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MINNEAPOLIS, MN 55440-1022				
			ART UNIT	PAPER NUMBER
			3646	
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			08/11/2020	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):

PATDOCTC@fr.com

Office Action Summary

Application No.

13/665,928

Applicant(s)

Tahan, A. Christian

Examiner

SHARON M DAVIS

Art Unit

3646

AIA (FITF) 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 07/01/20.

☐ 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) 36-37,39,43-45,66-73 and 75-76 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5a) Of the above claim(s) ____ is/are withdrawn from consideration.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) 36-37,39,43-45,66-73 and 75-76 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)

3) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date ____.

2) ☐ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)

4) ☐ Other: ____.

Paper No(s)/Mail Date ____.

Notice of Pre-AIA or AIA Status

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

DETAILED ACTION

Claim Status

2. Claims 36-37, 39, 43-45, 66-73, and 75-76 are pending and examined herein.

Response to Arguments/Affidavit

3. Applicant's arguments dated 07/01/20 have been fully considered but are not persuasive. The Examiner maintains the position that the present invention is incapable of causing any nuclear reaction.

4. The affidavit under 37 CFR 1.132 filed 07/01/20 is insufficient to overcome the rejection of pending claims 36-37, 39, 43-45, 66-73, and 75-76 based upon 35 U.S.C. 101 and 35 U.S.C. 112a as set forth in the last Office action because: the affidavit does not provide additional objective evidence that the present invention is capable of inducing a nuclear reaction. Instead, the affidavit merely clarifies evidence already considered by the examiner and found to be insufficient to demonstrate to a skilled artisan that the present invention is operable.

5. To properly reject a claimed invention under 35 U.S.C. 101, the Office must (A) make a prima facie showing that the claimed invention lacks utility, and (B) provide a sufficient evidentiary basis for factual assumptions relied upon in establishing the prima facie showing. In re Gaubert, 524 F.2d 1222, 1224, 187 USPQ 664, 666 (CCPA 1975) "Accordingly, the PTO must do more than merely question operability - it must set forth factual reasons which would lead one skilled in the art to question the objective truth of the statement of operability." If a rejection under 35 U.S.C. 101 has been properly imposed, along with a corresponding rejection under 35 U.S.C. 112(a) or pre-AIA 35 U.S.C. 112, first

paragraph, the burden shifts to the applicant to rebut the prima facie showing. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992) ("The examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability. If that burden is met, the burden of coming forward with evidence or argument shifts to the applicant. . . After evidence or argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument."). An applicant can do this using any combination of the following: amendments to the claims, arguments or reasoning, or new evidence submitted in an affidavit or declaration under 37 CFR 1.132, or in a printed publication. There is no predetermined amount or character of evidence that must be provided by an applicant to support an asserted utility, therapeutic or otherwise. Rather, the character and amount of evidence needed to support an asserted utility will vary depending on what is claimed (Ex parte Ferguson, 117 USPQ 229 (Bd. App. 1957)), and whether the asserted utility appears to contravene established scientific principles and beliefs. In re Gazave, 379 F.2d 973, 978, 154 USPQ 92, 96 (CCPA 1967); In re Chilowsky, 229 F.2d 457, 462, 108 USPQ 321, 325 (CCPA 1956). MPEP 2107.02.

6. The examiner's basis for finding the present invention to be inoperable and lacking utility is that a literature review revealed no indication of any known nuclear reactions that can be induced in hydrogen via a magnetic field and radio waves. That is, the present invention purportedly operates by a mechanism that is not recognized as valid by the scientific community.

7. Furthermore, the inventor's explanation of the purported mechanism of operation is at best implausible and at worst preposterous (see paragraphs 13-14) of the previous office action.

8. Finally, the evidence proffered in support of operability is thin. The affidavit describes a single experiment, and we have only the inventor's own explanation of the experimental details. Furthermore, the inventor himself has provided contradictory explanations of the experimentation. In one explanation of the experiment, "stable" molybdenum was used, and in another explanation of the experiment,

radioactive molybdenum-99 was used. The examiner notes that no published scientific article exists reporting the results of this experiment, and therefore there exists no record to indicate that rigorous experimentation was conducted to confirm the results of the experiment and to rule out other explanations for the results. The results of this single experiment have not undergone peer review, so there is no indication that a skilled artisan would accept the reported results at face value. For example, the purported evidence of Tc-99 production is provided by a scintillation counter that is incapable of providing the identity of the source of radiation detected. The affidavit argues that the scintillation detector detected radiation of an energy that is consistent with the decay of Tc-99. However, there is no evidence that the inventor positively identifies the radiation detected as emanating from Tc-99. For example, no further experimentation was conducted to confirm this result, such as by another analysis method. It would have been a simple matter to analyze the solution collected from the experiment via mass spectrometry to confirm the existence of the Tc-99 isotope. In fact, mass spectrometry was conducted "to test the effectiveness of a non-neutron reflective holding vessel in producing isotopes" (see Fig. 33 and the accompanying description in the specification filed 11/12/19). This would prompt a skilled artisan to ask "Why wasn't MS used to confirm Tc-99 production?" Furthermore, the experiment described in the affidavit made no attempt to rule out other possible sources of ionizing radiation in the energy range detected. It is also questionable that the experiments described in the specification dated 11/12/19 appear to be directed to transmutation of tungsten, while the experiment described in the affidavit is directed to the transmutation of molybdenum. This is yet another inconsistency that would lead one of ordinary skill in the art to question the operability of the present invention.

9. Accordingly, evidence of record does not demonstrate any sort of rigorous experimentation that would lead a skilled artisan to conclude that Applicant has discovered a new nuclear reaction that could

produce Tc-99. Lindstrom addressed the issue of believable science in a 2017 article examining published claims of new nuclear reactions:

“Anomalous observations may indeed point to new phenomena, but simple explanations are usually most probable.” The first principle is that you must not fool yourself- and you are the easiest person to fool” (R. P. Feynman, 1974 Caltech commencement address).

Science is a communal activity whose practitioners build upon each others' work. To exploit the literature we must understand its limitations, which is possible only if the authors of publications understand the uncertainties in their measurements and conclusions, and make us, the readers, understand them in the same way.”

10. Moreover, the purported mechanism of the invention is so unique as to conflict with accepted scientific theory. In the words of notable physicist Carl Sagan, who was a staunch advocate of skepticism in scientific endeavors and the power of the scientific method, “**Extraordinary claims require extraordinary evidence.**” This “Sagan Standard” has been repeated in patent law: There is no predetermined amount or character of evidence that must be provided by an applicant to support an asserted utility, therapeutic or otherwise. Rather, the character and amount of evidence needed to support an asserted utility will vary depending on what is claimed (*Ex parte Ferguson*, 117 USPQ 229 (Bd. App. 1957)) and whether the asserted utility appears to contravene established scientific principles and beliefs. *In re Gazave*, 379 F.2d 973, 978, 154 USPQ 92, 96 (CCPA 1967); *In re Chilowsky*, 229 F.2d 457, 462, 108 USPQ 321, 325 (CCPA 1956). In short, the purported operation of the present invention is so unprecedented, so surprising, so remarkable as to demand exceptional evidence in support of it. Applicant has not demonstrated that such proof exists.

11. Furthermore, the specification itself recognizes the importance of Tc-99 production. It would seem therefore, that the discovery of such a new and unique methodology for producing this isotope would warrant publication in a scientific journal. A skilled artisan would question why the inventor has

not done so. A skilled artisan would recognize a publication in a reputable peer-reviewed journal as evidence that the present invention has undergone scrutiny by the scientific community. The lack of such an article, given this high level of interest in the production of Tc-99, is therefore a factor to be weighed against operability.

12. Accordingly, there is insufficient detail in the present file to indicate that a skilled artisan believe that a new nuclear reaction was possible with the present invention.

Background

13. The presently presented claims are directed to “a system for generating an isotope.” The asserted utility of the present invention is “a novel system for generating particles that can also result in isotope production” (Specification as filed, see “Field of the Invention”). The invention purportedly operates by subjecting sulfuric acid in a magnetic field to extremely low frequency radio waves, producing neutrons due to electron capture and particles involved in spacetime bending due to unexplained phenomena. The neutrons then can produce radioisotopes by neutron capture (Specification as filed, see “Summary of the Invention”).

14. After a review of the literature, the examiner can find no indication of any known nuclear reactions that can be induced in hydrogen via a magnetic field and radio waves. The present invention is similar to a fringe branch of nuclear fusion research known as low energy nuclear reactions or cold fusion. Despite decades of work, no evidence has been produced that such reactions occur. In fact, a recent undertaking found “no evidence of anomalous effects claimed by proponents of cold fusion that cannot otherwise be explained prosaically” (see Berlinguette).

Specification

15. 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.

16. The specification is objected to under 35 U.S.C. 112, first paragraph as failing to set forth an adequate written description of the present invention and further as failing to provide an enabling disclosure. For the following reasons, one of ordinary skill in the art would have significant cause to doubt the operability of the present invention and would be unable to use the present disclosure to make and use the same.
17. The present invention purportedly generates neutrons by subjecting the hydrogen atoms of sulfuric acid to a magnetic field and radio waves (see specification as filed, pp. 2-3). The neutrons can irradiate a sample of molybdenum to produce Tc-99m (p.4). The system purportedly also generates “non-Standard Model particles, e.g. particles involved in spacetime bending (p. 4) and “was found to produce particles including having the ability to manipulate or expose strings, the underlying structures for particles that have been hypothesized by never before observed” (p. 7) as well as produce “high gravitational areas” (p. 19) due to production of gravitons (p. 20).
18. The alleged mode of operation of the present invention invokes the use of string theory and "experimental evidence" which one of ordinary skill in the art would regard as impossible to collect. For example p. 10 states “Video captured spacetime bending and a multi-dimensional object that resembled a membrane (brane) with an open string (D-brane with an open string) at the position of there the light was traveling toward the tube.” Even if one were to put aside the claimed theory of operation, it is plain

that the claimed system provides no useful effects. There is no indication that neutrons are produced by the present invention, and consequently no evidence that the claimed system can be used for medical isotope production.

19. Applicant's specification is replete with unconventional scientific interpretation and logical fallacies. For example, Applicant argues:

If strings exist, photons have been predicted would appear as a D-brane with an open string, the open string being a wave-like thread attached at one end to the higher dimensional string D-brane. In other words, laser light should be observed as a D-brane with an open string if the underlying structure of the light was a string. Accordingly due to the invention, a D-brane with an open string underlying the laser light as diagrammed in Figure 5 was observed and appeared as had been predicted.

20. So, if strings exist, a photon would appear as a "D-brane with an open string." Photons were observed, ergo, a "D-Brane with an open string" exists as predicted. This argument fails a basic logic analysis.

21. The crux of the invention rests upon some unproven basic concepts including the following:

- The creation in the laboratory of black holes.
- The induced curvature of space-time in the presence of a modest magnetic field and low energy radio waves.
- The "detection" of theoretical particles.
- The use of RF emanations of frequency less than the ELF regime.

22. Based on the above, there is neither an adequate description nor enabling disclosure as to how and in what manner either a magnetic field or extremely low frequency electromagnetic waves

(extremely low frequency indicating extremely low energy content) can impart enough energy to the proton to induce any nuclear reactions.

23. Additionally, the disclosure does not establish that the present invention is capable of achieving the aforementioned unproven scientific concepts and therefore of accomplishing the present invention's asserted utility—generating isotopes.

24. Specifically, Figure 2 purportedly illustrates the results of testing the invention at an independent laboratory. The experimental results purportedly shown in Figure 2 do not rebut the Examiner's conclusion that the present invention is wholly inoperable. Applicant states (see the arguments dated 08/30/17) that Figure 2 shows the radiation collected by a scintillation counter after "a quantity of the element molybdenum-99 was placed in the invention that was turned on." The scintillation counter found "the different element technetium-99m." However, a scintillation counter is capable of providing simply a measure of the amount of ionizing radiation experienced by the detector. *A scintillation counter is incapable of providing any indication of the source of the ionization radiation. It is also impossible to determine the elemental make-up of a sample using a scintillation counter.* The results of Figure 2, therefore indicate only that the scintillation counter of the experiment was exposed to ionizing radiation. Notably, there is no description of the experimental conditions that include a negative control experiment, so it cannot be ruled out that the "results" of Figure 2 are due simply to the presence of background/environmental radiation.

25. Moreover, any sample of molybdenum-99 will exhibit ionizing radiation, regardless of whether it is placed in the present invention. Molybdenum-99 spontaneously undergoes radioactive beta decay with a half-life of 66 hours into technetium-99, which then undergoes gamma decay (i.e., releases ionizing radiation). Accordingly, a scintillation counter exposed to a sample of molybdenum-99 will always detect ionizing radiation, because natural radioactive decay processes produce this effect. No

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human intervention whatsoever would be required to detect ionizing radiation from a sample of molybdenum-99 using a scintillation counter.

26. In summary, the present disclosure fails to meet the requirements of 35 U.S.C. 112, first paragraph. One of ordinary skill in the art would be unable to make and use the present invention based on the instant disclosure because:

- the present invention is wholly inoperable and relies on the use of unproven scientific concepts; and
- the disclosure does not establish that the inventor has succeeded in operating the present invention.

Claim Rejections - 35 USC § 101

27. 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.

28. Claims 36-37, 39, 43-45, 66-73, and 75-76 are rejected under 35 U.S.C. 101 because the disclosed invention is inoperative and therefore lacks utility. The claims are rejected for the same reason as described above. There is no known mechanism for a hydrogen-based nuclear reaction in the present invention to produce neutrons and gravitons. There is no known mechanism for the detection of gravitons. Simply put, it is categorically impossible for the present invention to operate as disclosed and as required by the claims *to generate an isotopes*. An invention that is "inoperative" (i.e., it does not operate to produce the results claimed by the patent applicant) is not a "useful" invention in the meaning of the patent law. See, e.g., *Newman v. Quigg*, 877 F.2d 1575, 1581, 11 USPQ2d 1340, 1345 (Fed. Cir. 1989); *In re Harwood*, 390 F.2d 985, 989, 156 USPQ 673, 676 (CCPA 1968) ("An inoperative invention, of course, does not satisfy the requirement of 35 U.S.C. 101 that an invention be useful.").

Claim Rejections - 35 USC § 112

29. 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.

30. Claims 36-37, 39, 43-45, 66-73, and 75-76 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 enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Operation of the present invention relies upon achieving the following unproven scientific concepts.

- The creation in the laboratory of black holes.
- The induced curvature of space-time in the presence of a modest magnetic field and low energy radio waves.
- The "detection" of theoretical particles.
- The use of RF emanations of frequency less than the ELF regime.

31. The instant disclosure does not demonstrate that the inventor has successfully operated the present invention and therefore does not provide a framework which one of ordinary skill in the art could use to also make and use the present invention.

32. Because practicing the present invention relies on achieving various unproven scientific concepts—to use the present invention to generate particles, one would have to achieve the impossible—the instant application does not enable one skilled in the art to make the claimed invention. Based on the evidence regarding the below factors (*In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988)), the specification at the time the application was filed, would not have taught one skilled in the art how to make the full scope of the claimed invention without undue experimentation.

- The claims are overly broad because they do not recite (and the specification does not provide) the exact conditions necessary for successful operation of the invention.
- The nature of the invention, the state of the prior art, and the predictability in the art all suggest that one of ordinary skill in the art would require a disclosure of exact parameters as well as objective proof that the present invention achieves a useful result in order to replicate, i.e., *use*, the claimed invention.
- The amount of direction provided by the inventor would not have enabled one of ordinary skill in the art at the time of the invention to make the claimed invention. There is no disclosure of exact parameters that would suggest that the inventor or one of ordinary skill in the art would be able to use the claimed invention based on unproven and impossible scientific concepts to achieve any meaningful result, such as the generation of particles.
- The absence of working examples indicates one of ordinary skill in the art would not have been enabled to make the claimed invention.
- The foregoing factors indicate one of ordinary skill in the art would have had to conduct undue experimentation to use the claimed invention. It is unlikely that *any* amount of experimentation would provide a successful result, given the invention's roots in

unproven concepts and the scientific impossibility of particle generation in the disclosed system.

Conclusion

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to SHARON M DAVIS whose telephone number is (571)272-6882. The examiner can normally be reached on Monday - Thursday, 7:30 - 6:00 pm EST.

34. 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>.

35. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

36. 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.

/SHARON M DAVIS/
Examiner, Art Unit 3646