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| EXAMINER |
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SISSON, BRADLEY L

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1634

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10/28/2016

PAPER

**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.

|                              |                                      |                                        |                                                  |
|------------------------------|--------------------------------------|----------------------------------------|--------------------------------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>15/010,436 | <b>Applicant(s)</b><br>LOUWAGIE, JOOST |                                                  |
|                              | <b>Examiner</b><br>Bradley L. Sisson | <b>Art Unit</b><br>1634                | <b>AIA (First Inventor to File) Status</b><br>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 07/25/2016.  
☐ 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) 82,86,88,92 and 100-105 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) 82,86,88,92 and 100-105 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](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto: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) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                          | 3) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)<br>Paper No(s)/Mail Date <u>07/25/2016</u> | 4) <input type="checkbox"/> Other: ____.                                                |

## **DETAILED ACTION**

### ***Notice of Pre-AIA or AIA Status***

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

### ***Claim Rejections - 35 USC § 112, Fourth Paragraph***

2. The following is a quotation of 35 U.S.C. 112(d):

(d) REFERENCE IN DEPENDENT FORMS.—Subject to subsection (e), a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

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

Subject to the following paragraph [i.e., the fifth paragraph of pre-AIA 35 U.S.C. 112], a claim in dependent form shall contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. A claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers.

3. Claim 86 is rejected under 35 U.S.C. 112(d) or pre-AIA 35 U.S.C. 112, 4th paragraph, as being of improper dependent form for failing to further limit the subject matter of the claim upon which it depends, or for failing to include all the limitations of the claim upon which it depends. Claim 86 depends from canceled claim 83. Applicant may cancel the claim(s), amend the claim(s) to place the claim(s) in proper dependent form, rewrite the claim(s) in independent form, or present a sufficient showing that the dependent claim(s) complies with the statutory requirements.

### ***Claim Rejections - 35 USC § 101, Judicial Exception***

4. 35 U.S.C. 101 reads as follows:

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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.

5. Effective December 16, 2014, subject matter eligibility determinations under 35 U.S.C. § 101 follow the procedure explained in the Federal Register notice titled **2014 Interim Guidance on Patent Subject Matter Eligibility** (79 FR 74618), which is found at:

<http://www.gpo.gov/fdsys/pkg/FR-2014-12-16/pdf/2014-29414.pdf>. These guidelines were updated May 2, 2016, in the Federal Register notice titled **May 2016 Subject Matter Eligibility Update**, (81 FR 27381), which can be found at: <https://www.gpo.gov/fdsys/pkg/FR-2016-05-06/pdf/2016-10724.pdf>.

6. Additionally, attention is directed to *Gottschalk, Comr. Pats. v. Benson, et al.* (US, 1972) 175 USPQ 673, 675:

The Court stated in *MacKay Co. v. Radio Corp.*, 306 U.S. 86, 94, 40 USPQ 199, 202, that “While a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be.” That statement followed the long-standing rule that “An idea of itself is not patentable.” *Rubber-Tip Pencil Co. v. Howard*, 20 Wall. 498, 507. “A principle, in the abstract, is a fundamental truth; an original cause; a motive; and these cannot be patented, as no one can claim in either of them an exclusive right.” *LeRoy v. Tatham*, 14 How. 156, 175. Phenomena of nature, though just discovered, mental processes, abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work. As we stated in *Funk Bros. Seed Co. v. Kalo Co.*, 333 U.S. 127, 130, 76 USPQ 280, 281, “He who discovers a hitherto unknown phenomenon of nature has no claim to a monopoly of it which the law recognizes. If there is to be invention from such a discovery, it must come from the application of the law of nature to a new and useful end.” We dealt there with a “product” claim, while the present case deals only with a “process” claim. But we think the same principle applies. (Emphasis added)

Here the “process” claim is so abstract and sweeping as to cover both known and unknown uses of the BCD to pure-binary conversion. The end use may (1) vary from the operation of a train to verification of drivers’ licenses to researching the law books for

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precedents and (2) be performed through any existing machinery or future-devised machinery or without any apparatus. (Emphasis added)

7. Attention is also directed to the precedential decision in *Ariosa Diagnostics, Inc., et al. v. Sequenom, Inc., et al.* 115 USPQ2d 1152 (Fed. Cir. 2015):

In *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. \_\_\_, 132 S. Ct. 1289 (2012), the Supreme Court set forth a framework for distinguishing patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts. First, we determine whether the claims at issue are directed to a patent-ineligible concept. *Id.* at 1297. If the answer is yes, then we next consider the elements of each claim both individually and “as an ordered combination” to determine whether additional elements “transform the nature of the claim” into a patent-eligible application. *Id.* at 1298.

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*Mayo* made clear that transformation into a patent-eligible application requires “more than simply stat[ing] the law of nature while adding the words ‘apply it.’” *Id.* At 1294. **A claim that recites an abstract idea, law of nature, or natural phenomenon must include “additional features” to ensure “that the [claim] is more than a drafting effort designed to monopolize the [abstract idea, law of nature, or natural phenomenon].”** *Id.* at 1297. **For process claims that encompass natural phenomenon, the process steps are the additional features that must be new and useful.** *See Parker v. Flook*, 437 U.S. 584, 591 (1978) (“The process itself, not merely the mathematical algorithm, must be new and useful.”). (Emphasis added)

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Thus, in this case, appending routine, conventional steps to a natural phenomenon, specified at a high level of generality, is not enough to supply an inventive concept.

\*\*\*

Sequenom and amici encourage us to draw distinctions among natural phenomena based on whether or not they will interfere significantly with innovation in other fields now or in the future. The Supreme Court cases, however, have not distinguished among different laws of nature or natural phenomenon according to whether or not the principles they embody are sufficiently narrow. *See, e.g., Parker v. Flook*, 437 U.S. 584 (1978) (holding narrow mathematical formula unpatentable). In *Parker v. Flook*, the Supreme Court stated the issue in the case as follows: “The question in this case is whether the

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identification of a limited category of useful, though conventional, post-solution applications of such a formula makes respondent's method eligible for patent protection." *Id.* at 585. The answer to that question was "no" because granting exclusive rights to the mathematical formula would be exempting it from any future use.

8. Claims 82, 88, 102 and 105 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more.

9. As noted in *Sequenom*:

First, we determine whether the claims at issue are directed to a patent-ineligible concept. *Id.* at 1297.

As seen in the *Interim Guidelines*, one asks the question

Is the claim to a process, machine, manufacture or composition of matter?

In the present case, the claims are drawn to a composition of matter.

10. Next, one applies the tests set forth in *Mayo*:

Is the claim directed to a law of nature, a natural phenomenon, or an abstract idea?

11. In the present case, the claim(s) is/are directed to a natural phenomenon. As can be seen in claims 102 and 105, the system (claim 102) and the kit (claim 105) are to include "components for performing a polymerase chain reaction." Such an embodiment has been construed as encompassing the presence of *Taq* polymerase, which is recognized as being a product of nature (isolated from *Thermus aquaticus*). In support of this position, attention is directed to US 4,889,818 (Gelfand et al.). As stated in the abstract:

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A purified thermostable enzyme is obtained that has unique characteristics. Preferably **the enzyme is isolated from the *Thermus aquaticus* species** and has a molecular weight of about 86,000-90,000 daltons.

12. Having answered the first test in *Mayo*, one turns to the second test:

Does the claim recite additional elements that amount to significantly more than the judicial exception?

As presently worded, the “system” and “kit” do not require the reagent, e.g., polymerase, to be combined with any other component that does not occur with the polymerase, and which alters the properties of same.

13. It is noted that claim 102 depends from claim 82, and that claim 105 depends from claim 88. Accordingly, claims 82 and 88 must encompass the embodiments of claims 102 and 105, respectively. Accordingly, and in the absence of convincing evidence to the contrary, claims 82, 88, 102 and 105 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a judicial exception (i.e., a law of nature, a natural phenomenon, or an abstract idea) without significantly more.

### ***Claim Rejections - 35 USC § 103***

14. 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.

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15. Claims 82, 86, 88, 92, and 100-105 are is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over US 4,582,811 (Pucci et al.) in view of US 2004/0091881 A1 (Olek et al.), US 7,371,527 B1 (Baylin et al.), US 2002/0187476 A1 (Koroulis et al.).

Standard for Obviousness.

16. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under pre-AIA 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

17. Attention is directed to *In re Jung*, 98 USPQ2d 1174, 1178 (Fed. Cir. 2011) wherein is stated:

There has never been a requirement for an examiner to make an on-the-record claim construction of every term in every rejected claim and to explain every possible difference between the prior art and the claimed invention in order to make out a *prima facie* rejection. This court declines to create such a burdensome and unnecessary requirement. “[Section 132] does not mandate that in order to establish *prima facie* anticipation, the PTO must explicitly preempt every possible response to a section 102 rejection. Section 132 merely ensures that an applicant at least be informed of the broad statutory basis for the rejection of his claims, so that he may determine what the issues are on which he can or should produce evidence.” *Chester*, 906 F.2d at 1578 (internal citation omitted). As discussed above, all that is required of the office to meet its *prima facie* burden of production is to set forth the statutory basis of the rejection and the reference or references relied upon in a sufficiently articulate and informative manner as

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to meet the notice requirement of § 132. As the statute itself instructs, the examiner must “notify the applicant,” “stating the reasons for such rejection,” “together with such information and references as may be useful in judging the propriety of continuing prosecution of his application.” 35 U.S.C. § 132.

18. Attention is directed to the decision in *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385 (U.S. 2007):

When there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill in the art has good reason to pursue the known options within his or her technical grasp. If this leads to the anticipated success, it is likely the product not of innovation but of ordinary skill and common sense.

19. It is further noted that prior art is not limited to the four corners of the documentary prior art being applied. Prior art includes both the specialized understanding of one of ordinary skill in the art, and the common understanding of the layman. It includes “background knowledge possessed by a person having ordinary skill in the art. . . [A] court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR* at 1396.

20. Suggestion, teaching or motivation does not have to be explicit and “may be found in any number of sources, including common knowledge, the prior art as a whole or the nature of the problem itself” *Pfizer, Inc. v. Apotex, Inc.* 480 F.3d 1348, 82 USPQ2d 1321 (Fed. Cir. 2007) citing *Dystar Textilfarben GMBH v. C. H. Patrick Co.*, 464 F.3d 1356 (Fed. Cir. 2006).

Rationale.

21. Pucci et al., column 2, lines 24-28, teach the use of monoclonal antibody to bind human hemoglobin that is present in fecal samples. As stated therein:

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This invention provides a diagnostic aid for use in detecting occult faecal blood consisting of a carrier which binds protein, the surface of which carrier is at least partly coated with **monoclonal antibody which is specific for human hemoglobin.**  
(Emphasis added)

22. Such a showing is deemed to meet a limitation of the two independent claims- claims 82 and 88.

23. Pucci et al., has not been found to teach using bisulfite reagents, “primers that hybridize to methylated NDRG4 DNA after the methylated NDRG4 DNA has been treated with a chemical reagent that selectively modifies non-methylated cytosine in CpG dinucleotide motifs and converts the non-methylated cytosine to uracil to produce modified NDRG4 DNA, wherein the primers may be utilized to amplify the modified NDRG4 DNA to produce a detectable amplicon”, nor probes capable of binding to said resultant amplicons.

24. Olek et al., paragraph [0085], teaches bisulfite treatment of DNA sequences and the subsequent amplification of same wherein non-methylated cytosine bases had been changed to uracil. As stated therein:

[0085] In the first step, a genomic sequence is treated using **bisulfite** (hydrogen sulfite, disulfite) in such a manner that all cytosines which are not methylated at the 5-position of the base are modified in such a manner that a different base is substituted with regard to the base pairing behaviour, while the cytosines methylated at the 5-position remain unchanged. If bisulfite solution in a concentration range between 0.1 and 6M is used for the reaction, then an addition takes place at the non-methylated cytosine bases. Moreover, a denaturing reagent or solvent as well as a radical interceptor is present. A subsequent alkaline hydrolysis then gives rise to the conversion of non-methylated cytosine nucleobases to uracil. Chemically converted DNA is then used for the detection of methylated cytosines. In the second method step, the treated DNA sample is diluted with water or an aqueous solution. Preferably, the DNA is subsequently desulfonated (10-30 min, 90-100.degree. C.) at an alkaline pH value. In the third step of the method, the DNA sample is amplified in a polymerase chain reaction, preferably using a **heat-resistant DNA polymerase.** (Emphasis added)

25. Baylin et al., claim a method of detecting the amount of methylation in the promoter region of genes. As seen in claims 2 and 6:

2. The method of claim 1, wherein the chemical reagent comprises bisulfite ions, wherein unmethylated cytosine residues in the 5' promoter region of the nucleic acid are converted to bisulfite modified cytosine residues, said method further comprising exposing the bisulfite ion treated nucleic acid to alkaline conditions, whereby bisulfite modified cytosine residues are converted to uracil residues, and detecting an amount or distribution of uracil residues in the 5' promoter region of the bisulfite ion treated nucleic acid in the sample, wherein a decrease in the amount or distribution of uracil residues in the 5' promoter region of nucleic acid in the sample, as compared to the amount or distribution of uracil residues in a corresponding bisulfite ion treated unmethylated nucleic acid following exposure to alkaline conditions, is indicative of methylation of cytosine residues in CpG dinucleotides in the 5' promoter region of the nucleic acid, thereby detecting methylation silencing of the nucleic acid in the sample.

6. The method of claim 2, wherein detecting the amount or distribution of uracil residues comprises contacting the 5' promoter region of the nucleic acid with an amplification primer pair comprising a forward primer and a reverse primer under conditions suitable for amplification, wherein at least one primer of the primer pair comprises an oligonucleotide that selectively hybridizes to a nucleotide sequence of the 5' promoter region containing uracil residues, wherein generation of an amplification product is indicative of methylation of cytosine residues in CpG dinucleotides in the 5' promoter region of the nucleic acid, thereby detecting methylation silencing of the nucleic acid in the sample.

26. As seen above, not only was it well known in the art to use bisulfite treatment so to convert unmethylated cytosines to uracil, but the prior art teaches specifically of having primers that are not only specific to the promoter region, but one used “at least one primer of the primer pair comprises an oligonucleotide that selectively hybridizes to a nucleotide sequence of the 5' promoter region containing uracil residues” as well as the polymerase that can enable one to perform an amplification reaction.

27. Neither Pucci et al., Olek et al., nor Baylin et al., have been found to teach primers that would anneal to the promoter of NDRG4, or to any resulting amplicon.

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28. Koroulis et al., at paragraph [0006], teach of arrays of oligonucleotides that comprise all possible oligonucleotides of a given length n. As stated therein:

[0006] An oligonucleotide array is comprised of a number of individual oligonucleotide species tethered to the surface of a solid support in a regular pattern, each species in a different area, so that the location of each oligonucleotide is known. An array can contain a chosen collection of oligonucleotides, e.g., probes specific for all known clinically important pathogens or specific for all known clinically important pathogens or specific for all known sequence markers of genetic diseases. Such an array can satisfy the needs of a diagnostic laboratory. Alternatively, an array can contain all possible oligonucleotides of a given length n. Hybridization of a nucleic acid with such a comprehensive array results in a list of all its constituent n-mers, which can be used for unambiguous gene identification (e.g., in forensic studies), for determination of unknown gene variants and mutations (including the sequencing of related genomes once the sequence of one of them is known), for overlapping clones, and for checking sequences determined by conventional methods. (Emphasis added)

29. It is noted that the oligonucleotides of the array can be used as primer and/or probe. As a result of all possible sequences are present, the array must comprise those sequences “that selectively hybridizes to a nucleotide sequence of the 5' promoter region containing uracil residues.” It is further noted that the claimed system and kit do not limit the number of primers that can be present. Rather, applicant’s use of the term “comprising” in both of claims 82 and 88 fairly opens the claims to where they can comprise even significant amounts of unrecited components.

30. In view of the above showing, it would have been obvious to one of ordinary skill in the art at the time of filing to have combined monoclonal antibodies specific for human hemoglobin in fecal samples, but to also include those reagents that would enable one to assess the methylation of promoters of genes of interest (bisulfite), whereby said promoter sequences could be subjected to selective amplification whereby one uses primers “that selectively hybridizes to a nucleotide sequence of the 5' promoter region containing uracil residues.” As seen above, the

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reagents were well known and available. To include such a variety of reagents, be it in a “system” or a “kit,” would have enabled the ordinary artisan to practice a wide variety of known assays.

31. In view of the above showing and in the absence of convincing evidence to the contrary, claims 82, 86, 88, 92, and 100-105 are is/are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over US 4,582,811 (Pucci et al.) in view of US 2004/0091881 A1 (Olek et al.), US 7,371,527 B1 (Baylin et al.), US 2002/0187476 A1 (Koroulis et al.) and applicant’s admissions.

### *Conclusion*

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

33. EP 0032782 A2 (Partanen et al.) at page 4, bridging to page 5, teaches the specific binding of human hemoglobin in fecal samples by use of antibodies that bind specifically to same. As stated therein:

The method in accordance with the present invention is mainly characterized in that human hemoglobin is isolated from the sample by means of an immunological reaction, i.e. a reaction between an antibody and an antigen, by using an antibody specific for human hemoglobin and attached to the solid phase, and that the human hemoglobin bound to the antibody is established hereupon. This immunological method based on antigen detection is sufficiently sensitive to detect even very little quantities of hemoglobin or of its decomposition products.

By means of the method in accordance with the present invention, any blood occult in human feces is detected immunologically. The method is based on the use of a specific antibody. By its means, only hemoglobin derived from a human is detected.

34. Objections and/or rejections which appeared in the prior Office action and which have not been repeated hereinabove have been withdrawn.

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35. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

36. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

37. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley L. Sisson whose telephone number is (571)272-0751.

The examiner can normally be reached on 6:30 a.m. to 5 p.m., Monday through Thursday.

38. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave T. Nguyen can be reached on (571) 272-0731. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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39. 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.

Bradley L. Sisson  
Primary Examiner  
Art Unit 1634

/Bradley L. Sisson/

Primary Examiner, Art Unit 1634