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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/274,170	02/12/2019	Robley Carpenter II	1397-4-NP	4761
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Rocky Mountain Patent LLC 1800 Wazee St., Suite 300 Denver, CO 80202			EXAMINER JACKSON, JAKIEDA R	
			ART UNIT	PAPER NUMBER
			2657	
			NOTIFICATION DATE	DELIVERY MODE
			07/26/2019	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.

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Office Action Summary**Application No.**

16/274,170

Applicant(s)

Carpenter et al.

Examiner

JAKIEDA R JACKSON

Art Unit

2657

AIA (FITF) Status

Yes

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

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

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

Status

- 1) ☒ Responsive to communication(s) filed on 2/12/19.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

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5a) Of the above claim(s) ____ is/are withdrawn from consideration.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

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☒ The drawing(s) filed on 2/20/19 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

- a) ☐ All b) ☐ Some** c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

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

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)
Paper No(s)/Mail Date ____.
- 3) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 4) ☐ Other: ____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

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

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.

Claim(s) 1 and 9 is/are rejected under 35 U.S.C. 102(a)(1) as being anticipated by Negreiro (USPN 7,110,963).

Regarding **claim 1**, Negreiro discloses a method of training a natural language ordering system comprising the steps of:

providing an audio stream of customer ordering transactions (figure 11, element 507 with dialog to place order; column 3, line 39 – column 4, line 65 with column 6, lines 1-41);

slicing the audio stream into short clips (parsing stream; column 5, lines 25-50);

transcribing the short clips into text using a transcription unit (figure 5, element 227 and column 3, line 39 – column 4, line 65);

adding metadata tags to the transcribed text using the transcription unit (codes; column 3, line 39 – column 4, line 65);

training a speech-to-text system by populating the artificially intelligent order processing system with the transcribed text having the metadata tags (training data; column 3, line 39 – column 4, line 65).

Regarding **claim 9**, Negreiro discloses a method wherein the audio stream used for text transcription is a stream from a customer accessible microphone to a base station (figure 3 with column 3, lines 4-38 and column 6, lines 1-41).

Claim Rejections - 35 USC § 103

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.

Claim 2 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Brelig et al (9,646,286), hereinafter referenced as Brelig.

Regarding **claim 2**, Negreiro discloses a method as described above, but does not specifically teach wherein the transcription unit is a crowd source platform.

Brelig discloses a method wherein the transcription unit is a crowd source platform (column 7, lines 9-35), to identify product profile.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to provide new and useful data to automating ordering processing.

Claim 3 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Sankaranarayanan (USPN 8,879,242).

Regarding **claim 3**, Negreiro discloses a method as described above, but does not specifically teach wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion.

Sankaranarayanan discloses a method wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion (column 4, lines 19-50), to allow synthesis.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to mark the customer interaction for classification and analysis.

Claim 3 is *alternately* rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Erbey et al. (PGPUB 2012/0317038), hereinafter referenced as Erbey.

Regarding **claim 3**, Negreiro discloses a method as described above, but does not specifically teach wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion.

Erbey discloses a method wherein the metadata tags provide data regarding tone or inflection that would be lost in a traditional speech-to-text conversion (paragraph 0011), to receive desired outcome based on real-time changes.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to output data that reflects changes and sounds natural.

Claim 4 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view Tsao (USPN 9,239,987).

Regarding **claim 4**, Negreiro discloses a method as described above, but does not specifically teach a method wherein the speech-to-text system employs a deep neural network.

Tsao discloses a method wherein the speech-to-text system employs a deep neural network (column 7, lines 53-67), to help estimate likelihoods.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to assist with predictive modeling.

Claim 5 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view Szabo (USPN 7,184,438).

Regarding **claim 5**, Negreiro discloses a method further comprising the steps of:
identifying a word or phrase in the text (keywords; figures 5 and 7) using the speech-to-text processor (speech to text; column 3, lines 51 – column 4, line 65), but does not specifically teach providing meaning for the identified word or phrase using a natural language processor.

Szabo discloses a method providing meaning for the identified word or phrase using a natural language processor (column 72, line 63 – column 73, line 57), to provide an intelligent system for providing definitions.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, for clarity.

Regarding **claim 6**, Negreiro discloses a method further comprising the step of generating an order with a business processor using the identified word or phrase from the natural language processor (naturally ordering; column 3, line 39 – column 4, line 65).

Claims 7 and 8 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view Szabo and in further view of Sankaranarayanan,

Regarding **claim 7**, it is interpreted and rejected for similar reasons as set forth in the combination of claims 3 and 5. In addition, Sankaranarayanan discloses a method wherein the natural language processor is configured to trigger an alert when a warning condition is encountered (column 4, lines 19-50).

Regarding **claim 8**, it is interpreted and rejected for similar reasons as set forth in the combination of claims 3 and 5. In addition, Sankaranarayanan discloses a method wherein the warning condition is a word or phrase indicative of customer dissatisfaction or confusion (column 4, lines 19-50).

Claim 10 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Kim (PGPUB 2018/0277107).

Regarding **claim 10**, Negreiro discloses a method as described above, but does not specifically teach a method further comprising the step of decreasing the strength of the audio stream prior to transmission to the transcription unit.

Kim discloses a method further comprising the step of decreasing the strength of the audio stream prior to transmission to the transcription unit (paragraph 0060), to enhance speech recognition.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to modify audio transition.

Claims 11-14 is/are rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Erbey.

Regarding **claim 11**, it is interpreted and rejected for similar reasons as set forth above. In addition, Negreiro discloses a method of speech recognition-based order processing comprising the steps of:

providing an audio stream of a customer order (customer speaks naturally to order; column 6, lines 1-41);

providing an order processor having a speech recognition module trained using artificial intelligence programs (training; column 3, line 39 – column 4, line 65);

converting a word or words in the audio stream to text using the speech recognition module (speech to text; column 3, line 39 – column 4, line 65);

processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training (identify keywords; column 3, line 39 – column 4, line 65);

providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies an order based upon the recognized text (naturally speaks; column 3, line 39 – column 4, line 65);

generating an order with the natural language processor (customer speaks naturally to order; column 6, lines 1-41);

transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service (payment and delivery; column 8, lines 1-27), but does not specifically teach alerting an auditor of detected exceptions in the order.

Erbey discloses alerting an auditor of detected exceptions in the order (paragraph 0100).

Regarding **claim 12**, Negreiro discloses a method wherein the order is processed in real time (real-time; abstract). Furthermore, Erbey discloses real-time processing (paragraph 0014).

Regarding **claim 13**, it is interpreted and rejected for similar reasons as set forth above. In addition, Erbey discloses a method wherein the business processor receives order information from the NLP and performs the steps of:

associating the order items with one or more additional menu items or options associated with the order items (paragraph 0100); and

querying the customer about the one or more additional menu items or options associated with the order items, wherein the NLP updates the order based upon the customer response to the query (paragraph 0100).

Regarding **claim 14**, Negreiro discloses a method further comprising the steps of:

providing a text-to-speech processor to convert queries from the business processor into audio to be communicated to a customer (speech to text; column 3, line 39 – column 4, line 65); and

processing the text with the text-to-speech processor to create an audio communication of the query generated by the business processor (speech to text; column 3, line 39 – column 4, line 65).

Claims 11-14 are *alternately* rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Borsutsky et al. (USPN 10/013,980), hereinafter referenced as Borsutsky.

Regarding **claim 11**, it is interpreted and rejected for similar reasons as set forth above. In addition, Negreiro discloses a method of speech recognition-based order processing comprising the steps of:

providing an audio stream of a customer order (customer speaks naturally to order; column 6, lines 1-41);

providing an order processor having a speech recognition module trained using artificial intelligence programs (training; column 3, line 39 – column 4, line 65);

converting a word or words in the audio stream to text using the speech recognition module (speech to text; column 3, line 39 – column 4, line 65);

processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training (identify keywords; column 3, line 39 – column 4, line 65);

providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies an order based upon the recognized text (naturally speaks; column 3, line 39 – column 4, line 65);

generating an order with the natural language processor (customer speaks naturally to order; column 6, lines 1-41);

transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service (payment and delivery; column 8, lines 1-27), but does not specifically teach alerting an auditor of detected exceptions in the order.

Borsutsky discloses alerting an auditor of detected exceptions in the order (column 14, line 51 – column 15, line 53), to provide options.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to provide the user with a list of options and recommendations, for ease.

Regarding **claim 12**, Negreiro discloses a method wherein the order is processed in real time (real-time; abstract).

Regarding **claim 13**, it is interpreted and rejected for similar reasons as set forth above. In addition, Borsutsky discloses a method wherein the business processor receives order information from the NLP and performs the steps of:

associating the order items with one or more additional menu items or options associated with the order items (column 14, line 51 – column 15, line 53); and

querying the customer about the one or more additional menu items or options associated with the order items, wherein the NLP updates the order based upon the customer response to the query (column 14, line 51 – column 15, line 53).

Regarding **claim 14**, Negreiro discloses a method further comprising the steps of:

providing a text-to-speech processor to convert queries from the business processor into audio to be communicated to a customer (speech to text; column 3, line 39 – column 4, line 65); and

processing the text with the text-to-speech processor to create an audio communication of the query generated by the business processor (speech to text; column 3, line 39 – column 4, line 65).

Claims 15-17 and 19-20 is rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Heater et al. (PGPUB 2018/0165691), hereinafter referenced as Heater.

Regarding **claim 15**, Negreiro discloses a method as described above, but does not specifically teach wherein the alert to the auditor prompts the auditor to take control of the order processing system.

Heater discloses a method wherein the alert to the auditor prompts the auditor to take control of the order processing system (paragraphs 0037-0038), to monitor interactions just in case of an unsuccessful or incomplete interaction.

Therefore, it would have been obvious to one of ordinary skill of the art to modify the method as described above, to provide the user with a list of options and recommendations, to satisfy certain criteria and customer satisfaction.

Regarding **claim 16**, it is interpreted and rejected for similar reasons as set forth above. In addition, Heater discloses a method further comprising the steps of reviewing an order by an auditor by comparing the order generated by the natural language processor to the communication in the audio stream and updating the order based upon auditor review (paragraphs 0037-0038).

Regarding **claim 17**, Negreiro discloses a method of speech recognition-based order processing comprising the steps of:

providing an audio stream of a customer order to a speech-to text processor (speech to text; column 3, line 39 – column 4, line 65);

providing an order processor incorporating a speech recognition module trained using artificial intelligence programs (train; column 3, line 39 – column 4, line 65);

converting a word or words in the audio stream to text using the speech recognition module (speech to text; column 3, line 39 – column 4, line 65);

processing the text communication with the speech recognition module to identify a word or words in the text of the converted audio stream according to a previous spoken word training (listening for keywords; column 3, line 39 – column 4, line 65);

providing a natural language processor having order assembly capabilities and exception detection capabilities, wherein the natural language processor receives recognized text from the order processor and creates or modifies the order based upon the recognized text (naturally speaks; column 3, line 51 – column 4, lines 65);

generating an order with the natural language processor (order; column 6, lines 1-41);

providing an audio stream of a customer order to an auditor (customer speaks natural; column 6, lines 1-41);

providing the generated order to the auditor (act on identification; column 6, lines 1-41);

performing a comparison of the audio stream of a customer order with the generated order by the auditor (providing feedback; abstract); and

transmitting the order to a business processor, wherein the business processor communicates with a point-of-sale system to collect payment and provide notifications to release the ordered product or service (payment and delivery; column 8, lines 1-27),

but does not specifically teach updating the order processor based upon errors detected in the order by the auditor.

Furthermore, Heater discloses a method of updating the order processor based upon errors detected in the order by the auditor (paragraphs 0058, 0038).

Regarding **claim 19**, Negreiro discloses a method further comprising the steps of:

providing a text-to-speech processor to convert queries from the business processor into audio to be communicated to a customer (speech to text; column 3, line 39 – column 4, line 65); and

processing the text with the text-to-speech processor to create an audio communication of the query generated by the business processor (speech to text; column 3, line 39 – column 4, line 65).

Regarding **claim 20**, it is interpreted and rejected for similar reasons as set for the above. In addition, Heater discloses a method further comprising the step of alerting the auditor by the NLP of any exceptions detected by the artificially intelligent order processing system, wherein the auditor can override the artificially intelligent order processing system based upon the detected exception (paragraphs 0038.

Claim 18 is rejected under 35 U.S.C. 103 as being unpatentable over Negreiro in view of Heater and in further view of Borsutsky.

Regarding **claim 18**, it is interpreted and rejected for similar reasons as set forth above in claim 13.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. This information has been detailed in the PTO 892 attached (Notice of References Cited).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAKIEDA R JACKSON whose telephone number is (571)272-7619. The examiner can normally be reached on Mon - Fri 6:30a-2:30p.

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

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel Washburn can be reached on 571.272.5551. 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.

/JAKIEDA R JACKSON/
Primary Examiner, Art Unit 2657