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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD

Proceeding	87661190
Applicant	Omniome, Inc.
Applied for Mark	SEQUENCING BY BINDING
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE TRADEMARK TRIAL AND APPEAL BOARD
ON APPEAL

Applicant	:	Omniome, Inc.
Serial No.	:	87/661,190
Filed	:	October 26, 2017
Mark	:	SEQUENCING BY BINDING in Classes 1, 9, 10 and 42

TM Attorney	:	John Wilke
Law Office	:	104
Docket No.	:	720167.210
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Trademark Trial and Appeal Board
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APPLICANT'S REPLY BRIEF

A. INTRODUCTION AND SUMMARY OF REPLY

Applicant, Omniome, Inc., submits this Reply to address specific issues raised by the Examining Attorney's Appeal Brief of June 7, 2019.[1]

The Examining Attorney mischaracterizes the law pertaining to descriptiveness and fails to account for or address those decisions that support the general proposition that a mark must immediately convey some aspect of the identified goods and services with some ***degree of particularity*** to be deemed merely descriptive, which Applicant's SEQUENCING BY BINDING mark fails to do.

The Examining Attorney also mischaracterizes the nature of the evidence of record, pointing to select portions out of context, and fails to appreciate the unique nature of non-consumer facing patent references. When viewing the evidence in its entirety and in its appropriate context, it is clear that the Examining Attorney has failed to meet his burden of proving descriptiveness.

The Examining Attorney also erroneously cites an article about Applicant's own work and use of its SEQUENCING BY BINDING mark as purported evidence of third-party descriptive use as support for its assertion that there is a need by competitors to use "sequencing by binding" for competitive technology. The record, however, is devoid of any use of "sequencing by binding" that is not associated with Applicant, which supports the opposite conclusion, namely, that there is no competitive need for others to use Applicant's SEQUENCING BY BINDING mark.

In sum, SEQUENCING BY BINDING is a coined mark which as a whole has no recognized meaning other than as Applicant's mark. The Examining Attorney has failed to show that the mark immediately conveys an aspect of the identified goods and services with any degree of particularity. The record is completely devoid of any evidence of descriptive use of the mark by others. Rather, the record supports the conclusion that SEQUENCING BY BINDING is not merely descriptive as it illustrates the vagueness of the term as applied to Applicant's complex goods and services and reveals recognition by others of SEQUENCING BY BINDING as Applicant's mark, not a descriptive term. The Examining Attorney has failed to meet his burden of establishing that the SEQUENCING BY BINDING

[1] This Reply does not supersede Applicant's previous arguments, nor does Applicant acquiesce to any of the Examining Attorney's arguments that are not specifically addressed herein. Applicant continues to also rely on its Appeal Brief.

mark is merely descriptive of the identified goods and services. As such, Applicant respectfully requests that the Board reverse the final refusal of registration by the Examining Attorney.

B. ARGUMENT

1. SEQUENCING BY BINDING Is Not Merely Descriptive

"It is the Examining Attorney's burden to show, prima facie, that a mark is merely descriptive of an applicant's goods or services." *In re Fat Boys Water Sports LLC*, 118 U.S.P.Q.2d 1511, 1513 (T.T.A.B. 2018). The Examining Attorney has failed to meet its burden of showing, based on the record, that SEQUENCING BY BINDING immediately conveys information as to the ingredients, qualities or characteristics of the identified goods and services with the requisite ***degree of particularity***.

a. SEQUENCING BY BINDING Does Not Immediately Convey Information as to the Ingredients, Qualities or Characteristics of the Goods and Services With Any Degree of Particularity

The Examining Attorney mischaracterizes the law pertaining to descriptiveness as it implies that the words of an applied-for mark must create a unitary mark with a unique or incongruous meaning to be registerable. Examining Attorney's Appeal Brief, page 2. That is not the law as such a hard line rule fails to account for or address those decisions that support the general proposition that a mark must convey an immediate idea of the ingredients, qualities or characteristics of the goods or services with a "degree of particularity" to be deemed merely descriptive. *See Plus Products v. Medical Modalities Assocs., Inc.*, 211 U.S.P.Q. 1199, 1204-05 (T.T.A.B. 1981). *See also In re Diet Tabs, Inc.*, 231 U.S.P.Q. 587, 588 (T.T.A.B. 1986); *Holiday Inns, Inc. v. Monolith Enters.*, 212 U.S.P.Q. 949, 952 (T.T.A.B. 1981); *In re TMS Corp. of the Americas*, 200 U.S.P.Q. 57, 59 (T.T.A.B. 1978); *Airco, Inc. v. Air Products and Chemicals, Inc.*, 196 U.S.P.Q. 832, 835 (T.T.A.B. 1977).

Here, Applicant's SEQUENCING BY BINDING mark fails to describe the identified goods and services, or features or functions thereof, with any ***degree of particularity***. As discussed in Applicant's Brief, Applicant's goods and services are complex. They include devices and research laboratory analyzers for analysis of biological analytes and related analysis services that are used to provide precision detection of DNA molecular structure by leveraging the polymerase's natural ability to match nucleotides to the DNA. More particularly, Applicant's goods and services employ a cyclic method for stepping along a target nucleic acid from one interrogation position to the next, thereby

determining the sequence of nucleotides in the target nucleic acid. Each individual cycle includes multiple steps. In a first step, the target nucleic acid is contacted with a polymerase and nucleotide under conditions to form a stable binding complex at the interrogation position. In a second step, the binding complex is detected to determine the type of nucleotide that is present in the complex. In a third step, the target nucleic acid is activated to a state that destabilizes the complex and renders the target nucleic acid competent for subsequent extension. In a fourth step, the activated target nucleic acid is extended by one nucleotide to step to the next interrogation position. The cycle then repeats for the extended target nucleic acid until the sequence has been obtained. Given the complexity of the Applicant's goods and services, the simple and vague phrase SEQUENCING BY BINDING does not describe them with the immediacy and particularity required under the law to be deemed merely descriptive.

The following table illustrates analogous situations in which nebulous and/or ambiguous marks failed to describe the applied-for goods and services with the immediacy and particularity required under the law to be deemed merely descriptive:

Mark	Goods/Services	Case
AIR-CARE	scheduled maintenance of hospital and medical anesthesia and inhalation therapy equipment and hospital piping systems for medical gases	*Airco, Inc. v. Air Products and Chemicals, Inc.*, 196 U.S.P.Q. 832 (T.T.A.B. 1977)
THE MONEY SERVICE	financial services wherein funds are transferred to and from a savings account from locations remote from the associated financial institution	*In re TMS Corp. of the Americas*, 200 U.S.P.Q. 57 (T.T.A.B. 1978)
EXPRESS SAVINGS	banking services	*In re Wells Fargo & Co.*, 231 U.S.P.Q. 116 (T.T.A.B. 1986)
LINKED SYSTEM	power tools, namely, drills, drivers, hammer drills, impact driver, oscillating tools, saws, circular saws, reciprocating saws, jig saws, metal cutting saws (and other goods)	*In re Black & Decker Corp.*, Serial No. 85857683, 2014 T.T.A.B. LEXIS 220 (T.T.A.B. May 22, 2014) (not citable as precedent)
ADVANCED FUEL CELL SOLUTIONS	custom manufacture of hydrogen-generation and electrical-power-generation products and equipment, namely, ... fuel cells, fuel cell stacks (and other services)	*In re IdaTech, LLC*, Serial No. 76369815, 2004 T.T.A.B. LEXIS 259, *15 (T.T.A.B. April 19, 2004) (not citable as precedent)
AIR CONTROL SCIENCE	construction, installation, and maintenance of dust collection systems; and conducting feasibility studies, evaluation, consultation, and engineering in the field of dust collection systems	*In re Fischer*, Serial No. 74590808, 1997 T.T.A.B. LEXIS 485 (T.T.A.B. July 28, 1997) (not citable as precedent)

FLIGHTLINK	meteorological forecasting; providing meteorological information; providing weather information; weather forecasting; weather information services; weather reporting	*In re Panasonic Avionics Corp.*, Serial No. 86499954, 2017 T.T.A.B. LEXIS 4 (T.T.A.B. January 5, 2017) (not citable as precedent)
PERFECTING SERUM	skin moisturizer	*In re Murad, Inc.*, Serial No. 77556539, 2010 T.T.A.B. LEXIS 31 (T.T.A.B. February 4, 2010) (not citable as precedent)
VIRTUAL LAS VEGAS	entertainment services, namely, providing on-line computer games	*In re Prize Cent. Networks, Inc.*, Serial No. 75509370, 2001 T.T.A.B. LEXIS 745 (T.T.A.B. October 03, 2001) (not citable as precedent)
BANKING STATION	interactive multimedia banking services	*In re PNC Bank Corp.*, Serial No. 74282055, 2000 T.T.A.B. LEXIS 226 (T.T.A.B. March 31, 2000) (not citable as precedent)

Similar to the marks in the cases above, the mark SEQUENCING BY BINDING does not, in any precise way, immediately describe Applicant's reagents and analyzer devices for analysis of biological analytes and related analysis and product development services. For example, relevant consumers seeing "Sequencing By Binding" branded on Applicant's laboratory analyzers would not immediately know what is being bound, how such binding is occurring or the relevance of such binding, if any. Indeed, the best consumers can glean from the mark is that some sort of "binding" is presumably occurring through the use of Applicant's goods or the provision of Applicant's services and, as such, it is clear that further research or education by supporting materials would be required to understand any particulars of Applicant's goods and services. SEQUENCING BY BINDING is simply far too nebulous and ambiguous to describe Applicant's goods and services with any ***degree of particularity*** and therefore fails to be merely descriptive.

b. The Evidence of Record Does Not Support a Finding That SEQUENCING BY BINDING is Merely Descriptive and Instead Supports the Opposite Conclusion

The Examining Attorney also mischaracterizes the nature of the evidence of record, pointing to select portions out of context, and fails to appreciate the unique nature of the relied-upon patent references.

For instance, the Examining Attorney's Brief points to select excerpts from Applicant's interrelated patent filings (US20170314072; US20180044727; US9951385; and US10161003) out of

context and fails to appreciate the unique nature of patent references that undermines the Examining Attorney's reliance on them.

These patent filings are insufficient to meet the Examining Attorney's burden because they provide no evidence as to how relevant consumers perceive or would perceive "sequencing by binding" in the marketplace. Patent filings are not consumer facing materials. Rather, patent applications are specialized documents in which the drafter can serve as his or her lexicographer to assign meanings to terms for the purposes of conveying complex ideas and facilitating the full disclosure of inventive concepts. That's exactly what Applicant did in this case, as can be appreciated from the following excerpts of the relied upon patent filings.

> The following description relates to a **sequencing-by-binding (SBB)** technique that relies on use of a mutant, non-catalytic DNA polymerase (a "crippled" polymerase). Crippled DNA polymerase enzymes useful for practicing the technique are substantially unable to catalyze magnesium-dependent formation of a phosphodiester bond between a primer strand of a primed template nucleic acid, and an incoming next correct nucleotide. Although being without this catalytic activity, the mutant enzyme retains the ability to discriminate cognate from non-cognate nucleotides. In some embodiments, the mutant polymerase is unable to bind the divalent cation ordinarily needed for catalytic function. Although the following description exemplifies useful aspects of crippled polymerase in the context of SBB, it will be understood that the polymerase can have other uses including, but not limited to, identifying individual nucleotides in a nucleic acid (e.g., detecting single nucleotide polymorphisms) or binding to particular sequences to provide polymerase-mediated affinity separation of the nucleic acids that bear the sequences. US20170314072 at Paragraph 0070.
>
> As used herein, **"sequencing-by-binding"** refers to a sequencing technique wherein specific binding of a polymerase and cognate nucleotide to a primed template nucleic acid is used for identifying the next correct nucleotide to be incorporated into the primer strand of the primed template nucleic acid. The specific binding interaction need not result in chemical incorporation of the nucleotide into the primer. In some embodiments, the specific binding interaction precedes chemical incorporation of the nucleotide into the primer strand or precedes chemical incorporation of an analogous, next correct nucleotide into the primer. Thus, identification of the next correct nucleotide can take place without incorporation of the next correct nucleotide. US20180044727 at Paragraph 0052.
>
> Various sequencing techniques can be used to read a template nucleic acid, one position at a time, as a primer is elongated along the template via polymerase based synthesis. One such technique, **sequencing-by-binding (SBB)**, is generally based on repetitive cycles of detecting a stabilized complex that forms at each position along the template (e.g. a ternary complex that includes the primed template, a polymerase, and a cognate nucleotide for the position), under conditions that prevent covalent incorporation of the cognate nucleotide into the primer, and then extending the primer to allow detection of the next position along the template. In SBB, detection of the nucleotide at each position of the template occurs prior to extension of the primer to the next position. US9951385 at col. 6, lines 51-64.
>
> Various sequencing techniques can be used to read a template nucleic acid, one position at a time, as a primer is elongated along the template via polymerase based synthesis. One such

> technique, **Sequencing By Binding™ (SBB™)** methodology, is generally based on repetitive cycles of detecting a stabilized complex that forms at each position along the template (e.g. a ternary complex that includes the primed template, a polymerase, and a cognate nucleotide for the position), under conditions that prevent covalent incorporation of the cognate nucleotide into the primer, and then extending the primer to allow detection of the next position along the template. In SBB™ methods, detection of the nucleotide at each position of the template occurs prior to extension of the primer to the next position. US10161003 at col. 6, line 66 to col. 7, line 12.

In each instance above, Applicant's representative used a coined term, "Sequencing By Binding" (also presented as "sequencing-by-binding"), and its acronym SBB, as a concise identifier, label or shorthand name for a complex DNA sequencing technique for the purpose of conveying Applicant's inventive technology solely for patent procurement purposes. This is particularly clear in the last instance where more care was taken by the drafter to provide trademark notice (i.e., "Sequencing By Binding™") within the text of the patent itself. The other references to "sequencing by binding" or "sequencing-by-binding" in the Title, Abstract and other sections of the relied-upon patent documents (which the Examining Attorney selectively points to) all rely on the aforementioned associations of Applicant's SEQUENCING BY BINDING mark with the detailed description of Applicant's complex DNA sequencing technology to convey any relevant information.

The fact that Applicant had to assign a lengthy meaning to "sequencing by binding" demonstrates that the term, standing alone, is nebulous and would not mean anything of significance to the Patent Office (or anyone else) without the supporting text explaining the DNA sequencing techniques Applicant is seeking to protect (aspects of which may be employed by the identified goods and services). Far from being evidence of descriptiveness, this demonstrates the opposite, namely, that it requires "imagination, thought and perception" to mentally connect the mark with the characteristics of the goods and services. *See In re Fat Boys Water Sports*, 118 U.S.P.Q.2d at 1515 (*quoting StonCor Grp., Inc. v. Specialty Coatings, Inc.*, 759 F.3d 1327, 111 U.S.P.Q.2d 1649, 1652 (Fed. Cir. 2014)). Accordingly, contrary to the Examining Attorney's assertions, Applicant's patent filings fail to support the outstanding descriptiveness refusal.

Further, there is no evidence in the record of any third party descriptive use of the mark. The Examining Attorney claims to have found one such reference in the ACS Publication, but the Examining Attorney mischaracterizes the document. The Examining Attorney states that, "the authors of the ACS Publications article referenced above found it necessary to use the term 'sequencing by binding' in order to describe an imaging platform that enables nucleic acid sequencing by binding technology" in

asserting an alleged competitive need by others to use "sequencing by binding." Examining Attorney's Appeal Brief, page 4. This is false. The ACS Publication is a publication of Applicant's work as indicated below the title of the article and in the note section, which are copied below for ease of reference.

Plasmonic Sensor Could Enable Label-Free DNA Sequencing

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Notes

The authors declare the following competing financial interest(s): The authors have a financial interest in Omniome Inc., a private company. Sequencing by Binding and SBB are trademarks of Omniome Inc.

The note section also makes it unmistakably clear that "Sequencing by Binding" and its acronym, "SBB", are Applicant's trademarks. As indicated in Applicant's Brief, this attribution of the mark was added by the publisher to offset its requirement to remove trademark marking of Applicant's SEQUENCING BY BINDING mark from the body of the article. As such, the ACS Publication does not support a descriptiveness refusal given that it explicitly attributes the SEQUENCING BY BINDING mark to Applicant, and does not evidence third-party use and a need by others to use "sequencing by binding" to describe competitive DNA sequencing technology as asserted as it relates to Applicant's work and use of its mark, not others.

To be clear, all evidence of record showing any use of "sequencing by binding" is use associated with Applicant (i.e., Applicant's patent filings and the ACS Publication directed to Applicant's work). All other evidence discussing various DNA sequencing techniques (i.e., the Wikipedia entries, the JBT article, the National Institutes of Health article, the Nature Communications article, and the Nature article) lack any use of or reference to "sequencing by binding" despite such sequencing technologies involving "binding" aspects. This is not surprising, however, because the term "sequencing by binding" is nebulous and ambiguous, and is not capable of describing any of these technologies with any degree of particularity given the number of binding events that occur *within* any given sequencing technology and given the differences in binding steps *between* the different sequencing technologies.

Again, if "sequencing by binding" were merely descriptive as asserted, one would expect to see some evidence of use by others to describe similar goods and services. The record provides

absolutely none. Again, a lack of descriptive use by others can be controlling on the issue of descriptiveness. *See In re Wells Fargo & Company*, 231 U.S.P.Q. 116 (T.T.A.B. 1986) and *In re c/net, Inc*., Serial No. 75/061,139, 1999 T.T.A.B. LEXIS 71, *9 (T.T.A.B. 1999).

In sum, looking at the record as a whole, the record is insufficient to support a finding that Applicant's coined SEQUENCING BY BINDING mark is merely descriptive of Applicant's goods and services.

c. SEQUENCING BY BINDING Is a Coined Term, Has No Dictionary Definition, Is Not Generally Used to Describe Applicant's Goods and Services, and Is Not Used in the Relevant Industry

To reiterate, SEQUENCING BY BINDING is a coined term and, therefore, unsurprisingly, has no dictionary meaning. The term "sequencing by binding" is not generally used to describe the identified goods and services, or features or functions thereof, and is not used in the relevant industry. The only evidence of record containing use of "sequencing by binding" is use associated with Applicant. And Applicant's use of the term in its patent filings merely reinforces that the mark is suggestive of the identified goods and services. That is, because Applicant was required to invent a definition of "sequencing by binding" in its patent filings, it follows that relevant consumers would not understand the term to immediately convey a quality or characteristic of the goods or services. None of the evidence of record shows use of "sequencing by binding" by others to describe reagents and analyzer devices for analysis of biological analytes and related analysis and product development services. Accordingly, for at least these reasons, Applicant's coined SEQUENCING BY BINDING mark is not merely descriptive.

d. Doubts Must Be Resolved in Applicant's Favor

Again, to the extent there is doubt about whether SEQUENCING BY BINDING is merely descriptive of Applicant's goods and services, such doubt must be resolved in Applicant's favor. *In re Grand Forest Holdings Inc.*, 78 U.S.P.Q.2d 1152, 1156 (T.T.A.B. 2006). Here, where there is zero evidence of use of "sequencing by binding" by others in a descriptive manner and where Board decisions dictate that a mark must convey some aspect of the goods and services with some ***degree of particularity*** to be deemed merely descriptive, there must be at least some doubt that Applicant's SEQUENCING BY BINDING mark is merely descriptive, and such doubt must be resolved in Applicant's favor. *See In re Isco, Inc*., Serial No. 74/417,450, 1996 T.T.A.B. LEXIS 370, *7-8 (T.T.A.B. July 26, 1996) ("The sparse

evidence of record bearing on the technical goods involved here creates doubts as to whether applicant's mark is descriptive of such goods. When there are doubts on the issue of whether a mark is descriptive as applied to the relevant goods, it is the policy of the Board to resolve doubts in applicant's favor").

C. CONCLUSION

Applicant is developing instruments for the analysis of biological analytes used to provide precision detection of DNA molecular structure by leveraging the polymerase's natural ability to match nucleotides to the DNA. Applicant seeks to register and use its coined mark, SEQUENCING BY BINDING, in connection with such instruments and related reagents and analysis and product development services. Applicant's SEQUENCING BY BINDING mark is not descriptive because it is far too vague to immediately convey a salient aspect of such goods and services with any degree of particularity. Applicant's detailed explanation of its invented meaning of "sequencing by binding" in connection with the technology discussed in its patent documents demonstrates that the term is not descriptive of Applicant's goods or services. Lacking any established meaning of "sequencing by binding," relevant consumers encountering Applicant's analysis instruments (or other applied-for goods and services) bearing the SEQUENCING BY BINDING mark necessarily will have to engage in some thought or mental steps to reach a conclusion as to the particular nature of Applicant's goods and services or any underlying DNA sequencing technology employed therein. As such, the mark is suggestive, not descriptive, and is registrable without proof of secondary meaning. The record fails to show otherwise. Rather, the record: (i) supports the conclusion that Applicant's SEQUENCING BY BINDING mark is vague (and thus non-descriptive) as applied to Applicant's complex goods and services; (ii) establishes that there is no use by others or need by others to use Applicant's mark in association with competitive goods, (iii) shows recognition by others of SEQUENCING BY BINDING as Applicant's mark, not a descriptive term; and (iv) at the very least raises doubts as to the purported descriptiveness of the mark. As such, the Examining Attorney has failed to meet his burden of showing descriptiveness.

In light of the above, Applicant respectfully requests that the Board reverse the Examining Attorney's descriptiveness refusal and pass Application Serial No. 87/661,190 to publication.

Respectfully submitted,

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