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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ART UNIT PAPER NUMBER

DATE MAILED: 05/14/2009

Please find below and/or attached an Office communication concerning this application or proceeding.



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(THIRD PARTY REQUESTER'S CORRESPONDENCE ADDRESS)

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MAILED

MAY 14 2009

CENTRAL REEXAMINATION UNIT

EX PARTE REEXAMINATION COMMUNICATION TRANSMITTAL FORM

REEXAMINATION CONTROL NO. 90/009,288.

PATENT NO. 6074454.

ART UNIT 3991.

Enclosed is a copy of the latest communication from the United States Patent and Trademark Office in the above identified *ex parte* reexamination proceeding (37 CFR 1.550(f)).

Where this copy is supplied after the reply by requester, 37 CFR 1.535, or the time for filing a reply has passed, no submission on behalf of the *ex parte* reexamination requester will be acknowledged or considered (37 CFR 1.550(g)).

Office Action in Ex Parte Reexamination	Control No. 90/009,288	Patent Under Reexamination 6074454	
	Examiner JERRY D. JOHNSON	Art Unit 3991	

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

- a Responsive to the communication(s) filed on _____. b This action is made FINAL.
c A statement under 37 CFR 1.530 has not been received from the patent owner.

A shortened statutory period for response to this action is set to expire 2 month(s) from the mailing date of this letter. Failure to respond within the period for response will result in termination of the proceeding and issuance of an *ex parte* reexamination certificate in accordance with this action. 37 CFR 1.550(d). **EXTENSIONS OF TIME ARE GOVERNED BY 37 CFR 1.550(c).** If the period for response specified above is less than thirty (30) days, a response within the statutory minimum of thirty (30) days will be considered timely.

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|------------------------------------------------------------------------------|---------------------------------------------------------|
| 1. <input type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 3. <input type="checkbox"/> Interview Summary, PTO-474. |
| 2. <input type="checkbox"/> Information Disclosure Statement, PTO/SB/08. | 4. <input type="checkbox"/> _____. |

Part II SUMMARY OF ACTION

- 1a. Claims 1,2,5-7,12-15,23,24,38-42,49,50,53,54,64 and 66 are subject to reexamination.
1b. Claims 3, 4, 8-11, 16-22, 25-37, 43-48, 51, 52, 55-63 and 65 are not subject to reexamination.
2. Claims _____ have been canceled in the present reexamination proceeding.
3. Claims _____ are patentable and/or confirmed.
4. Claims 1,2,5-7,12-15,23,24,38-42,49,50,53,54,64 and 66 are rejected.
5. Claims _____ are objected to.
6. The drawings, filed on _____ are acceptable.
7. The proposed drawing correction, filed on _____ has been (7a) approved (7b) disapproved.
8. Acknowledgment is made of the priority claim under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some* c) None of the certified copies have
1 been received.
2 not been received.
3 been filed in Application No. _____.
4 been filed in reexamination Control No. _____.
5 been received by the International Bureau in PCT application No. _____.
* See the attached detailed Office action for a list of the certified copies not received.
9. Since the proceeding appears to be in condition for issuance of an *ex parte* reexamination certificate 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.
10. Other: _____

cc: Requester (if third party requester)

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Status of Proceedings

A Request pursuant to 37 CFR 1.510 for *ex parte* reexamination of claims 1, 2, 5-7, 12-15, 23, 24, 38-42, 49, 50, 53, 54, 64 and 66 of U.S. Patent 6,074,454 was filed September 29, 2008 by Third Party Requester. An Order granting *ex parte* reexamination of claims 1, 2, 5-7, 12-15, 23, 24, 38-42, 49, 50, 53, 54, 64 and 66 of U.S. Patent 6,074,454 was mailed December 2, 2008.

Scope of Claims

In reexamination, patent claims are construed broadly. *In re Yamamoto*, 740 F.2d 1569, 1571, 222 USPQ 934, 936 (Fed. Cir. 1984) (claims given “their broadest reasonable interpretation consistent with the specification”). The 6,074,454 patent contains claims to a frangible bullet, ammunition, a method of making a frangible bullet and a powder useful for manufacturing a frangible item. Claims 1, 5, 39 and 49 are representative:

1. A frangible bullet comprising at least 60 percent by weight copper and manufactured by pressing a copper-containing powder in a die to form a pressed powder compact and subsequently sintering said pressed powder compact, wherein said sintering is partially impeded either

(i) by the addition of a frangibility effecting additive to said powder, or
(ii) through control of density of said pressed powder compact, or
(iii) through control of sintering temperature, or sintering time, or any combination of the above; so as to produce a bullet capable of fragmenting upon impact with a target.

5. Ammunition comprising the bullet of claim 1.

39. A method of making a frangible bullet which comprises pressing a powder containing at least 60 percent by weight copper in a die to form a pressed powder compact and subsequently sintering said pressed powder compact, wherein said sintering is partially impeded either

(i) by the addition of a frangibility effecting additive to said powder, or
(ii) through control of density of said pressed powder compact, or

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(iii) through control of sintering temperature, or sintering time, or any combination of the above; so as to produce a bullet capable of fragmenting upon impact with a target.

49. A powder useful for manufacturing a frangible item by pressing in a die and subsequently sintering, said powder comprising at least about 60 percent by weight copper and a frangibility effecting additive selected from the group consisting of an oxide, a solid lubricant, a nitride, a carbide, a boride, and combinations thereof.

The 6,074,454 patent does not define what is encompassed by the term “sintering”. Nor does the 6,074,454 patent define the phrase “sintering is partially impeded”. In fact, the only place in the specification of the 6,074,454 patent where that phrase can reasonably be said to appear is at column 4, lines 11-15:

[o]ne of the objects of these additives is to coat the copper powder particles with inert second phases and thus partially impede the sintering process so that bonds formed between the particles are embrittled.

Therefore, when an additive has not been included in the sintering process, the phrase “sintering is partially impeded” is taken to mean that a frangible bullet is produced, i.e., if the bullet is frangible, then the sintering process has been partially impeded. However, it is noted that the 6,074,454 patent claims do not define the conditions under which the claimed bullets are “capable of fragmenting upon impact with a target”.

Product-by-Process Claims

Claims 1, 5-7, 12-15 and 38 of the 6,074,454 patent are product-by-process claims.

MPEP 2113 (Rev. 6, September 2006) states:

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“[E]ven though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted).

>The structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where the manufacturing process steps would be expected to impart distinctive structural characteristics to the final product. See, e.g., *In re Garnero*, 412 F.2d 276, 279, 162 USPQ 221, 223 (CCPA 1979).

“The Patent Office bears a lesser burden of proof in making out a case of *prima facie* obviousness for product-by-process claims because of their peculiar nature” than when a product is claimed in the conventional fashion. *In re Fessmann*, 489 F.2d 742, 744, 180 USPQ 324, 326 (CCPA 1974). Once the examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

35 U.S.C. §§ 102 & 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Detailed Action

I. Claims 1, 2, 5, 7, 39 and 40 are rejected under 35 U.S.C. 102(b) as clearly anticipated by UK Patent Application GB 2 278 423 to Slater et al. (hereinafter "Slater").

Slater teaches a projectile, especially a small arms bullet (abstract) comprising a metal core which is formed from a sintered metal powder and an adherent coating (page 2, lines 22-23). The metal powder is advantageously selected from the group comprising iron, steel, tungsten, copper and bronze powders (page 2, lines 29-30). Where frangibility is desired, the projectile can be sintered by a sintering process in which the process parameters are selected so as to create a mechanically weak material which easily disintegrates on striking a hard target (page 3, lines 25-28). The frangibility of the finished projectile can be controlled by control of the pressure used for producing the green preform, and the temperature and duration of the sintering process, as well as the particle size of the powder (page 4, lines 9-11).

II. Claims 49, 53 and 64 are rejected under 35 U.S.C. 102(b) as clearly anticipated by British Patent No. 531,389 to Woodworth.

Page 5, lines 10-21 of Woodworth discloses a powder composition for forming bullets comprising 90 parts by weight powdered copper, 10 parts by weight powdered tin, .5 parts by weight stearic acid, .5 parts by weight boric acid and 1.5 parts by weight graphite.

The above rejection is based solely on patents and/or printed publications already cited/considered in an earlier concluded examination of the patent being reexamined. On November 2, 2002, Public Law 107-273 was enacted. Title III, Subtitle A, Section 13105, part

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(a) of the Act revised the reexamination statute by adding the following new last sentence to 35 U.S.C. 303(a) and 312(a):

“The existence of a substantial new question of patentability is not precluded by the fact that a patent or printed publication was previously cited by or to the Office or considered by the Office.”

For any reexamination ordered on or after November 2, 2002, the effective date of the statutory revision, reliance on previously cited/considered art, i.e., “old art,” does not necessarily preclude the existence of a substantial new question of patentability (SNQ) that is based exclusively on that old art. Rather, determinations on whether a SNQ exists in such an instance shall be based upon a fact-specific inquiry done on a case-by-case basis.

In the present instance, there exists a SNQ based solely on Woodworth. A discussion of the specifics now follows:

During prosecution of the application which became the 6,074,454 application, the teaching at page 5, lines 10-21 of Woodworth disclosing a composition comprising 90 parts by weight powdered copper, 10 parts by weight powdered tin, .5 parts by weight stearic acid, .5 parts by weight boric acid and 1.5 parts by weight graphite was not considered or cited as anticipating the composition of patented claims 49, 53 and 64. Accordingly, Woodworth is being presented/viewed in a new light, or in a different way, as compared with the earlier concluded examination.

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III. Claims 50 and 54 are rejected under 35 U.S.C. 103(a) as being unpatentable over Woodworth.

Woodworth is relied on as cited above. While Woodworth differs from the instant claims in disclosing a composition comprising 1.5 wt % of graphite as opposed to the instantly claimed 0.05-0.5 wt %, it is well known in the art to vary the amount of graphite added to a bullet composition in order to achieve the desired result (e.g., density). Accordingly, it would have been obvious to one having ordinary skill in the art at the time the invention was made to add an amount of graphite lubricant within the instantly claimed range in order to form a composition useful for forming a pressed and sintered bullet having the desired density.

IV. Claims 6, 12-15, 23, 24, 38, 41, 42 and 66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Slater as applied to claims 1, 2, 5, 7, 39 and 40 above, and further in view of Woodworth and the ASM Handbook, Vol. 7, pages 859-873 (hereinafter "ASM Handbook").

Slater is relied on as cited above but differs from the instant claims in not disclosing the addition of a solid lubricant (claims 6, 23, 24 and 38), weight percents of copper, tin and bronze (claims 12-15 and 38) or the compacting pressure (claims 40 and 41).

Woodworth teaches that metal compositions prepared by sintering a compressed mixture of powders and which compositions have previously been used principally for bearings are exceptionally well suited for making bullets (page 1, lines 42-51). More specifically, Woodworth teaches sintering metal powder mixtures comprising powdered copper or copper alloy and another powdered metal of low melting point (e.g., tin) by compression in a mold followed by sintering in a reducing or non-oxidizing atmosphere below the melting point of the

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copper or copper alloy and above that of the bonding metal (page 2, lines 85-97). Compacting pressures disclosed include, for example, 75,000 pounds per square inch (page 1, lines 70-74). Page 5, lines 10-21 of Woodworth discloses a composition comprising 90 parts by weight powdered copper, 10 parts by weight powdered tin, .5 parts by weight stearic acid, .5 parts by weight boric acid and 1.5 parts by weight graphite. Woodworth teaches that the density of bullets can be varied by varying by force of compression, the size of the particles of powdered metal and the type and proportions of powdered metals employed (page 3, lines 77-83).

The ASM Handbook teaches that copper powders of 99+ % purity are commercially available (page 859). Copper alloy powders are produced by either (1) preblending copper powders with other elemental powders such as tin, zinc, or nickel or (2) prealloying during powder production. Preblended powders are mixtures of selected compositions, with or without lubricant, that form the desired alloy during sintering (page 860). Typical bronze composition is 90 Cu - 10 Sn, often containing up to 1.5% graphite (page 861). Whether it is economical to produce an alloy by sintering compacts from elemental powders or from homogeneous alloy powders depends upon the coefficient for interdiffusion of the alloy ingredients (page 863). Prealloyed powders have higher yield strengths and work-hardening rates than premixed powders. Therefore, pressing loads required to achieve given green densities in prealloyed powders are higher than the pressure required for elemental powders (page 864).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form a frangible bullet by a sintering process in which the process parameters are selected so as to create a mechanically weak material which easily disintegrates on striking a hard target as taught by Slater wherein the sintered powder includes a solid

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lubricant (as taught by Woodworth and the ASM Handbook), is a prealloyed bronze or a mixture of cooper powder and tin power (as taught by Slater, Woodworth and the ASM Handbook) and the compacting pressure is performed at a pressure of about 75,000 (Woodworth).

Duty to Disclose

The patent owner is reminded of the continuing responsibility under 37 CFR 1.565(a) to apprise the Office of any litigation activity, or other prior or concurrent proceeding, involving Patent No. 6,074,454 throughout the course of this reexamination proceeding. The third party requester is also reminded of the ability to similarly apprise the Office of any such activity or proceeding throughout the course of this reexamination proceeding. See MPEP §§ 2207, 2282 and 2286.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerry D. Johnson whose telephone number is (571) 272-1448. The examiner can normally be reached on 5:30-3:00, M-F, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535.

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

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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).

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