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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/269,142	09/19/2016	David Wilson	Q0052.70018US02	6662

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EXAMINER	
WEIDNER, ADAM M	

ART UNIT	PAPER NUMBER
1649	

NOTIFICATION DATE	DELIVERY MODE
12/31/2018	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):

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Office Action Summary	Application No. 15/269,142	Applicant(s) Wilson et al.	
	Examiner ADAM M WEIDNER	Art Unit 1649	AIA Status No

-- 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 14 November 2018.

☐ 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) 12-13,21-24,92-95,97-103 and 105-120 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) 12-13,21-24,92-95,97-103 and 105-120 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 _____ 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: _____.

The present application is being examined under the pre-AIA first to invent provisions.

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.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/14/18 has been entered.

Claims 12-13, 21-24, 92-95, 97-103, and 105-120 are pending and under examination.

Notice

Nowhere in the Remarks filed 11/14/18 does Applicant provide any substantive argument against the double patenting rejection, instead asking that the rejection be deferred until the Application is otherwise allowable. Note that nonstatutory double patenting rejections, including provisional ODP rejections, are not held in abeyance (MPEP §804(I)(B)(1)). Resolution of this rejection is necessary and future correspondence must provide a complete response to the double patenting rejections.

Withdrawn Rejections

The rejection under §103 is withdrawn as all of the independent claims require measuring tau within 12 hours, which was non-obvious as previously discussed.

The rejection under §101 over claim 12 and dependent claims thereof is withdrawn. This is specifically because of Applicant's argument on page 14 of the Remarks filed 11/14/18, noting that the decision in Berkheimer clearly requires the Office to first present evidence of the routine nature of the

assay. The use of a highly sensitive assay, including to specifically measure tau and to measure tau in blood/serum, has already been made of record. Art has also been made of record noting that calculating the area under a curve (AOC) was also well known. However, no art of record combines such an assay with the AOC manipulations of the claim. The specification makes no statement that this combination of elements was routine or conventional, no Court decision explicitly discusses this technology coupled to the data manipulations required, no publications indicate that the combination of elements was prevalent (though the individual elements were), and the Examiner cannot fairly take official notice of the conventional nature of this combination. Further, claims must be examined for eligibility as an ordered set of steps and should consider the purpose of the judicial exception, which is to mitigate the risk that it will 'tie-up' the excepted subject matter and pre-empt others from using [the judicial exception]" (federal register, p.74622, C1).

Taking the claimed elements as instantly amended and weighing all the factors and evidence of record, the combination of using an assay which requires a limit of detection less than about 0.2 pg/ml, requiring steps i-iv, which are included in the single molecule digital ELISA, and requiring that all the gathered data including the measurements pre-12 hours be included in an area under a curve analysis is deemed sufficient to render the claims patent eligible. This rationale also applies to claim 111 and dependent claims thereof. While the treatment step is no more than generic instructions to "treat it", i.e., use any conceivable therapeutic, the claim still contains the combination of elements discussed above. The method of claim 114 is a method of detection and is eligible for the same reasons.

Current Rejections

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 105-110 are rejected under 35 U.S.C. § 101 because the claims as a whole are not directed to patent eligible subject matter. Based upon an analysis with respect to the claim as a whole,

these claims do not recite something significantly more than a judicial exception. The rationale for this determination is explained below:

Guidance with respect to patent eligibility under 35 U.S.C. § 101 has been provided, effective 16 December 2014 and published in the Federal Register V 79 No 241 (please visit http://www.uspto.gov/patents/law/exam/interim_guidance_subject_matter_eligibility.jsp for the published guidance). This guidance has been provided in light of recent court decisions such as *Association for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. __, 133 S. Ct. 2107, 2116, 106, USPQ2d 1972 (2013), *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. __, 132 S. Ct. 1289, 101 USPQ2d 1961 (2012), and *Alice Corporation PTY. LTD v CLS Bank International*.

The first step under this guidance is determining if the claim is directed to one of the four statutory categories (process, machine, manufacture, or composition of matter). In this case, the claims are methods (a process). The second step is determining if the claims recite or involve judicial exception(s), such as laws of nature, natural phenomena, natural products, or an abstract idea. In this case, the claims are drawn to judicial exceptions: "determining a prognosis…based on the measurement of tau".

Thus, it must be determined if the claim as a whole recites something significantly more than the judicial exceptions.

Where a claim describes a judicial exception, such a claim "requires closer scrutiny for eligibility because of the risk that it will 'tie-up' the excepted subject matter and pre-empt others from using [the judicial exception]" (federal register, p.74622, C1). While all inventions to some degree involve natural laws, products, and other judicial exceptions, the new guidance regarding patent eligibility makes clear that a practical application of these exceptions is necessary, offering "significantly more" than the exception itself. Limitations that were found not to be enough to qualify as "significantly more" include:

- Mere instructions to implement an abstract idea on a computer
- Adding generic instructions that the judicial exception should be used ("apply it")
- Simply appending well-understood, routine and conventional activities previously known to the industry, specified at a high level of generality
- Adding insignificant extrasolution activity to the exception ("mere data gathering")

- Generally linking the use of the exception to a particular technological environment or field of use

Independent claim 105 introduces the judicial exception of calling out the natural correlation between tau levels in blood observed within 12 hours of a brain injury and its relevance to prognosis. Such limitations follow the pattern of Julitis claim 2, which is ineligible. This is also similar to the fact pattern of the claims at issue in *Mayo*, where a drug was administered, the natural metabolites were measured, and a conclusion was made about treatment efficacy; this was deemed ineligible by the Supreme Court.

In Mayo, a level of the metabolite "less than about 230 pmol per $8x10^8$ red blood cells [indicated] a need to increase the amount of said drug". Such claim limitations were found to be a description of the correlation itself and not "significantly more". It was also found that steps prior to this constituted routine data gathering, instructing the artisan to engage in conventional, well-known practices and then "warning" the user of the implications of the data; this was not eligible in Mayo.

"Determining a prognosis" is the same as "warning" the user of the implications of the tau levels in blood shortly after brain injury, i.e., it is correlated to the prognosis without more ("apply it").

As above, "mere data gathering" is both necessary to utilize the judicial exception as well as insignificant extrasolution activity. Limitations such as obtaining the samples within 12/48 hours or that the relevant tau concentrations require a sensitivity of less than about 0.2 pg/mL are merely a description of the natural correlation itself, informing the artisan of the ranges in which the correlation is observable/relevant. In another light, it is generic instructions to use assays of high sensitivity; using sensitive assays to detect proteins represents no more than conventional wisdom in the art and such descriptions do not offer significantly more. As discussed previously, such techniques were known and routinely used in this manner. See for example Rissin ("single molecule enzyme linked immunosorbent assay detects serum proteins as subfemtomolar concentrations"; previously cited). Here, Rissin describes antibodies attached to beads, which then bind a target antigen, followed by binding the antigen with a biotin-labeled antibody, where only some of the beads bind the biotin-antibody, dividing these beads into wells, and imaging them to determine the number of locations containing the biotin-antibody by exposure to a streptavidin-ß-gal (streptavidin-enzyme) conjugate in order to determine the concentration of the

antigen (e.g., figure 1). While Rissin does not explicitly use the technique to measure tau, Rissin teaches the technology is broadly applicable to detecting single protein molecules in blood for sensitive diagnostic assays (abstract). The instant claims do not require any particular, novel antibody or other unique reagent. Thus, once informed of the relevant correlation, the "digital ELISA" technique would have been a well-known choice using conventional, commercially available monoclonal antibodies in order to measure tau concentration at the required sensitivity (such as by single molecule detection). Thus, such an assay does not provide significantly more than instructions to a relevant audience to use known techniques to observe a natural phenomenon and to "apply it". This is not patent eligible.

See also (previously cited):

- Harma 2000 *Clinical Chemistry*
- Gorris 2010 "analytical chemistry on the femtoliter scale"
- Ekins 2010 "*Clinical Chemistry*
- Duffy 2011 "immunoassays with broad dynamic ranges based on combining digital and digitally enhanced analog detection of enzyme labels"
- *Chen 2009 *AIChE*
- Xie 2009 *JACS*
- Burton 2010 *Lab Chip*
- Agrawal 2007 *J Agric Food Chem1*
- Quaternix 2010 *IQT Technology Focus Day*
- 2011 "Quanterix discovers link between heart attack-induced hypoxia suspected Alzheimer's disease pathway"
- US 20110245097
- US 20100075407
- US 20110212537
- US 20110212848

This list is not exhaustive, but illustrates that at the time of or before the instant invention, an assay meeting the criteria of the instantly claimed assay was already publicly known and had been disclosed as

measuring numerous different proteins from cancer antigens to Aß to tau. For example, the Quaternix document above ("single molecule arrays for digital detection in complex samples" *IQT technology focus day* presented 25 March 2010, more than one year before the instant priority date of 12 April 2011) describes using antibodies bound to beads to capture a "target protein", followed by a biotin-labeled detection antibody, performed in a plurality of wells (p.13), suggests its use relative to neurological diseases (p.19), and explicitly states that the method was used to measure tau in blood of AD patients and age-matched controls (p.22). The document also teaches measuring tau in relation to TBI (p.29).

Thus, taken as a whole, instant claim 105 does not provide significantly more than the recitation of the judicial exception and is thus not patent eligible.

Claims 106-110 provide further steps of the detection method, which were known steps as discussed in previous actions.

Therefore, claims 105-110 are not patent eligible.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112(a):

> (a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.

The following is a quotation of the first paragraph of pre-AIA 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 111-113 are rejected under 35 U.S.C. 112(a) or 35 U.S.C. 112 (pre-AIA), first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor or a joint inventor, or for pre-AIA the inventor(s), at the time the application was filed, had possession of the claimed invention.

See MPEP §2163(I)(A) which states:

> "The claimed invention as a whole may not be adequately described where an invention is described solely in terms of a method of its making coupled with its function and there is no described or art recognized correlation or relationship between the structure of the invention and its function. A biomolecule sequence described only by a functional characteristic, without any known or disclosed correlation between that function and the structure of the sequence, normally is not a sufficient identifying characteristic for written description purposes, even when accompanied by a method of obtaining the claimed sequence."

In this case, the claims are a method of treatment where the treatment is defined solely by function to encompass all possible "therapeutic agents". Written description may be met by providing sufficient distinguishing identifying characteristics of the genus. The factors to be considered include disclosure of complete or partial structure, physical and/or chemical properties, functional characteristics, structure/function correlation, methods of making the claimed product, or any combination thereof. In this case, therapeutic agent, neuroprotective drug, anti-oxidant, etc., are all classes described solely by a function/result with no corresponding structure. This is insufficient to meet the written description requirement.

Alternately, species representative of the genus may be disclosed. However, the specification does not appear to provide any individual species of the claimed genera (see p. 16) and thus does not convey to the artisan that Applicant was in possession of species sufficient to warrant a claim to using the breadth of the genus.

Therefore, claims 111-113 do not meet the written description requirement.

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 conflicting claims 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); *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 nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined 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(l)(1) - 706.02(l)(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/patent/patents-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 www.uspto.gov/patents/process/file/efs/guidance/eTD-info-I.jsp.

Claims 12-13, 21-24, 92-95, 97-103, and 105-120 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 11, 24-30, and 100-134 of copending Application No. 14111331 (reference application). Although the claims at issue are not identical, they are not patentably distinct from each other because the reference application is directed to the same methodology:

- detection of a protein in blood to determine prognosis

-the same detection limit e.g., claim 109

- using an area under the curve analysis (e.g., claim 105)

- plurality of samples within 96 hours

The difference is in the reference application being drawn to beta-amyloid rather than tau. However, in turning to the specification of the reference application for support of this limitation, the specification clearly indicates tau is an alternate biomarker (p.12), making such a method an obvious variation of the instant method.

The specification, in support of selecting samples within 96 hours, also discloses those under 12 hours (e.g., specification p.8).

This is a provisional nonstatutory double patenting rejection because the patentably indistinct claims have not in fact been patented.

Response to Arguments

Applicant's arguments filed 11/14/18 have been fully considered but they are not persuasive.

Applicant has not argued the merits of the double patenting rejection and it is maintained for reasons of record.

Regarding the §101 rejection, Applicant argues that using blood represents a non-conventional method and as such the claims should be eligible, noting that there is no evidence that tau could be reliably measured from blood samples (remarks 11/14/18 p. 13). This is not persuasive. The Examiner has set forth multiple documents which constitute prior art that disclose a method for doing so, including at least one document that explicitly teaches measuring tau in blood. Further, selection of the sample (blood) does not need to be routine and/or conventional as this is the judicial exception itself. In other words, as noted, the exception is the relationship between tau levels in blood within 12 hours of a brain injury and the prognosis such levels are indicative of. Thus, that the measurements are made in blood must be set aside when determining "routine and conventional".

Applicant argues the specification characterizes the assay as unconventional (remarks 11/14/18) and thus the Examiner should consider the assay unconventional. Mere statements by Applicant with no corresponding evidence is not persuasive.

Applicant argues that performing mathematical manipulations on data amounts to transformation into a different state or thing and that the "Examiner admits, transformation of gathered data into different state or thing is an important consideration with regard to the patent-eligibility of the claim" (remarks 11/14/18 spanning p. 13-14). It is unclear what statement Applicant is relying on for this admission and the Examiner does not view mathematical manipulation as meeting the transformation test, e.g., it is still the same data useful for the same reasons irrespective of the particular visual representation of that data.

Applicant argues, and the Examiner agrees, that using tau levels in blood within 12 hours of an injury was excluded and deemed non-indicative of future prognosis; such was stated the reasons for withdrawing the §103 rejection. However, Applicant argues that this must also indicate that the method is non-routine and non-conventional. Applicant further argues that the 12 hour limitation is not a description of the natural law. This is not persuasive. Rather, the relationship of tau specifically in this time frame in blood is part of the natural phenomenon being observed over other time frames indicative of prognosis (see previous art rejections). Thus, the judicial exception is informing the artisan that tau levels in blood within 12 hours of the injury is correlated/indicative of prognosis and thus the time frame itself is definitively part of the exception. Moreover, regarding such being excluded or counter-intuitive, this weighs against the obviousness of the claim. However, eligibility is concerned with, once informed of the judicial exception, what would or would not have been routine and conventional. This requirement and level of analysis has been set forth by the Courts. The Court in *Ameritox v Millennium* 88 F.Supp.3d 885 (2015) determined that while the decision in *Mayo* tied the notion of well-understood and conventional steps to "activity already engaged in by the scientific community", the Court when deciding *Myriad v Ambry* couched the question as "techniques that a scientist would have thought" to use. Thus, the relevant question when determining whether or not a technique was routine and conventional is not necessarily that the steps were strictly practiced in the art prior to the invention as in *Mayo*, but whether the techniques are those that would have been thought of by the artisan given the relevant information. This conclusion is supported not only by the *Ameritox* case, but also by the decision in *Ariosa v Sequenom*, where the sample was clearly unconventional (maternal plasma had routinely been disregarded as medical waste) but when provided with information regarding the natural relationship between cffDNA in maternal plasma and a diagnosis, the remaining portion of the claim was drawn to no

more than "known laboratory techniques". This is also supported by the decision in *Myriad v Ambry*, where the probes for *BRCA1* were previously unknown, but represented no more than a standard technique for detection; "any scientist engaged in obtaining the sequence of a gene in a patient sample would rely on these techniques".

In this case, the fact pattern is similar to that in Ariosa. The sample itself (maternal plasma; plasma) was previously disregarded as having any important information (disregarded as medical waste; demonstrated that within 12 hours, tau did not inform a prognosis). However, once informed, the claim uses no more than those laboratory techniques known to provide the necessary data, in this case highly sensitive assays routinely used by the art to detect low levels of a protein when the discovered natural phenomenon was that low levels of tau appearing early after injury in blood was indicative of prognosis.

Regarding the method of treatment, Applicant argues the claims are eligible because of the addition of a treatment step; this is not persuasive as appending a treatment step that includes any and all possible treatments is no more than generic instructions to treat/apply it, which does not confer eligibility. However, these claims are eligible for the reasons discussed above, e.g., the combination of the sensitive assay and the data analysis steps.

Conclusion

No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADAM M WEIDNER whose telephone number is (571)272-3045. The examiner can normally be reached on M-F 9-16.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Stucker can be reached on 571-272-0911. 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.

/Adam Weidner/
Primary Examiner, Art Unit 1649