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Narrowing Scope of Patentable Subject Matter — Signals From *Nuijten*

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Special to the Legal

The United States has traditionally been open to broad areas of patentable subject matter. Title 35 of the U.S. Code, in Section 101, regulates the subject matter of patentable inventions: "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, ... may obtain a patent therefor."

The U.S. Supreme Court in the past has supported that this section is to be interpreted broadly to cover "anything under the sun that is made by man." Traditionally unpatentable subject matter includes abstract ideas, laws of nature, natural phenomena and mathematical algorithms. Thus, simply discovering something already in existence in nature is not patentable, but doing something with a naturally occurring item typically would be. For example, while a mathematical algorithm cannot be patented, its adoption as part of a software program useful for running a new business method through a computer system that provides a practical end result would fall within the scope of patentable subject matter.

Courts have not always easily categorized inventions as "machines," "manufactures," "processes" or "compositions of matter," but the default has generally been to see if the invention was not excluded and then to determine if the proposed invention is "new" and "useful" as those terms have been traditionally associated with Section 101 and could be within the statutory categories.



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The invention in *In re Nuijten* involved the field of placing "watermarks" on electronic signals, such as digital and audio files. Signal transmitters, concerned with unauthorized copying of transmitted data, are able to embed additional data within a signal to detect copying.

The inventor, Nuijten, developed a new signal, which reduced distortion associated with such watermarking to improve signals transmitted with watermarks. While the patent examiner was comfortable with the patent claims directed to a process of embedding data in a signal using various steps, and with patent claims directed to an "arrangement" for embedding data in a signal that incorporated an "encoder means," the examiner rejected patent claims directed to the resulting signal.

The signal claims described, among other things, a signal with embedded data encoded "in accordance with a given encoding process." The examiner rejection was appealed to the Board of Patent Appeals and

Interferences (BPAI) at the U.S. Patent and Trademark Office, which affirmed the rejection, holding that the signal had no physical attributes, and so was an abstract idea and not patentable. The BPAI also viewed the signals as not within the four categories of patentable subject matter, particularly noting that the signals are not a "manufacture" because they are not tangible objects. The inventor appealed to the Federal Circuit Court of Appeals.

The Federal Circuit affirmed, agreeing that the signals were "transitory electrical and electromagnetic signals" and not within the four categories of patentable subject matter. Signals were described as transmitting or conveying information. The court, however, took issue with the absence of a "specified physical medium" to carry the signal in the claims, such that the signals were merely conveying information with the physical carrier being irrelevant to the claim.

First, the court evaluated each of the four categories, noting that if the invention did not fit, it was not patentable. It ruled out "process" because the signal did not recite an action that transformed and reduced subject matter into something new. The signals were also not "products-by-process" because the claims were not specific to any particular process. The court noted that such signals were also not "machines," as not being concrete things. "Compositions of matter" were also ruled out because the court held that such compositions must be formed of two or more substances or be a composite article, regardless of form, but did not include a fluctuation in electric

potential or electromagnetic field that is not the result of a chemical union.

Then the court addressed whether the signal is a "manufacture." On a first-impression basis, making a new signal that effectuates an improvement in the art of watermarking such that the resulting signals are more useful for transmitting data, seems to provide something new — a new product resulting from a new process, even if not "physical," per se. The court proceeded down a narrowing path, first acknowledging that the signals are man-made, but noting they were not articles resulting from production and were not "tangible articles or commodities." Thus, the signals, while man-made and physical in nature, were deemed transitory, had to be measured at a certain point to be detected and interpreted, and had energy that was fleeting and devoid of permanence.

Nuijten includes a vigorous dissent, which criticizes both the approach to analysis under Section 101 as well as the end result. The dissent notes that the definition of "manufacture" used in the opinion was not based on prior precedent and that such cases did not limit Section 101 to tangible or nontransitory subject matter. The dissent pointedly called to mind other inventions accepted as patentable that are not necessarily stable.

For example, chemical intermediates where detection with instruments to identify the substance is necessary and/or where the intermediate is formed but not amenable to isolation may be unstable and transitory in nature. While the signals may only last for a brief period of time, they may also be broadcast for reasonably long periods of time, and so, the dissent noted, they are also not necessarily fleeting. Further, the dissent argued that Section 101 precedent did not require permanence.

As technology evolves, for example, in areas of nanotechnology, microcircuitry and biotechnology, what is and is not within the realm of "anything under the sun made by man" necessarily evolves as well. Cutting back on the scope and nature of the analysis of patentable subject matter under Section 101 makes it more difficult to envelop new inventions within the scope of protectible U.S.

innovation. Such cases are indicative of the difficulties inherent in making new technologies work within age-old statutory definitions and court precedents coupled with the pressures of new industries growing up around these technologies and various patent reform movements.

On the same day as *Nuijten*, the Federal Circuit issued the opinion, *In re Stephen W. Comiskey*. The invention in that case was a legal business method based on a program that "requires resolution by binding arbitration of any challenge or complaint concerning any unilateral document." In the method, the document and its author are registered, arbitration language is inserted in the document, someone having an issue submits an arbitration request, an arbitration is conducted and supported, after which a decision or award is determined that is binding. Clearly, this method seems like most methods of legal arbitration, but is in a mandatory system. The patent office viewed the method as obvious and merely an abstract idea and not tied to a machine or able to transform materials. Putting aside whether the method is unique, the Federal Circuit addressed first the Section 101 issue.

The court noted, based on the Supreme Court precedent, *Diamond v. Diehr*, that mental process inventions can be patentable when tied to a machine or when involving a composition of matter or manufacture. However, the mental process alone is not patentable, even if it has a practical application. Unlike the narrowing approach in *Nuijten*, the *Comiskey* court draws the distinction that a pure mental process must be tied to an otherwise patentable category of subject matter and appears to arrive at an intuitively correct result. While an automated or software system was described in the patent, it was not made part of all of the claims. The *Comiskey* court did view as potentially patentable subject matter those claims having the system software or hardware modules or access over the Web. That being said, for the claims that did recite Section 101 subject matter, the court remanded to determine whether the invention was prima facie obvious.

These cases either trimming back or clari-

fying a tight scope for Section 101 are also consistent with increasing Section 101 challenges being raised by examiners at the U.S. Patent and Trademark Office. Two recent decisions of the BPAI, issued prior to *Nuijten* and *Comiskey*, reflect this as well.

In re Jakobsson involved a computational method. While the steps were argued to provide output values that were of use in the cryptography field by generating passwords, the BPAI held that the method did not provide a "useful, concrete and tangible result," transform data and have a "real world activity."

Further, the end result of a password use in the cryptography field was not included in the process claims, so that the claims did not reflect the alleged real world activity and were really seen as an abstract idea in the form of an algorithm. While the claims mentioned a generic "processor," that alone was found insufficient to avoid the claims potentially blocking any use of the underlying algorithms.

Similarly, *In re Gutta* held that the invention was an abstract idea in that the claims incorporated mathematical algorithms working through a general computational device to measure the distance between items, with no specificity. The board found that the "items" could be any items, even geometric figures, such that the method would foreclose general use of the mathematical algorithms for measuring distance.

These cases show an attempt to put a fence around Section 101, but struggle with what should constitute patentable subject matter. While the "computational" cases and pure "mental thought" claims appear to reflect a correct result, as the claims in those cases appear to have been drafted perhaps unnecessarily broadly, cases like *Nuijten* show a more formalistic and unnecessarily narrow view that could make new, difficult-to-categorize technologies more difficult to patent. The cases also point to the need for careful and varied claim drafting for such inventions. This is a slower sea change than other reform areas, and inventors should keep an eye on the Section 101 trends. •