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17/765,765	03/31/2022	Yusuke KANDA	112655-0186	4139

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EXAMINER
WITHERS, GRANT S

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

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In re Application of	:	
KANDA et al.	:	
Application No. 17/765,765	:	
Filed: March 31, 2022	:	DECISION ON PETITION
For SEMICONDUCTOR DEVICE AND	:	
METHOD OF MANUFACTURING	:	
SEMICONDUCTOR DEVICE	:	

This is a decision on the petition filed on January 5, 2023, under 37 CFR 1.181, requesting that the Director exercise supervisory authority and review the decision of December 21, 2022, by the Director of Technology Center 2800 (Technology Center Director) which decision refused to withdraw the requirement for unity of invention made on July 18, 2022, and made final on October 5, 2022.

The petition to withdraw the requirement for unity of invention made final in the Office action of October 5, 2022, is **DENIED**.

RELEVANT BACKGROUND

The above-identified application was filed on March 31, 2022, as a US national stage application under 35 U.S.C. § 371.

A requirement for unity of invention was made on July 18, 2022, as provided in 37 CFR 1.475(a) among: (1) Invention I (claims 1 through 3 and 8 through 18) drawn to a semiconductor device; (2) Invention II (claims 4 through 7) drawn to a semiconductor device; and (3) Invention III (claim 22) drawn to a method of making a semiconductor device.

A reply to the requirement of July 18, 2022, was filed on September 14, 2022, in which petitioner elected, with traverse, Invention I (claims 1 through 3 and 8 through 18).

A non-final Office action was issued on October 5, 2022. The Office action of October 5, 2022, made the unity of invention requirement final and included, *inter alia,* (1) a rejection of claims 1, 2, 8 through 13, 15, and 16 under 35 U.S.C. § 103 as being unpatentable over Published US Patent Application No. 2011/0095337 to Sato (hereinafter "Sato") in view of "Comparison of AlGaN/GaN High Electron Mobility Transistor with AIN or GaN as cap layer" published by Park et al. (hereinafter "Park et al."); (2) a rejection of claim 17 under 35 U.S.C. § 103 as being

unpatentable over Sato in view of Park et al. and further in view of "Electron mobility calculation for two-dimensional electron gas in InN/GaN digital alloy channel high electron mobility transistors" published by Hoshino et al. (hereinafter "Hoshino et al."); and (3) a rejection of claim 18 under 35 U.S.C. § 103 as being unpatentable over Sato in view of Park et al. and further in view of Published US Patent Application No. 2007/0057290 to Ishida et al (hereinafter "Ishida et al.").

A petition under 37 CFR 1.181 to the Technology Center Director was filed on November 9, 2022, requesting withdrawal of requirement for unity of invention made final in the Office action of October 5, 2022. A decision by the Technology Center Director was issued on December 21, 2022, dismissing the petition to withdraw the requirement made final in the Office action of October 5, 2022.

A reply to the non-final Office action of October 5, 2022, was filed on January 5, 2023, which included, *inter alia*, an amendment to the claims and new claims 24 through 45.

The present petition under 37 CFR 1.181 was on filed on January 5, 2022, requesting reconsideration of the decision of the Technology Center Director, which decision refused to withdraw the requirement for unity of invention made on July 18, 2022, and made final on October 5, 2022.

A final Office action was issued on February 9, 2023, included, *inter alia*, (1) a rejection of claims 24 through 30, 32, 35 through 41, and 43 under 35 U.S.C. § 103 as being unpatentable over Sato in view of Park et al.; (2) a rejection of claims 33 and 44 under 35 USC § 103 as being unpatentable over Sato in view of Park et al. and further in view of Ishida et al. and further in view of Hoshino et al; and (3) a rejection of claims 34 and 45 under 35 U.S.C. § 103 as being unpatentable over Sato in view of Park et al. and further in view of Ishida et al.

A certification and request for consideration under the after final consideration pilot program filed was on April 25, 2023, which included, *inter alia*, claim amendments under 37 CFR 1.116 and arguments in response to the final Office action of February 9, 2023.

TREATY PROVISIONS, STATUTES, AND REGULATIONS

PCT Rule 13 provides, in part, that:

> 13.1. Requirement
>
> The international application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept ("requirement of unity of invention").
>
> 13. 2. Circumstances in Which the Requirement of Unity of Invention Is to Be Considered Fulfilled

> Where a group of inventions is claimed in one and the same international application, the requirement of unity of invention referred to in Rule 13.1 shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.
>
> 13.3. Determination of Unity of Invention Not Affected by Manner of Claiming
>
> The determination whether a group of inventions is so linked as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim.
>
> 13. 4. Dependent Claims
>
> Subject to Rule 13.1, it shall be permitted to include in the same international application a reasonable number of dependent claims, claiming specific forms of the invention claimed in an independent claim, even where the features of any dependent claim could be considered as constituting in themselves an invention.

PCT Article 17 provides, in part, that:

> (3)
>
> > (a) If the International Searching Authority considers that the international application does not comply with the requirement of unity of invention as set forth in the Regulations, it shall invite the applicant to pay additional fees. The International Searching Authority shall establish the international search report on those parts of the international application which relate to the invention first mentioned in the claims ("main invention") and, provided the required additional fees have been paid within the prescribed time limit, on those parts of the international application which relate to inventions in respect of which the said fees were paid.

PCT Rule 43 *bis*.1 provides that:

> (a) Subject to Rule 69.1(b-bis), the International Searching Authority shall, at the same time as it establishes the international search report or the declaration referred to in Article 17(2)(a), establish a written opinion as to:
>
> > (i) whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), and to be industrially applicable;

(ii) whether the international application complies with the requirements of the Treaty and these Regulations in so far as checked by the International Searching Authority.

The written opinion shall also be accompanied by such other observations as these Regulations provide for.

35 U.S.C. § 121 provides that:

If two or more independent and distinct inventions are claimed in one application, the Director may require the application to be restricted to one of the inventions. If the other invention is made the subject of a divisional application which complies with the requirements of section 120 it shall be entitled to the benefit of the filing date of the original application. A patent issuing on an application with respect to which a requirement for restriction under this section has been made, or on an application filed as a result of such a requirement, shall not be used as a reference either in the Patent and Trademark Office or in the courts against a divisional application or against the original application or any patent issued on either of them, if the divisional application is filed before the issuance of the patent on the other application. The validity of a patent shall not be questioned for failure of the Director to require the application to be restricted to one invention.

35 U.S.C. § 372 provides that:

(a) All questions of substance and, within the scope of the requirements of the treaty and Regulations, procedure in an international application designating the United States shall be determined as in the case of national applications regularly filed in the Patent and Trademark Office.

(b) In case of international applications designating but not originating in, the United States—

(1) the Director may cause to be reexamined questions relating to form and contents of the application in accordance with the requirements of the treaty and the Regulations;

(2) the Director may cause the question of unity of invention to be reexamined under section 121, within the scope of the requirements of the treaty and the Regulations; and

(3) the Director may require a verification of the translation of the international application or any other document pertaining to the application if the application or other document was filed in a language other than English.

37 CFR 1.142 provides that:

(a) If two or more independent and distinct inventions are claimed in a single application, the examiner in an Office action will require the applicant in the reply to that action to elect an invention to which the claims will be restricted, this official action being called a requirement for restriction (also known as a requirement for division). Such requirement will normally be made before any action on the merits; however, it may be made at any time before final action.

(b) Claims to the invention or inventions not elected, if not canceled, are nevertheless withdrawn from further consideration by the examiner by the election, subject however to reinstatement in the event the requirement for restriction is withdrawn or overruled.

37 CFR 1.143 provides that:

If the applicant disagrees with the requirement for restriction, he may request reconsideration and withdrawal or modification of the requirement, giving the reasons therefor. (See § 1.111). In requesting reconsideration the applicant must indicate a provisional election of one invention for prosecution, which invention shall be the one elected in the event the requirement becomes final. The requirement for restriction will be reconsidered on such a request. If the requirement is repeated and made final, the examiner will at the same time act on the claims to the invention elected.

37 CFR 1.144 provides that:

After a final requirement for restriction, the applicant, in addition to making any reply due on the remainder of the action, may petition the Director to review the requirement. Petition may be deferred until after final action on or allowance of claims to the invention elected, but must be filed not later than appeal. A petition will not be considered if reconsideration of the requirement was not requested (see § 1.181).

37 CFR 1.181(a) provides that:

> Petition may be taken to the Director:
>
> (1) From any action or requirement of any examiner in the *ex parte* prosecution of an application, or in *ex parte* or *inter partes* prosecution of a reexamination proceeding which is not subject to appeal to the Patent Trial and Appeal Board or to the court;
>
> (2) In cases in which a statute or the rules specify that the matter is to be determined directly by or reviewed by the Director; and
>
> (3) To invoke the supervisory authority of the Director in appropriate circumstances. For petitions involving action of the Patent Trial and Appeal Board, see § 41.3 of this title.

37 CFR 1.475 provides that:

> (a) An international and a national stage application shall relate to one invention only or to a group of inventions so linked as to form a single general inventive concept ("requirement of unity of invention"). Where a group of inventions is claimed in an application, the requirement of unity of invention shall be fulfilled only when there is a technical relationship among those inventions involving one or more of the same or corresponding special technical features. The expression "special technical features" shall mean those technical features that define a contribution which each of the claimed inventions, considered as a whole, makes over the prior art.
>
> (b) An international or a national stage application containing claims to different categories of invention will be considered to have unity of invention if the claims are drawn only to one of the following combinations of categories:
>
> (1) A product and a process specially adapted for the manufacture of said product; or
>
> (2) A product and a process of use of said product; or
>
> (3) A product, a process specially adapted for the manufacture of the said product, and a use of the said product; or
>
> (4) A process and an apparatus or means specifically designed for carrying out the said process; or

> (5) A product, a process specially adapted for the manufacture of the said product, and an apparatus or means specifically designed for carrying out the said process.
>
> (c) If an application contains claims to more or less than one of the combinations of categories of invention set forth in paragraph (b) of this section, unity of invention might not be present.
>
> (d) If multiple products, processes of manufacture or uses are claimed, the first invention of the category first mentioned in the claims of the application and the first recited invention of each of the other categories related thereto will be considered as the main invention in the claims, see PCT Article 17(3)(a) and § 1.476(c).
>
> (e) The determination whether a group of inventions is so linked as to form a single general inventive concept shall be made without regard to whether the inventions are claimed in separate claims or as alternatives within a single claim.

37 CFR 1.499 provides that:

> If the examiner finds that a national stage application lacks unity of invention under § 1.475, the examiner may in an Office action require the applicant in the response to that action to elect the invention to which the claims shall be restricted. Such requirement may be made before any action on the merits but may be made at any time before the final action at the discretion of the examiner. Review of any such requirement is provided under §§ 1.143 and 1.144.

OPINION

Petitioner asserts that the requirement for unity of invention should be withdrawn and all of the pending claims examined. Petitioner argues that because unity of invention is a formality and was found in the international stage of the present application, a requirement for unity of invention may not be made during the national stage of the application. Petitioner states that the PCT is a treaty with unified formality and that each contracting state is restrained by and mandated to follow the decisions made at the international stage with respect to formality. Petitioner further argues that the USPTO's reliance on MPEP § 1893.03(e) II is improper because it refers to patentability, and not to a formality such as unity of invention.

Petitioner's arguments have been considered but are not persuasive. 35 U.S.C. § 372(b)(2) provides that the Director may cause the question of unity of invention to be reexamined under section 121, within the scope of the requirements of the treaty and the Regulations. The

legislative history of section 372(b)(2) includes a Senate Report[1] which specifically explains that 35 U.S.C. § 372(b)(2) —

> Deals with the reexamination of compliance with the requirements of unity of invention. Under section 121 of this title, the Commissioner may require restriction to one invention, if two or more independent and distinct inventions are claimed in one application. Rule 13 of the Regulations provides that an international application shall relate to one invention only, or to a group of inventions so linked as to form a single general inventive concept. The report also elaborates on the different combinations of inventions which may be present in one application provided they form a single general inventive concept. Thus, a reexamination is authorized to ascertain whether the determination of unity of invention by another International Searching Authority is in accord with the provisions of the Treaty and Regulations.

Also, 37 CFR 1.499 states that, if the examiner finds that a national stage application lacks unity of invention under § 1.475, the examiner may in an Office action require the applicant in the response to that action to elect the invention to which the claims shall be restricted at any time before the final action, at the examiner's discretion.

Furthermore, the notes to PCT Article 17(3)(a) provided by the International Bureau of WIPO, state that any designated Office may disagree with the interpretation that the International Searching Authority gives to Rule 13 in any given case and the designated Office may find that there is not unity of invention even when the Authority has not required additional fees for lack of unity. The notes provide an example where the Authority has not asked for additional fees, the designated State may still find that there is not unity of invention.[2]

The *Manual of Patent Examining Procedure* (MPEP) § 1893.03(d) states in part, that:

> Examiners are reminded that unity of invention (not restriction practice pursuant to 37 CFR 1.141 -1.146) is applicable in international applications (both Chapter I and II) and in national stage applications submitted under 35 U.S.C. 371. Restriction practice in accordance with 37 CFR 1.141-1.146 continues to apply to U.S. national applications filed under 35 U.S.C. 111(a), even if the application filed under 35 U.S.C. 111(a) claims benefit under 35 U.S.C. 120 and 365(c) to an earlier international application designating the United States or to an earlier U.S. national stage application submitted under 35 U.S.C. 371.

MPEP § 1893.03 (e) II states in part, that:

> The examiner may adopt any portion or all of the report on patentability of the IPEA or ISA (Chapter I and II) upon consideration in the national stage so long as it is consistent with U.S. practice.

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[1] S. Rep No. 94-215, at 17-18 (1975).

[2] World Intellectual Property Organization Records of The Washington Diplomatic Conference On The Patent Cooperation Treaty, at 29 (1970).

The report of patentability, as defined in PCT Rule 43bis.1, includes the international search report and written opinion of the ISA. The written opinion includes observations on Lack of Unity of Invention (Box No. IV). MPEP § 1893.03 (e) II does not make a distinction between a formal requirement or other types requirements or observations made in the report on patentability of the ISA and states that the examiner may adopt any portion or all of the report on patentability of the ISA. In the present application, and in accordance with MPEP § 1893.03 (e) II, the examiner did not adopt all of the report on patentability of the ISA.

Since the unity of invention requirement made final in the Office action of October, 5, 2022, is consistent with 37 CFR 1.499 and MPEP §§ 1893.03 (d) and (e) II, the requirement will not be withdrawn.

DECISION

For the previously stated reasons, the petition requesting withdrawal of the requirement for unity of invention made final in the Office action of October 5, 2022, is **DENIED**.

This constitutes a final decision on the petition. No further requests for reconsideration will be entertained. Judicial review of this decision may be available upon entry of a final agency action adverse to the petitioner in the instant application (*e.g.,* a final decision by the Patent Trial and Appeal Board). *See* MPEP 1002.02.

The application is being forwarded to Technology Center 2800 for consideration of the certification and request for consideration under the after final consideration pilot program filed on April 25, 2023.

/Robert W. Bahr/
Robert W. Bahr
Deputy Commissioner
for Patents