
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ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /N L/

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	Naum B. Levin
Sheet	3	of	3	Attorney Docket Number	8523WANG-1-CON-4

27	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE NOCO COMPANY, INC. ; U.S. District Court For the District of Arizona; Civil Action No. 2:20-cv-01452 ; Includes publicly available documents filed from April 22, 2021 - June 11, 2021; Docket Nos. 79-114; (1,676 pages)
28	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE NOCO COMPANY, INC. ; U.S. District Court For the District of Arizona; Civil Action No. 2:20-cv-01452 ; Includes publicly available documents filed on August 6, 2021; Docket No. 115; (19 pages)
29	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. Baccus Global LLC ; U.S. District Court for the Southern District of Florida West Palm Beach Division; Civil Action No. 9:21-cv-81009 ; Includes publicly available documents filed from June 7, 2021 - July 30, 2021; Docket Nos. 1-22; (1,543 pages)

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Sheet	1	of	4	Attorney Docket Number	8523WANG-1-CON-4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ^{2 (if known)}	Publication Date MM-DD-YYYY	Name of Patentee of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	3267452	08-16-1966	Wolf	
	2	3950688	04-13-1976	Sancey et al.	
	3	10046653	08-14-2018	Wang et al.	
	4	10328806	06-25-2019	Wang et al.	
	5	10875410	12-29-2020	Wang et al.	
	6	2013/0154543	06-20-2013	Richardson et al.	
	7	2015/0340907	11-26-2015	Lei	

UNPUBLISHED U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ^{2 (if known)}	Filing Date MM-DD-YYYY	Name of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	8	17/236260	04-21-2021	Wang et al.	
	9	17/236279	04-21-2021	Wang et al.	
	10	17/236302	04-21-2021	Wang et al.	
	11	17/236339	04-21-2021	Wang et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ ; Number ⁴ ; Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	12	AU 6997198 A	07-30-1998	CLORE AUTOMOTIVE LLC		

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OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)		
Examiner Initials*	Cite No. ¹	
	13	Notification to Grant a Patent Right for Utility Model for Chinese Patent Application No. 201420212173.5, mailed July 17, 2014 (Attorney Ref. No. 8523WANG-1-CN)
	14	Petition for Inter Partes Review of U.S. Patent No. 9,525,297, including Exhibits 1001-1011; Case No. IPR 2018-00488 , filed January 13, 2018 (439 pages)
	15	Documents filed with WINPLUS NORTH AMERICA, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2018-00488 ; Filed between January 18, 2018 - February 6, 2018 (19 pages)
	16	DECISION Institution of <i>Inter Partes</i> Review 35 U.S.C. § 314 (a) filed in WINPLUS NORTH AMERICA, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2018-00488 ; Filed on July 16, 2018 (31 pages)
	17	Documents filed with WINPLUS NORTH AMERICA, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2018-00488 ; Filed between July 19, 2018 - October 24, 2018 (14 pages)
	18	ORDER Granting Joint Motion to Terminate Proceeding and Granting Joint Request to Treat Settlement Agreement as Business Confidential Information 35 U.S.C. § 317; 37 C.F.R. §§ 42.72, 42.74 filed in WINPLUS NORTH AMERICA, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2018-00488 ; Filed on November 16, 2018 (4 pages)
	19	Petition for Inter Partes Review of U.S. Patent No. 9,007,015, including Exhibits 1001-1018; Case No. IPR 2020-00944 , filed May 14, 2020 (1,100 pages)
	20	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed between May 21, 2020 - August 17, 2020 (34 pages)
	21	Patent Owner The Noco Company's Preliminary Response filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on August 21, 2020 (138 pages)
	22	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on August 25, 2020 (8 pages)
	23	Petitioner's Reply Brief filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on September 1, 2020 (98 pages)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	Naum B. Levin
Sheet	3	of	4	Attorney Docket Number	8523WANG-1-CON-4

24	Patent Owner the Noco Company's Preliminary Sur-Reply filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on September 4, 2020 (125 pages)
25	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed from September 16, 2020 - November 6, 2020 (46 pages)
26	DECISION Granting Institution of <i>Inter Partes</i> Review filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on November 12, 2020 (84 pages)
27	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed from November 13, 2020 - January 14, 2021 (29 pages)
28	Patent Owner The Noco Company's Response to Petition filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on February 4, 2021 (507 pages)
29	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed from February 5, 2021 - April 6, 2021 (184 pages)
30	Petition for Inter Partes Review of U.S. Patent No. 10,046,653, including Exhibits 1001-1014; Case No. IPR 2021-00777 , filed April 7, 2021 (617 pages)
31	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. WINPLUS NORTH AMERICA, INC. ; U.S. District Court for the District of Colorado; Civil Action No. 1:17-cv-01183; Includes publicly available documents filed from May 12, 2017 - June 8, 2017; Docket Nos. 1-11; (36 pages)
32	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. ANKER TECHNOLOGY CORPORATION ; U.S. District Court for the District of Colorado; Civil Action No. 1:17-cv-01185; Includes publicly available documents filed from May 12, 2017 - June 9, 2017; Docket Nos. 1-11; (37 pages)
33	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. WINPLUS NORTH AMERICA, INC. ; U.S. District Court for the Central District of California; Civil Action No. 5:17-cv-01712; Includes publicly available documents filed from August 23, 2017- October 8, 2018; Docket Nos. 1-59; (593 pages)
34	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. ANKER TECHNOLOGY CORPORATION ; U.S. District Court for the Northern District of CALIFORNIA; Civil Action No. 4:17-cv-04918; Includes publicly available documents filed from August 23, 2017 - March 27, 2018; Docket Nos. 1-25; (130 pages)

Examiner Signature	/NAUM LEVIN/	Date Considered	03/02/2023
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	
Sheet	4	of	4	Attorney Docket Number	8523WANG-1-CON-4

35	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. SCHUMACHER ELECTRIC CORPORATION ; U.S. District Court for the Northern District of Texas Dallas Division; Civil Action No. 3:19-cv-01676; Includes publicly available documents filed from July 12, 2019 - September 6, 2019; Docket Nos. 1-18; (560 pages)
36	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. SCHUMACHER ELECTRIC CORPORATION ; U.S. District Court for the Northern District of Illinois Eastern Division; Civil Action No. 1:19-cv-05982; Includes publicly available documents filed from September 6, 2019 - July 15, 2020; Docket Nos. 1-40; (1,233 pages)
37	Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and Unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 - Including Exhibits I.A - I.Q (REDACTED) for PILOT, INC. v. SCHUMACHER ELECTRIC CORPORATION ; U.S. District Court for the Northern District of Illinois Eastern Division; Civil Action No. 1:19-cv-05982; Includes publicly available documents filed November 25, 2019 (729 pages)
38	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. GOOLOO TECHNOLOGY LLC and SHENZHEN GOOLOO E-COMMERCE CO. LTD. ; U.S. District Court for the Central District of California; Civil Action No. 2:19-cv-09485; Includes publicly available documents filed from November 4, 2019 - January 21, 2020; Docket Nos. 1-25; (581 pages)
39	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. AUKEY TECHNOLOGY CO. LTD. and SHENZHEN AUKEY E-BUSINESS CO., LTD. ; U.S. District Court for the Central District of California; Civil Action No. 2:19-cv-09486; Includes publicly available documents filed from November 4, 2019 - April 27, 2020; Docket Nos. 1-25; (585 pages)
40	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE DURACELL COMPANY ; U.S. District Court for the Northern District of Illinois Eastern Division; Civil Action No. 1:20-cv-04054; Includes publicly available documents filed from July 10, 2020 - August 20, 2020; Docket Nos. 1-11; (663 pages)
41	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE NOCO COMPANY, INC. ; U.S. District Court For the District of Arizona; Civil Action No. 2:20-cv-01452; Includes publicly available documents filed from July 22, 2020 - April 21, 2021; Docket Nos. 1-78; (2,799 pages)
42	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. BATTERY-BIZ, INC. ; U.S. District Court Central District of California; Civil Action No. 2:20-cv-10207; Includes publicly available documents filed from November 6, 2020 - January 29, 2021; Docket Nos. 1-35; (733 pages)

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Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	
				Examiner Name	Naum E. Levin
Sheet	1	of	2	Attorney Docket Number	10737-1-CON-4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

UNPUBLISHED U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Filing Date MM-DD-YYYY	Name of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	17/495196	10-06-2021	Wang et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ ; Number ⁴ ; Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶

OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)		
Examiner Initials*	Cite No. ¹	
	2	Notice of Allowance for US Application No. 17/236,279, mailed September 24, 2021 (Attorney Ref. No. 10737-1-CON-6)
	3	Documents filed with SHENZHEN CAR KU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Petitioner's Demonstrative Exhibit; Case No.: IPR 2020-00944; Filed on August 9, 2021 (83 pages)
	4	Documents filed with SHENZHEN CAR KU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Case No.: IPR 2020-00944; Filed on August 9, 2021 (38 pages)
	5	Documents filed with SHENZHEN CAR KU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Record of Oral Hearing; Case No.: IPR 2020-00944; Filed on September 13, 2021 (95 pages)

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				Examiner Name	Naum E. Levin
Sheet	2	of	2	Attorney Docket Number	10737-1-CON-4

	6	Decision Granting Institution of <i>Inter Partes</i> Review filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-00777 ; Filed on October 5, 2021 (14 pages)
	7	Scheduling Order filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-00777 ; Filed on October 5, 2021 (11 pages)
	8	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE NOCO COMPANY, INC. ; U.S. District Court For the District of Arizona; Civil Action No. 2:20-cv-01452 ; Includes publicly available documents filed from August 20, 2021 - September 15, 2021; Docket Nos. 116-120; (13 pages)

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	1	11043768	06-22-2021	King et al.	

FOREIGN PATENT DOCUMENTS						
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OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)		
Examiner Initials*	Cite No. ¹	
	2	Office Action for US Application No. 17/495,196 mailed January 24, 2022 (Attorney Ref. No. 10737-1-CON-9)
	3	Notice of Allowance for US Application No. 17/495,196 mailed March 9, 2022 (Attorney Ref. No. 10737-1-CON-9)
	4	JUDGMENT - Final Written Decision Determining Some Challenged Claims Unpatentable Denying Motions to Exclude filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Record of Oral Hearing; Case No.: IPR 2020-00944 ; Filed on November 3, 2021 (108 pages)
	5	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Record of Oral Hearing; Case No.: IPR 2020-00944 ; Filed December 3, 2021 - February 16, 2022 (24 pages)
	6	Patent Owner's Response to Petition Pursuant to 27 C.F.R. 42.120, Patent Owner's Updated Exhibit List, and Exhibits 2001-2009 filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-00777 ; Filed on December 30, 2021 and February 11, 2022 (345 pages)

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				Filing Date	December 22, 2020
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				Art Unit	
				Examiner Name	Naum B. Levin
Sheet	2	of	2	Attorney Docket Number	10737-1-CON-4

7	DECISION Granting Institution of <i>Inter Partes</i> Review and Scheduling Order filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed on January 14, 2022 (27 pages)
8	Patent Owner's Response to Petition Pursuant to 37 C.F.R. 42.120, including Exhibits 2001-2002 filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed on April 8, 2022 (113 pages)
9	DECISION Granting Institution of <i>Inter Partes</i> Review and Scheduling Order filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01235 ; Filed on January 14, 2022 (35 pages)
10	Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and Unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 - Including Exhibits I.A - I.Q (REDACTED) for PILOT, INC. v. SCHUMACHER ELECTRIC CORPORATION ; U.S. District Court for the Northern District of Illinois Eastern Division; Civil Action No. 1:19-cv-05982; Includes publicly available documents filed November 25, 2019 (729 pages)
11	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE NOCO COMPANY, INC. ; U.S. District Court For the District of Arizona; Civil Action No. 2:20-cv-01452 ; Includes publicly available documents filed from October 6, 2021 - March 10, 2022; Docket Nos. 121-125; (27 pages)

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Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>			Complete if Known		
			Application Number	17/131,113	
			Filing Date	December 22, 2020	
			First Named Inventor	Calvin Shiening Wang	
			Art Unit	2851	
			Examiner Name	~~Not Yet Assigned~~ Naum B. Levin	
Sheet	1	of	12	Attorney Docket Number	8523WANG-1-CON-4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	3343057	09/19/1967	Smith	
	2	3590357	06/29/1971	Reid	
	3	3950668	04/13/1976	Sancey et al.	
	4	4871957	10/03/1989	Taranto et al.	
	5	5319298	06/07/1994	Wanzong et al.	
	6	5487002	01/23/1996	Diller et al.	
	7	5793185	08/11/1998	Prelec	
	8	5831350	11/03/1998	McConkey et al.	
	9	6057667	05/02/2000	Mills	
	10	6130519	10/10/2000	Whiting et al.	
	11	6144110	11/07/2000	Matsuda et al.	
	12	6160381	12/12/2000	Peterzell	
	13	6212054	04/03/2001	Chan	
	14	6249106	06/19/2001	Turner et al.	
	15	6262492	07/17/2001	Sheng	
	16	6271605	08/07/2001	Carkner et al.	
	17	6344733	02/05/2002	Crass et al.	
	18	6351102	02/26/2002	Troy	
	19	6362599	03/26/2002	Turner et al.	
	20	6362599	03/26/2002	Turner et al.	
	21	6424158	07/23/2002	Klang	
	22	6426606	07/30/2002	Purkey	
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			Application Number	17/131,113	
			Filing Date	December 22, 2020	
			First Named Inventor	Calvin Shiening Wang	
			Art Unit	2851	
			Examiner Name	~~Not Yet Assigned~~ Naum B. Levin	
Sheet	9	of	12	Attorney Docket Number	8523WANG-1-CON-4

191	Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and Unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 84 pages
192	Exhibits I.A - I.C for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and Unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 70 pages
193	Exhibit II.A, Invalidity Claim Chart for Schumacher SL1 System for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 29 pages
194	Exhibit II.B, Invalidity Claim Chart for HaiJiu SHF12000-12 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 23 pages
195	Exhibit II.C, Invalidity Claim Chart for JPR Series Jump Starters for Schumacher SL1 System for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 29 pages
196	Exhibit II.D, Invalidity Claim Chart for U.S. Patent 6,249,106 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 42 pages
197	Exhibit II.E, Invalidity Claim Chart for Projecta HP2200 for Schumacher SL1 System for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 39 pages
198	Exhibit II.F, Invalidity Claim Chart for Stanley System for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 24 pages
199	Exhibit II.G, Invalidity Claim Chart for U.S. Patent Publication No. US 2010/0173182 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 41 pages
200	Exhibit II.H, Invalidity Claim Chart for US Patent Application Publication No. US 2009/0174362 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 36 pages

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			Filing Date	December 22, 2020	
			First Named Inventor	Calvin Shiening Wang	
			Art Unit	2851	
			Examiner Name	~~Not Yet Assigned~~ Naum B. Levin	
Sheet	10	of	12	Attorney Docket Number	8523WANG-1-CON-4

201	Exhibit II.I, Invalidity Claim Chart for U.S. Patent No. 7,345,450 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 41 pages
202	Exhibit II.J, Invalidity Claim Chart for U.S. Patent No. US 6,426,606 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 81 pages
203	Exhibit II.K, Invalidity Claim Chart for U.S. Patent 6,803,743 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 23 pages
204	Exhibit II.L, Invalidity Claim Chart for U.S. Patent Publication No. US 2014/0159509 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 35 pages
205	Exhibit II.M, Invalidity Claim chart for German Utility Model Specification No. De 202013102599 U1 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 27 pages
206	Exhibit II.N, Invalidity Claim chart for Japanese Laid-Open Publication No. JP2015-115979A for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 39 pages
207	Exhibit II.O, Invalidity Claim Chart for US Patent Application Publication No. US 2009/0174362 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 34 pages
208	Corrected Exhibit II.P, Invalidity Claim Chart for DieHard 950 System for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 48 pages
209	Exhibit II.Q, Invalidity Claim chart for U.S. Patent Publication No. US 2001/0038276 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 54 pages
210	Shenzhen Carku Technology Co., Ltd. v. The Noco Company, Petition for Inter Partes Review for U.S. Patent No. 9007015 with Exhibits 1001-1018, dated May 14, 2020, 1099 pages.

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Sheet	11	of	12	Attorney Docket Number	8523WANG-1-CON-4

211	Pilot, Inc., v. The Noco Company, Inc., The Noco Company, Inc.'s Objections and Responses to Plaintiff Pilot's First Interrogatories (Nos. 1-13), Case # 2:20-cv-01452-SB, dated Dec. 11, 2020, 17 pages.
212	Pilot, Inc., v. The Noco Company, Inc., The Noco Company, Inc.'s Objections and Responses to Plaintiff Pilot's First Interrogatories (Nos. 14-15), Case # 2:20-cv-01452-SB, dated Dec. 11, 2020, 9 pages.
213	Pilot, Inc., v. The Noco Company, Inc., The Noco Company, Inc.'s Objections and Responses to Plaintiff Pilot's First Set Of Requests For Production (Nos. 1-27), Case # 2:20-cv-01452-SB, dated Dec. 11, 2020, 24 pages.
214	Pilot, Inc., v. The Noco Company, Inc., The Noco Company, Inc.'s Objections and Responses to Plaintiff Pilot's First Set Of Requests For Production (Nos. 28), Case # 2:20-cv-01452-SB, dated Dec. 11, 2020, 7 pages.
215	Pilot, Inc., v. The Noco Company, Inc., The Noco Company, Inc.'s Supplemental Responses to Interrogatory No. 1, Case # 2:20-cv-01452-SB, dated Feb. 5, 2021, 10 pages.
216	Official Action for U.S. Patent Application No. 14/569,352, mailed Aug. 31, 2016 (Attorney Ref. No. 8523WANG-1), 8 pages
217	Notice of Allowance for U.S. Patent Application No. 14/569,352, mailed Oct. 13, 2016 (Attorney Ref. No. 8523WANG-1), 7 pages
218	Official Action for U.S. Patent Application No. 15/355,409, dated Dec. 14, 2017 (Attorney's Ref. No. 8523WANG-1-CON) 6 pages
219	Official Action for U.S. Patent Application No. 15/355,409, dated May 3, 2018 (Attorney's Ref. No. 8523WANG-1-CON) 6 pages
220	Notice of Allowance for U.S. Patent Application No. 15/355,409, dated Jun. 21, 2018 (Attorney's Ref. No. 8523WANG-1-CON) 7 pages
221	Official Action for U.S. Patent Application No. 15/923,219, dated Jan. 08, 2019 (Attorney's Ref. No. 8523WANG-1-CON-2) 7 pages
222	Notice of Allowance for U.S. Patent Application No. 15/923,219, dated Apr. 05, 2019 (Attorney's Ref. No. 8523WANG-1-CON-2) 8 pages
223	Official Action for U.S. Patent Application No. 16/404321, dated Apr. 27, 2020 (Attorney's Ref. No. 8523WANG-1-CON-3), 5 pages.
224	Notice of Allowance for U.S. Patent Application No. 16/404321, dated Aug. 26, 2020 (Attorney's Ref. No. 8523WANG-1-CON-3), 9 pages.
225	Notice of Allowance for U.S. Patent Application No. 16/404321, dated Oct. 13, 2020 (Attorney's Ref. No. 8523WANG-1-CON-3), 3 pages.
226	Petition for Inter Partes Review of U.S. Patent No. 9,525,297, filed Jan. 13, 2018 (Attorney's Ref. No. 8523WANG-1-IPR) 93 pages
227	Decision Institution of Inter Partes Review for U.S. Patent No. 9,525,297, dated Jul. 16, 2018, Case IPR2018-00488, 22 pages

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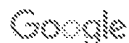
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	228	Order Granting Joint Motion to Terminate Proceeding and Granting Joint Request to Treat Settlement Agreement as Business Confidential Information for U.S. Patent No. 9,525,297, dated Nov. 16, 2018, Case IPR2018-00488, 4 pages
	229	Declaration of Shukri Sourì in Support of Petition for Inter Partes Review of U.S. Patent No. 9,525,297, dated Jan. 13, 2018, 92 pages
	230	Curriculum Vitae of Dr. Shukri J. Sourì, Jul. 2016, 4 pages

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Automotive Line Transient Protection Circuit - Texas Instruments

Reverse Polarity Protection and Overvoltage Disconnect ... While the vehicle battery is capable of large currents for re-starting the engine and serves as ...

<https://patents.justia.com/patent>

Portable or hand held vehicle battery jump starting apparatus ...

Apr 20, 2021 — ... jumper cable usable with the handheld jump starter booster device in ... the vehicle battery 72 has been connected in reverse polarity.

<https://patents.google.com/patent>

Automobile charger - US10328806B2 - Google Patents

a boost device for boosting a gate voltage of the plurality of MOSFETs. ... Portable vehicle battery jump start apparatus with safety protection and jumper ...

<https://www.quora.com/Can-I-use-a-diode-to-charge-a-s...>

Can I use a diode to charge a second battery from my ... - Quora

This prevents the leisure load from draining the vehicle battery. ... When you connect the jumper cables, a few tens of amperes flow from one battery to the ...

4 answers · 3 votes: You 'can' indeed this was the way they used to do 'dual battery' installs ma...

<https://static.dxengineering.com/exa-07873> [pdf](#)

Evolution™ Series Inverter/Charger Pure Sine Wave Models

Over current protection (fuse) for battery and External Charger circuits has NOT been ... If the input is connected in reverse polarity, external DC fuse.

<https://repositories.lib.utexas.edu/bitstream/handle> [pdf](#)

Fred Engelkemeir master's thesis: Solorean Electrical System ...

specifically designed for electric vehicle battery packs manufactured by ... reverse polarity protection diode to prevent damage from reverse polarity power.

<https://worldradiohistory.com/Technology/Ency...> [pdf](#)

ELECTRONIC CIRCUITS - World Radio History

ON STARTER RELAY ... frequency by adding a jumper to one of the countless eight output lines. ... ble 20-kHz oscillator and reverse polarity protection.

855 pages

<https://d1.amobbs.com/files/49/pdf/>

+ + Exhaust Oxygen Level Tester

Jan 4, 2012 — puts the lambda value both as an analog voltage level and as digital values ...
Patent protection may exist in respect of circuits, devices.

https://drones.altigator.com/products_all

All Products : Drones, UAV, OnyxStar, MikroKopter ... - AltiGator

Once connected, it indicates the voltage level for each cell thanks to a luminous ... This is a universal protection dome that can be used with MikroKopter ...

Ad · <https://www.centricrf.com/terminations>

Reverse Polarity Terminations - SMA, TNC

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<https://ebin.pub>

Automotive Electricity and Electronics (Automotive Systems ...

Fuses and Circuit Protection Devices ... Starter Drive-to-Flywheel Clearance ... plate the jumper cable connections, and this spark could cause an explosion ...

<http://www.siliconchip.com.au/issue/December/Us...>

December 2016 - Silicon Chip Online

Dec 24, 2016 — ... battery jumper terminal provides convenient access to the vehicle battery ... especially since there is no reverse polarity protection; ...

<https://s3-us-west-1.amazonaws.com/piab-filings/pdf/>

Paper 14 - Amazon S3

Jan 9, 2023 — ... 20 monitors the voltage level of one or more jump starter batteries 22. A reverse voltage sensor. 24 monitors the polarity of the jumper ...

<https://www.scribd.com/document/Automotive-Power...>

Automotive Power Systems | PDF | Electric Motor - Scribd

Jumper starts, 48 V · Reverse polarity, -24 V · Lower voltage on cold cranking, 13.3 V. The impressive development of comfort and safety systems intensified ...

<https://dokumen.pub/automotive-electricity-and-electron...>

Automotive Electricity and Electronics: CDX Master ...

Starter Drives and the Ring Gear ... NQ2001 Comply with the required use of safety glasses, ear protection, gloves, ... Set the voltage level and time base.

<https://electronics.stackexchange.com/sitemap-questions-1>

sitemap-questions-1.xml

... /questions/532029/the-best-place-for-the-reverse-polarity-protection-diode ...
stackexchange.com/questions/530652/vehicle-battery-nmc-max-discharge-rate ...

<https://archive.org/stream/ElektorMagazine/Elekt...>

Full text of "Elektor Magazine" - Internet Archive

Patent protection may exist in respect of circuits, devices, ... switch will leave them at a hazardous voltage level when the equipment is switched off.

<https://archive.org/stream/GrafEncyclopediaOfElect...>

Full text of "Graf Encyclopedia Of Electronic Circuits Vol 4"

4-16 Schematic diagram and parts list for the reverse-polarity protection ... As long as there is no change in the dc-voltage level at either of UI-b's ...

<https://subscribe.eyfindia.com> › articles › categoryTree

Technical Articles: Category wise listing-Articles segregated ...

Motor protection depending on size and voltage level ... Learn how to use an IRF-9630 P-Channel MOSFET circuit for reverse polarity protection.

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<https://issuu.com> › yurgenn › docs

Everyday practical electronics 2013 10 by Yurgen - Issuu

IC5 and IC6 are used to drive the MOSFETs which control the brightness of up to 16 ... CON10 to 5V regulator REG1 via reverse polarity protection diode D1.

<https://picclick.co.uk> › Business-Office-Industrial › Other...

Other Electrical Equipment & Supplies - PicClick UK

23 Items -- 1 Pair Battery Inverter Cables Vehicle Battery Cable Power Cable ... Adopt Japan's precision protection IC, IR and other high-quality MOSFETs, ...

<https://docplayer.net> › 149968622-Pner-a-ecisio-electro...

pner a ecisio Electrostatic Voltage Prob Solid -State Soldeng ...

4-THIS VERY RELIABLE light flasher uses two MOSFETs and no electrolytic ... (CC /CV) All models: protection of short ckt, overload, reverse polarity, ...

<https://docplayer.net> › 98045222-Summer-issue-supersi...

summer issue supersize with more than circuits, ideas ...

Patent protection may exist in respect of circuits, devices, ... switch will leave them at a hazardous voltage level when the equipment is switched off.

<https://www.s21arsb.com> › book › ARRL [pdf]

The ARRL Handbook for Radio Communications; Volume 2

Matches 7 - 12 -- 7.16.7 Reverse-Polarity Protection Circuits ... a vehicle battery may vary from more than 14 V when being charged down to 10 V or less when.

<https://azslide.com> › ... [pdf]

for men with ideas in electronics - AZSLIDE.COM

The FC-100 is an extremely flexible home protection device. ... A voltage level above approxi- ... throw switch is used to reverse polarity.

<https://www.docketalarm.com> › IPR2021-01232 [pdf]

united states patent and trademark office - Docket Alarm

automobile battery by an external battery reverse polarity detection circuit 44 ... voltage level of one or more jump starter batteries 22.

<https://vdoc.pub> › documents

Modern Diesel Technology : Electricity & Electronics [PDF]

... as a starter (cranking) motor on your foot may cause serious injury. Work boots, especially steel-toed safety shoes, offer some level of protection.

*In order to show you the most relevant results, we have omitted some entries very similar to the 27 already displayed.
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Application No: 17/131,113

Foreign Priority claimed: ☒ Yes ☐ No

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

Verified and Acknowledged:

/NAUM LEVIN/

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Initials

Title:

AUTOMOBILE CHARGER

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
12/22/2020	320	2851	10737-1-CON-4
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APPLICANTS

Pilot Inc., City of Industry, CA,

INVENTORS

Calvin Shiening Wang, City of Industry, CA, UNITED STATES

Chung-Hsin Wang, Shenzhen, CHINA

CONTINUING DATA

This application is a CON of 16404321 05/06/2019 PAT 10875410

16404321 is a CON of 15923219 03/16/2018 PAT 10328806

15923219 is a CON of 15355409 11/18/2016 PAT 10046653

15355409 is a CON of 14569352 12/12/2014 PAT 9525297

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Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	Jason Vick/Joanne Vos
Filer Authorized By:	Jason Vick
Attorney Docket Number:	10737-1-CON-4
Receipt Date:	03-MAR-2023
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Application Type:	Utility under 35 USC 111(a)

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18	Non Patent Literature	PART_006_IPR2021-00777.pdf	15224412	no	180
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Total Files Size (in bytes):			906030608		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	Naum B. Levin
Sheet	1	of	3	Attorney Docket Number	10737-1-CON-4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	7363129	04-22-2008	Barnicle et al.	
	2	7969119	06-28-2011	Odaohhara	
	3	7973534	07-05-2011	Tatebayashi et al.	
	4	8232772	07-31-2012	Lai et al	
	5	8264205	09-11-2012	Kopera	
	6	9245888	01-26-2016	Petruzzi et al.	
	7	10604024	03-31-2020	Nook et al.	

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Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ ; Number ⁴ ; Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	8	CN 203933073 U	11-05-2014	WANG		(Includes an English Translation of the Abstract)

OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)		
Examiner Initials*	Cite No. ¹	
	9	JASIO, Di et al. "PIC Microcontrollers Know It All" Newnes; 2008; 926 pages
	10	ZAMAN, Najamuz "Automotive Electronics Design Fundamentals" Springer; pages, 23-24; 2015
	11	Patent Owner's Notice of Appeal filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Record of Oral Hearing; Case No.: IPR 2020-00944 ; Filed April 13, 2022 (114 pages)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	Naum B. Levin
Sheet	2	of	3	Attorney Docket Number	10737-1-CON-4

12	Petitioner's Notice of Appeal filed with SHENZHEN CAR KU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Record of Oral Hearing; Case No.: IPR 2020-00944 ; Filed April 27, 2022 (113 pages)
13	Documents filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-00777 ; Filed between May 5, 2022 - August 3, 2022 (180 pages)
14	JUDGEMENT - Final Written Decision Determining Some Challenged Claims Unpatentable filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-00777 ; Filed October 3, 2022 (40 pages)
15	Patent Owner's Notice of Appeal filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-00777 ; Filed December 5, 2022 (45 pages)
16	Documents filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed between April 15, 2022 - June 15, 2022 (11 pages)
17	Petitioner's Reply to Patent Owner's Response (Including Exhibits 1012-1021) filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed July 1, 2022 (1,435 pages)
18	Documents filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed between August 12, 2022 - October 19, 2022 (150 pages)
19	Petitioner's Authorized Additional Briefing Pursuant to PTAB's Post-Hearing Order of October 19, 2022 (Including Exhibits 1023-1028) filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed November 4, 2022 (242 pages)
20	Documents filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed between November 8, 2022 - November 14, 2022 (79 pages)
21	JUDGEMENT: Final Written Decision Determining Some Challenged Claims Unpatentable 35 U.S.C. 318 filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed January 9, 2023 (44 pages)
22	Documents filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed January 10, 2023 (49 pages)
23	Documents filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01235 ; Filed between July 1, 2022 - November 2, 2022 (22 pages)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	Naum B. Levin
Sheet	3	of	3	Attorney Docket Number	10737-1-CON-4

24	JUDGMENT - Final Written Decision Determining All Challenged Claims Unpatentable 35 U.S.C. 318 filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01235 ; Filed January 9, 2023 (30 pages)
25	Petition for Inter Partes Review of U.S. Patent No. 11,124,077 including Exhibits 1001-1012; Case No. IPR 2022-01237 , filed July 1, 2022 (616 pages)
26	Documents filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2022-01237 ; Filed between July 22, 2022 - July 26, 2022 (13 pages)
27	DECISION Granting Institution of <i>Inter Partes</i> Review and Scheduling Order filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2022-01237 ; Filed January 23, 2023 (43 pages)
28	Petition for Inter Partes Review of U.S. Patent No. 11,104,236 including Exhibits 1001-1011; Case No. IPR 2022-01417 , filed August 12, 2022 (439 pages)
29	Documents filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2022-01417 ; Filed between August 23, 2022 - August 26, 2022 (13 pages)
30	DECISION Granting Institution of <i>Inter Partes</i> Review and Scheduling Order filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2022-01417 ; Filed February 14, 2023 (34 pages)
31	Petition for Inter Partes Review of U.S. Patent No. 11,235,673 including Exhibits 1001-1012; Case No. IPR 2022-00167 , filed November 7, 2022 (609 pages)
32	Documents filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2022-00167 ; Filed between November 28, 2022 - December 22, 2022 (14 pages)
33	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE NOCO COMPANY, INC. ; U.S. District Court For the District of Arizona; Civil Action No. 2:20-cv-01452 ; Includes publicly available documents filed from May 5, 2022 - February 14, 2023; Docket Nos. 126-136; (115 pages)
34	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. NOCO COMPANY INCORPORATED ; U.S. District Court for the District of Arizona; Civil Action No. 2:22-cv-00389 ; Includes publicly available documents filed from March 14, 2022 - February 14, 2023; Docket Nos. 1-48; (2,604 pages)
35	Documents filed with U.S. Court of Appeals for the Federal Circuit for PILOT, INC. v. NOCO COMPANY, INC. ; Appeal Docket No. 23-1234; Includes documents filed from December 9, 2022 - January 23, 2023; Docket Nos. 1-13; (136 pages)
36	Documents filed with U.S. Court of Appeals for the Federal Circuit for PILOT, INC. v. SHENZHEN CHIC ELECTRICS CO., LTD ; Appeal Docket No. 23-1399; Includes documents filed from January 17, 2023 - January 31, 2023; Docket Nos. 1-10; (72 pages)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Electronic Acknowledgement Receipt	
EFS ID:	47628279
Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	Jason Vick/Joanne Vos
Filer Authorized By:	Jason Vick
Attorney Docket Number:	10737-1-CON-4
Receipt Date:	03-MAR-2023
Filing Date:	22-DEC-2020
Time Stamp:	16:46:57
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Non Patent Literature	PART_0006_NOCO.pdf	1626824	no	115
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	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Letter specifying the conditions for filing under 37 CFR 1.97		1	4	
	Information Disclosure Statement (IDS) Form (SB08)		5	7	
Warnings:					
Information:					
Total Files Size (in bytes):			127726022		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2851
Calvin Shiening Wang	)	Confirmation No.: 8694
Serial No.: 17/131,113	)	Examiner: Naum B. Levin
Filed: December 22, 2020	)	
Atty File No.: 10737-1-CON-4	)	<u>SUPPLEMENTAL</u>
Entitled: "AUTOMOBILE CHARGER"	)	<u>INFORMATION DISCLOSURE</u>
	)	<u>STATEMENT</u>
	)	
	)	Electronically Submitted

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

Dear Commissioner:

The references cited on attached Form PTO-1449 are being called to the attention of the Examiner.

- ☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.
- ☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.
- ☒ Copies of the cited U.S. patents/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).
- ☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.
- ☐ To the best of applicants' belief, the pertinence of the foreign-language references are believed to be summarized in the attached English translation/abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.
- ☐ Examiner's attention is drawn to the following related applications:
- Serial No. _____ filed _____ (Attorney Ref. No. _____)
- ☐ Other:

- PILOT, INC. v. BACCUS GLOBAL LLC.; U.S. District Court for the District Court for the Southern District of Florida West Palm Beach Division; Civil Action No. 9:21-cv-81009-DMM
- PILOT, INC. v. THE NOCO COMPANY; U.S. District Court District of Arizona; Civil Action No. 2:22-cv-00389-CDB
- PILOT v. NOCO COMPANY, INC.; U.S. Court of Appeals for the Federal Circuit; Appeal Docket No. 2023-1234
- PILOT, INC. v. SHENZHEN CHIC ELECTRICS CO., LTD.; U.S. Court of Appeals for the Federal Circuit; Appeal Docket No. 2023-1399
- Inter Partes Review – SHENZHEN CHIC ELECTRICS CO., LTD. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR2021-01232
- Inter Partes Review – THE NOCO COMPANY, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR2021-01235
- Inter Partes Review – THE NOCO COMPANY, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR2022-01237
- Inter Partes Review – THE NOCO COMPANY, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR2022-01417
- Inter Partes Review – THE NOCO COMPANY, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR2023-00167

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☒	37 CFR 1.97(b): No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry into the national stage of an international application as set forth in 37 CFR 1.491 or ☒ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☐	37 CFR 1.97(c): The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of one of the following conditions: (1) a final action under 37 C.F.R. 1.113 or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(c). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of \$260.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	37 CFR 1.97(d): This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of \$260.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e)) (Applicable only if checked)
☐ The undersigned certifies that: ☐ Each item of information contained in this 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 this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: March 3, 2023

By: /Jason H. Vick/

Jason H. Vick

Reg. No. 45,285

1560 Broadway, Suite 1200

Denver, Colorado 80202

Telephone: 303-863-9700

jvick@sheridanross.com

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: Calvin Shiening Wang	)	Group Art Unit: 2851
Application No.: 17/131,113	)	Examiner: Naum B. LEVIN
Filed: December 22, 2020	)	Confirmation No.: 8694
Atty. File No.: 10737-1-CON-4	)	

For: AUTOMOBILE CHARGER

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

RESPONSE TO RESTRICTION REQUIREMENT

Dear Commissioner:

In an Office Action dated December 23, 2022, the Examiner issued a Restriction Requirement with regard to the above-identified patent application. Generally, the Examiner indicated the following claims were restrictable:

- Group I** Claims 7-21, drawn to a jumpstarter device comprising a power supply connected to a microcontroller via a voltage regulator, *classified* in cpc group B60L 53/00 (emphasis added); and
- Group II** Claims 22-26, drawn to a method for a device to charge an automobile battery comprising detecting a connection and a type of connection between the power supply and the automobile battery, classified in cpc group H02J 7/342.

Applicant hereby elects, without traverse, to prosecute **Group II**, including **Claims 22-26**, drawn to a method for a device to charge an automobile battery comprising detecting a

connection and a type of connection between the power supply and the automobile battery. However, Applicant respectfully reserves the right to pursue the remaining claims in a subsequent divisional/continuation application(s).

The Commissioner is hereby authorized to charge to deposit account number 19-1970 any fees under 37 CFR § 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that Account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby petitioned.

Respectfully submitted,
SHERIDAN ROSS P.C.

Date: February 23, 2023

By: /Jason H. Vick/
Jason H. Vick
Reg. No. 45,285
1560 Broadway, Suite 1200
Denver, Colorado 80202
Telephone: 303-863-9700
jvick@sheridanross.com

Electronic Acknowledgement Receipt	
EFS ID:	47580661
Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	Jason Vick/Joanne Vos
Filer Authorized By:	Jason Vick
Attorney Docket Number:	10737-1-CON-4
Receipt Date:	23-FEB-2023
Filing Date:	22-DEC-2020
Time Stamp:	15:01:28
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Response to Election / Restriction Filed	Resp_to_Restriction_Requirement_10737-1-CON-4.pdf	98258 e12c90c905e07bdcf4dbbabafe527f4ce2b29797	no	2
Warnings:					

Information:	
Total Files Size (in bytes):	98258
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	



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.
17/131,113	12/22/2020	Calvin Shiening Wang	10737-1-CON-4	8694
22442	7590	12/23/2022	EXAMINER	
Sheridan Ross PC			LEVIN, NAUM B	
1560 Broadway			ART UNIT	
Suite 1200			PAPER NUMBER	
Denver, CO 80202			2851	
			NOTIFICATION DATE	
			DELIVERY MODE	
			12/23/2022	
			ELECTRONIC	

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

The time period for reply, if any, is set in the attached communication.

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

e-docket@sheridanross.com

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.

DETAILED ACTION

1. This office action is in response to application 17/131,313 filed on 12/22/2020. Claims 1-6 have been canceled in a Preliminary Amendment. Claims 7-26 have been newly created. Claims 7-26 are pending in the application.

Election/Restrictions

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 7-21 (Group 1), drawn to a jumpstarter device comprising a power supply connected to a microcontroller via a voltage regulator, *classified in cpc group B60L 53/00 (emphasis added)*.

II. Claims 22-26 (Group 2), drawn to a method for a device to charge an automobile battery comprising detecting a connection and a type of connection between the power supply and the automobile battery, *classified in cpc group H02J 7/342*.

3. Inventions 22-26 (Group 2) and 7-21 (Group 1) are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination (Group 2) as claimed does not require the particulars of the subcombination as claimed, because

Group 2 does not require the jumpstarter device comprising the voltage regulator (emphasis added). The subcombination (Group 1) has separate utilities such as, but not limited to: the jumpstarter device comprising the voltage regulator; the voltage regulator comprising a voltage stabilizer connected to a resistor, a capacitor, and the microcontroller; the voltage regulator is a direct current to direct-current (DC-DC) converter; the microcontroller causes the switching circuitry to disconnect the power supply from the automobile battery when the automobile battery has a higher voltage than the power supply; the microcontroller causes the device to enter a standby mode when a voltage of the power supply is less than 9V and allows operation when the voltage of the power supply is greater than 10V (emphasis added).

4. Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required, because the inventions have acquired a separate status in the art in view of their different search queries and different classification that requires a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

5. Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement be traversed (37 CFR 1.143).

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or of the currently named inventors is no longer an inventor of at least one claim

remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to NAUM B LEVIN whose telephone number is (571)272-1898. The examiner can normally be reached on M-F 8 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Chiang can be reached on 571-272-7483. 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.

/NAUM LEVIN/
Primary Examiner, Art Unit 2851

<i>Index of Claims</i> 	Application/Control No. 17/131,113	Applicant(s)/Patent Under Reexamination Wang et al.
	Examiner NAUM B LEVIN	Art Unit 2851

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

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	12/15/2022								
	1	-								
	2	-								
	3	-								
	4	-								
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	26	÷								

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	
				Examiner Name	
Sheet	1	of	2	Attorney Docket Number	10737-1-CON-4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	11043768	06-22-2021	King et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ ; Number ⁴ ; Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶

OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)		
Examiner Initials*	Cite No. ¹	
	2	Office Action for US Application No. 17/495,196 mailed January 24, 2022 (Attorney Ref. No. 10737-1-CON-9)
	3	Notice of Allowance for US Application No. 17/495,196 mailed March 9, 2022 (Attorney Ref. No. 10737-1-CON-9)
	4	JUDGMENT - Final Written Decision Determining Some Challenged Claims Unpatentable Denying Motions to Exclude filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Record of Oral Hearing; Case No.: IPR 2020-00944 ; Filed on November 3, 2021 (108 pages)
	5	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Record of Oral Hearing; Case No.: IPR 2020-00944 ; Filed December 3, 2021 - February 16, 2022 (24 pages)
	6	Patent Owner's Response to Petition Pursuant to 27 C.F.R. 42.120, Patent Owner's Updated Exhibit List, and Exhibits 2001-2009 filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-00777 ; Filed on December 30, 2021 and February 11, 2022 (345 pages)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	
				Examiner Name	
Sheet	2	of	2	Attorney Docket Number	10737-1-CON-4

7	DECISION Granting Institution of <i>Inter Partes</i> Review and Scheduling Order filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed on January 14, 2022 (27 pages)
8	Patent Owner's Response to Petition Pursuant to 37 C.F.R. 42.120, including Exhibits 2001-2002 filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed on April 8, 2022 (113 pages)
9	DECISION Granting Institution of <i>Inter Partes</i> Review and Scheduling Order filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01235 ; Filed on January 14, 2022 (35 pages)
10	Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and Unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 - Including Exhibits I.A - I.Q (REDACTED) for PILOT, INC. v. SCHUMACHER ELECTRIC CORPORATION ; U.S. District Court for the Northern District of Illinois Eastern Division; Civil Action No. 1:19-cv-05982; Includes publicly available documents filed November 25, 2019 (729 pages)
11	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE NOCO COMPANY, INC. ; U.S. District Court For the District of Arizona; Civil Action No. 2:20-cv-01452 ; Includes publicly available documents filed from October 6, 2021 - March 10, 2022; Docket Nos. 121-125; (27 pages)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Electronic Acknowledgement Receipt

EFS ID:	45455165
Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	Jason Vick/Joanne Vos
Filer Authorized By:	Jason Vick
Attorney Docket Number:	10737-1-CON-4
Receipt Date:	12-APR-2022
Filing Date:	22-DEC-2020
Time Stamp:	14:44:05
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		IDS_05.pdf	238035	yes	5
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	Letter specifying the conditions for filing under 37 CFR 1.97		1	3	
	Information Disclosure Statement (IDS) Form (SB08)		4	5	
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Information:					
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Warnings:					
Information:					
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Warnings:					
Information:					
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Warnings:					
Information:					
5	Non Patent Literature	PART_021_IPR_2020-00944.pdf	360851	no	24
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Warnings:					
Information:					
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Information:					
7	Non Patent Literature	PART_003_IPR_2021-01232.pdf	685719	no	27
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Information:					
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Information:					
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Warnings:					
Information:					
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Warnings:					
Information:					
11	Non Patent Literature	SchumacherElectric_Noninfringement_Contentions_002.pdf	10642734	no	459
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Warnings:					
Information:					
12	Non Patent Literature	PART_0005_NOCO.pdf	598689	no	27
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Warnings:					
Information:					
Total Files Size (in bytes):			54599229		

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.

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2851
Calvin Shiening Wang	)	Confirmation No.: 8694
Serial No.: 17/131,113	)	Examiner:
Filed: December 22, 2020	)	
Atty File No.: 10737-1-CON-4	)	<u>SUPPLEMENTAL</u>
Entitled: "AUTOMOBILE CHARGER"	)	<u>INFORMATION DISCLOSURE</u>
	)	<u>STATEMENT</u>
	)	
	)	Electronically Submitted

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

Dear Commissioner:

The references cited on attached Form PTO-1449 are being called to the attention of the Examiner.

- ☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.
- ☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.
- ☒ Copies of the cited U.S. patents/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).
- ☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.
- ☐ To the best of applicants' belief, the pertinence of the foreign-language references are believed to be summarized in the attached English translation/abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.
- ☐ Examiner's attention is drawn to the following related applications:
- Serial No. _____ filed _____ (Attorney Ref. No. _____)
- ☐ Other: _____

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☒	37 CFR 1.97(b): No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry into the national stage of an international application as set forth in 37 CFR 1.491 or ☒ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☐	37 CFR 1.97(c): The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of one of the following conditions: (1) a final action under 37 C.F.R. 1.113 or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of \$260.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	37 CFR 1.97(d): This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of \$260.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))

(Applicable only if checked)

☐ The undersigned certifies that:

☐ Each item of information contained in this 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 this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: April 12, 2022

By: /Jason H. Vick/

Jason H. Vick

Reg. No. 45,285

1560 Broadway, Suite 1200

Denver, Colorado 80202

Telephone: 303-863-9700

jvick@sheridanross.com

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
 Stylesheet Version v1.2

EPAS ID: PAT7214129

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	SECURITY INTEREST
CONVEYING PARTY DATA	
Name	Execution Date
PILOT INC.	10/29/2021
RECEIVING PARTY DATA	
Name:	WINGSPIRE CAPITAL LLC, AS ADMINISTRATIVE AGENT
Street Address:	13010 MORRIS ROAD
Internal Address:	BUILDING ONE, SUITE 175
City:	ALPHARETTA
State/Country:	GEORGIA
Postal Code:	30004
PROPERTY NUMBERS Total: 5	
Property Type	Number
Patent Number:	11104236
Application Number:	16883685
Application Number:	17131113
Application Number:	29711629
Application Number:	29711630
CORRESPONDENCE DATA	
Fax Number:	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
Phone:	3128637141
Email:	kristen.lange@goldbergkohn.com
Correspondent Name:	KRISTEN N. LANGE, PARALEGAL
Address Line 1:	C/O GOLDBERG KOHN LTD.
Address Line 2:	55 E. MONROE STREET, SUITE 3300
Address Line 4:	CHICAGO, ILLINOIS 60603
ATTORNEY DOCKET NUMBER:	8177.001
NAME OF SUBMITTER:	KRISTEN N. LANGE
SIGNATURE:	/kristenlange/
DATE SIGNED:	03/09/2022
This document serves as an Oath/Declaration (37 CFR 1.63).	

Total Attachments: 5

source=Pilot - First Amendment to Patent Security Agreement (10-29-21)#page1.tif

source=Pilot - First Amendment to Patent Security Agreement (10-29-21)#page2.tif

source=Pilot - First Amendment to Patent Security Agreement (10-29-21)#page3.tif

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FIRST AMENDMENT TO PATENT SECURITY AGREEMENT

THIS FIRST AMENDMENT ("Amendment") to that certain Patent Security Agreement dated as of September 8, 2020 (the "Patent Security Agreement"), among Pilot Inc., a California corporation (referred to herein as "Grantor" or "Grantors"), and WINGSPIRE CAPITAL LLC, as Administrative Agent (in such capacity, the "Administrative Agent") is dated as of October 29, 2021.

Reference is made to (a) that certain Credit Agreement, dated as of September 8, 2020, by and among PILOT-NGC HOLDING, INC., a Delaware corporation ("Holdings"), PILOT INC., a California corporation (the "Borrower-Pilot"), WANG'S INTERNATIONAL, INCORPORATED, a California corporation (the "Borrower-Wangs"), the other Subsidiaries (if any) of Holdings from time to time party thereto as "Borrowers" (together with Borrower-Pilot and Borrower-Wangs, each, a "Borrower" and individually and collectively, jointly and severally, the "Borrowers"), the Subsidiaries (if any) of Holdings from time to time party thereto as "Guarantors" (together with Holdings, each, a "Guarantor" and collectively, the "Guarantors"), the lenders from time to time party thereto as lenders (each, a "Lender" and, collectively, the "Lenders"), and the Administrative Agent (as the same may be amended, restated, supplemented, or otherwise modified from time to time, the "Credit Agreement"), and (b) that certain Pledge and Security Agreement, dated as of September 8, 2020, by and among Holdings, Borrower-Pilot, Borrower-Wangs, the other Subsidiaries (if any) of Holdings from time to time party thereto as "Grantors" and the Administrative Agent (as the same may be amended, restated, supplemented or otherwise modified from time to time, the "Security Agreement").

The Lenders have agreed to extend credit to the Borrowers subject to the terms and conditions set forth in the Credit Agreement, the Guarantors have guaranteed Obligations and the Grantors have secured their obligations pursuant to the Security Agreement. The obligations of the Lenders to extend such credit are conditioned upon, among other things, the execution and delivery of this Amendment.

In the furtherance of the foregoing, Grantor entered into the Patent Security Agreement. Since the date of Grantor's execution of the Patent Security Agreement. Grantor has acquired interest in additional Patents (the "New Patents"). In accordance with the Security Agreement the parties agree to amend the Patent Security Agreement to confirm the inclusion of such New Patents.

Accordingly, the parties hereto agree to amend the Patent Security Agreement as follows:

1. Schedules. Schedule I to the Patent Security Agreement shall be deemed to refer to Schedule I as amended by the addition of the New Patent schedules on Schedule I attached hereto.
2. Effect of Amendment. Except as expressly amended by this Amendment the terms of the Patent Security Agreement shall remain in full force and effect as executed.
3. Counterparts. This Amendment may be executed in counterparts (and by different parties hereto in different counterparts), each of which shall constitute an original, but all of which when taken together shall constitute a single contract. Delivery of an executed counterpart of a

signature page of this Amendment by facsimile or in electronic (e.g., "pdf" or "tif") format shall be effective as delivery of a manually executed counterpart of this Amendment.

4. Governing Law. This Amendment shall be governed by, and construed in accordance with, the laws of the State of New York.

[Continued on the following page.]

IN WITNESS WHEREOF, the parties hereto have duly executed this Amendment as of the day and year first above written.

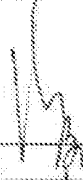
PILOT INC.

By: 

Name: Michael Du

Title: Chief Financial Officer

WINGSPIRE CAPITAL LLC, as Administrative
Agent

By: 
Name: Bruce Long
Title: Managing Director

SCHEDULE I

PATENTS

Patent Title	Patent No.	Reg. Date	Serial No.	Filing Date
BLUETOOTH ENABLED SNAKE CAM	n/a	n/a	16/883685	05/26/20
AUTOMOBILE CHARGER	n/a	n/a	17/131113	12/22/20
AUTOMOBILE CHARGER	11,104,236	08/31/21	17/236339	04/21/21
VEHICLE BUMPER	n/a	n/a	29/711629	11/01/19
VEHICLE BUMPER	n/a	n/a	29/711630	11/01/19

Patent Licenses

None.



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.
17/131,113	12/22/2020	Calvin Shiening Wang	10737-1-CON-4	8694
22442	7590	12/27/2021	EXAMINER	
Sheridan Ross PC			CENTRAL, DOCKET	
1560 Broadway				
Suite 1200				
Denver, CO 80202				
			ART UNIT	PAPER NUMBER
			OPAP	
			NOTIFICATION DATE	DELIVERY MODE
			12/27/2021	ELECTRONIC

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

The time period for reply, if any, is set in the attached communication.

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

e-docket@sheridanross.com

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

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR/ PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
17/131,113	12/22/2020	Wang et al.	10737-1-CON-4

Sheridan Ross PC 1560 Broadway Suite 1200 Denver, CO 80202		EXAMINER	
		N/A	
		ART UNIT	PAPER
		OPAP	20211221

DATE MAILED: _____

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

Commissioner for Patents

Please see the attached decision on the petition to expunge under 37 CFR 1.59(b).

/Kimberly N. Kakalec/
Primary Examiner, Art Unit 2872

/JENNY L WAGNER/
TQAS, Technology Center 2800



UNITED STATES PATENT AND TRADEMARK OFFICE

Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450
www.uspto.gov

Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

In re Application of:

Wang *et al.*

Serial No.: 17/131,113

Filed: December 22, 2020

Docket: 10737-1-CON-4

Title: AUTOMOBILE CHARGER

:
:
:
:
:
:

DECISION ON PETITION
UNDER 37 C.F.R. § 1.59(b)

This decision is in response to the petition under 37 CFR 1.59(b) to expunge information submitted under MPEP 724.02 or as part of an Information Disclosure Statement, filed 05 November 2021.

The petition is **HELD IN ABEYANCE**.

REVIEW OF FACTS

Applicant filed a petition requesting that the following documents be expunged from the record:

(1) Non-Patent Literature Document 191 (Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and Unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 84 pages – corresponding with Document No. 46 listed on Electronic Acknowledgement Receipt EFS ID: 41886676), submitted with the Information Disclosure Statement of 10 February 2021.

(2) Non-Patent Literature Document 208 (Corrected Exhibit II.P, Invalidity Claim Chart for DieHard 950 System for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 48 pages – corresponding with Document No. 3 listed on Electronic Acknowledgement Receipt EFS ID: 41886676), submitted with the Information Disclosure Statement of 10 February 2021.

REGULATION AND PRACTICE

MPEP 724.05 (II) states:

II. Information Unintentionally Submitted in Application

A petition to expunge information unintentionally submitted in an application (other than information forming part of the original disclosure) may be filed under 37 CFR 1.59(b), provided that:

- (A) the Office can effect such return prior to the issuance of any patent on the application in issue;
- (B) it is stated that the information submitted was unintentionally submitted and the failure to obtain its return would cause irreparable harm to the party who submitted the information or to the party in interest on whose behalf the information was submitted;
- (C) the information has not otherwise been made public;
- (D) there is a commitment on the part of the petitioner to retain such information for the period of any patent with regard to which such information is submitted;
- (E) it is established to the satisfaction of the Director that the information to be returned is not material information under 37 CFR 1.56; and
- (F) the petition fee as set forth in 37 CFR 1.17(g) is included.

A request to expunge information that has not been clearly identified as information that may be later subject to such a request by marking and placement in a separate sealed envelope or container shall be treated on a case-by-case basis. Applicants should note that unidentified information that is a trade secret, proprietary, or subject to a protective order that is submitted in an Information Disclosure Statement may inadvertently be placed in an Office prior art search file by the examiner due to the lack of such identification and may not be retrievable.

ANALYSIS AND DECISION

The decision on the petition will be held in abeyance until allowance of the application or mailing of an *Ex parte* Quayle action or a Notice of Abandonment, at which time the petition will be decided.

The decision on the petition is held in abeyance because prosecution on the merits has not completed. Accordingly, it is not appropriate to make a final determination of whether or not the material requested to be expunged is “material,” with “materiality” being defined as any information which the examiner considers as being important to a determination of patentability of the claims. Thus, the decision on the petition to expunge must be held in abeyance at this time.

During prosecution on the merits, the examiner will determine whether or not the identified document is considered to be “material.” If the information is not considered by the examiner to be material, the information will be removed from the official file.

Accordingly, the petition is **HELD IN ABEYANCE**.

IMPORTANT: Applicant is encouraged to **renew** petition upon allowance of the application or mailing of an *Ex parte* Quayle action or a Notice of Abandonment, at which time the petition will be decided.

Alternatively, Applicant may file a petition under 37 CFR 1.182 requesting to replace the unredacted versions of the above documents with redacted versions. Such submission should include redacted versions of the above documents. It is noted that the document submitted with the Information Disclosure Statement of 18 May 2021 does not appear to directly correspond with the unredacted versions submitted on 10 February 2021. Documents (1) and (2) above are 84 and 48 pages long, respectively, while the redacted document submitted on 18 May 2021 includes 729 pages.

Any inquiry concerning this decision should be directed to Jenny Wagner at (571) 272-5359. If attempts to reach the undersigned are unsuccessful, you may contact Brian Sircus at (571) 272-2058.

/JENNY L WAGNER/

Jenny L Wagner, Quality Assurance Specialist
Technology Center 2800

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of: Calvin Wang	)	Group Art Unit:
Application No.: 17/131,113	)	Examiner:
Filed: December 22, 2020	)	Confirmation No.: 8694
Atty. File No.: 10737-1-CON-4	)	
	)	

For: AUTOMOBILE CHARGER

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

PETITION UNDER 37 CFR 1.59(b) TO EXPUNGE INFORMATION
UNINTENTIONALLY SUBMITTED IN AN APPLICATION

Dear Commissioner:

This is a Petition to expunge information unintentionally submitted in an application under 37 CFR 1.59(b).

37 CFR 1.59 provides that information, other than the original disclosure of the application, may be expunged from the file wrapper provided a petition to expunge under 37 CFR 1.59(b) and the required fee set forth in 37 CFR 1.17(g) are filed, and further that petitioner has established to the satisfaction of the Director that the return of the information is appropriate. Expungement of information that was inadvertently submitted to the Office is appropriate provided that items (A)-(F) set forth in MPEP § 724.05, paragraph II, are satisfied.

In compliance with MPEP § 724.05, paragraph II, "Information Unintentionally Submitted in Application", Applicants are required to submit the following:

(A) the Office can effect such return prior to the issuance of any patent on the application in issue;

(B) it is stated that the information submitted was unintentionally submitted and the failure to obtain its return would cause irreparable harm to the party who submitted the information or to the party in interest on whose behalf the information was submitted;

(C) the information has not otherwise been made public;

(D) there is a commitment on the part of the petitioner to retain such information for the period of any patent with regard to which such information is submitted;

(E) it is established to the satisfaction of the Director that the information to be returned is not material information under 37 CFR 1.56; and

(F) the petition fee as set forth in 37 CFR 1.17(g) is included.

On February 10, 2021, Applicants submitted an Information Disclosure Statement (“IDS”) in the referenced application citing various documents that had been submitted in related litigation matters. The documents uploaded to EFS for Reference No. 191 and Reference No. 208 listed on the 1449 form were the incorrect documents. The documents that were uploaded were “Confidential Under Protective Order” and were labeled as Confidential. The documents that should have been uploaded were the Redacted versions of these documents.

Applicants have conferred with counsel for Schumacher Electric Corporation (“Schumacher”), the party whose confidential information was included in the IDS, and counsel for that party has stated that only certain materials should remain confidential. Those materials reflect confidential business activities on the part of Schumacher that have no bearing on the patentability of this application. A redacted version of the IDS with this information removed was previously submitted with the USPTO on May 18, 2021, reference number 37 on the 1449, labeled as “*Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and Unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 - Including Exhibits I.A - I.Q (REDACTED) for PILOT, INC. v. SCHUMACHER ELECTRIC CORPORATION; U.S. District Court for the Northern District of Illinois Eastern Division; Civil Action No. 1:19-cv-05982; Includes publicly available documents filed November 25, 2019 (729 pages)*”. The documents are listed as “SchumacherElectric_Noninfringement_Contentions_001” and “SchumacherElectric_Noninfringement_Contentions_002” under Electronic Acknowledgment Receipt Patent Center # 60196996.

Accordingly, any information material to patentability in the IDS will remain before the Examiner for consideration.

In support of this petition, Applicants state as follows:

The Office can effect the requested return prior to the issuance of any patent on the application in issue, as no patent has issued on the application in issue.

The redacted information was unintentionally submitted and the failure to obtain its return would cause irreparable harm to Applicants and to Schumacher, as the information reflects confidential business information subject to a judicial protective order.

The redacted information has not otherwise been made public. The information is listed as Non-Patent Literature “NPL” on PAIR and cannot be accessed through Public Pair.

Applicants commit that they will retain the redacted information for the period of any patent with regard to which such information was submitted.

Applicants submit that the redacted information is not material information under 37 CFR 1.56.

The petition fee as set forth in 37 CFR 1.17(g) is included with this petition.

Applicants therefore request that Document No. 46 listed on Electronic Acknowledgement Receipt EFS ID: 41886676

Information:					
46	Non Patent Literature	1-19-cv-05982_Def_Corrected_Initial_Noninfringement_Invalidity_11-25-2019.pdf	1327017	no	84
			10c06207125c91b25a9b7bdc0956e62904a4dab06		

and Document No. 3 listed on Electronic Acknowledgement Receipt EFS ID: 41886942

Information:					
3	Non Patent Literature	Corrected_Exhibit_IIIP_Invalidity_Claim_Chart_for_DieHard_950_System.pdf	3379739	no	48
			b15197db65660cb8f25b27c0b7e123204bd5729		
Warnings:					

be expunged from the file wrapper.

Although Applicant does not believe additional fees are due in connection with the filing of this Petition, please charge any additional fees deemed necessary, or credit any overpayment, to Deposit Account No. 19-1970.

Based on the above and in compliance with 37 CFR 1.59(b), Applicants request this Petition to be granted.

Respectfully submitted,

SHERIDAN ROSS P.C.

By: /Jason H. Vick/
Jason H. Vick
Registration No. 45,285
1560 Broadway, Suite 1200
Denver, Colorado 80202-5141
(303) 863-9700
jvick@sheridanross.com

Date: November 5, 2021

Electronic Patent Application Fee Transmittal				
Application Number:		17131113		
Filing Date:		22-Dec-2020		
Title of Invention:		AUTOMOBILE CHARGER		
First Named Inventor/Applicant Name:		Calvin Shiening Wang		
Filer:		Jason Vick/Joanne Vos		
Attorney Docket Number:		10737-1-CON-4		
Filed as Large Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
PETITION FEE- 37 CFR 1.17(G) (GROUP II)	1463	1	220	220
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				220

Electronic Acknowledgement Receipt

EFS ID:	44214648
Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	Jason Vick/Joanne Vos
Filer Authorized By:	Jason Vick
Attorney Docket Number:	10737-1-CON-4
Receipt Date:	05-NOV-2021
Filing Date:	22-DEC-2020
Time Stamp:	13:04:49
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$220
RAM confirmation Number	E2021A5D05092903
Deposit Account	191970
Authorized User	Joanne Vos
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)

37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Petition for review by the Office of Petitions	Petition_to_Expunge.pdf	166807	no	4
			da3432096124ad7abb996a4c8cc181fd3b194a0		

Warnings:

Information:

2	Fee Worksheet (SB06)	fee-info.pdf	37858	no	2
			41f8bc7a06ec291e59e9042c31c67d2baa946197		

Warnings:

Information:

Total Files Size (in bytes):	204665
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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.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	
				Examiner Name	
Sheet	1	of	2	Attorney Docket Number	10737-1-CON-4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear

UNPUBLISHED U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Filing Date MM-DD-YYYY	Name of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	17/495196	10-06-2021	Wang et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ ; Number ⁴ ; Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶

OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)		
Examiner Initials*	Cite No. ¹	
	2	Notice of Allowance for US Application No. 17/236,279, mailed September 24, 2021 (Attorney Ref. No. 10737-1-CON-6)
	3	Documents filed with SHENZHEN CAR KU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Petitioner's Demonstrative Exhibit; Case No.: IPR 2020-00944 ; Filed on August 9, 2021 (83 pages)
	4	Documents filed with SHENZHEN CAR KU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Case No.: IPR 2020-00944 ; Filed on August 9, 2021 (38 pages)
	5	Documents filed with SHENZHEN CAR KU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board; Record of Oral Hearing; Case No.: IPR 2020-00944 ; Filed on September 13, 2021 (95 pages)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	
				Examiner Name	
Sheet	2	of	2	Attorney Docket Number	10737-1-CON-4

	6	Decision Granting Institution of <i>Inter Partes</i> Review filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-00777 ; Filed on October 5, 2021 (14 pages)
	7	Scheduling Order filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-00777 ; Filed on October 5, 2021 (11 pages)
	8	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE NOCO COMPANY, INC. ; U.S. District Court For the District of Arizona; Civil Action No. 2:20-cv-01452 ; Includes publicly available documents filed from August 20, 2021 - September 15, 2021; Docket Nos. 116-120; (13 pages)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Electronic Acknowledgement Receipt

EFS ID:	43977075
Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	Jason Vick/Joanne Vos
Filer Authorized By:	Jason Vick
Attorney Docket Number:	10737-1-CON-4
Receipt Date:	07-OCT-2021
Filing Date:	22-DEC-2020
Time Stamp:	16:34:49
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		IDS_04.pdf	236569	yes	5
			98897aea7b91f971d8e37de0156ba4ce7149a42c		

	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Letter specifying the conditions for filing under 37CFR1.97		1	3	
	Information Disclosure Statement (IDS) Form (SB08)		4	5	
Warnings:					
Information:					
2	Non Patent Literature	10737-1- CON-6_NOA_09-24-2021.pdf	440527	no	8
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Warnings:					
Information:					
Total Files Size (in bytes):				30378440	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2851
Calvin Shiening Wang	)	
Serial No.: 17/131,113	)	Confirmation No.: 8694
Filed: December 22, 2020	)	Examiner:
Atty File No.: 10737-1-CON-4	)	
Entitled: "AUTOMOBILE CHARGER"	)	<u>SUPPLEMENTAL</u>
	)	<u>INFORMATION DISCLOSURE</u>
	)	<u>STATEMENT</u>
	)	
	)	Electronically Submitted

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

Dear Commissioner:

The references cited on attached Form PTO-1449 are being called to the attention of the Examiner.

- ☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.
- ☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.
- ☒ Copies of the cited U.S. patents/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).
- ☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.
- ☐ To the best of applicants' belief, the pertinence of the foreign-language references are believed to be summarized in the attached English translation/abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.
- ☒ Examiner's attention is drawn to the following related applications:
- Serial No. 17/495,196 filed Oct. 6, 2021 (Attorney Ref. No. 10737-1-CON-9)
- ☐ Other:

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☒	37 CFR 1.97(b): No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry into the national stage of an international application as set forth in 37 CFR 1.491 or ☒ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☐	37 CFR 1.97(c): The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of one of the following conditions: (1) a final action under 37 C.F.R. 1.113 or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of \$260.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	37 CFR 1.97(d): This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of \$260.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e))

(Applicable only if checked)

☐ The undersigned certifies that:

☐ Each item of information contained in this 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 this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: October 7, 2021

By: /Jason H. Vick/

Jason H. Vick

Reg. No. 45,285

1560 Broadway, Suite 1200

Denver, Colorado 80202

Telephone: 303-863-9700

jvick@sheridanross.com

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	
Sheet	1	of	3	Attorney Docket Number	8523WANG-1-CON-4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	6459175	10-01-2002	Potega	
	2	7002265	02-21-2006	Potega	
	3	7839117	11-23-2010	Elder et al.	
	4	2005/0212521	09-29-2005	Bertness	
	5	2006/0244412	11-02-2006	Bonzer et al.	
	6	2011/0216451	09-08-2011	Haines et al.	
	7	2013/0241498	09-19-2013	Koebler	
	8	2016/0079776	03-17-2016	Iguchi et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ ; Number ⁴ ; Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	9	CN 203211234 U	09-25-2013	HUIZHOU HUAYITONG TECHNOLOGY CO LTD		(Includes an English Translation of the Application)

OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)		
Examiner Initials*	Cite No. ¹	
	10	PR WEB Online Visibility from Vocus "Groundbreaking NOCO Genius® Boost™ Car Starter Available Commercially Beginning October 6, 2014" Published September 23, 2014
	11	Office Action for US Application No. 17/236,260 mailed June 24, 2021 (Attorney Ref. No. 8523WANG-1-CON-5)
	12	Notice of Allowance for US Application No. 17/236,260 mailed July 12, 2021 (Attorney Ref. No. 8523WANG-1-CON-5)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	
Sheet	2	of	3	Attorney Docket Number	8523WANG-1-CON-4

13	Office Action for US Application No. 17/236,279, mailed July 30, 2021 (Attorney Ref. No. 8523WANG-1-CON-6)
14	Office Action for US Application No. 17/236,302, mailed June 23, 2021 (Attorney Ref. No. 8523WANG-1-CON-7)
15	Office Action for US Application No. 17/236,339, mailed June 18, 2021 (Attorney Ref. No. 8523WANG-1-CON-8)
16	Notice of Allowance for US Application No. 17/236,339, mailed July 7, 2021 (Attorney Ref. No. 8523WANG-1-CON-8)
17	Patent Owner the NOCO Company's Supplemental Response (Including Exhibit 2024) for SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed April 22, 2021 (124 pages)
18	Petitioner's Reply to Patent Owner's Response (Including Exhibits 1024 - 1050) for SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed April 29, 2021 (1,601 pages)
19	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed from May 3, 2021 - July 12, 2021 (236 pages)
20	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on July 22, 2021 (439 pages)
21	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on August 5, 2021 (16 pages)
22	Documents filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-00777 ; Filed between April 14 - April 30, 2021 (27 pages)
23	Petition for Inter Partes Review of U.S. Patent No. 10,046,653 including Exhibits 1001-1011; Case No. IPR 2021-01232 , filed July 17, 2021 (737 pages)
24	Documents filed with SHENZHEN CHIC ELECTRICS CO., LTD., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01232 ; Filed between July 28, 2021 - August 5, 2021 (15 pages)
25	Petition for Inter Partes Review of U.S. Patent No. 10,328,806 including Exhibits 1001-1012; Case No. IPR 2021-01235 , filed July 7, 2021 (479 pages)
26	Documents filed with THE NOCO COMPANY, INC., v. PILOT, INC. ; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2021-01235 ; Filed between July 19 - July 29, 2021 (14 pages)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	
Sheet	3	of	3	Attorney Docket Number	8523WANG-1-CON-4

	27	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE NOCO COMPANY, INC. ; U.S. District Court For the District of Arizona; Civil Action No. 2:20-cv-01452 ; Includes publicly available documents filed from April 22, 2021 - June 11, 2021; Docket Nos. 79-114; (1,676 pages)
	28	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE NOCO COMPANY, INC. ; U.S. District Court For the District of Arizona; Civil Action No. 2:20-cv-01452 ; Includes publicly available documents filed on August 6, 2021; Docket No. 115; (19 pages)
	29	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. Baccus Global LLC ; U.S. District Court for the Southern District of Florida West Palm Beach Division; Civil Action No. 9:21-cv-81009 ; Includes publicly available documents filed from June 7, 2021 - July 30, 2021; Docket Nos. 1-22; (1,543 pages)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Electronic Acknowledgement Receipt	
EFS ID:	43549022
Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	Jason Vick/Joanne Vos
Filer Authorized By:	Jason Vick
Attorney Docket Number:	8523WANG-1-CON-4
Receipt Date:	19-AUG-2021
Filing Date:	22-DEC-2020
Time Stamp:	11:08:16
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		IDS_03.pdf	261277	yes	6
			126927f5b3e676e2e5f229a07edade26ee990582		

	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Letter specifying the conditions for filing under 37CFR1.97		1	3	
	Information Disclosure Statement (IDS) Form (SB08)		4	6	
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2	Foreign Reference	CN203211234U.pdf	9544229	no	27
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3	Non Patent Literature	PRWeb_Groundbreaking_NOC O.pdf	162737	no	3
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Information:					
14	Non Patent Literature	PART_014_IPR_2020-00944.pdf	1325230	no	236
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19	Non Patent Literature	PART_001_IPR_2021-01232_PET_001.pdf	20740107	no	400
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20	Non Patent Literature	PART_001_IPR_2021-01232_PET_002.pdf	15057567	no	337
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21	Non Patent Literature	PART_002_IPR_2021-01232.pdf	765732	no	15
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Warnings:					
Information:					

22	Non Patent Literature	PART_001_IPR2021-01235_PET_001.pdf	14634591	no	250
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Information:					
23	Non Patent Literature	PART_001_IPR2021-01235_PET_002.pdf	14991938	no	229
			591f20c0caeb7bc25bd571081b4ee779fe92417a		
Warnings:					
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24	Non Patent Literature	PART_002_IPR2021-01235.pdf	775726	no	14
			dff9e9a61f92c4d04baa683362d5809a3884efd4		
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25	Non Patent Literature	PART_0002_NOCO_01.pdf	25331140	no	500
			63f10a085e1d88d03ec90d77e7f727e9c98ee371		
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26	Non Patent Literature	PART_0002_NOCO_02.pdf	16003082	no	300
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Warnings:					
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27	Non Patent Literature	PART_0002_NOCO_03.pdf	22048484	no	300
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Warnings:					
Information:					
28	Non Patent Literature	PART_0002_NOCO_04.pdf	12305667	no	200
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Warnings:					
Information:					

29	Non Patent Literature	PART_0002_NOCO_05.pdf	22048265	no	376
			22e9ab84e06bc31cd1e6443a78bcd9503a53d64e		
Warnings:					
Information:					
30	Non Patent Literature	PART_0003_NOCO.pdf	344339	no	19
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Information:					
31	Non Patent Literature	PART_0001_BaccusGlobal_01.pdf	25452376	no	240
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Warnings:					
Information:					
32	Non Patent Literature	PART_0001_BaccusGlobal_02.pdf	22367045	no	210
			bd11662485dddc7317043db79e1deeaca8ba99b7		
Warnings:					
Information:					
33	Non Patent Literature	PART_0001_BaccusGlobal_03.pdf	19815257	no	200
			e37f5128f9d29ffeb9659370e697b405893a25a6		
Warnings:					
Information:					
34	Non Patent Literature	PART_0001_BaccusGlobal_04.pdf	24798907	no	200
			0e9be34470aee02af01df3cb2b846fb9a5689dec		
Warnings:					
Information:					
35	Non Patent Literature	PART_0001_BaccusGlobal_05.pdf	21271612	no	150
			13f0b0b2e3d40488c4866c15240825a07562f652		
Warnings:					
Information:					

36	Non Patent Literature	PART_0001_BaccusGlobal_06.pdf	25463491	no	250
			5bb325a1fc49bb5226985ecc4d8851cf6ee27a3d		
Warnings:					
Information:					
37	Non Patent Literature	PART_0001_BaccusGlobal_07.pdf	21635311	no	293
			75d33c2f53ac1aef302f36fca4a9b7a8a16a2eb3		
Warnings:					
Information:					
Total Files Size (in bytes):			432877852		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2851
Calvin Shiening Wang	)	Confirmation No.: 8694
Serial No.: 17/131,113	)	Examiner:
Filed: December 22, 2020	)	
Atty File No.: 8523WANG-1-CON-4	)	<u>SUPPLEMENTAL</u>
Entitled: "AUTOMOBILE CHARGER"	)	<u>INFORMATION DISCLOSURE</u>
	)	<u>STATEMENT</u>
	)	
	)	Electronically Submitted

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

Dear Commissioner:

The references cited on attached Form PTO-1449 are being called to the attention of the Examiner.

- ☒ Copies of the cited non-patent and/or foreign references are enclosed herewith.
- ☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.
- ☒ Copies of the cited U.S. patents/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).
- ☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.
- ☒ To the best of applicants' belief, the pertinence of the foreign-language references are believed to be summarized in the attached English translation/abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.
- ☐ Examiner's attention is drawn to the following related applications:
- Serial No. _____ filed _____ (Attorney Ref. No. _____)
- ☒ Other:
- PILOT, INC. v. BACCUS GLOBAL LLC; U.S. District Court for the Southern District of Florida West Palm Beach Division; Civil Action No. 9:21-cv-81009

- Inter Partes Review – SHENZHEN CHIC ELECTRICS CO., LTD., v PILOT, INC.:
United States Patent and Trademark Office - Before the Patent Trial and Appeal
Board, Case No.: IPR2021-01232
- Inter Partes Review – THE NOCO COMPANY, INC., v PILOT, INC.: United States
Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.:
IPR2021-01235

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

☒	37 CFR 1.97(b): No fee is believed due in connection with this submission, because the information disclosure statement submitted herewith is satisfied by one of the following conditions ("X" indicates satisfaction): ☐ Within three months of the filing date of a national application other than a continued prosecution application under 37 CFR 1.53(d), or ☐ Within three months of the date of entry into the national stage of an international application as set forth in 37 CFR 1.491 or ☒ Before the mailing date of a first Office Action on the merits, or ☐ Before the mailing of a first Office action after the filing of a request for continued examination under 37 CFR 1.114. Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970.
☐	37 CFR 1.97(c): The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of one of the following conditions: (1) a final action under 37 C.F.R. 1.113 or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by: ☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR

☐	Please charge Deposit Account 19-1970 in the amount of \$260.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
☐	37 CFR 1.97(d): This Information Disclosure Statement is being submitted after the period specified in 37 CFR 1.97(c). ☐ This information Disclosure Statement includes a Certification (below) as specified by 37 C.F.R. 1.97(e) AND ☐ Applicants hereby requests consideration of the reference(s) disclosed herein. Please charge Deposit Account 19-1970 in the amount of \$260.00 under 37 C.F.R. 1.17(p). Please credit any overpayment or charge any underpayment to Deposit Account 19-1970. Election to pay the fee should not be taken as an indication that applicant(s) cannot execute a certification.

Certification (37 C.F.R. 1.97(e)) (Applicable only if checked)	
☐	The undersigned certifies that: ☐ Each item of information contained in this 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 this statement. 37 C.F.R. 1.97(e)(1). ☐ A copy of the communication from the foreign patent office is enclosed. OR ☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: August 19, 2021

By: /Jason H. Vick/
 Jason H. Vick
 Reg. No. 45,285
 1560 Broadway, Suite 1200
 Denver, Colorado 80202
 Telephone: 303-863-9700
jvick@sheridanross.com

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In Re the Application of:	)	Group Art Unit: 2851
Calvin Shiening Wang	)	Confirmation No.: 8694
Serial No.: 17/131,113	)	Examiner:
Filed: December 22, 2020	)	
Atty File No.: 8523WANG-1-CON-4	)	<u>SUPPLEMENTAL</u>
Entitled: "AUTOMOBILE CHARGER"	)	<u>INFORMATION DISCLOSURE</u>
	)	<u>STATEMENT</u>
	)	
	)	Electronically Submitted

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

Dear Commissioner:

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- ☐ Copies of the cited U.S. patents and/or patent applications are enclosed herewith.
- ☒ Copies of the cited U.S. patents/unpublished patent applications/patent application publications are not enclosed in accordance with 37 C.F.R. § 1.98(a).
- ☐ Copies of the cited references are not enclosed, in accordance with 37 C.F.R. § 1.98(d), because the references were cited by or submitted to the U.S. Patent and Trademark Office in prior application Serial No. _____ filed _____, which is relied upon for an earlier filing date under 35 U.S.C. § 120.
- ☒ To the best of applicants' belief, the pertinence of the foreign-language references are believed to be summarized in the attached English translation/abstracts and/or in the figures, although applicants do not necessarily vouch for the accuracy of the translation.
- ☒ Examiner's attention is drawn to the following related applications:
- Serial No. 14/569,352 filed Dec. 12, 2014 US Patent No. 9,525,297 (Attorney Ref. No. 8523WANG-1)
 - Serial No. 15/355,409 filed Nov. 18, 2016 US Patent No. 10,046,653 (Attorney Ref. No. 8523WANG-1-CON)

- Serial No. 15/923,219 filed Mar. 16, 2018 US Patent No. 10,328,806 (Attorney Ref. No. 8523WANG-1-CON-2)
- Serial No. 16/404,321 filed May 6, 2019 US Patent No. 10,875,410 (Attorney Ref. No. 8523WANG-1-CON-3)
- Serial No. 17/236,260 filed Apr. 21, 2021 (Attorney Ref. No. 8523WANG-1-CON-5)
- Serial No. 17/236,279 filed Apr. 21, 2021 (Attorney Ref. No. 8523WANG-1-CON-6)
- Serial No. 17/236,302 filed Apr. 21, 2021 (Attorney Ref. No. 8523WANG-1-CON-7)
- Serial No. 17/236,339 filed Apr. 21, 2021 (Attorney Ref. No. 8523WANG-1-CON-8)

☒ Other:

- PILOT, INC. v. WINPLUS NORTH AMERICA, INC.; U.S. District Court for the District Court of Colorado; Civil Action No. 1:17-cv-01183
- PILOT, INC. v. ANKER TECHNOLOGY CORPORATION; U.S. District Court for the District of Colorado; Civil Action No. 1:17-cv-01185
- PILOT, INC. v. WINPLUS NORTH AMERICA, INC.; U.S. District Court for the Central District of California; Civil Action No. 5:17-cv-01712
- PILOT, INC. v. ANKER TECHNOLOGY CORPORATION; U.S. District Court for the Northern District of California; Civil Action No. 4:17-cv-04918
- PILOT, INC. v. SCHUMACHER ELECTRIC CORPORATION; U.S. District Court for the Northern District of Texas Dallas Division; Civil Action No. 3:19-cv-01676
- PILOT, INC. v. SCHUMACHER ELECTRIC CORPORATION; U.S. District Court for the Northern District of Illinois Eastern Division; Civil Action No. 1:19-cv-05982
- PILOT, INC. v. GOOLOO TECHNOLOGY LLC and SHENZHEN GOOLOO E-COMMERCE CO., LTD.; U.S. District Court Central District of California; Civil Action No. 2:19-cv-09485
- PILOT, INC. v. AUKEY TECHNOLOGY CO., LTD. and SHENZHEN AUKEY E-BUSINESS CO., LTD.; U.S. District Court Central District of California; Civil Action No. 2:19-cv-09486
- PILOT, INC. v. THE DURACELL COMPANY; U.S. District Court for the Northern District of Illinois Eastern Division; Civil Action No. 1:20-cv-04054
- PILOT, INC. v. THE NOCO COMPANY, INC.; U.S. District Court for the District of Arizona; Civil Action No. 2:20-cv-01452
- PILOT, INC. v. BATTERY-BIZ, INC.; U.S. District Court Central District of California; Civil Action No. 2:20-cv-10207

- Inter Partes Review – WINPLUS NORTH AMERICA, INC. v PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No. : IPR2018-00488
- Inter Partes Review – SHENZHEN CAR KU TECHNOLOGY CO., LTD. v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No. : IPR2020-00944
- Inter Partes Review – THE NOCO COMPANY, INC. v PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No. : IPR2021-00777

Submission of the above information is not intended as an admission that any item is citable under the statutes or rules to support a rejection, that any item disclosed represents analogous art, or that those skilled in the art would refer to or recognize the pertinence of any reference without the benefit of hindsight, nor should an inference be drawn as to the pertinence of the references based on the order in which they are presented. Submission of this statement should not be taken as an indication that a search has been conducted, or that no better art exists.

It is respectfully requested that the cited information be expressly considered during the prosecution of this application and the references made of record therein.

FEES

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☐	37 CFR 1.97(c): The information disclosure statement transmitted herewith is being filed after all the above conditions (37 CFR 1.97(b)), but before the mailing date of one of the following conditions: (1) a final action under 37 C.F.R. 1.113 or (2) a notice of allowance under 37 C.F.R. 1.311, or (3) an action that otherwise closes prosecution in the application. This Information Disclosure Statement is accompanied by:

	☐ A Certification (below) as specified by 37 C.F.R. 1.97(e). Although no fee is believed due, if any fee is deemed due in connection with this submission, please charge such fee to Deposit Account 19-1970. OR ☐ Please charge Deposit Account 19-1970 in the amount of \$260.00 for the fee set forth in 37 C.F.R. 1.17(p) for submission of an information disclosure statement. Please credit any overpayment or charge any underpayment to Deposit Account 19-1970.
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Certification (37 C.F.R. 1.97(e))

(Applicable only if checked)

☐ The undersigned certifies that:

☐ Each item of information contained in this 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 this statement. 37 C.F.R. 1.97(e)(1).

☐ A copy of the communication from the foreign patent office is enclosed.

OR

☐ No item of information contained in this information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the undersigned after making reasonable inquiry, no item of information contained in this Information Disclosure Statement was known to any individual designated in 37 C.F.R. 1.56(c) more than three months prior to the filing of this statement. 37 C.F.R. 1.97(e)(2).

Respectfully submitted,

SHERIDAN ROSS P.C.

Date: May 18, 2021

By: /Jason H. Vick/

Jason H. Vick

Reg. No. 45,285

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Denver, Colorado 80202

Telephone: 303-863-9700

jvick@sheridanross.com

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	
Sheet	1	of	4	Attorney Docket Number	8523WANG-1-CON-4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ^{2 (if known)}	Publication Date MM-DD-YYYY	Name of Patentee of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	3267452	08-16-1966	Wolf	
	2	3950688	04-13-1976	Sancey et al.	
	3	10046653	08-14-2018	Wang et al.	
	4	10328806	06-25-2019	Wang et al.	
	5	10875410	12-29-2020	Wang et al.	
	6	2013/0154543	06-20-2013	Richardson et al.	
	7	2015/0340907	11-26-2015	Lei	

UNPUBLISHED U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ^{2 (if known)}	Filing Date MM-DD-YYYY	Name of Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	8	17/236260	04-21-2021	Wang et al.	
	9	17/236279	04-21-2021	Wang et al.	
	10	17/236302	04-21-2021	Wang et al.	
	11	17/236339	04-21-2021	Wang et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code ³ ; Number ⁴ ; Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	12	AU 6997198 A	07-30-1998	CLORE AUTOMOTIVE LLC		

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	
Sheet	2	of	4	Attorney Docket Number	8523WANG-1-CON-4

OTHER ART (Including Author, Title, Date, Pertinent Pages, etc.)		
Examiner Initials*	Cite No. ¹	
	13	Notification to Grant a Patent Right for Utility Model for Chinese Patent Application No. 201420212173.5, mailed July 17, 2014 (Attorney Ref. No. 8523WANG-1-CN)
	14	Petition for Inter Partes Review of U.S. Patent No. 9,525,297, including Exhibits 1001-1011; Case No. IPR 2018-00488 , filed January 13, 2018 (439 pages)
	15	Documents filed with WINPLUS NORTH AMERICA, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2018-00488 ; Filed between January 18, 2018 - February 6, 2018 (19 pages)
	16	DECISION Institution of <i>Inter Partes</i> Review 35 U.S.C. § 314 (a) filed in WINPLUS NORTH AMERICA, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2018-00488 ; Filed on July 16, 2018 (31 pages)
	17	Documents filed with WINPLUS NORTH AMERICA, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2018-00488 ; Filed between July 19, 2018 - October 24, 2018 (14 pages)
	18	ORDER Granting Joint Motion to Terminate Proceeding and Granting Joint Request to Treat Settlement Agreement as Business Confidential Information 35 U.S.C. § 317; 37 C.F.R. §§ 42.72, 42.74 filed in WINPLUS NORTH AMERICA, INC. v. PILOT, INC.; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2018-00488 ; Filed on November 16, 2018 (4 pages)
	19	Petition for Inter Partes Review of U.S. Patent No. 9,007,015, including Exhibits 1001-1018; Case No. IPR 2020-00944 , filed May 14, 2020 (1,100 pages)
	20	Documents filed with SHENZHEN CAR KU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed between May 21, 2020 - August 17, 2020 (34 pages)
	21	Patent Owner The Noco Company's Preliminary Response filed with SHENZHEN CAR KU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on August 21, 2020 (138 pages)
	22	Documents filed with SHENZHEN CAR KU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on August 25, 2020 (8 pages)
	23	Petitioner's Reply Brief filed with SHENZHEN CAR KU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on September 1, 2020 (98 pages)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	
Sheet	3	of	4	Attorney Docket Number	8523WANG-1-CON-4

24	Patent Owner the Noco Company's Preliminary Sur-Reply filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on September 4, 2020 (125 pages)
25	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed from September 16, 2020 - November 6, 2020 (46 pages)
26	DECISION Granting Institution of <i>Inter Partes</i> Review filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on November 12, 2020 (84 pages)
27	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed from November 13, 2020 - January 14, 2021 (29 pages)
28	Patent Owner The Noco Company's Response to Petition filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed on February 4, 2021 (507 pages)
29	Documents filed with SHENZHEN CARKU TECHNOLOGY CO., LTD., v. THE NOCO COMPANY; United States Patent and Trademark Office - Before the Patent Trial and Appeal Board, Case No.: IPR 2020-00944 ; Filed from February 5, 2021 - April 6, 2021 (184 pages)
30	Petition for Inter Partes Review of U.S. Patent No. 10,046,653, including Exhibits 1001-1014; Case No. IPR 2021-00777 , filed April 7, 2021 (617 pages)
31	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. WINPLUS NORTH AMERICA, INC. ; U.S. District Court for the District of Colorado; Civil Action No. 1:17-cv-01183; Includes publicly available documents filed from May 12, 2017 - June 8, 2017; Docket Nos. 1-11; (36 pages)
32	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. ANKER TECHNOLOGY CORPORATION ; U.S. District Court for the District of Colorado; Civil Action No. 1:17-cv-01185; Includes publicly available documents filed from May 12, 2017 - June 9, 2017; Docket Nos. 1-11; (37 pages)
33	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. WINPLUS NORTH AMERICA, INC. ; U.S. District Court for the Central District of California; Civil Action No. 5:17-cv-01712; Includes publicly available documents filed from August 23, 2017- October 8, 2018; Docket Nos. 1-59; (593 pages)
34	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. ANKER TECHNOLOGY CORPORATION ; U.S. District Court for the Northern District of CALIFORNIA; Civil Action No. 4:17-cv-04918; Includes publicly available documents filed from August 23, 2017 - March 27, 2018; Docket Nos. 1-25; (130 pages)

Examiner Signature		Date Considered	
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*EXAMINER: Initial if reference is considered, whether or not citation is in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	
Sheet	4	of	4	Attorney Docket Number	8523WANG-1-CON-4

35	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. SCHUMACHER ELECTRIC CORPORATION ; U.S. District Court for the Northern District of Texas Dallas Division; Civil Action No. 3:19-cv-01676; Includes publicly available documents filed from July 12, 2019 - September 6, 2019; Docket Nos. 1-18; (560 pages)
36	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. SCHUMACHER ELECTRIC CORPORATION ; U.S. District Court for the Northern District of Illinois Eastern Division; Civil Action No. 1:19-cv-05982; Includes publicly available documents filed from September 6, 2019 - July 15, 2020; Docket Nos. 1-40; (1,233 pages)
37	Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and Unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 - Including Exhibits I.A - I.Q (REDACTED) for PILOT, INC. v. SCHUMACHER ELECTRIC CORPORATION ; U.S. District Court for the Northern District of Illinois Eastern Division; Civil Action No. 1:19-cv-05982; Includes publicly available documents filed November 25, 2019 (729 pages)
38	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. GOOLOO TECHNOLOGY LLC and SHENZHEN GOOLOO E-COMMERCE CO. LTD. ; U.S. District Court for the Central District of California; Civil Action No. 2:19-cv-09485; Includes publicly available documents filed from November 4, 2019 - January 21, 2020; Docket Nos. 1-25; (581 pages)
39	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. AUKEY TECHNOLOGY CO. LTD. and SHENZHEN AUKEY E-BUSINESS CO., LTD. ; U.S. District Court for the Central District of California; Civil Action No. 2:19-cv-09486; Includes publicly available documents filed from November 4, 2019 - April 27, 2020; Docket Nos. 1-25; (585 pages)
40	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE DURACELL COMPANY ; U.S. District Court for the Northern District of Illinois Eastern Division; Civil Action No. 1:20-cv-04054; Includes publicly available documents filed from July 10, 2020 - August 20, 2020; Docket Nos. 1-11; (663 pages)
41	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. THE NOCO COMPANY, INC. ; U.S. District Court For the District of Arizona; Civil Action No. 2:20-cv-01452; Includes publicly available documents filed from July 22, 2020 - April 21, 2021; Docket Nos. 1-78; (2,799 pages)
42	Documents filed with U.S. District Court Proceedings for PILOT, INC. v. BATTERY-BIZ, INC. ; U.S. District Court Central District of California; Civil Action No. 2:20-cv-10207; Includes publicly available documents filed from November 6, 2020 - January 29, 2021; Docket Nos. 1-35; (733 pages)

Examiner Signature		Date Considered	
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ELECTRONIC ACKNOWLEDGEMENT RECEIPT

APPLICATION #
17/131,113

RECEIPT DATE / TIME
05/18/2021 02:40:25 PM ET

ATTORNEY DOCKET #
8523WANG-1-CON-4

Title of Invention

AUTOMOBILE CHARGER

Application Information

APPLICATION TYPE Utility - Nonprovisional Application
under 35 USC 111(a)

PATENT # -

CONFIRMATION # 8694

FILED BY Joanne Vos

PATENT CENTER # 60196996

FILING DATE 12/22/2020

CUSTOMER # 22442

FIRST NAMED
INVENTOR Calvin Shiening Wang

CORRESPONDENCE
ADDRESS -

AUTHORIZED BY Jason Vick

Documents

TOTAL DOCUMENTS: 74

DOCUMENT	PAGES	DESCRIPTION	SIZE (KB)
IDS_02.pdf	9	-	268 KB
IDS_02-IDS.R197.REL.pdf	(1-5) 5	Letter specifying the conditions for filing under 37CFR1.97	188 KB
IDS_02-IDS.pdf	(6-9) 4	Information Disclosure Statement (IDS) Form (SB08)	167 KB
AU6997198A.pdf	15	Foreign Reference	2139 KB
8523WANG-1-CN_NOA_07- 17-2014.pdf	1	Non Patent Literature	121 KB
PART_001_IPR2018-	285	Non Patent Literature	14401 KB

00488_PET_001.pdf			
PART_001_IPR2018-00488_PET_002.pdf	154	Non Patent Literature	12299 KB
PART_002_IPR2018-00488.pdf	19	Non Patent Literature	168 KB
PART_003_IPR2018-00488_Decision.pdf	31	Non Patent Literature	454 KB
PART_004_IPR2018-00488.pdf	14	Non Patent Literature	202 KB
PART_005_IPR2018-00488.pdf	4	Non Patent Literature	79 KB
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PART_001_IPR 2020-00944_PET_002.pdf	326	Non Patent Literature	25249 KB
PART_001_IPR 2020-00944_PET_003.pdf	61	Non Patent Literature	4899 KB
PART_001_IPR 2020-00944_PET_004.pdf	259	Non Patent Literature	15023 KB
PART_001_IPR 2020-00944_PET_005.pdf	174	Non Patent Literature	25300 KB
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PART_005_IPR 2020-00944_01.pdf	48	Non Patent Literature	7522 KB
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Digest

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If a new application is being filed and the application includes the necessary components for 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.



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PORTABLE BOOSTER BATTERY

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LUC ROZON

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(57) A portable automobile booster including an electrical storage device having a positive terminal and a negative terminal; a housing (1) for containing said electrical storage device; a first cable (6) having a first end and a second end, the first end connected to the positive terminal of said electrical storage device; a second cable (6) having a first end and a second end, the first end connected to the negative terminal of said electrical storage device; a first clamp (7) connected to the second end of said first cable (6), said first clamp (2) including a hand gripping end and a clamping end, said clamping end constructed for electrically connecting said first cable to a positive terminal of an automobile battery, said hand gripping end operable to selectively open and close said clamping end; a second clamp (7) connected to the second end of said second cable (6), said second clamp (7) including a hand gripping end and a clamping end, said clamping end constructed for electrically connecting said second cable to one of a negative terminal of said automobile battery and a ground of an automobile, said hand gripping end operable to selectively open and close said clamping end; a first holster (4) connected to said housing (1) and provided for receiving said first clamp (7); and a second holster (4) connected to said housing (1) and provided for receiving said second clamp (7).

AUSTRALIA

Patents Act 1990

PATENT REQUEST : STANDARD PATENT / PATENT OF ADDITION

We being the person identified below as the applicant, request the grant of a patent to the person identified below as the Nominated Person, for an invention described in the accompanying standard complete specification.

Full application details follow.

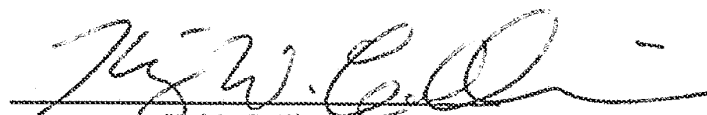
[71/70]	Applicant/Nominated Person	Century Mfg. Co
	Address	1500 Country Road B2 West St Paul, Minnesota 5113-3105 United States of America
[54]	Invention Title	Portable Booster Battery
[72]	Name of actual inventor	Luc Rozon
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Attorney Code: FM

DIVISIONAL APPLICATION DETAILS

[62]	Original application number	78511/94
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9 June 1998


Keith Callinan

Registered Patent Attorney
in the firm of FREEHILLS PATENT ATTORNEYS
for the applicant

AUSTRALIA

Patents Act 1990

**ORIGINAL
COMPLETE SPECIFICATION
STANDARD PATENT**

Invention Title: Portable Booster Battery

The following statement is a full description of this invention, including the best method of performing it known to me/us:

1007

PORTABLE BOOSTER BATTERY

Field of the Invention

The present invention relates to batteries and more specifically to batteries that are moved from location to location, to connect to different devices, especially
5 discharged for dead batteries of motor vehicles.

Background of the Invention

Most automobiles are presently powered by an internal combustion engine which must be spun up to speed externally before they can operate. The engines are usually spun up to speed by an electric motor that is powered by battery. The
10 battery is then charged by a generator connected to the engine once the engine is operating or running. The battery is usually able to store enough charge for the periods that the engine is not running in order to start the engine when needed.

When the battery does not have sufficient charge to start the engine, a way must be found to recharge the battery or bypass the battery with a separate charge.
15 Since very often a discharged battery is caused by an external drain such as leaving the lights on or playing the radio, once the engine is started by either recharging the battery or bypassing it by sending a separate charge the automobile will continue to operate properly.

Since there are many things that will temporally cause a battery to lose its charge,
20 the need to recharge or bypass batteries with separate charges is common. Very often another or booster battery is brought to the vicinity of the dead battery and electrical cables are used to connect the booster battery to the dead battery in parallel in order to recharge and/or bypass the dead battery. This often known as boosting or jump starting the dead battery or engine.

25 In this method of boosting, the cables are disconnected from the batteries after each use so as to prevent short circuits. This method and structure however, is cumbersome since there are at least two parts and they demand great attention

since there are 4 connections to make and a bad connection in either one will result in a short circuit or failure to start the engine.

Some manufacturers have tried to resolve the problem by combining the battery and cables in one unit. The problems that have arisen with these units are that the
5 cables which are permanently connected to the battery are always live so they have to be protected as to not touch each other. The amount of amperage available in these batteries is very large and if the cables touch each other it would create a short circuit and damage the cables and batteries. To isolate the live cables, some manufacturers have used protective pouches. These are not
10 practical to use since they are often in the way when trying to boost. Also it is time consuming to put the cables in and out of the pouches.

Other manufacturers have incorporated a male cigar lighter plug at the end of the cables permitting the user to plug this into the female cigar lighter plug of the vehicle. The problem with this unit is that one can only use this tool on vehicles
15 equipped with the female cigar lighter plugs. Also, since the plugs almost always have a maximum amperage rating of 30 amps and that most starter motors draw much more than 30 amps, the capacity is not adequate.

Summary and Objects of the Invention

It is any object of the present invention to provide a portable booster battery which
20 can be easily carried to a car with a dead battery and connected to the dead battery of the car in order to provide sufficient charge to start the engine. It is also an object of the present invention to make the portable booster battery easy to use, maintain and safe from electrical short circuits which could damage the battery, the cables and the surrounding environment.

25 The present invention addresses these objectives by providing a portable automobile booster including:

an electrical storage device having a positive terminal
and a negative terminal;

a housing for containing said electrical storage device;

a first cable having a first end and a second end, the first end connected to the positive terminal of said electrical storage device;

5 a second cable having a first end and a second end, the first end connected to the negative terminal of said electrical storage device;

10 a first clamp connected to the second end of said first cable, said first clamp including a hand gripping end and a clamping end, said clamping end constructed for electrically connecting said first cable to a positive terminal of an automobile battery, said hand gripping end operable to selectively open and close said clamping end;

15 a second clamp connected to the second end of said second cable, said second clamp including a hand gripping end and a clamping end, said clamping end constructed for electrically connecting said second cable to one of a negative terminal of said automobile battery and a ground of an automobile, said hand gripping end operable to selectively
20 open and close said clamping end;

a first holster connected to said housing and provided for receiving said first clamp; and

a second holster connected to said housing and provided for receiving said second clamp.

25 Preferably the housing includes a plastic material. More preferably the electrical storage device includes a battery. The battery may be a sealed, non-spillable battery. Advantageously, the first holster is pivotably connected to said housing

with the pivotal connection to the housing being preferably at least 90 degrees. More advantageously, the first holster includes a bit, and the clamping end of said first clamp is attached to said bit. Also, the first holster may include a cover.

5 The various features of novelty which characterize the invention are pointed out with particularly in the claims annexed to and forming a part of this disclosure. For a better understanding of the invention, its operating advantages and specific objects attained by its uses, reference is made to the accompanying drawings and descriptive matter in which preferred embodiments of the invention are illustrated.

Brief Description of the Drawings

10 In the drawings:

Fig 1 is a plan view of an embodiment of the present invention;

Fig 2 is a partial cross sectional side view according to section line II-II of Fig 1 and with the holster pivoted approximately 30°;

15 Fig 3 is a view of the bit means without the cover of the holster and with a portion of the housing;

Fig 4 is a perspective view of another embodiment of the present invention;

Fig 5 is a view of one recharging plug;

Fig 6 is a view another recharging plug.

Detailed Description of the Preferred Embodiments

20 Referring to the drawings, in particular Fig 1, the unit comprises of a housing 1 which is preferably made out of plastic. Inside the housing 1 is the electrical storage device which is preferably a sealed non-spillable battery. First and second electrical cables 6 are connected to terminals of the battery inside the housing 1. The cable 6 extend outside the housing and are preferably held to the housing by

grooves 10 when the cables are not in use.

At the other end of the cable 6 from the battery which is inside the housing 1, are clamp means 7 for electrically connecting the cable to the terminals of a dead battery or portions of an electrical system. As can be seen in the drawings, especially Figs 1 and 2, the housing has a box-like shape. First and second dimensions of the box-like shape are of a size that is roughly or approximately similar to the two largest dimensions of the clamp means 7.

Holster means 4 are preferably positioned on opposite sides of the housing 1. The holster means 4 includes a cover 8 which is rounded at one end and opened at another end 22. The holster means 4 also includes bit means 5 for connecting with the clamp means 7 when the clamps means is inside the holster means 4. The cover 8 is made of non-electrically conductive material and is preferable that the bit means 5 and the housing 1 are also non-conducting. The holster means 4 is pivotably connected to the housing 1 by at least 90°. This allows easier insertion and removal of the clamps means 7 independent of the position of the housing 1. The bit means 5 is preferably positioned in substantially the middle of the holster with regard to the length of the housing 1.

The unit also can have a recharging connection 12 for charging the energy storage device. Preferably this recharging connection 12 is male cigar lighter plug which can extend from the housing 1 in order to plug into the cigar lighter receptacle of an automobile. An accessory power connection 11 is also provided for a powering accessories with the unit. This accessory connection 11 is preferably a female cigar lighter receptacle and can be used power such equipment as portable lights, invertors, compressors, vacuum cleaners and refrigerators.

In order to determine the amount of charge in the energy storage device, the present invention has a display means 13 which displays the present charge of the device. The preferred embodiment the display means consists of a test button 14 and indicator lights 15.

To use the unit, one puts the housing 1 close to the engine one wishes to boost, either on its bottom 3 or on its back side 9. Next one pivots the holster 4 to the desired angle, opens the clamp 7, and removes the clamp 7 from the holster. The positive clamp is connected to the positive post of the battery one wishes to boost, the negative clamp is connected to a good ground of the engine. The engine, is then started. To use the booster as a power supply, the male cigar plug of any 12 volt accessory is plugged into the female cigar plug on the unit.

In another embodiment of the present invention, as shown in Fig 4, the recharging connection can also be the same as the accessory connection 11. A special recharging plug 16 as shown in Fig 5, or 17 as shown in Fig 6, is connected to the accessory connection 11. With the recharging plug 16 of Fig 5, one end is plugged into the accessory connection 11, and the other end is plug into the female cigar lighter receptacle in an automobile. With the recharging plug 17 of Fig 6, the male cigar lighter plug 18 is plugged into the accessory connection 11 and the other end has a wall outlet plug 19 which is plugged into a wall outlet. The embodiment of Fig 4 also has a recharging light 20 indicating that the battery is recharging.

While specific embodiments of the invention have been shown and described in detail to illustrate the application of the principles of the invention, it will be understood that the invention may be embodied otherwise without departing from such principles.

It will be understood that the invention disclosed and defined herein extends to all alternative combinations of two or more of the individual features mentioned or evident from the text or drawings. All of those different combinations constitute various alternative aspects of the invention.

It will also be understood that where the term "comprises" or its grammatical variants, is employed herein, it is equivalent to the term "includes" and is not to be taken as excluding the presence of other elements or features.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1 A portable automobile booster including:

an electrical storage device having a positive terminal and a negative terminal;

5 a housing for containing said electrical storage device;

a first cable having a first end and a second end, the first end connected to the positive terminal of said electrical storage device;

10 a second cable having a first end and a second end, the first end connected to the negative terminal of said electrical storage device;

15 a first clamp connected to the second end of said first cable, said first clamp including a hand gripping end and a clamping end, said clamping end constructed for electrically connecting said first cable to a positive terminal of an automobile battery, said hand gripping end operable to selectively open and close said clamping end;

20 a second clamp connected to the second end of said second cable, said second clamp including a hand gripping end and a clamping end, said clamping end constructed for electrically connecting said second cable to one of a negative terminal of said automobile battery and a ground of an automobile, said hand gripping end operable to selectively open and close said clamping end;

25 a first holster connected to said housing and provided for receiving said first clamp; and

a second holster connected to said housing and provided for receiving said clamp.

2 A portable automobile booster according to claim 1, wherein the housing includes a plastic material.

5 3 A portable automobile booster according to claim 1 or claim 2, wherein the electrical storage device includes a battery.

4 A portable automobile booster according to claim 3, wherein the battery includes a sealed, non-spillable battery.

10 5 A portable automobile booster according to any one of claims 1 to 4, wherein said first holster is pivotably connected to said housing.

6 A portable automobile booster according to claim 5, wherein said first holster is pivotably connected to said housing by at least 90 degrees.

15 7 A portable automobile booster according to any one of claims 1 to 6, wherein said first holster includes a bit, and the clamping end of said first clamp is attached to said bit.

8 A portable automobile booster according to any one of claims 1 to 7, wherein said first holster includes a cover.

20 9 A portable automobile booster substantially as hereinbefore described with reference to the accompanying drawings.

CENTURY MFG. CO

by their Registered Patent Attorneys

FREEHILLS PATENT ATTORNEYS

9 June 1998

ABSTRACT

A portable automobile booster including an electrical storage device having a positive terminal and a negative terminal; a housing (1) for containing said electrical storage device; a first cable (6) having a first end and a second end, the first end connected to the positive terminal of said electrical storage device; a second cable (6) having a first end and a second end, the first end connected to the negative terminal of said electrical storage device; a first clamp (7) connected to the second end of said first cable (6), said first clamp (2) including a hand gripping end and a clamping end, said clamping end constructed for electrically connecting said first cable to a positive terminal of an automobile battery, said hand gripping end operable to selectively open and close said clamping end; a second clamp (7) connected to the second end of said second cable (6), said second clamp (7) including a hand gripping end and a clamping end, said clamping end constructed for electrically connecting said second cable to one of a negative terminal of said automobile battery and a ground of an automobile, said hand gripping end operable to selectively open and close said clamping end; a first holster (4) connected to said housing (1) and provided for receiving said first clamp (7); and a second holster (4) connected to said housing (1) and provided for receiving said second clamp (7).

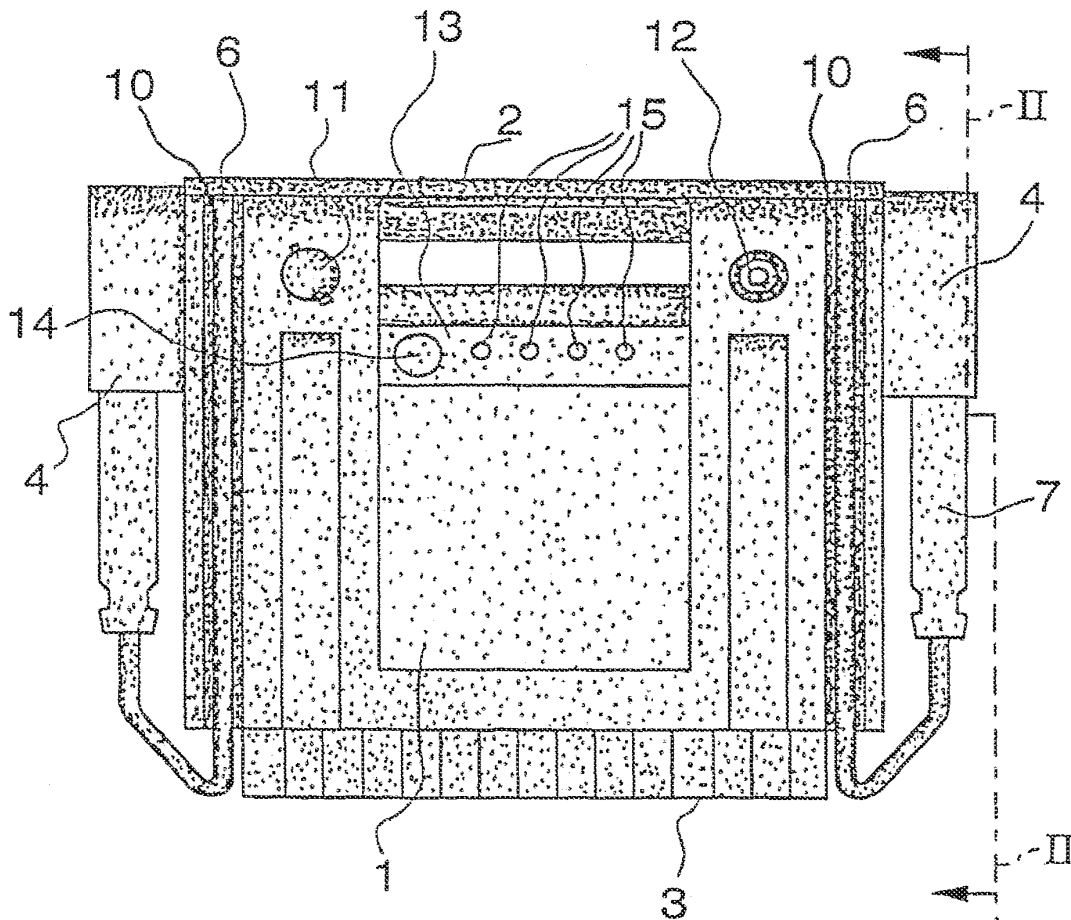


Fig. 1

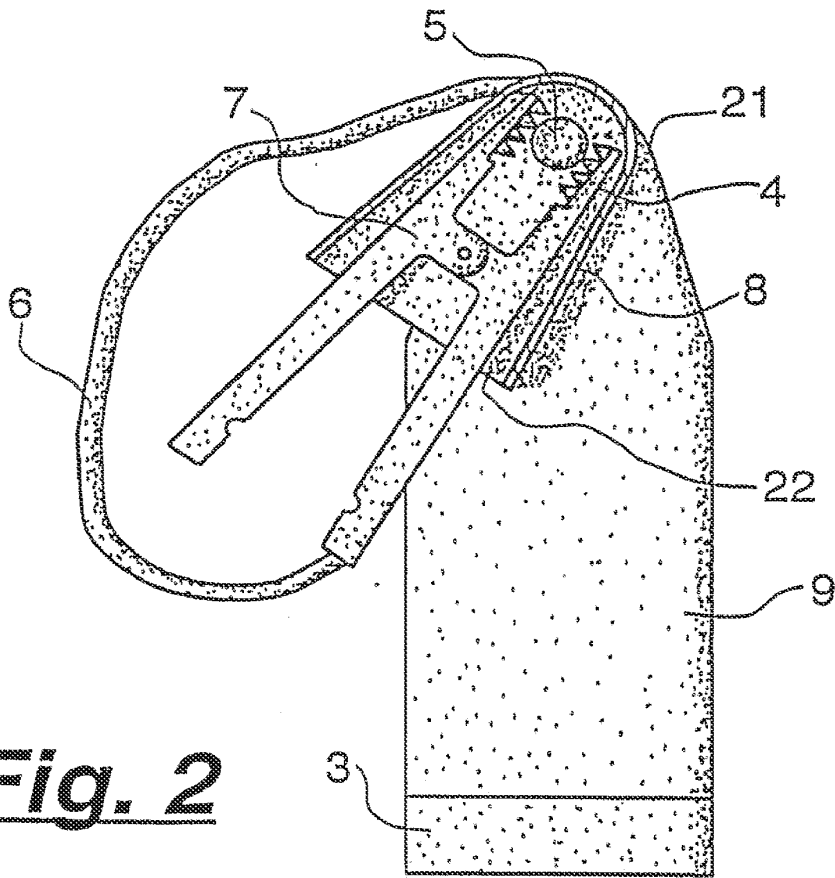


Fig. 2

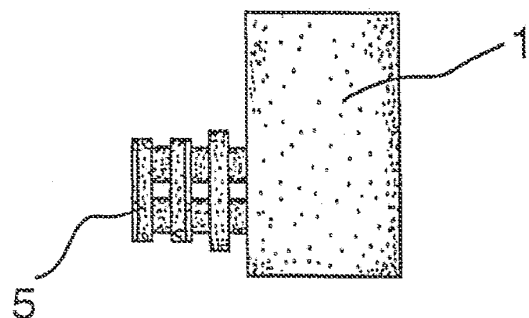


Fig. 3

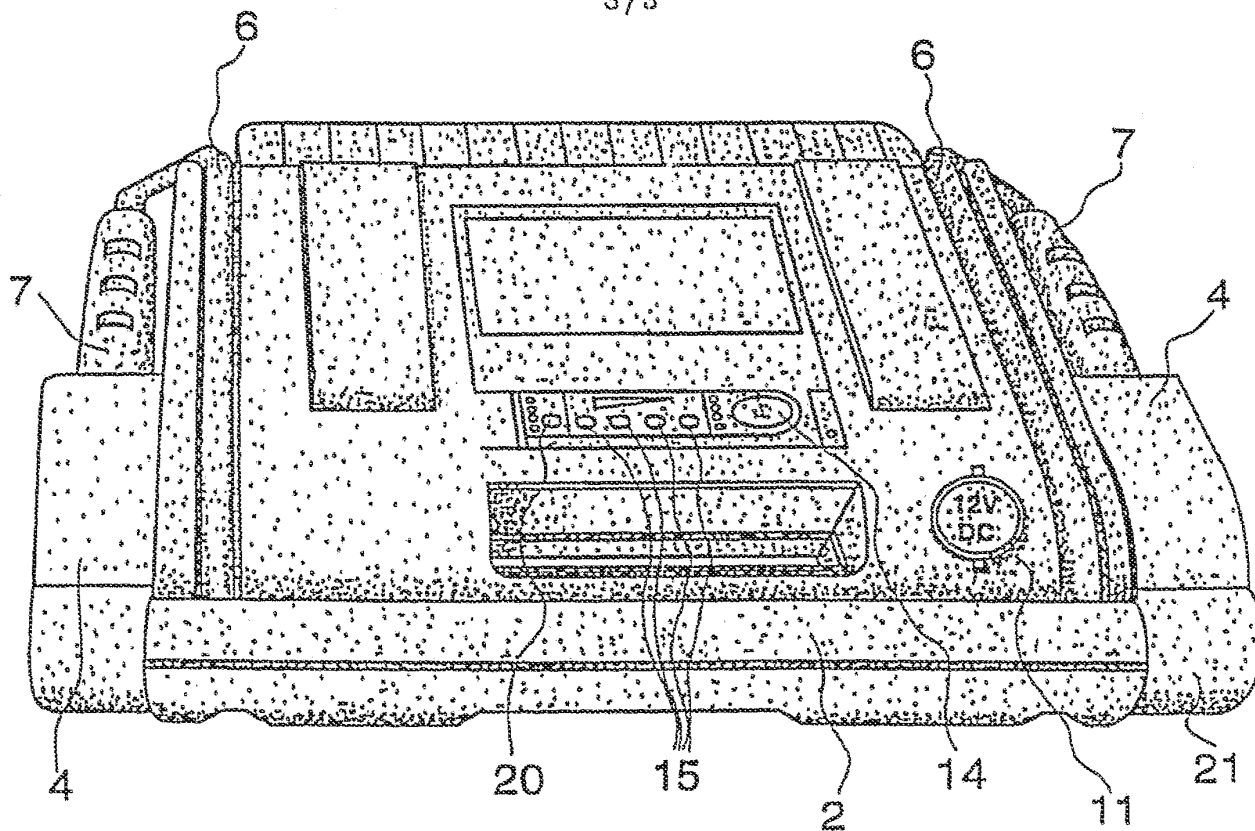


Fig. 4

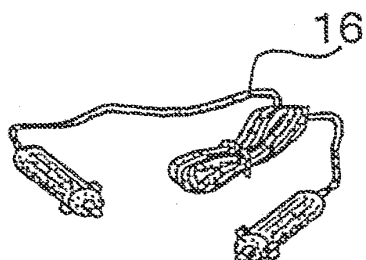


Fig. 5

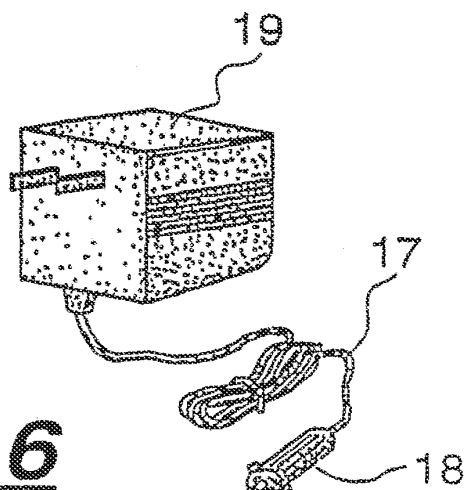


Fig. 6



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/131,113	12/22/2020	Calvin Shiening Wang	8523WANG-1-CON-4

CONFIRMATION NO. 8694

POA ACCEPTANCE LETTER



22442
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1560 Broadway
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Denver, CO 80202

Date Mailed: 04/23/2021

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/20/2021.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

Questions about the contents of this notice and the requirements it sets forth should be directed to the Office of Data Management, Application Assistance Unit, at (571) 272-4000 or (571) 272-4200 or 1-888-786-0101.

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POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

☒ Practitioners associated with Customer Number: 22442

OR

☐ Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignment documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

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Assignee name and address: Pilot, Inc.
13000 Temple Avenue
City of Industry, CA 91746

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/95 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee.

Signature	Date
Name	Telephone
Title	

This collection of information is required by 37 CFR 1.31, 1.32, and 1.33. The information is required to obtain or retain a benefit by the public, which is to update (and by the USPTO to process) the file of a patent or reexamination proceeding. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 18 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.

Electronic Acknowledgement Receipt

EFS ID:	42498835
Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	Jason Vick/Joanne Vos
Filer Authorized By:	Jason Vick
Attorney Docket Number:	8523WANG-1-CON-4
Receipt Date:	20-APR-2021
Filing Date:	22-DEC-2020
Time Stamp:	13:07:18
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		Statement_Under_373c_w_PO A.pdf	298112 7d40dfc479ff72dc89783afb498f964c15bb8fa0	yes	3

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Assignee showing of ownership per 37 CFR 3.73	1	2
	Power of Attorney	3	3
Warnings:			
Information:			
Total Files Size (in bytes):		298112	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.			

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.

STATEMENT UNDER 37 CFR 3.73(c)Applicant/Patent Owner: Pilot Inc.Application No./Patent No.: 17/131,113Filed/Issue Date: December 22, 2020Titled: AUTOMOBILE CHARGERPilot Inc., a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is _____. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A. ☐ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
- B. ☒ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Calvin Shiening WANG To: WANG'S INTERNATIONAL, INC.The document was recorded in the United States Patent and Trademark Office at
Reel 54731, Frame 402, or for which a copy thereof is attached.2. From: WANG'S INTERNATIONAL, INC. To: PILOT INC.The document was recorded in the United States Patent and Trademark Office at
Reel 54731, Frame 417, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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STATEMENT UNDER 37 CFR 3.73(c)3. From: Chung-Hsin WANG To: PILOT INC.

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☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Jason H. Vick/
 Signature

April 20, 2021
 Date

Jason H. Vick
 Printed or Typed Name

45,285
 Title or Registration Number

[Page 2 of 2]



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE	REQUEST ID
17/131,113	12/22/2020	Calvin Shiening Wang	8523WANG-1-CON-4	137070

Acknowledgement of Loss of Entitlement to Entity Status Discount

The entity status change request below filed through Private PAIR on 04/20/2021 has been accepted.

CERTIFICATIONS:

Change of Entity Status:

☒ Applicant changing to regular undiscounted fee status.

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

This portion must be completed by the signatory or signatories making the entity status change in accordance with 37 CFR 1.4(d)(4).

Signature:	/Jason H. Vick/
Name:	Jason H. Vick
Registration Number:	45285



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
17/131,113	12/22/2020	Calvin Shiening Wang	8523WANG-1-CON-4

CONFIRMATION NO. 8694

PUBLICATION NOTICE



22442
Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

Title:AUTOMOBILE CHARGER

Publication No.US-2021-0107365-A1

Publication Date:04/15/2021

NOTICE OF PUBLICATION OF APPLICATION

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

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

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

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Substitute for form 1449/PTO			Complete if Known		
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>			Application Number	17/131,113	
			Filing Date	December 22, 2020	
			First Named Inventor	Calvin Shiening Wang	
			Art Unit	2851	
			Examiner Name	Not Yet Assigned	
Sheet	1	of	12	Attorney Docket Number	8523WANG-1-CON-4

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number Number-kind Code ² (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
	1	3343057	09/19/1967	Smith	
	2	3590357	06/29/1971	Reid	
	3	3950668	04/13/1976	Sancey et al.	
	4	4871957	10/03/1989	Taranto et al.	
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	12	6160381	12/12/2000	Peterzell	
	13	6212054	04/03/2001	Chan	
	14	6249106	06/19/2001	Turner et al.	
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	22	6426606	07/30/2002	Purkey	
	23	6632103	10/14/2003	Liu	
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	25	6803743	10/12/2004	George et al.	
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	27	7199555	04/03/2007	Hung	
	28	7339347	03/04/2008	Elder et al.	
	29	7345450	03/18/2008	Krieger et al.	
	30	7508171	03/24/2009	Carrier et al.	
	31	7579811	08/25/2009	Sato et al.	
	32	7656118	02/02/2010	Krieger et al.	
	33	7675261	03/09/2010	Elder et al.	

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	Not Yet Assigned
Sheet	2	of	12	Attorney Docket Number	8523WANG-1-CON-4

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	35	8125181	02/28/2012	Gregg et al.	
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	37	8183821	05/22/2012	Sakurai	
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	52	9412994	08/09/2016	Koebler	
	53	9496728	11/15/2016	Lei	
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	55	9525297	12/20/2016	Wang	
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	62	2004/0066168	04/08/2004	George et al.	
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	66	2005/0258797	11/24/2005	Hung	
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	68	2009/0174362	07/09/2009	Richardson et al.	
	69	2010/0013302	01/21/2010	Howell et al.	

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Substitute for form 1449/PTO				Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	Not Yet Assigned
Sheet	3	of	12	Attorney Docket Number	8523WANG-1-CON-4

	70	2010/0055546	03/04/2010	Elder et al.	
	71	2010/0173182	07/08/2010	Baxter et al.	
	72	2010/0181959	07/22/2010	Gibbs et al.	
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	74	2010/0301800	12/02/2010	Inskeep	
	75	2011/0127947	06/02/2011	Hunter et al.	
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	77	2012/0013189	01/19/2012	Jenkins	
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	81	2013/0015814	01/17/2013	Kelty et al.	
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	86	2015/0212135	07/30/2015	Jin et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document Country Code²; Number³; Kind Code⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
	87	AU 694452	07/23/1998	CENTURY MFG CO.		
	88	CN 201947042	08/24/2011	SHENZHEN SBASE ELECTRONICS TECHNOLOGY CO LTD		X
	89	CN 202696190	01/23/2013	GUANGWEI AMERICA LINE ELECTRICAL APPLIANCE CO LTD		(with English abstract)
	90	CN 203522157	04/02/2014	SHENZHEN SBASE ELECTRONICS TECHNOLOGY CO LTD		X
	91	CN 103066662	04/24/2013	LEI XINGLIANG		(with English abstract)
	92	DE 202013102599	08/13/2013	ASIA BRIGHT IND HONG CON CO		X

Examiner Signature		Date Considered	
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INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>				Application Number	17/131,113
				Filing Date	December 22, 2020
				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	Not Yet Assigned
Sheet	4	of	12	Attorney Docket Number	8523WANG-1-CON-4

	93	EP 1673828	05/08/2013	BLACK & DECKER INC.		
	94	JP 2015-115979	06/22/2015	SFJ CORP		X
	95	WO 2000/024108	04/27/2000	CENTURY MFG CO.		
	96	WO 2010/129723	11/11/2010	BAXTER BRENT		
	97	WO 2012/080996	06/21/2012	JTM POWER LIMITED		

NON-PATENT LITERATURE DOCUMENTS		
Examiner Initials*	Cite No. ³	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, page(s), volume-issue number(s), publisher, city and/or country where published.
	98	"12VDC Mini Jump Start "Power Punch for JPR 9000P, JPR 4500P, JPR 4500 6V, JPR 2600P, JPR 1800P," axhess GmbH & jCo. KG, 2013, 25 pages
	99	"12VDC Mini Jump Start for JPR 4500P, JPR 2600P, JPR 1800P," axhess GmbH & Co. KG, 2012, 9 pages
	100	"3000A 12/24V High Cranking Sure Start Jumpstarter," Projecta, Oct. 2011, 12 pages
	101	"450 Amp Jump-Starter With Compressor Instruction Manual," Baccus Global LLC, 2014, 10 pages
	102	"900 Peak Amp Jump-Starter Model No. PKC0AZ Owner's Manual and Warranty Information," Old World Industries, LLC, © 2014, 8 pages
	103	"AAA Oregon Deploys PowerSafe Jump Start Systems," Energy Safe Technologies, Inc., Mar. 17, 2011, 2 pages
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	107	"Function and jumpstart short cut Description," axhess GmbH & Co. Kg., date unknown, 1 page
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	109	"Intelligent Jumper Cable," Shenzhen Carku Technology Co., Ltd., Date Unknown, 1 page.
	110	"JPR 9000M Series Mini Jump Start Product Datasheet," Asia Bright Industrial (H.K.) Co. Ltd., as early as Apr. 22, 2013, 1 page
	111	"JPR Series Jump Starter: JPR-1800M/2600M/4500M/9000M/9024M," BatteryFighter, 2014, 2 pages
	112	"JPR Series M version Mini Jump Start Product Datasheet," Asia Bright Industrial (H.K.) Co. Ltd., undated, 1 page

Examiner Signature		Date Considered	
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				First Named Inventor	Calvin Shiening Wang
				Art Unit	2851
				Examiner Name	Not Yet Assigned
Sheet	5	of	12	Attorney Docket Number	8523WANG-1-CON-4

	113	"Jump Starter Instructions," Shenzhen Carku Technology Co., Ltd., Date Unknown, 1 page.
	114	"Juno Power announces the JUMPR external battery," Coolest Gadgets, Apr. 25, 2014, 2 pages
	115	"Latest News - Projecta website," Brown & Watson International Pty Ltd., 2017, 5 pages
	116	"Lithium Ion Jump Starter, Fuel Pack and Backup Power Owner's Manual," Schumacher Electric Corporation, date unknown, 7 pages
	117	"Lithium Starthilfe Booster Energiestation mit USB- Jump Starter JPR4500," Amazon.com, first available Jan. 26, 2013, 3 pages
	118	"Lithium-Ion Jump-Starter Instruction Mannual," Baccus Global LLC, 2011, 10 pages
	119	"LM78XX/LM78XXA 3-Terminal 1A Positive Voltage Regulator," Fairchild Semiconductor Corporation, Mar. 2008, Rev. 1.0, 28 pages
	120	"LSTART RANGE 12V Compact Lithium-ion Jump Starts," Sealey, date unknown, 2 pages
	121	"mPower Jump Mini User Manual," mPower Technologies, Inc., date unknown, 1 page
	122	"mPower JUMP User Manual," mPower Technologies, Inc., date unknown, 1 page
	123	"New Projecta Jump Starters Lift The Bar," Brown & Watson International Pty Ltd., Apr. 12, 2012, 2 pages
	124	"Power Punch User Manual," axhess GmbH & Co. KG, 2013, 8 pages
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	126	"PowerSafe Jumper Cables SEMA Global Media Award Winner," Energy Safe Technologies, Inc., Feb. 24, 2009, 2 pages
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			Art Unit	2851
			Examiner Name	Not Yet Assigned
			Attorney Docket Number	8523WANG-1-CON-4
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154	"Summary of invalidity defenses against asserted claims of Pilot's U.S. Patent No. 10,046,653," Date Unknown, 17 pages.

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			Art Unit	2851
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			Attorney Docket Number	8523WANG-1-CON-4
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170	Pilot, Inc. v. Schumacher Electric Corporation, Answer Exhibits for Case #: 1:19-cv-05982, dated Sep. 23, 2019, 456 pages
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			Attorney Docket Number	8523WANG-1-CON-4	
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176	Pilot, Inc. v. Anker Technology Corporation, Docket Report for Case #: 4:17-cv-4918, dated Sep. 18, 2019, 5 pages
177	Pilot, Inc. v. Anker Technology Corporation, Anker North America, LLC and Hunan Oceanwing E-Commerce Co., Ltd., First Amended Complaint for Patent Infringement and Jury Demand for Case #: 4:17-cv-04918-JST, dated Nov. 23, 2017, 19 pages
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179	Pilot, Inc. v. Winplus North America, Inc., Complaint for Patent Infringement and Jury Demand for Case #: 5:17-cv-01712-GW-MRW, dated Aug. 23, 2017, 14 pages
180	Declaration in Support of Motion to Stay Exhibit 3, for Case #: 5:17-cv-01712-GW-MRW, dated Aug. 22, 2018, 11 pages
181	Declaration in Support of Motion to Stay Exhibit 4, for Case #: 5:17-cv-01712-GW-MRW, dated Aug. 22, 2018, 17 pages
182	Declaration in Support of Motion to Stay Exhibit 8, for Case #: 5:17-cv-01712-GW-MRW, dated Aug. 22, 2018, 24 pages
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186	Pilot, Inc. v. Winplus North America, Inc., First Amended Complaint for Patent Infringement for Case #: 5:17-cv-01712-GW-MRW, dated Oct. 31, 2017, 17 pages
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191	Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and Unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 84 pages
192	Exhibits I.A - I.C for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and Unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 70 pages
193	Exhibit II.A, Invalidity Claim Chart for Schumacher SL1 System for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 29 pages
194	Exhibit II.B, Invalidity Claim Chart for HaiJiu SHF12000-12 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 23 pages
195	Exhibit II.C, Invalidity Claim Chart for JPR Series Jump Starters for Schumacher SL1 System for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 29 pages
196	Exhibit II.D, Invalidity Claim Chart for U.S. Patent 6,249,106 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 42 pages
197	Exhibit II.E, Invalidity Claim Chart for Projecta HP2200 for Schumacher SL1 System for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 39 pages
198	Exhibit II.F, Invalidity Claim Chart for Stanley System for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 24 pages
199	Exhibit II.G, Invalidity Claim Chart for U.S. Patent Publication No. US 2010/0173182 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 41 pages
200	Exhibit II.H, Invalidity Claim Chart for US Patent Application Publication No. US 2009/0174362 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 36 pages

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201	Exhibit II.I, Invalidity Claim Chart for U.S. Patent No. 7,345,450 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 41 pages
202	Exhibit II.J, Invalidity Claim Chart for U.S. Patent No. US 6,426,606 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 81 pages
203	Exhibit II.K, Invalidity Claim Chart for U.S. Patent 6,803,743 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 23 pages
204	Exhibit II.L, Invalidity Claim Chart for U.S. Patent Publication No. US 2014/0159509 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 35 pages
205	Exhibit II.M, Invalidity Claim chart for German Utility Model Specification No. De 202013102599 U1 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 27 pages
206	Exhibit II.N, Invalidity Claim chart for Japanese Laid-Open Publication No. JP2015-115979A for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 39 pages
207	Exhibit II.O, Invalidity Claim Chart for US Patent Application Publication No. US 2009/0174362 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 34 pages
208	Corrected Exhibit II.P, Invalidity Claim Chart for DieHard 950 System for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 48 pages
209	Exhibit II.Q, Invalidity Claim chart for U.S. Patent Publication No. US 2001/0038276 for Pilot, Inc. v. Schumacher Electric Corporation, Defendant Schumacher Electric Corporation's Corrected Initial Noninfringement, Invalidity and unenforceability Contentions Pursuant to Local Patent Rule (LPR) 2.3 for Case # 1:19-cv-05982-EEC, dated Nov. 25, 2019, 54 pages
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211	Pilot, Inc., v. The Noco Company, Inc., The Noco Company, Inc.'s Objections and Responses to Plaintiff Pilot's First Interrogatories (Nos. 1-13), Case # 2:20-cv-01452-SB, dated Dec. 11, 2020, 17 pages.
212	Pilot, Inc., v. The Noco Company, Inc., The Noco Company, Inc.'s Objections and Responses to Plaintiff Pilot's First Interrogatories (Nos. 14-15), Case # 2:20-cv-01452-SB, dated Dec. 11, 2020, 9 pages.
213	Pilot, Inc., v. The Noco Company, Inc., The Noco Company, Inc.'s Objections and Responses to Plaintiff Pilot's First Set Of Requests For Production (Nos. 1-27), Case # 2:20-cv-01452-SB, dated Dec. 11, 2020, 24 pages.
214	Pilot, Inc., v. The Noco Company, Inc., The Noco Company, Inc.'s Objections and Responses to Plaintiff Pilot's First Set Of Requests For Production (Nos. 28), Case # 2:20-cv-01452-SB, dated Dec. 11, 2020, 7 pages.
215	Pilot, Inc., v. The Noco Company, Inc., The Noco Company, Inc.'s Supplemental Responses to Interrogatory No. 1, Case # 2:20-cv-01452-SB, dated Feb. 5, 2021, 10 pages.
216	Official Action for U.S. Patent Application No. 14/569,352, mailed Aug. 31, 2016 (Attorney Ref. No. 8523WANG-1), 8 pages
217	Notice of Allowance for U.S. Patent Application No. 14/569,352, mailed Oct. 13, 2016 (Attorney Ref. No. 8523WANG-1), 7 pages
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221	Official Action for U.S. Patent Application No. 15/923,219, dated Jan. 08, 2019 (Attorney's Ref. No. 8523WANG-1-CON-2) 7 pages
222	Notice of Allowance for U.S. Patent Application No. 15/923,219, dated Apr. 05, 2019 (Attorney's Ref. No. 8523WANG-1-CON-2) 8 pages
223	Official Action for U.S. Patent Application No. 16/404321, dated Apr. 27, 2020 (Attorney's Ref. No. 8523WANG-1-CON-3), 5 pages.
224	Notice of Allowance for U.S. Patent Application No. 16/404321, dated Aug. 26, 2020 (Attorney's Ref. No. 8523WANG-1-CON-3), 9 pages.
225	Notice of Allowance for U.S. Patent Application No. 16/404321, dated Oct. 13, 2020 (Attorney's Ref. No. 8523WANG-1-CON-3), 3 pages.
226	Petition for Inter Partes Review of U.S. Patent No. 9,525,297, filed Jan. 13, 2018 (Attorney's Ref. No. 8523WANG-1-IPR) 93 pages
227	Decision Institution of Inter Partes Review for U.S. Patent No. 9,525,297, dated Jul. 16, 2018, Case IPR2018-00488, 22 pages

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	228	Order Granting Joint Motion to Terminate Proceeding and Granting Joint Request to Treat Settlement Agreement as Business Confidential Information for U.S. Patent No. 9,525,297, dated Nov. 16, 2018, Case IPR2018-00488, 4 pages
	229	Declaration of Shukri Sourì in Support of Petition for Inter Partes Review of U.S. Patent No. 9,525,297, dated Jan. 13, 2018, 92 pages
	230	Curriculum Vitae of Dr. Shukri J. Sourì, Jul. 2016, 4 pages

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Electronic Acknowledgement Receipt

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Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	David B. Kellis/Joseph Samelson
Filer Authorized By:	David B. Kellis
Attorney Docket Number:	8523WANG-1-CON-4
Receipt Date:	10-FEB-2021
Filing Date:	22-DEC-2020
Time Stamp:	11:54:54
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	Non Patent Literature	Exhibit_IIN_Invalidity_Claim_C hart_for_JP2015-115979.pdf	1101713 1414f1b7aa752f7153fb38aa832dd7a2cc92 c710	no	39

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Information:					
Total Files Size (in bytes):			97576024		

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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.

Electronic Acknowledgement Receipt

EFS ID:	41886242
Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	David B. Kellis/Joseph Samelson
Filer Authorized By:	David B. Kellis
Attorney Docket Number:	8523WANG-1-CON-4
Receipt Date:	10-FEB-2021
Filing Date:	22-DEC-2020
Time Stamp:	11:18:26
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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58	Non Patent Literature	SL1391_SL1398_SL1399_Lithium_Ion_Tactical_Jump_Starter_Light_Owners_Manual.pdf	4470211	no	39
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Information:					
Total Files Size (in bytes):			220160960		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

Electronic Acknowledgement Receipt	
EFS ID:	41886676
Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	David B. Kellis/Joseph Samelson
Filer Authorized By:	David B. Kellis
Attorney Docket Number:	8523WANG-1-CON-4
Receipt Date:	10-FEB-2021
Filing Date:	22-DEC-2020
Time Stamp:	11:41:52
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment		no			
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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3	Non Patent Literature	Start-It_Jump-Starter_12_Volt_DC_Power_Supply.pdf	429934	no	6
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4	Non Patent Literature	START-It_JumpnCharge_Users_Manual.pdf	15255063	no	8
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5	Non Patent Literature	STARTMONKEY_400_Quick_Start_Guide.pdf	830193	no	2
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6	Non Patent Literature	Stanley_Digital_portable_power.pdf	8827968	no	10
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7	Non Patent Literature	Stanley_lithium-ion_jump_starter.pdf	8515076	no	10
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8	Non Patent Literature	Summary_of_invalidity_defenses_against_asserted.pdf	3303243	no	17
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9	Non Patent Literature	Why_PowerSafe_Jumper_Cables_Are_Necessary.pdf	1241146	no	2
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13	Non Patent Literature	CUNNINGHAM_Three_pocket-size_jump_starters.pdf	2266527	no	5
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14	Non Patent Literature	EDELSTEIN_Lithium-Ion_Batteries.pdf	9453450	no	18
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16	Non Patent Literature	GANOZA_re_your_letters_on_behalf_of_pilot_20201215.pdf	13950971	no	20
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47	Non Patent Literature	Exhibits_IA-IC_Case_1-19-cv-05982-EEC_11-25-2019.pdf	8517920	no	70
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55	Non Patent Literature	Exhibit_IIH_Invalidity_Claim_Chart_for_US2009-0174362.pdf	1411350	no	36
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56	Non Patent Literature	Exhibit_III_Invalidity_Claim_Chart_for_US7345450.pdf	1056883	no	41
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57	Non Patent Literature	Exhibit_IIJ_Invalitidy_Claim_Chart_for_US6426606.pdf	1750306	no	81
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Total Files Size (in bytes):			245627568		
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PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 17/131,113				
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	80		N/A				
SEARCH FEE (37 CFR 1.16(k), (i), or (m))	N/A	N/A	N/A	350		N/A				
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	400		N/A				
TOTAL CLAIMS (37 CFR 1.16(i))	20	minus 20 = *	x 50 =	0.00	OR					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *	x 240 =	0.00						
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 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).			0.00						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00						
			TOTAL	830		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)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
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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
17/131,113	12/22/2020		830	8523WANG-1-CON-4	20	3

CONFIRMATION NO. 8694

FILING RECEIPT



22442
Sheridan Ross PC
1560 Broadway
Suite 1200
Denver, CO 80202

Date Mailed: 01/07/2021

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Inventor(s)

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Chung-Hsin Wang, Shenzhen, CHINA;

Applicant(s)

Pilot Inc., City of Industry, CA;

Power of Attorney: None

Domestic Priority data as claimed by applicant

This application is a CON of 16/404,321 05/06/2019 PAT 10875410
which is a CON of 15/923,219 03/16/2018 PAT 10328806
which is a CON of 15/355,409 11/18/2016 PAT 10046653
which is a CON of 14/569,352 12/12/2014 PAT 9525297

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Projected Publication Date: 04/15/2021

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

AUTOMOBILE CHARGER

Preliminary Class

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

First Named Inventor: Calvin Shiening Wang	)	Examiner Name: TBD
	)	
Application No.: Herewith	)	Group Art Unit: TBD
	)	
Filing Date: Herewith	)	Confirmation No.: TBD
	)	
Attorney Docket No.: 8523WANG-1-CON-4	)	
	)	
Title: AUTOMOBILE CHARGER	)	FIRST PRELIMINARY
	)	AMENDMENT

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

Dear Commissioner:

Prior to the initial review by the Examiner of the patent application submitted herewith, please enter the following Preliminary Amendment. Applicant does not believe that any fees are due with respect to the entry of this Preliminary Amendment. However, if any fees are due relating to the entry hereof, please debit those fees from Deposit Account No. 19-1970.

Amendments to the Specification, other than the claims, begin on page 2 of this communication.

Amendments to the Drawings begin on page 3 of this communication and include an attached set of replacement sheets.

Amendments to the Claims are reflected in the listing of claims beginning on page 4 of this communication.

Arguments/Remarks begin on page 8 of this communication.

AMENDMENT TO THE SPECIFICATION

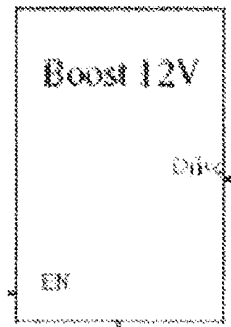
Please amend the Specification as shown in the Substitute Specification, of which both a clean and a marked version are submitted herewith. No new matter is added by the amendments to the Specification.

AMENDMENT TO THE DRAWINGS

Applicant submits herewith a set of replacement drawings, in which no changes have been made to Fig. 1, and Fig. 2 contains the following amendments:

- "*VDO" has been changed to -*VDD-;
- "R2" next to C6 has been changed to -R7-;
- "C3" between H+ and H- has been changed to -C7-;
- the indications "Boost 12V," "Drive," and "EN" (shown in the excerpt from original Fig. 2 below) have been made more legible, and the word "Device" has been added for improved clarity:

Excerpt from original Fig. 2:



Excerpt from Replacement Fig. 2 submitted herewith:



AMENDMENT TO THE CLAIMS

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

Listing of Claims:

1-6. (Cancelled)

7. (New) A jumpstarter device, comprising:

a power supply connected to a microcontroller via a voltage regulator;

a power supply voltage detector, connected to the microcontroller, to detect a power supply voltage;

a load detector, connected to the microcontroller, to detect a connection to an automobile battery, wherein the microcontroller generates an output signal based on a detected power supply voltage in response to a detected connection;

switching circuitry including a plurality of MOSFETs to selectively connect a terminal of the power supply to the automobile battery when the microcontroller generates the output signal, such that the power supply supplies a charging current to the automobile battery; and

a boost device for boosting a gate voltage of the plurality of MOSFETs.

8. (New) The jumpstarter device of claim 7, the voltage regulator comprising a voltage stabilizer connected to a resistor, a capacitor, and the microcontroller.

9. (New) The jumpstarter device of claim 7, wherein the load detector comprises a resistor in parallel with a capacitor, the resistor and capacitor connected to the microcontroller.

10. (New) The jumpstarter device of claim 7, wherein the microcontroller comprises a plurality of ports, the ports including a power supply port, a ground port, an output signal port, and a switching circuitry port.

11. (New) The jumpstarter device of claim 7, wherein the switching circuitry is connected to the microcontroller via the boost device, and the plurality of MOSFETs are connected in parallel.

12. (New) The jumpstarter device of claim 7, wherein the microcontroller:
generates the output signal to cause the switching circuitry to connect the power supply to the automobile battery when the automobile battery is properly connected and the detected power supply voltage is above a threshold; and

generates the output signal to cause the switching circuitry to disconnect the power supply from the automobile battery when i) the detected power supply voltage is below the threshold, or ii) the automobile battery is improperly connected.

13. (New) The jumpstarter device of claim 7, wherein the microcontroller causes the switching circuitry to disconnect the power supply from the automobile battery when the automobile battery has a higher voltage than the power supply.

14. (New) The jumpstarter device of claim 7, wherein the output signal causes the switching circuitry to disconnect the power supply from the automobile battery to prevent recharging of the power supply by the automobile battery.

15. (New) The jumpstarter device of claim 7, wherein the voltage regulator is a direct-current to direct-current (DC-DC) converter.

16. (New) The jumpstarter device of claim 7, wherein the load detector prevents improper user operation of the jumpstarter device.

17. (New) The jumpstarter device of claim 7, wherein the load detector detects a reversed polarity condition.

18. (New) The jumpstarter device of claim 7, wherein the load detector is connected to a negative terminal of the plurality of MOSFETs.

19. (New) The jumpstarter device of claim 7, further comprising one or more light emitting diodes (LEDs) controlled by the microcontroller.

20. (New) The jumpstarter device of claim 7, wherein a portion of the load detector is connected in parallel with the plurality of MOSFETs.

21. (New) The jumpstarter device of claim 7, wherein the microcontroller causes the device to enter a standby mode when a voltage of the power supply is less than 9V and allows operation when the voltage of the power supply is greater than 10V.

22. (New) A method for a device to charge an automobile battery comprising:
detecting a voltage level of a power supply;
detecting a connection and a type of connection between the power supply and the automobile battery;
generating, by a microcontroller receiving power from the power supply, an output signal based on the voltage level of the power supply, the connection to the automobile battery and the type of connection of the automobile battery;
based on the output signal, selectively connecting the power supply to the automobile battery by activating a plurality of MOSFETs; and
based on the output signal, selectively disconnecting the power supply from the automobile battery to prevent damage caused by over-discharging of the power supply.

23. (New) The method of claim 22, wherein a boost device boosts the gate voltage of the plurality of MOSFETs.

24. (New) The method of claim 23, wherein:
the type of connection of the automobile battery is a correct polarity connection or an incorrect polarity connection.

25. (New) The method of claim 24, wherein the output signal:

causes the plurality of MOSFETs to connect the power supply to the automobile battery when the type of connection is a correct polarity connection and the voltage level of the power supply is above a threshold; and

cause the plurality of MOSFETs to disconnect the power supply from the automobile battery when i) the level of the power supply is below the threshold, or ii) the type of connection is an incorrect polarity connection.

26. (New) A system for jumpstarting an automobile battery comprising:

a power supply;

means for detecting a voltage level of the power supply;

means for detecting whether a connection with an automobile battery is a correct polarity connection or an incorrect polarity connection;

a microcontroller configured to generate an output signal based on the voltage level of the power supply and whether the connection with the automobile battery is a correct polarity connection or an incorrect polarity connection; and

means for selectively enabling current to flow from the power supply to the automobile battery based on the output signal; and

a boost device for boosting a voltage associated with the means for selectively enabling current to flow from the power supply to the automobile battery based on the output signal.

ARGUMENTS/REMARKS

This Preliminary Amendment makes certain amendments to the Drawings and the Specification. Additionally, Claims 1-6 are cancelled and Claims 7-26 are newly presented. No new matter is added by these amendments, nor are the amendments intended to abandon or dedicate to the public any patentable subject matter.

Support for Amendment to the Specification

The Specification is herein amended, *inter alia*, to insert a Paragraph [0024A] in between Paragraphs [0024] and [0025] of the Application as filed. Paragraph [0024A] describes subject matter illustrated in the highlighted portions of the below reproduction of Fig. 2 (as amended herein):

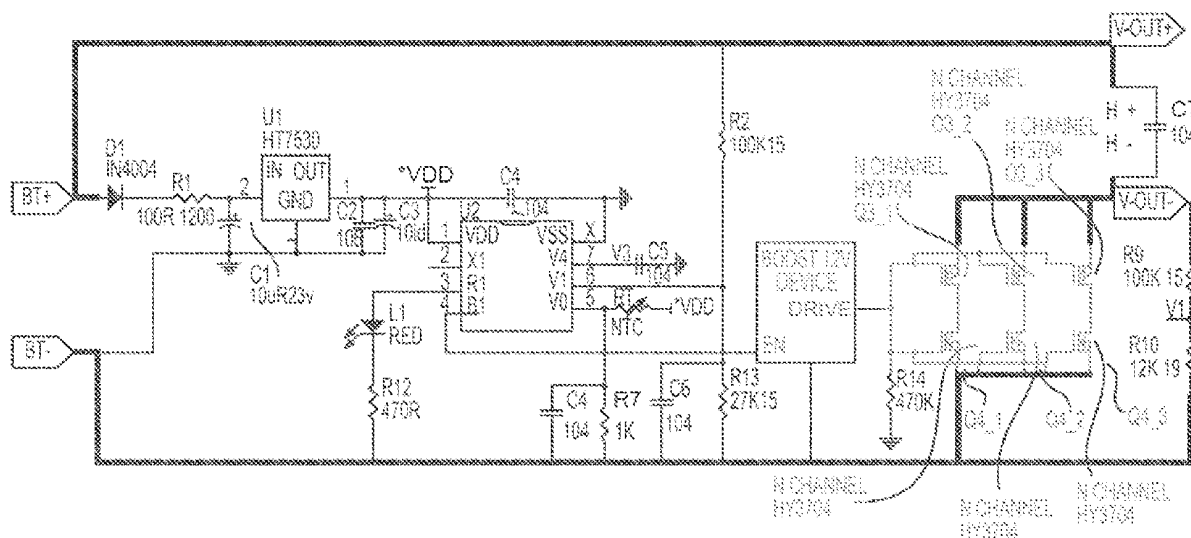


Fig. 2 (annotated).

More specifically, Paragraph [0024] states that “a B1 port of the microcontroller U2 is connected with a EN port of the automobile start control module.” Application, ¶ [0024]. Paragraph [0024A] further explains that “the EN port of the automobile start control module is positioned on a boost device,” which is plainly shown in Fig. 2. Paragraph [0024A] further states that the boost device “provides a gate-source voltage to a plurality of N-channel MOSFETs Q3_1, Q3_2, Q3_3, Q4_1, Q4_2, Q4_3, which are connected in parallel pairs.” This is also plainly apparent in Fig. 2, which shows six MOSFET symbols, each identified as “N Channel HY3704,” and further shows the boost device connected to the gate of each MOSFET.

CONCLUSION

In view of the foregoing, Applicant believes that the application is now in condition for allowance.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at (303) 764-3055.

The Commissioner is hereby authorized to charge to Deposit Account No. 19-1970 any fees under 37 CFR § 1.16 and 1.17 that may be required by this paper and to credit any overpayment to that account. If any extension of time is required in connection with the filing of this paper and has not been separately requested, such extension is hereby petitioned.

Respectfully submitted,
SHERIDAN ROSS P.C.

Date: December 22, 2020

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Facsimile: 303-863-0223

AUTOMOBILE CHARGER

RELATED APPLICATIONS

[0001] This application is a continuation of U.S. Patent No. 16/404,321, filed on May 6, 2019 and entitled "Automobile Charger," which is a continuation of U.S. Patent Application No. 15/923,219, filed on March 16, 2018 and entitled "Automobile Charger," which is a continuation of U.S. Patent Application No. 15/355,409, filed on November 18, 2016 and entitled "Automobile Charger," now Patent No. 10,046,653, which is a continuation of U.S. Patent Application No. 14/569,352, filed on December 12, 2014 and entitled "Automobile Charger," now Patent No. 9,525,297, which claims the benefit of priority of Chinese application no. 201420212173.5 filed on April 28, 2014, the entire contents of all of which is/are incorporated herein by reference.

BACKGROUND

[0002] The present disclosure relates to an automobile charging device, in particular relates to a novel automobile charger with a safe power supply charging quickly.

[0003] Automobile charging is a big issue of traveling by automobile for those automobile fans and businessmen, the maturity of the technology thereof is one of the critical factors restricting the application of the automobile charger. However, current automobile chargers have common problems of not able to automatically detect whether a load is connected, whether an electrode is connected with an automobile storage battery reversely, whether an automobile engine or the storage battery has a reverse current, whether the battery state is suitable for heavy current power generation and so on. Accordingly, the present disclosure provides a novel automobile charger with the safe power supply charging quickly to solve the problems mentioned above, thus making the automobile charging safe, quick, mature and propagable.

SUMMARY

[0004] A purpose of the present disclosure aims to provide a novel automobile charger with the safe power supply charging quickly, in order to solve the problems presented in the above background.

[0005] To achieve the purpose described above, the present disclosure provides the following technical solutions: a novel automobile charger comprises a direct

current power supply, wherein a positive pole of the direct current power supply is connected with one end of a DC to DC module, one end of a battery voltage detection module and one end of a load module simultaneously, while a negative pole of the direct current voltage is connected with the other end of the DC to DC module, one end of a micro controller, one end of an automobile start control module and the other end of the battery voltage detection module simultaneously. A third end of the DC to DC module is connected with the other end of the microcontroller, and the other three ends of the microcontroller are connected with the third end of the battery voltage detection module, the other end of the automobile start control module and one end of the load detection module respectively, wherein the other end of the load detection module is connected with the third end of the automobile start control module and the other end of the load module simultaneously; the load module which comprises the automobile storage battery and the automobile engine is located on the end of the load module.

[0006] As a further solution of the present disclosure that: the DC to DC module provides a stable voltage for the microcontroller which collects relevant data to conduct the corresponding control. The battery voltage detection module conducts the measurement of the batter voltage, the automobile start control module conducts the power supply or the power outage for the load module through the microcontroller, and the load detection module which comprises the automobile storage battery or the automobile engine detects whether the load module is correctly connected.

[0007] As a further solution of the present disclosure that: the circuit employs an electronic switch to supply power to the load module, which can offer more protection for the product, or reduce the product size and the material cost.

[0008] As a further solution of the present disclosure that: the battery voltage detection module provides protection for the power supply battery to prevent damages caused by the discharging of the direct current power supply.

[0009] As a further solution of the present disclosure that: the load detection module prevents improper operations of the user.

[0010] As a further solution of the present disclosure that: in the standby mode, the microcontroller closes all outputs when the voltage of the direct current power supply is lower than that of the state being able to supply power and then recovers when it is higher than that of the state being able to supply power.

[0011] As a further solution of the present disclosure that: the automobile start

control module is the electronic switch.

[0012] Compared to the prior art, the present disclosure has the beneficial effects that:

[0013] 1. The present disclosure employs the electronic switch to control the supply power for the load, this part can offer more protection for the product, and reduce the product size and the material cost.

[0014] 2. The battery detection of the present disclosure can provide low voltage protection to prevent damages caused by the over discharging of the battery.

[0015] 3. The load detection of the present disclosure can prevent improper operations by the user, such as reversed polarity, which causes damages to the automobile or the direct current power supply.

[0016] 4. The present disclosure employs the voltage backflow protection for abnormal load, wherein the automobile start line is closed to protect the battery when the abnormal voltage is detected.

[0017] 5. The present disclosure has a fast charging function, and can be installed fixedly or moved portably according to the use requirements of people.

[0018] 6. The automatic detection module of the present disclosure can automatically detects whether the load is connected, whether the electrode is connected with the automobile storage battery reversely, whether the automobile engine or the storage battery has reverse current, whether the battery state is suitable for heavy current power generation, thereby protecting the load and the circuit and thus has complete functions.

BRIEF DESCRIPTION OF DRAWINGS

[0019] Figure 1 is a block diagram for the principle of the emergency power supply of the safe intelligent automobile;

[0020] Figure 2 is a circuit diagram for the emergency power supply of the safe intelligent automobile.

[0021] In figures: 1-DC to DC module, 2-microcontroller, 3-battery voltage detection module, 4-automobile start control module, 5-load detection module, 6-load module, 7-direct current power supply.

DETAILED EMBODIMENTS

[0022] The technical solutions of the present disclosure will be described more clearly and fully in conjunction with drawings in the embodiments of the present disclosure, and obviously, the described embodiments are merely a part of the embodiments of the present disclosure, not all the embodiments. Based on the embodiments of the present disclosure, all the other embodiments obtained by the ordinary skilled in the art without creative labors belong to the scope claimed by the present disclosure.

[0023] Refer to figure 1, a novel automobile charger comprises a direct current power supply, wherein the positive pole of the direct current power supply is connected with one end or lead of the DC to DC module, one end of the battery voltage detection module and one end of the load module simultaneously, while the negative pole of the direct current voltage is connected with the other end of the DC to DC module, one end of the microcontroller, one end of the automobile start control module and the other end of the battery voltage detection module simultaneously. A third end of the DC to DC module is connected with the other end of the microcontroller, and the other three ends of the microcontroller are connected with the third end of the battery voltage detection module, the other end of the automobile start control module and one end of the load detection module respectively, wherein the other end of the load detection module is connected with the third end of the automobile start control module and the other end of the load module simultaneously; the load module which comprises the automobile storage battery and the automobile engine is located on the end of the load module.

[0024] Refer to figure 2, the DC to DC module comprises a diode D1, a resistor R1, capacitor C1, a HT7530 voltage stabilizing tube, capacitors C2 and C3, wherein the positive pole of the diode D1 is connected with the positive pole of the battery, the negative pole of the diode D1 is connected with one end of the capacitor C1 and an IN port of the HT7530 voltage stabilizing tube simultaneously through the resistor R1, and an OUT port of the HT7530 voltage stabilizing tube is connected with one end of the capacitor C2, one end of the capacitor C3 and a VDD port of the microcontroller U2, while the other end of the capacitor C1, the other end of the capacitor C2 and the other end of the capacitor C3 as well as a GND port of the HT7530 voltage stabilizing tube are grounded and connected with the negative pole of the battery simultaneously; a R1 port of the microcontroller U2 is connected with the negative pole of the battery through a light-emitting diode L1 and a resistor R12 which are in series connection, a B1 port of the

microcontroller U2 is connected with a EN port of the automobile start control module, a V0 port of the microcontroller U2 is connected with the negative pole of the battery through a capacitor C4 and a resistor R7 which are in parallel connection, the V0 port is also connected with the VDD port through a slide rheostat RT, a V1 port of the microcontroller U2 is also connected with the negative pole of the battery through a resistor 10, a capacitor C6 and a resistor R13 which are in parallel connection, the V1 port is connected with the positive pole of the battery through a resistor R2, and is also connected with the negative pole of the automobile storage battery and the automobile engine simultaneously through a resistor R9, wherein two ends of the automobile storage battery are in parallel connection with the capacitor C7, resistors R9, 10, a capacitor C6 and a resistor R13 to form the load detection module together, a V4 port of the microcontroller U2 is grounded through a capacitor C5, a VSS port of the microcontroller U2 and one end of the capacitor C4 are grounded simultaneously. The other end of the capacitor C4 is connected with the VDD port of the microcontroller U2, the resistors R2, R13 and capacitor C6 form the battery voltage detection module together, and a Drive port of the automobile start control module is connected with the automobile engine and one end of a resistor R14 simultaneously, wherein the other end of the resistor R14 is grounded.

[0024A] The EN port of the automobile start control module is positioned on a boost device, which provides a gate-source voltage to a plurality of N-channel MOSFETs Q3_1, Q3_2, Q3_3, Q4_1, Q4_2, Q4_3, which are connected in parallel pairs.

[0025] The DC to DC module in the present disclosure provides the stable voltage for the microcontroller which collects relevant data to conduct the corresponding control. The battery voltage detection module conducts the measurement of the battery voltage, and the automobile start control module conducts the power supply or the power outage for the load module through the microcontroller, wherein the load detection module detects whether the load module is correctly connected.

[0026] The microcontroller in the present disclosure determines whether the automobile storage battery is connected with the automobile engine through the load detection module, wherein the automobile start control model is automatically activated and the battery starts to supply power to the load module when the load is correctly connected; the automobile start control model is automatically deactivated and the battery stops supplying power to the load module when assuming that the load is not connected or

the positive and negative polarities are reversely connected. In the standby mode, the microcontroller closes all outputs when the battery voltage is lower than 9V, and recovers the normal operation only when the battery voltage is larger than 10V; the automobile engine will generate the normal voltage to recharge the battery after the automobile starts, whereas the automobile start control module is deactivated immediately once the recharging voltage is larger than the voltage before that battery starts the power supply, to protect the battery from damages caused by charging with the normal voltage; the automobile start control module is the electronic switch, which can prevent the load from being reversely connected and recharging of the normal voltage, thus protecting the battery and prolonging lifespan.

[0027] The automobile engine will generate abnormal voltage to recharge the direct current power supply after the automobile starts, and the automobile start control module is deactivated immediately once the recharging voltage is larger than the voltage before the direct current power supply starts the power supply, to protect the direct current power supply from damages caused by charging with normal voltage charge.

[0028] It is obvious for the skilled people in the art that the present disclosure is not merely limited to the details of the above exemplary embodiments, and the present disclosure can be implemented in other specific forms without departing from the spirits or the basic features of the present disclosure. Thus, no matter to consider from which point of view, the embodiments should be considered as exemplary and non-limiting. The scope of the present disclosure is defined by the accompanying Claims rather than the above description, therefore it is intended that all the changes fallen within the meanings and scope of the equivalent elements of the Claims are contained in the present disclosure. Any drawing reference in the Claims should not be regarded as limiting the Claims involved.

[0029] Furthermore, it should be understood that although the specification is described according to the embodiments, but not every embodiment includes only an independent technical solution, this manner of description for the specification is only for clarity, therefore the skilled people in the art should take the Specification as a whole, and the technical solutions in various embodiments can be combined appropriately to form other implementations understandable for those skilled in the art.

ABSTRACT

A novel automobile charger which comprises a direct current (DC) voltage supply, wherein a positive pole of the direct-current (DC) voltage supply is connected with one-a first end or a first lead of a DC-to-DC-DC-to-DC module, one-a first end of a battery voltage detection module and one-a first end of a load module simultaneously [1] while a negative pole of the battery-DC voltage supply is connected with the-a second other-end of the DC-to-DC-DC-to-DC module, one-a first end of a microcontroller, one-a first end of the an automobile start control module and the-a second other-end of the battery voltage detection module simultaneously. A third end of the DC-to-DC-DC-to-DC module is connected with the-a second other-end of the microcontroller, the-Third, fourth and fifth other-three-ends of which-the microcontroller are connected with the-a third end of the battery voltage detection module, the-a second other-end of the automobile start control module and one-a first end of the-a load detection module respectively. The-A second other end of the load detection module is connected with the-a third end of the automobile start control module and the-a second other-end of the load module simultaneously.

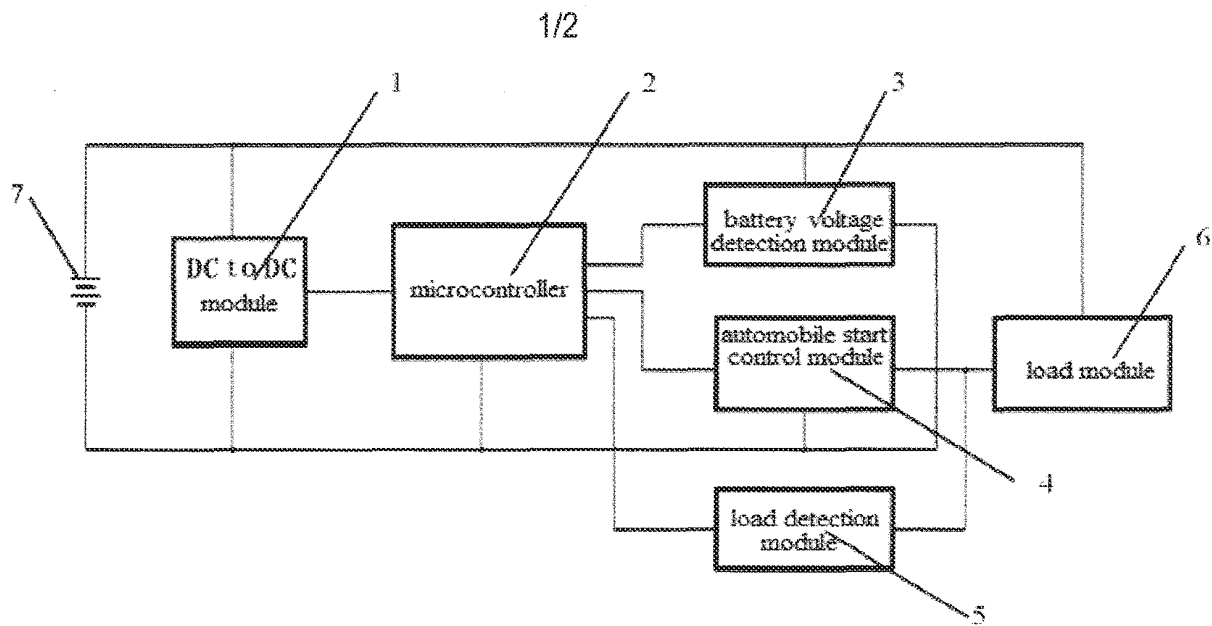


Figure 1

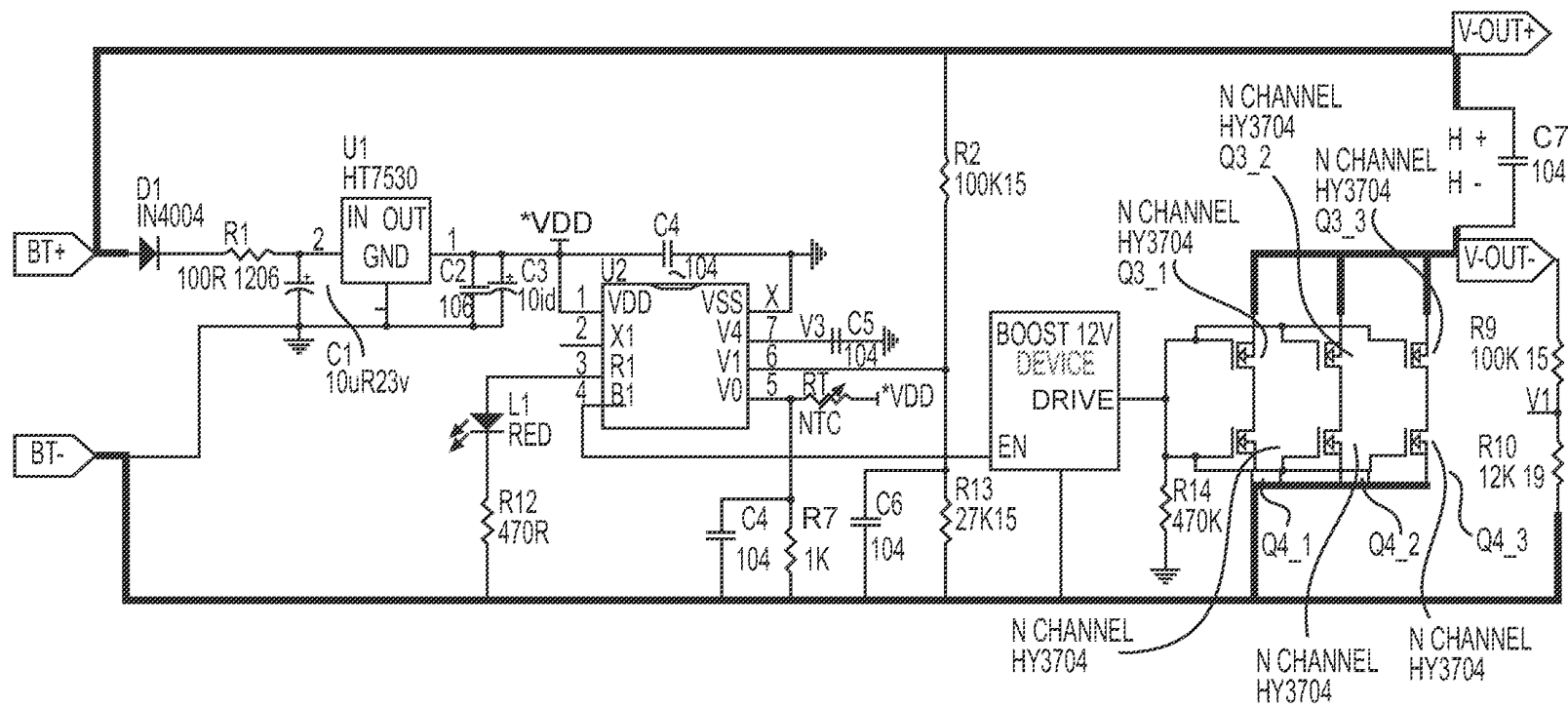


Figure 2

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	8523WANG-1-CON-4
		Application Number	
Title of Invention	AUTOMOBILE CHARGER		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

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☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

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	Chung-Hsin		Wang			
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Address 2	San Wei Village, XiXiang Town, Bao'an					
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		Application Number	
Title of Invention	AUTOMOBILE CHARGER		

Enter either Customer Number or complete the Correspondence Information section below.
For further information see 37 CFR 1.33(a).

☐ **An Address is being provided for the correspondence information of this application.**

Customer Number	22442		
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Application Information:

Title of the Invention	AUTOMOBILE CHARGER		
Attorney Docket Number	8523WANG-1-CON-4	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)	2	Suggested Figure for Publication (if any)	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

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Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	8523WANG-1-CON-4
		Application Number	
Title of Invention	AUTOMOBILE CHARGER		

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This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

When referring to the current application, please leave the "Application Number" field blank.

Prior Application Status	Pending		Remove		
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)		
	Continuation of	16/404321	2019-05-06		
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
16/404321	Continuation of	15/923219	2018-03-16	10328806	2019-06-25
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15/923219	Continuation of	15355409	2016-11-18	10046653	2018-08-14
Prior Application Status	Patented		Remove		
Application Number	Continuity Type	Prior Application Number	Filing Date (YYYY-MM-DD)	Patent Number	Issue Date (YYYY-MM-DD)
15355409	Continuation of	14/569352	2014-12-12	9525297	2016-12-20
Additional Domestic Benefit/National Stage Data may be generated within this form by selecting the Add button.					

Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)	Remove
201420212173.5	CN	2014-04-28		
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	8523WANG-1-CON-4
		Application Number	
Title of Invention	AUTOMOBILE CHARGER		

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. ☐ NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.	
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	8523WANG-1-CON-4
		Application Number	
Title of Invention	AUTOMOBILE CHARGER		

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When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	8523WANG-1-CON-4
		Application Number	
Title of Invention	AUTOMOBILE CHARGER		

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Applicant	1	Remove	
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		Clear	
☒ Assignee	Legal Representative under 35 U.S.C. 117	Joint Inventor	
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest	
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Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	Pilot Inc.		
Mailing Address Information For Applicant:			
Address 1	13000 Temple Boulevard		
Address 2			
City	City of Industry	State/Province	CA
Country	US	Postal Code	91746
Phone Number		Fax Number	
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	8523WANG-1-CON-4
		Application Number	
Title of Invention	AUTOMOBILE CHARGER		

Assignee	1			
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Signature	/David B. Kellis/		Date (YYYY-MM-DD)	2020-12-22
First Name	David B.	Last Name	Kellis	Registration Number
				59377
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	8523WANG-1-CON-4
		Application Number	
Title of Invention	AUTOMOBILE CHARGER		

This collection of information is required by 37 CFR 1.76. 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 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet 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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Application Number:				
Filing Date:				
Title of Invention:		AUTOMOBILE CHARGER		
First Named Inventor/Applicant Name:		Calvin Shiening Wang		
Filer:		David B. Kellis/Mandi Lamberson		
Attorney Docket Number:		8523WANG-1-CON-4		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	80	80
UTILITY SEARCH FEE	2111	1	350	350
UTILITY EXAMINATION FEE	2311	1	400	400
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 (\$)				830

Electronic Acknowledgement Receipt

EFS ID:	41468601
Application Number:	17131113
International Application Number:	
Confirmation Number:	8694
Title of Invention:	AUTOMOBILE CHARGER
First Named Inventor/Applicant Name:	Calvin Shiening Wang
Customer Number:	22442
Filer:	David B. Kellis/Mandi Lamberson
Filer Authorized By:	David B. Kellis
Attorney Docket Number:	8523WANG-1-CON-4
Receipt Date:	22-DEC-2020
Filing Date:	
Time Stamp:	17:08:52
Application Type:	Utility under 35 USC 111(a)

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Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$830
RAM confirmation Number	E2020BLH10273806
Deposit Account	191970
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		20201222_Application-Original.pdf	130142	yes	10
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	Multipart Description/PDF files in .zip description				
	Document Description	Start	End		
	Specification	1	6		
	Claims	7	9		
	Abstract	10	10		
Warnings:					
Information:					
2	Drawings-only black and white line drawings	20201222_Drawings-Original.pdf	128457	no	2
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3	Oath or Declaration filed	20201222_Declaration-CSW.pdf	144988	no	2
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4	Oath or Declaration filed	20201222_Declaration-CHW.pdf	305829	no	1
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Warnings:					
Information:					
5		20201222_Preliminary-Amendment.pdf	232614	yes	9
			50594bcd62f1fbf73bcab0cfd1786ddcb4f06216		

	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Preliminary Amendment		1	1	
	Specification		2	2	
	Drawings-only black and white line drawings		3	3	
	Claims		4	7	
	Applicant Arguments/Remarks Made in an Amendment		8	9	
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6	Specification	20201222_Substitute-Specification-Marked.pdf	97483	no	7
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Warnings:					
Information:					
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Warnings:					
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Warnings:					
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10	Fee Worksheet (SB06)	fee-info.pdf	35096	no	2
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AUTOMOBILE CHARGER

RELATED APPLICATIONS

[0001] This application claims the benefit of priority of Chinese application no. 201420212173.5 filed April 28, 2014, the entire content of which is incorporated herein by reference.

BACKGROUND

[0002] The present disclosure relates to an automobile charging device, in particular relates to a novel automobile charger with a safe power supply charging quickly.

[0003] Automobile charging is a big issue of traveling by automobile for those automobile fans and businessmen, the maturity of the technology thereof is one of the critical factors restricting the application of the automobile charger. However, current automobile chargers have common problems of not able to automatically detect whether a load is connected, whether an electrode is connected with an automobile storage battery reversely, whether an automobile engine or the storage battery has a reverse current, whether the battery state is suitable for heavy current power generation and so on. Accordingly, the present disclosure provides a novel automobile charger with the safe power supply charging quickly to solve the problems mentioned above, thus making the automobile charging safe, quick, mature and propagable.

SUMMARY

[0004] A purpose of the present disclosure aims to provide a novel automobile charger with the safe power supply charging quickly, in order to solve the problems presented in the above background.

[0005] To achieve the purpose described above, the present disclosure provides the following technical solutions: a novel automobile charger comprises a direct current power supply, wherein a positive pole of the direct current power supply is connected with one end of a DC to DC module, one end of a battery voltage detection

module and one end of a load module simultaneously, while a negative pole of the direct current voltage is connected with the other end of the DC to DC module, one end of a micro controller, one end of an automobile start control module and the other end of the battery voltage detection module simultaneously. A third end of the DC to DC module is connected with the other end of the microcontroller, and the other three ends of the microcontroller are connected with the third end of the battery voltage detection module, the other end of the automobile start control module and one end of the load detection module respectively, wherein the other end of the load detection module is connected with the third end of the automobile start control module and the other end of the load module simultaneously; the load module which comprises the automobile storage battery and the automobile engine is located on the end of the load module.

[0006] As a further solution of the present disclosure that: the DC to DC module provides a stable voltage for the microcontroller which collects relevant data to conduct the corresponding control. The battery voltage detection module conducts the measurement of the batter voltage, the automobile start control module conducts the power supply or the power outage for the load module through the microcontroller, and the load detection module which comprises the automobile storage battery or the automobile engine detects whether the load module is correctly connected.

[0007] As a further solution of the present disclosure that: the circuit employs an electronic switch to supply power to the load module, which can offer more protection for the product, or reduce the product size and the material cost.

[0008] As a further solution of the present disclosure that: the battery voltage detection module provides protection for the power supply battery to prevent damages caused by the discharging of the direct current power supply.

[0009] As a further solution of the present disclosure that: the load detection module prevents improper operations of the user.

[0010] As a further solution of the present disclosure that: in the standby mode, the microcontroller closes all outputs when the voltage of the direct current power supply is lower than that of the state being able to supply power and then recovers when it is higher than that of the state being able to supply power.

[0011] As a further solution of the present disclosure that: the automobile start control module is the electronic switch.

[0012] Compared to the prior art, the present disclosure has the beneficial effects that:

[0013] 1. The present disclosure employs the electronic switch to control the supply power for the load, this part can offer more protection for the product, and reduce the product size and the material cost.

[0014] 2. The battery detection of the present disclosure can provide low voltage protection to prevent damages caused by the over discharging of the battery.

[0015] 3. The load detection of the present disclosure can prevent improper operations by the user, such as reversed polarity, which causes damages to the automobile or the direct current power supply.

[0016] 4. The present disclosure employs the voltage backflow protection for abnormal load, wherein the automobile start line is closed to protect the battery when the abnormal voltage is detected.

[0017] 5. The present disclosure has a fast charging function, and can be installed fixedly or moved portably according to the use requirements of people.

[0018] 6. The automatic detection module of the present disclosure can automatically detects whether the load is connected, whether the electrode is connected with the automobile storage battery reversely, whether the automobile engine or the storage battery has reverse current, whether the battery state is suitable for heavy current power generation, thereby protecting the load and the circuit and thus has complete functions.

BRIEF DESCRIPTION OF DRAWINGS

[0019] Figure 1 is a block diagram for the principle of the emergency power supply of the safe intelligent automobile;

[0020] Figure 2 is a circuit diagram for the emergency power supply of the safe intelligent automobile.

[0021] In figures: 1-DC to DC module, 2-microcontroller, 3-battery voltage detection module, 4-automobile start control module, 5-load detection module, 6-load module, 7-direct current power supply.

DETAILED EMBODIMENTS

[0022] The technical solutions of the present disclosure will be described more clearly and fully in conjunction with drawings in the embodiments of the present disclosure, and obviously, the described embodiments are merely a part of the embodiments of the present disclosure, not all the embodiments. Based on the embodiments of the present disclosure, all the other embodiments obtained by the ordinary skilled in the art without creative labors belong to the scope claimed by the present disclosure.

[0023] Refer to figure 1, a novel automobile charger comprises a direct current power supply, wherein the positive pole of the direct current power supply is connected with one end or lead of the DC to DC module, one end of the battery voltage detection module and one end of the load module simultaneously, while the negative pole of the direct current voltage is connected with the other end of the DC to DC module, one end of the microcontroller, one end of the automobile start control module and the other end of the battery voltage detection module simultaneously. A third end of the DC to DC module is connected with the other end of the microcontroller, and the other three ends of the microcontroller are connected with the third end of the battery voltage detection module, the other end of the automobile start control module and one end of the load detection module respectively, wherein the other end of the load detection module is connected with the third end of the automobile start control module and the other end of the load module simultaneously; the load module which comprises the automobile storage battery and the automobile engine is located on the end of the load module.

[0024] Refer to figure 2, the DC to DC module comprises a diode D1, a resistor R1, capacitor C1, a HT7530 voltage stabilizing tube, capacitors C2 and C3, wherein the positive pole of the diode D1 is connected with the positive pole of the battery, the negative pole of the diode D1 is connected with one end of the capacitor C1 and an IN port of the HT7530 voltage stabilizing tube simultaneously through the resistor R1, and an OUT port of the HT7530 voltage stabilizing tube is connected with one end of the capacitor C2, one end of the capacitor C3 and a VDD port of the microcontroller U2, while the other end of the capacitor C1, the other end of the capacitor C2 and the other end of the capacitor C3 as well as a GND port of the HT7530 voltage stabilizing tube are grounded and connected with the negative pole of the battery simultaneously; a R1 port of the microcontroller U2 is connected with the negative pole of the battery through a light-

emitting diode L1 and a resistor R12 which are in series connection, a B1 port of the microcontroller U2 is connected with a EN port of the automobile start control module, a V0 port of the microcontroller U2 is connected with the negative pole of the battery through a capacitor C4 and a resistor R7 which are in parallel connection, the V0 port is also connected with the VDD port through a slide rheostat RT, a V1 port of the microcontroller U2 is also connected with the negative pole of the battery through a resistor R10, a capacitor C6 and a resistor R13 which are in parallel connection, the V1 port is connected with the positive pole of the battery through a resistor R2, and is also connected with the negative pole of the automobile storage battery and the automobile engine simultaneously through a resistor R9, wherein two ends of the automobile storage battery are in parallel connection with the capacitor C7, resistors R9, R10, a capacitor C6 and a resistor R13 to form the load detection module together, a V4 port of the microcontroller U2 is grounded through a capacitor C5, a VSS port of the microcontroller U2 and one end of the capacitor C4 are grounded simultaneously. The other end of the capacitor C4 is connected with the VDD port of the microcontroller U2, the resistors R2, R13 and capacitor C6 form the battery voltage detection module together, and a Drive port of the automobile start control module is connected with the automobile engine and one end of a resistor R14 simultaneously, wherein the other end of the resistor R14 is grounded.

[0025] The DC to DC module in the present disclosure provides the stable voltage for the microcontroller which collects relevant data to conduct the corresponding control. The battery voltage detection module conducts the measurement of the battery voltage, and the automobile start control module conducts the power supply or the power outage for the load module through the microcontroller, wherein the load detection module detects whether the load module is correctly connected.

[0026] The microcontroller in the present disclosure determines whether the automobile storage battery is connected with the automobile engine through the load detection module, wherein the automobile start control model is automatically activated and the battery starts to supply power to the load module when the load is correctly connected; the automobile start control model is automatically deactivated and the battery stops supplying power to the load module when assuming that the load is not connected or the positive and negative polarities are reversely connected. In the standby mode, the microcontroller closes all outputs when the battery voltage is lower than 9V, and recovers

the normal operation only when the battery voltage is larger than 10V; the automobile engine will generate the normal voltage to recharge the battery after the automobile starts, whereas the automobile start control module is deactivated immediately once the recharging voltage is larger than the voltage before that battery starts the power supply, to protect the battery from damages caused by charging with the normal voltage; the automobile start control module is the electronic switch, which can prevent the load from being reversely connected and recharging of the normal voltage, thus protecting the battery and prolonging lifespan.

[0027] The automobile engine will generate abnormal voltage to recharge the direct current power supply after the automobile starts, and the automobile start control module is deactivated immediately once the recharging voltage is larger than the voltage before the direct current power supply starts the power supply, to protect the direct current power supply from damages caused by charging with normal voltage charge.

[0028] It is obvious for the skilled people in the art that the present disclosure is not merely limited to the details of the above exemplary embodiments, and the present disclosure can be implemented in other specific forms without departing from the sprits or the basic features of the present disclosure. Thus, no matter to consider from which point of view, the embodiments should be considered as exemplary and non-limiting. The scope of the present disclosure is defined by the accompanying Claims rather than the above description, therefore it is intended that all the changes fallen within the meanings and scope of the equivalent elements of the Claims are contained in the present disclosure. Any drawing reference in the Claims should not be regarded as limiting the Claims involved.

[0029] Furthermore, it should be understood that although the specification is described according to the embodiments, but not every embodiment includes only an independent technical solution, this manner of description for the specification is only for clarity, therefore the skilled people in the art should take the Specification as a whole, and the technical solutions in various embodiments can be combined appropriately to form other implementations understandable for those skilled in the art.

CLAIMS

What is claimed is:

1. A novel automobile charger which comprises a direct current power supply, comprising:

a positive pole of the direct current power supply connected with a first lead of a DC to DC module, a first lead of a battery voltage detection module, and a first lead of a load module simultaneously,

a negative pole of the direct current voltage connected with a second lead of the DC to DC module, a first lead of a microcontroller, a first lead of an automobile start control module and a second lead of the battery voltage detection module simultaneously;

a third lead of the DC to DC module connected with a second lead of the microcontroller, and

three additional leads the microcontroller connected with a third lead of the battery voltage detection module, a second lead of the automobile start control module and the first lead of the load detection module respectively,

wherein a second lead of the load detection module is connected with the third end of the automobile start control module and second lead of the load module simultaneously;

the load module including an automobile storage battery and an automobile engine is located on one end of the automobile.

2. The novel automobile charger according to Claim 1, wherein

the DC to DC module includes a diode D1, a resistor R1, a capacitor C1, a HT7530 voltage stabilizing tube, and capacitors C2 and C3,

a positive pole of the diode D1 is connected with a positive pole of the battery,

a negative pole of the diode D1 is connected with a first lead of the capacitor C1 and an IN port of the HT7530 voltage stabilizing tube through the resistor R1 simultaneously, and

an OUT port of the HT7530 voltage stabilizing tube is connected with a first lead of the capacitor C2, a first lead of the capacitor C3 and a VDD port of a microcontroller U2 simultaneously,

a second lead of the capacitor C1, a second lead of the capacitor C2 and a second lead of the capacitor C3 as well as a GND port of the HT7530 voltage stabilizing tube are grounded and connected with the negative pole of the battery simultaneously;

a R1 port of the microcontroller U2 is connected with a negative pole of the battery through a luminous diode L1 and a resistor R12 in series connection,

a B1 port of the microcontroller U2 is connected with a EN port of the automobile start control module,

a V0 port of the microcontroller U2 is connected with the negative pole of the battery through a capacitor C4 and a resistor R7 in parallel connection and also with the VDD port through a slide rheostat RT,

a V1 port of the microcontroller U2 is also connected with the negative pole of the battery through a resistor 10, a capacitor C6 and a resistor R13 in parallel connection,

the V1 port is connected with the positive pole of the battery through a resistor R2 and is also connected with the negative pole of the automobile storage battery and the automobile engine simultaneously through a resistor R9,

wherein two leads of the automobile storage battery are in parallel connection with the capacitor C7, the resistors R9, 10, the capacitor C6 and the resistor R13 together to form the load detection module,

a V4 port of the microcontroller U2 is grounded through a capacitor C5,

a VSS port of the microcontroller U2 and one end of the capacitor C4 are grounded; simultaneously,

the second lead of the capacitor C4 is connected with the VDD port of the microcontroller U2,

the resistor R2, capacitor C6 and resistor R13 form the battery voltage detection module together, and

a Drive port of the automobile start control module is connected with the automobile engine and one end of a resistor R14 simultaneously, wherein the other end of the resistor R14 is grounded.

3. The automobile charger according to Claim 1, wherein the DC to DC module is operably configured to provide a stable voltage for the microcontroller which collects relevant data to conduct corresponding control, and

the battery voltage detection module conducts the measurement of the battery voltage, the automobile start control module conducts power supply or power outage for the load module through the microcontroller, wherein the load detection module detects whether the load module is correctly connected.

4. The automobile charger according to Claim 1, further comprising the battery voltage detection module being operably configured to provide protection for the power supply battery.

5. The automobile charger according to Claim 1, further comprising programmatic instructions such that, when placed in a standby mode, the microcontroller closes all outputs when the voltage of the direct current power supply is lower than that of a state being able to supply power and then recovers when it is higher than the state being able to supply power.

6. The automobile charger according to Claim 1 wherein the automobile start control module is an electronic switch.

ABSTRACT

A novel automobile charger which comprise a direct current voltage, wherein a positive pole of the direct current voltage is connected with one end or lead of a DC to DC module, one end of a battery voltage detection module and one end of a load module simultaneously, while a negative pole of the battery is connected with the other end of the DC to DC module, one end of a microcontroller, one end of the automobile start control module and the other end of the battery voltage detection module simultaneously. A third end of the DC to DC module is connected with the other end of the microcontroller, the other three ends of which are connected with the third end of the battery voltage detection module, the other end of the automobile start control module and one end of the load detection module respectively. The other end of the load detection module is connected with the third end of the automobile start control module and the other end of the load module simultaneously.

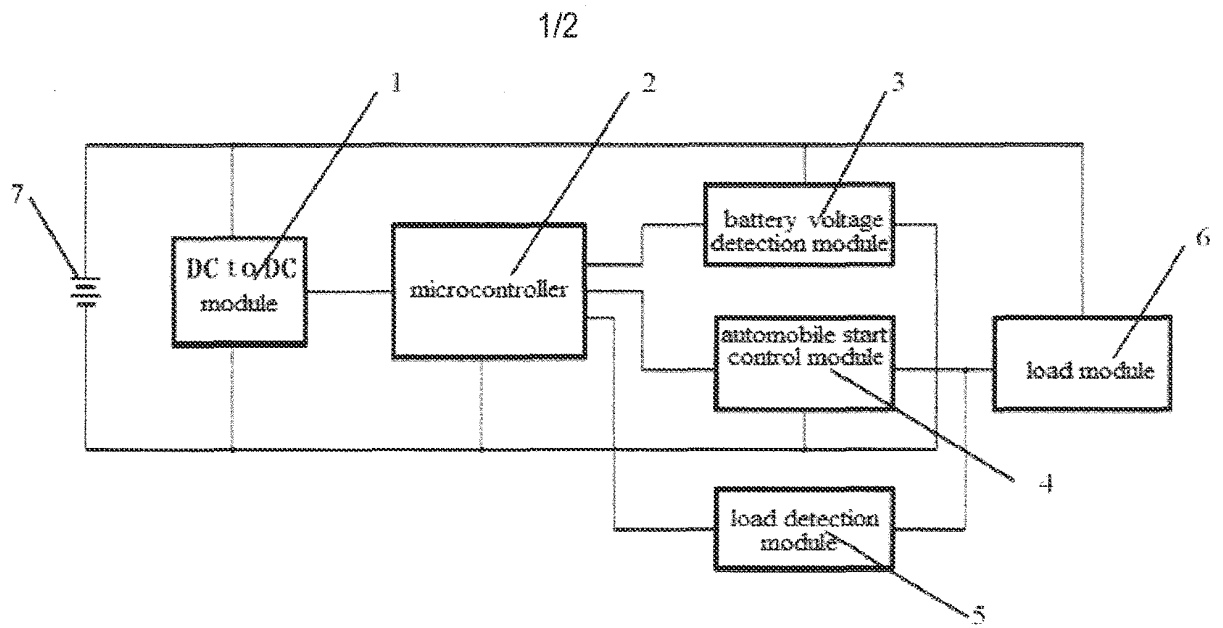


Figure 1

**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	AUTOMOBILE CHARGER
As the below named inventor, I hereby declare that: This declaration is directed to: ☐ The attached application, or ☒ United States application or PCT international application number <u>14/569,352</u> filed on <u>December 12, 2014</u> The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. LEGAL NAME OF INVENTOR Inventor: <u>Calvin Shiening Wang</u> Date (Optional): <u>9/18/15</u> Signature:  Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

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 1 minute 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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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.
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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.
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DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN APPLICATION DATA SHEET (37 CFR 1.76)

Title of Invention	AUTOMOBILE CHARGER		
	Attorney Docket No. 8523WANG-1		
As the below named inventor, I hereby declare that:			
This declaration is directed to:	☐	The attached application, or	
	☒	United States application or PCT international application number <u>14/569,352</u>	
		filed on <u>December 12, 2014</u>	
The above-identified application was made or authorized to be made by me.			
I believe that I am the original inventor or an original joint inventor of a claimed invention in the application.			
I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than five (5) years, or both.			
WARNING:			
Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identity theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.			
LEGAL NAME OF INVENTOR			
Inventor:	<u>Chung-Hsin Wang</u>		Date (Optional) <u>2014/5/29</u>
Signature:	<u>Chung-Hsin Wang</u>		
Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.			

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 1 minute 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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AUTOMOBILE CHARGER

RELATED APPLICATIONS

[0001] This application is a continuation of U.S. Patent No. 16/404,321, filed on May 6, 2019 and entitled “Automobile Charger,” which is a continuation of U.S. Patent Application No. 15/923,219, filed on March 16, 2018 and entitled “Automobile Charger,” which is a continuation of U.S. Patent Application No. 15/355,409, filed on November 18, 2016 and entitled “Automobile Charger,” now Patent No. 10,046,653, which is a continuation of U.S. Patent Application No. 14/569,352, filed on December 12, 2014 and entitled “Automobile Charger,” now Patent No. 9,525,297, which claims the benefit of priority of Chinese application no. 201420212173.5 filed on April 28, 2014, the entire contents of all of which are incorporated herein by reference.

BACKGROUND

[0002] The present disclosure relates to an automobile charging device, in particular relates to a novel automobile charger with a safe power supply charging quickly.

[0003] Automobile charging is a big issue of traveling by automobile for those automobile fans and businessmen, the maturity of the technology thereof is one of the critical factors restricting the application of the automobile charger. However, current automobile chargers have common problems of not able to automatically detect whether a load is connected, whether an electrode is connected with an automobile storage battery reversely, whether an automobile engine or the storage battery has a reverse current, whether the battery state is suitable for heavy current power generation and so on. Accordingly, the present disclosure provides a novel automobile charger with the safe power supply charging quickly to solve the problems mentioned above, thus making the automobile charging safe, quick, mature and propagable.

SUMMARY

[0004] A purpose of the present disclosure aims to provide a novel automobile charger with the safe power supply charging quickly, in order to solve the problems presented in the above background.

[0005] To achieve the purpose described above, the present disclosure provides the following technical solutions: a novel automobile charger comprises a direct

current power supply, wherein a positive pole of the direct current power supply is connected with one end of a DC to DC module, one end of a battery voltage detection module and one end of a load module simultaneously, while a negative pole of the direct current voltage is connected with the other end of the DC to DC module, one end of a micro controller, one end of an automobile start control module and the other end of the battery voltage detection module simultaneously. A third end of the DC to DC module is connected with the other end of the microcontroller, and the other three ends of the microcontroller are connected with the third end of the battery voltage detection module, the other end of the automobile start control module and one end of the load detection module respectively, wherein the other end of the load detection module is connected with the third end of the automobile start control module and the other end of the load module simultaneously; the load module which comprises the automobile storage battery and the automobile engine is located on the end of the load module.

[0006] As a further solution of the present disclosure that: the DC to DC module provides a stable voltage for the microcontroller which collects relevant data to conduct the corresponding control. The battery voltage detection module conducts the measurement of the battery voltage, the automobile start control module conducts the power supply or the power outage for the load module through the microcontroller, and the load detection module which comprises the automobile storage battery or the automobile engine detects whether the load module is correctly connected.

[0007] As a further solution of the present disclosure that: the circuit employs an electronic switch to supply power to the load module, which can offer more protection for the product, or reduce the product size and the material cost.

[0008] As a further solution of the present disclosure that: the battery voltage detection module provides protection for the power supply battery to prevent damages caused by the discharging of the direct current power supply.

[0009] As a further solution of the present disclosure that: the load detection module prevents improper operations of the user.

[0010] As a further solution of the present disclosure that: in the standby mode, the microcontroller closes all outputs when the voltage of the direct current power supply is lower than that of the state being able to supply power and then recovers when it is higher than that of the state being able to supply power.

[0011] As a further solution of the present disclosure that: the automobile start

control module is the electronic switch.

[0012] Compared to the prior art, the present disclosure has the beneficial effects that:

[0013] 1. The present disclosure employs the electronic switch to control the supply power for the load, this part can offer more protection for the product, and reduce the product size and the material cost.

[0014] 2. The battery detection of the present disclosure can provide low voltage protection to prevent damages caused by the over discharging of the battery.

[0015] 3. The load detection of the present disclosure can prevent improper operations by the user, such as reversed polarity, which causes damages to the automobile or the direct current power supply.

[0016] 4. The present disclosure employs the voltage backflow protection for abnormal load, wherein the automobile start line is closed to protect the battery when the abnormal voltage is detected.

[0017] 5. The present disclosure has a fast charging function, and can be installed fixedly or moved portably according to the use requirements of people.

[0018] 6. The automatic detection module of the present disclosure can automatically detects whether the load is connected, whether the electrode is connected with the automobile storage battery reversely, whether the automobile engine or the storage battery has reverse current, whether the battery state is suitable for heavy current power generation, thereby protecting the load and the circuit and thus has complete functions.

BRIEF DESCRIPTION OF DRAWINGS

[0019] Figure 1 is a block diagram for the principle of the emergency power supply of the safe intelligent automobile;

[0020] Figure 2 is a circuit diagram for the emergency power supply of the safe intelligent automobile.

[0021] In figures: 1-DC to DC module, 2-microcontroller, 3-battery voltage detection module, 4-automobile start control module, 5-load detection module, 6-load module, 7-direct current power supply.

DETAILED EMBODIMENTS

[0022] The technical solutions of the present disclosure will be described more clearly and fully in conjunction with drawings in the embodiments of the present disclosure, and obviously, the described embodiments are merely a part of the embodiments of the present disclosure, not all the embodiments. Based on the embodiments of the present disclosure, all the other embodiments obtained by the ordinary skilled in the art without creative labors belong to the scope claimed by the present disclosure.

[0023] Refer to figure 1, a novel automobile charger comprises a direct current power supply, wherein the positive pole of the direct current power supply is connected with one end or lead of the DC to DC module, one end of the battery voltage detection module and one end of the load module simultaneously, while the negative pole of the direct current voltage is connected with the other end of the DC to DC module, one end of the microcontroller, one end of the automobile start control module and the other end of the battery voltage detection module simultaneously. A third end of the DC to DC module is connected with the other end of the microcontroller, and the other three ends of the microcontroller are connected with the third end of the battery voltage detection module, the other end of the automobile start control module and one end of the load detection module respectively, wherein the other end of the load detection module is connected with the third end of the automobile start control module and the other end of the load module simultaneously; the load module which comprises the automobile storage battery and the automobile engine is located on the end of the load module.

[0024] Refer to figure 2, the DC to DC module comprises a diode D1, a resistor R1, capacitor C1, a HT7530 voltage stabilizing tube, capacitors C2 and C3, wherein the positive pole of the diode D1 is connected with the positive pole of the battery, the negative pole of the diode D1 is connected with one end of the capacitor C1 and an IN port of the HT7530 voltage stabilizing tube simultaneously through the resistor R1, and an OUT port of the HT7530 voltage stabilizing tube is connected with one end of the capacitor C2, one end of the capacitor C3 and a VDD port of the microcontroller U2, while the other end of the capacitor C1, the other end of the capacitor C2 and the other end of the capacitor C3 as well as a GND port of the HT7530 voltage stabilizing tube are grounded and connected with the negative pole of the battery simultaneously; a R1 port of the microcontroller U2 is connected with the negative pole of the battery through a light-emitting diode L1 and a resistor R12 which are in series connection, a B1 port of the

microcontroller U2 is connected with a EN port of the automobile start control module, a V0 port of the microcontroller U2 is connected with the negative pole of the battery through a capacitor C4 and a resistor R7 which are in parallel connection, the V0 port is also connected with the VDD port through a slide rheostat RT, a V1 port of the microcontroller U2 is also connected with the negative pole of the battery through a resistor 10, a capacitor C6 and a resistor R13 which are in parallel connection, the V1 port is connected with the positive pole of the battery through a resistor R2, and is also connected with the negative pole of the automobile storage battery and the automobile engine simultaneously through a resistor R9, wherein two ends of the automobile storage battery are in parallel connection with the capacitor C7, resistors R9, 10, a capacitor C6 and a resistor R13 to form the load detection module together, a V4 port of the microcontroller U2 is grounded through a capacitor C5, a VSS port of the microcontroller U2 and one end of the capacitor C4 are grounded simultaneously. The other end of the capacitor C4 is connected with the VDD port of the microcontroller U2, the resistors R2, R13 and capacitor C6 form the battery voltage detection module together, and a Drive port of the automobile start control module is connected with the automobile engine and one end of a resistor R14 simultaneously, wherein the other end of the resistor R14 is grounded.

[0024A] The EN port of the automobile start control module is positioned on a boost device, which provides a gate-source voltage to a plurality of N-channel MOSFETs Q3_1, Q3_2, Q3_3, Q4_1, Q4_2, Q4_3, which are connected in parallel pairs.

[0025] The DC to DC module in the present disclosure provides the stable voltage for the microcontroller which collects relevant data to conduct the corresponding control. The battery voltage detection module conducts the measurement of the battery voltage, and the automobile start control module conducts the power supply or the power outage for the load module through the microcontroller, wherein the load detection module detects whether the load module is correctly connected.

[0026] The microcontroller in the present disclosure determines whether the automobile storage battery is connected with the automobile engine through the load detection module, wherein the automobile start control model is automatically activated and the battery starts to supply power to the load module when the load is correctly connected; the automobile start control model is automatically deactivated and the battery stops supplying power to the load module when assuming that the load is not connected or

the positive and negative polarities are reversely connected. In the standby mode, the microcontroller closes all outputs when the battery voltage is lower than 9V, and recovers the normal operation only when the battery voltage is larger than 10V; the automobile engine will generate the normal voltage to recharge the battery after the automobile starts, whereas the automobile start control module is deactivated immediately once the recharging voltage is larger than the voltage before that battery starts the power supply, to protect the battery from damages caused by charging with the normal voltage; the automobile start control module is the electronic switch, which can prevent the load from being reversely connected and recharging of the normal voltage, thus protecting the battery and prolonging lifespan.

[0027] The automobile engine will generate abnormal voltage to recharge the direct current power supply after the automobile starts, and the automobile start control module is deactivated immediately once the recharging voltage is larger than the voltage before the direct current power supply starts the power supply, to protect the direct current power supply from damages caused by charging with normal voltage charge.

[0028] It is obvious for the skilled people in the art that the present disclosure is not merely limited to the details of the above exemplary embodiments, and the present disclosure can be implemented in other specific forms without departing from the spirits or the basic features of the present disclosure. Thus, no matter to consider from which point of view, the embodiments should be considered as exemplary and non-limiting. The scope of the present disclosure is defined by the accompanying Claims rather than the above description, therefore it is intended that all the changes fallen within the meanings and scope of the equivalent elements of the Claims are contained in the present disclosure. Any drawing reference in the Claims should not be regarded as limiting the Claims involved.

[0029] Furthermore, it should be understood that although the specification is described according to the embodiments, but not every embodiment includes only an independent technical solution, this manner of description for the specification is only for clarity, therefore the skilled people in the art should take the Specification as a whole, and the technical solutions in various embodiments can be combined appropriately to form other implementations understandable for those skilled in the art.

ABSTRACT

A novel automobile charger comprises a direct current (DC) voltage supply, wherein a positive pole of the (DC) voltage supply is connected with a first end or a first lead of a DC-to-DC module, a first end of a battery voltage detection module and a first end of a load module simultaneously, while a negative pole of the DC voltage supply is connected with a second end of the DC-to-DC module, a first end of a microcontroller, a first end of an automobile start control module and a second end of the battery voltage detection module simultaneously. A third end of the DC-to-DC module is connected with a second end of the microcontroller. Third, fourth and fifth ends of the microcontroller are connected with a third end of the battery voltage detection module, a second end of the automobile start control module and a first end of a load detection module respectively. A second end of the load detection module is connected with a third end of the automobile start control module and a second end of the load module simultaneously.