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.
18/905,099	10/02/2024	Evgeniy Gabrilovich	139004-00-5013-US	2420

126234 7590 07/02/2025

Morgan, Lewis & Bockius LLP (PA)(Facebook)
1400 Page Mill Road
Palo Alto, CA 94304-1124

EXAMINER	
LUBIT, RYAN A	

ART UNIT	PAPER NUMBER
2626	

NOTIFICATION DATE	DELIVERY MODE
07/02/2025	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):

donald.mixon@morganlewis.com
padocketingdepartment@morganlewis.com

Office Action Summary	Application No. 18/905,099	Applicant(s) Gabrilovich et al.	
	Examiner RYAN A LUBIT	Art Unit 2626	AIA (First Inventor to File) 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 October 2, 2024.

☐ 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) 1-4,6-7,9-13 and 15-19 is/are rejected.

8) ☑ Claim(s) 5,8,14 and 20 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 October 2, 2025 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

Status of the Application

1. Claims 1 – 20 are pending and are under examination in this Office Action.

2. 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 § 103

3. 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 1 – 2, 4, 9 – 11, 13, 16 – 17, and 19** are rejected under 35 U.S.C. 103 as being unpatentable over Mannby (U.S. Pub. 2020/0065370) in view of Missig et al. (U.S. Pub. 2020/0356254) in view of Huang et al. (U.S. Pub. 2020/0201443).

Regarding claim 1, Mannby teaches: a non-transitory computer-readable storage medium comprising instructions (paragraph [0098]; disclosed embodiments may be implemented via executing instructions on a computer-readable medium) for:

obtaining, via one or more sensors, data corresponding to a user attempting to perform a sequence of handwriting motions associated with one or more target inputs (FIGS. 1, 2; paragraphs [0026], [0029], [0036], [0037]; in step 202, handwritten input 114 is received from a user at an electronic device 102 so that the user's handwritten input 114 can be translated to one or more target inputs of words, phrases, etc.

Electronic device 102 may be a wearable device [wristwatch or VR glasses] and handwritten input 114 may be detected by sensors such as a touchpad, trackpad, camera, etc. In this claim, the "data" corresponds to handwritten segment 304);

identifying, based on at least (i) the data corresponding to the user attempting to perform the sequence of handwriting motions and (ii) the one or more target inputs associated with the sequence of handwriting motions (FIGS. 2 – 4; paragraphs [0051], [0053], [0067]; in step 204, handwritten input 114 is parsed to determine a sequence of motions and an intended word [target input]. For example, handwritten input parser 402 identifies the sequence of handwritten segment 304 as corresponding to a plurality of target inputs, including a target input of the word "dinosaur"):

a devolved sequence of handwriting motions for inputting a respective target input of the one or more target inputs (FIGS. 2 – 4; paragraphs [0051], [0054], [0055], [0067]; in step 206, handwritten segment 304 [devolved sequence] is identified as input by a user via handwriting motions. In this example, handwritten segment 304 [devolved sequence] corresponds to a plurality of target inputs, including the target input of the word "dinosaur"),

wherein: the devolved sequence of handwriting motions is a different sequence as compared to the sequence of handwriting motions, and includes fewer handwriting motions as compared to the sequence of handwriting motions (FIGS. 2 – 4; paragraphs [0051], [0054], [0055], [0067]; handwritten segment 304 [devolved sequence] has fewer characters and handwriting motions by requiring only "di~~" as compared to the full sequence of handwriting motions to spell out "dinosaur"); and

causing presentation, via the computing system, of a representation of the devolved sequence of handwriting motions (FIGS. 1, 3; paragraphs [0028], [0037], [0051], [0054]; a user's handwritten input 108 is displayed, including handwritten segment 304 [devolved sequence]).

Mannby fails to explicitly disclose: the devolved sequence of handwriting motions to suggest to the user.

However, in a related field of endeavor, Missig discloses an electronic device that detects a user's handwriting input (FIG. 17L, 17M; paragraph [0673]).

With regard to claim 1, Missig teaches: the devolved sequence of handwriting motions to suggest to the user (FIG. 17L, 17M; paragraphs [0673], [0674]; a user may take a shortcut to completing a word by writing part of the word [FIG. 17L] and then underlining the displayed suggestion [FIG. 17M]).

It would have been obvious to a person of ordinary skill in the art before the effective filing date of Applicant's claimed invention to combine the know teachings of Mannby and Missig to yield predictable results. More specifically, the teachings of a wearable electronic device that determines a "devolved" handwriting input as a shortcut for a complete handwriting input in order for a user to communicate with fewer handwriting movements, as taught by Mannby, are known. Additionally, the teachings of an electronic device that suggests and determines a completion of a "devolved" handwriting input as a shortcut for complete handwriting input in order for a user to communicate with fewer handwriting movements, as taught by Missig, are known as well. The combination of the known teachings of Mannby and Missig would yield the predictable result of a wearable electronic device that suggests a "devolved"

handwriting input and determines a completion of a "devolved" handwriting input as a shortcut for a complete handwriting input in order for a user to communicate with fewer handwriting movements. In other words, it would have been obvious to incorporate the completion suggestion for "devolved" handwriting inputs, as taught by Missing, into the device of Mannby. Such a modification of Mannby would increase word detection accuracy, simplify the processing with regard to word parsing, and require only the same types of movements as disclosed in Mannby, i.e., limited characters followed by a line/squiggle. Therefore, it would have been obvious to a person of ordinary skill in the art before the effective filing date of Applicant's claimed invention to combine the know teachings of Mannby and Missig to yield the aforementioned predictable results.

Neither Mannby nor Missig explicitly disclose: the data is obtained by one or more sensors of a wearable electronic device of a computing system while a user is wearing the wearable electronic device of the computing system.

However, Huang teaches: the data is obtained by one or more sensors of a wearable electronic device of a computing system while a user is wearing the wearable electronic device of the computing system (FIG. 1; paragraphs [0021], [0035], [0065]; a user applies in-air-handwriting that is detected and determined by either a wearable inertial sensor [wearable electronic device with a sensor] or a 3D depth camera [sensor] of a VR-headset [wearable device]).

It would have been obvious to a person of ordinary skill in the art before the effective filing date of Applicant's claimed invention to combine the know teachings of Mannby, Missig, and Huang to yield predictable results. More specifically, the teachings of a system including a wearable electronic device, such as a wristwatch or VR glasses,

and a sensor that detects a user's handwriting input, as taught by Mannby, are known. Additionally, the teachings of a wristwatch or VR glasses that detect a user's in-air-handwriting input, as taught by Huang, are known as well. The combination of the known teachings of Mannby and Huang would yield the predictable result of a wearable electronic device, such as a wristwatch or VR glasses, that detects a user's in-air-handwriting input. In other words, it would have been obvious to modify Mannby such that the sensor for detecting handwriting input is incorporated into the wristwatch or VR glasses thereof, as taught by Huang. Such a modification of Mannby merely requires a simple substitution of one means of detecting handwriting input with another. Therefore, it would have been obvious to a person of ordinary skill in the art before the effective filing date of Applicant's claimed invention to combine the know teachings of Mannby, Missig, and Huang to yield the aforementioned predictable results.

Regarding claim 10, this claim is a method implementation of the instructions rejected above with regard to claim 1. Accordingly, this claim is rejected for at least the same reasons as set forth above with regard to claim 1. A duplication of the above rejection is not included in this Office Action for the purpose of brevity.

Regarding claim 16, Mannby teaches: a computing system, comprising:

a wearable electronic device (FIG. 1; paragraph [0026]; mobile electronic device 102 may include a wearable device such as a wristwatch or VR glasses) comprising:

one or more sensors (FIG. 1; paragraph [0029]; sensors for detecting handwritten input may include a touchpad, trackpad, camera, etc.); and

one or more processors configured to: perform operations (paragraph [0087]; disclosed operations and functions may be implemented as instructions executed by one or more processors).

The remainder of this claim is a functional implementation of the instructions rejected above with regard to claim 1. Accordingly, this claim is rejected for at least the same reasons as set forth above with regard to claim 1. A duplication of the above rejection is not included in this Office Action for the purpose of brevity.

Regarding claims 2, 11, and 17, Mannby teaches: further comprising instructions for:

obtaining, via one or more sensors, other data corresponding to the user attempting to perform the devolved sequence of handwriting motions associated with the respective target input of the one or more target inputs (FIGS. 1, 2; paragraphs [0026], [0029], [0036], [0037], [0052]; in step 202, handwritten input 114 is received from a user at an electronic device 102 so that the user's handwritten input 114 can be translated to one or more target inputs of words, phrases, etc. Electronic device 102 may be a wearable device [wristwatch or VR glasses] and handwritten input 114 may be detected by sensors such as a touchpad, trackpad, camera, etc. In this claim, the "other data" corresponds to hint segment 312, the length of which identifies the target input of the word "dinosaur");

identifying, based on at least (i) the other data corresponding to the user attempting to perform the devolved sequence of handwriting motions and (ii) the respective target input of the one or more target inputs (FIGS. 2 – 4; paragraphs [0051], [0053], [0067]; in step 204, handwritten input 114 is parsed to determine a sequence of

motions and an intended word [target input]. For example, handwritten input parser 402 identifies the sequence of segment hint 310 as corresponding to the target input of the word "dinosaur" based on the length thereof):

a refined devolved sequence of handwriting motions for inputting the respective target input (FIGS. 2 – 4; paragraphs [0051], [0054], [0055], [0067]; in step 206, hint segment 312 [refined devolved sequence] is identified as input by a user via handwriting motions. In this example, hint segment 304 [refined devolved sequence] corresponds to the target input of the word "dinosaur" based on the length thereof),

wherein the refined devolved sequence of handwriting motions is a different sequence as compared to the devolved sequence of handwriting motions identified based on the sequence of handwriting motions (FIGS. 2 – 4; paragraphs [0051], [0054], [0055], [0067]; handwritten segment 304 [devolved sequence] has fewer characters and handwriting motions by requiring only "di~~" as compared to the full sequence of handwriting motions to spell out "dinosaur"); and

causing presentation, via the computing system, of a representation of the refined devolved sequence of handwriting motions (FIGS. 1, 3; paragraphs [0028], [0037], [0051], [0054]; a user's handwritten input 108 is displayed, including hint segment 312 [refined devolved sequence]).

Mannby fails to explicitly disclose: the refined devolved sequence of handwriting motions to suggest to the user.

However, Missig teaches: the refined devolved sequence of handwriting motions to suggest to the user (FIG. 17L, 17M; paragraphs [0673], [0674]; a user may take a

shortcut to completing a word by writing part of the word [FIG. 17L] and then underlining the displayed suggestion [FIG. 17M]).

It would have been obvious to a person of ordinary skill in the art before the effective filing date of Applicant's claimed invention to combine the know teachings of Mannby and Missig to yield predictable results for at least the reasons set forth above with regard to claim 1.

Neither Mannby nor Missig explicitly disclose: the other data is obtained by one or more sensors of a wearable electronic device of a computing system while a user is wearing the wearable electronic device of the computing system.

However, Huang teaches: the other data is obtained by one or more sensors of a wearable electronic device of a computing system while a user is wearing the wearable electronic device of the computing system (FIG. 1; paragraphs [0021], [0035], [0065]; a user applies in-air-handwriting that is detected and determined by either a wearable inertial sensor [wearable electronic device with a sensor] or a 3D depth camera [sensor] of a VR-headset [wearable device]).

It would have been obvious to a person of ordinary skill in the art before the effective filing date of Applicant's claimed invention to combine the know teachings of Mannby, Missig, and Huang to yield predictable results for at least the reasons set forth above with regard to claim 1.

Regarding claims 4, 13, and 19, Mannby fails to explicitly disclose: further comprising instructions for: identifying another devolved sequence of handwriting motions to suggest to the user for inputting a different respective target input of the one or more target inputs, wherein: the devolved sequence of handwriting motions and the

other devolved sequence of handwriting motions individually, and collectively, include fewer handwriting motions as compared to the sequence of handwriting motions.

However, Missig teaches: further comprising instructions for: identifying another devolved sequence of handwriting motions to suggest to the user for inputting a different respective target input of the one or more target inputs (FIGS. 17H, 17J; paragraphs [0671] – [0674]; autocomplete suggestion 106 is generated based on user provides handwritten input 1704. Autocomplete suggestion 106 changes as handwritten input 1704 changes. For example, in FIG. 17H, a "devolved sequence" of "br" suggests a target input of "brief". Additionally, in FIG. 17J, "another devolved sequence" of "bro" suggests a different target input of "brothers"),

wherein: the devolved sequence of handwriting motions and the other devolved sequence of handwriting motions individually, and collectively, include fewer handwriting motions as compared to the sequence of handwriting motions (FIGS. 17H, 17K, 17M; paragraphs [0671] – [0674]; a user may take a shortcut to completing a word by writing part of the word [FIG. 17L] and then underlining the displayed suggestion [FIG. 17M]. This results in requiring fewer handwriting motions for using the devolved sequence and other devolved sequence as compared to fully writing the suggested words).

It would have been obvious to a person of ordinary skill in the art before the effective filing date of Applicant's claimed invention to combine the know teachings of Mannby and Missig to yield predictable results for at least the reasons set forth above with regard to claim 1.

Regarding claims 6 and 15, Mannby fails to explicitly disclose: further comprising instructions for: based on the data corresponding to the sequence of

handwriting motions from the one or more sensors of the wearable electronic device: identifying a plurality of devolved sequences of handwriting motions to suggest to the user for inputting the respective target input, including the devolved sequence of handwriting motions; and causing presentation, via the computing system, of a plurality of representations, each respective representation corresponding to one of the plurality of devolved sequences of handwriting motions.

However, Missig teaches: further comprising instructions for: based on the data corresponding to the sequence of handwriting motions from the one or more sensors of the wearable electronic device:

identifying a plurality of devolved sequences of handwriting motions to suggest to the user for inputting the respective target input, including the devolved sequence of handwriting motions (FIGS. 17H, 17J; paragraphs [0671] – [0674]; autocomplete suggestion 106 is generated based on user provides handwritten input 1704. Autocomplete suggestion 106 changes as handwritten input 1704 changes. For example, in FIG. 17H, a “devolved sequence” of “br” suggests a target input of “brief”. Additionally, in FIG. 17J, “devolved sequence” of “bro” suggests a different target input of “brothers”); and

causing presentation, via the computing system, of a plurality of representations, each respective representation corresponding to one of the plurality of devolved sequences of handwriting motions (FIGS. 17H, 17J; paragraphs [0671] – [0674]; as set forth above, a “devolved sequence” of “br” results in displaying a presentation of the suggested target input “brief” while a “devolved sequence” of “bro” results in displaying a presentation of the suggested target input “brothers”).

It would have been obvious to a person of ordinary skill in the art before the effective filing date of Applicant's claimed invention to combine the know teachings of Mannby and Missig to yield predictable results for at least the reasons set forth above with regard to claim 1.

Regarding claim 9, Mannby teaches: further comprising instructions for: causing storage, in a vector space (FIG. 4; paragraphs [0066], [0073], [0076]; word probability generator 404, phrase probability generator 406, and word-phrase library 410 together constitute a "vector space"), of a plurality of vector representations for respective target inputs (FIGS. 3, 4; paragraphs [0038], [0069]; word/phrase library 410 stores information regarding words that satisfy a selected word mapping rule, such as a particular two letter combination [vector representation]), wherein respective vector representations of the plurality of vector representations include data profiles for sequences of handwriting movements associated with the respective target inputs (FIGS. 3, 4; paragraph [0069]; word/phrase library 410 stores a set of common words [data profiles] that satisfy the word mapping rule with regard to a particular two letter combination [vector representation]. These common words [data profiles] correspond to the target word. For example, in FIG. 3, the handwriting segment 304 of "di" is associated with a set of common words [data profiles] of which the target word "dinosaur" is one);

responsive to obtaining the data corresponding to the sequence of handwriting motions:

causing generation of a new vector representation of the sequence of handwriting motions (FIG. 4; paragraph [0068]; handwritten input parser 402 parses

handwritten input 114 to convert a user's handwritten input 114 to a two letter sequence of parsed text 414 [new vector representation]),

wherein: the vector representation of the data corresponding to the sequence of handwriting motions is embedded into the vector space (FIG. 4; paragraph [0068]; parsed text 414 [new vector representation] is input to word probability generator 404 and is thus embedded into the "vector space" set forth above); and

based on a relationship between the new vector representation and the respective vector representations of the plurality of vector representations, a corresponding vector representation is caused to be identified (FIG. 4; paragraph [0069]; word probability generator 404 uses parsed text 414 [new vector representation] to search the "plurality of vector representations" in the word/phrase library 410 to find a matching with a two letter combination [corresponding vector representation]).

5. **Claims 3, 7, 12, and 18** are rejected under 35 U.S.C. 103 as being unpatentable over Mannby in view of Huang, as applied to claim 1 above, in further view of Patel et al. (U.S. Pub. 2024/0086761).

Regarding claims 3, 12, and 18, Mannby teaches: wherein: the devolved sequence of handwriting motions is selected from a predefined set of devolved sequences corresponding to particular target inputs (FIG. 3; paragraphs [0038], [0046], [0050]; a user selected word mapping rule dictates which characters of words in a phrase ought to be input to as a reduced text handwritten segment. For example, handwriting segment 304 [devolved sequence] includes an initial letter plus a first vowel of the target word. Accordingly, the user's particular handwriting segment 304

[devolved sequence] is selected from a predefined set of "devolved sequences" based on the selected word mapping rule).

Neither Mannby nor Huang explicitly disclose: the refined devolved sequence is identified via a self-supervised model that is co-adapted based on sequences of handwriting motions performed by the user.

However, Mannby discloses using language models, neural network models, and/or machine learning models to properly and accurately detect the components of a user's handwritten input 114 (paragraphs [0057], [0085]).

Additionally, it was well-known and conventional in the art before the effective filing date of Applicant's claimed invention for machine learning models to be adaptive to specific users, tasks, or settings.

For evidence of this well-known and conventional teachings, please see paragraph [0086] of Patel.

It would have been obvious to a person of ordinary skill in the art before the effective filing date of Applicant's claimed invention to combine the know teachings of Mannby and Messing, as evidenced by well-known and conventional teachings in the art, to yield predictable results. Specifically, it would have been obvious to implement the models of Mannby that recognize the user's handwritten input as being adaptive to specific users, tasks, or settings, as was well-known and conventional in the art. Such a modification of Mannby is obvious because no two people's handwriting is identical and the variations in letter and word shape and formation would logically indicate that the models of Mannby could be trained or adapted to account for the particular handwriting styles of different users.

Regarding claim 7, neither Mannby nor Huang explicitly disclose: further comprising instructions for: based on the data corresponding to the sequence of handwriting motions, applying a co-adaptation to an input detection model used to identify the devolved sequence of handwriting motions, wherein the co-adaptation is based on user-specific aspects of performance of one or more respective handwriting motions of the sequence of handwriting motions; and using the co-adaptation to the input detection model to detect a different sequence of handwriting motions corresponding to one or more different target inputs.

However, Mannby discloses using language models, neural network models, and/or machine learning models to properly and accurately detect the components of a user's handwritten input 114 (paragraphs [0057], [0085]).

Additionally, it was well-known and conventional in the art before the effective filing date of Applicant's claimed invention for machine learning models to be adaptive to specific users, tasks, or settings.

For evidence of this well-known and conventional teachings, please see paragraph [0086] of Patel.

It would have been obvious to a person of ordinary skill in the art before the effective filing date of Applicant's claimed invention to combine the know teachings of Mannby and Messing, as evidenced by well-known and conventional teachings in the art, to yield predictable results for at least the reasons set forth above with regard to claims 3, 12, and 18.

Allowable Subject Matter

6. **Claims 5, 8, 14, and 20** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN A LUBIT whose telephone number is (571)270-3389. The examiner can normally be reached M - F, ~6am - 3pm.

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, Temesghen Ghebretinsae can be reached at 571-272-3017. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of published or unpublished applications may be obtained from Patent Center. Unpublished application information in Patent Center is available to registered users. To file and manage patent submissions in Patent Center, visit: https://patentcenter.uspto.gov. Visit https://www.uspto.gov/patents/apply/patent-center for more information about Patent Center and https://www.uspto.gov/patents/docx for information about filing in DOCX format. For

additional questions, contact the Electronic Business Center (EBC) at 866-217-9197

(toll-free). If you would like assistance from a USPTO Customer Service

Representative, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/RYAN A LUBIT/
Primary Examiner, Art Unit 2626