

The Limited Monopoly™

An Eerie Sound - Transitory Signals and Computer Readable Media Rejections

by Robert Gunderman, PE and John Hammond PE

Patent-eligible Subject Matter

The patentability of inventions is defined in the United States by federal statute 35 U.S.C. §101 that states “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.”¹

Thus, for an invention to be patentable, it has to be both useful, and within at least one of the four categories of patentable subject matter. The four patent-eligible subject matter categories, as defined by 35 U.S.C. §101 are Process, Machine, Manufacture and Composition of Matter. If the claim of a patent application is not in one of these four categories, it is not patent eligible. Some examples of ineligible subject matter are transitory signals *per se*, a company *per se*, humans *per se*, or a set of instructions *per se* (such as a game or software *per se*).

Judicial Exceptions

Ever since the original Patent Act of 1793 that was authored by Thomas Jefferson², the courts over the years have altered the definition of patent eligible subject matter to take into consideration recent technical advancements and their related patent disputes.

These have come to be known as judicially recognized exceptions, and are used extensively by the Patent Office and its examining corps to determine patent eligibility. Some of the more common judicially recognized exceptions that are not patent eligible subject matter include abstract ideas, laws of nature, natural phenomenon, mental processes, mathematical algorithms, and scientific principles. If a claim in a patent application is directed to a judicial exception itself, it is not patent eligible. It should be noted, however, that many practical applications of judicial exceptions can become patent eligible. For example, the Supreme Court in *Bilski v. Kappos*³ reaffirmed a previous decision in *Diamond v. Diehr*⁴ that “while an abstract idea, law of nature, or mathematical formula could not be patented, an application of a law of nature or

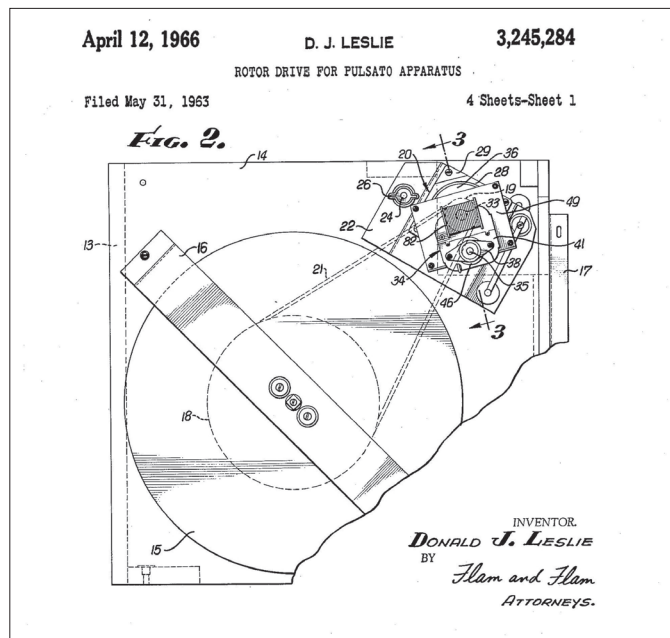
mathematical formula to a known structure or process may well be deserving of patent protection.”

Rejection of Claims for Transitory Computer Readable Media

A claim is interpreted with the broadest reasonable interpretation in view of the specification consistent with the interpretation those skilled in the art would reach.⁵ As such, for many years software instructions were not regarded as patent eligible because they were considered printed matter. Then in 1995, a decision by the U.S. Court of Appeals for the Federal Circuit *In re Beauregard*⁶ held that computer instructions on computer-readable media were articles of manufacture, and were patent eligible.

It became common for patent claims to recite a computer program on computer readable media, and these claims became known as “Beauregard claims.” Then, in 2007, the same court (the Federal Circuit), in the case of *In re Nuijten*⁷ held that a signal *per se* is not patentable subject matter under 35 U.S.C. §101. This prompted a series of internal documents at the USPTO instructing Examiners to require that all “Beauregard claims” be limited to non-transitory computer readable media, whatever that means.

This of course created more confusion and more questions than answers. So on January 26, 2010, David Kappos, the director of the USPTO, issued a memorandum offering a solution. Director Kappos provided a technical interpretation of computer readable medium in that “the broadest reasonable interpretation of a claim drawn to a computer readable medium...typically covers forms of non-transitory tangible media and transitory propagating signals *per se* in view of the ordinary and customary meaning of computer readable media...” and further broadly interpreted the *In re Nuijten* case that “transitory embodiments are not directed to statutory subject matter.” Director Kappos further went on to offer





up a solution – that any claim drawn to a computer readable medium simply be amended to narrow the claim so that it reads “non-transitory computer readable medium.”

Technical Flaws

So the guidance from Director Kappos seemed simple – add the term “non-transitory” to the claim language and the rejection goes away. But wait a minute, a signal is not a computer readable medium, a signal is *stored on* a computer readable medium. Any good EE knows this, and in fact this came up in the *In re Beauregard* case that started the whole thing. The court stated “Nuijten’s allowed claim 15 is directed to [a] storage medium *having stored thereon a signal* with embedded supplemental data.”

So then what is a non-transitory computer readable medium? The answer is scary. The term transitory, according to several dictionaries, means lasting only a short time, brief, short-lived, temporary. So it follows that non-transitory means long-lived, enduring. So amending your claims to state “non-transitory computer readable media” covers floppy disks, CD’s, DVD’s, etc. But what about computer readable media that store data for a short period of time, such as volatile memory that stores data only when the power is on? (Consider RAM, cache memory, and register memory, to name a few.) This unintended loophole created by the USPTO is worrisome. For example, pirated software could be temporarily embedded in volatile memory in the U.S. and permanently stored outside of the U.S., similar to the way in which cloud computing or web based applications are run today. With such narrow claim language, infringement could be cleverly avoided.

How to Fix or Avoid a Transitory Signal Rejection in Your Patent Application

Drafting claims without the limiting “non-transitory” language is a good first approach, as not all Examiners will reject claims and insist on the non-transitory computer readable media language. If the Examiner rejects the claims and insists on “non-transitory computer readable media” language, a careful explanation should be provided in the Office Action response, which indicates that non-transitory computer-readable media include *all* computer-readable media, with the sole exception being a transitory propagating signal *per se*. Such an explanation may also be included in the specification prior to filing the application or may be amended later. This may help to defend against unnecessary and unintended narrow claim interpretation. While it is not guaranteed that all Beauregard style claims will run into this issue, it is important to know that it may happen, and to understand what the rejection means and how to deal with it without unnecessarily narrowing and weakening your patent case.

1. See also “[The Limited Monopoly](#)” June 2007.
2. Act. of Feb. 21, 1793, ch. 11, §1, 1 Stat. 318.
3. 130 S. Ct. 3218 (2010)
4. 450 U.S. 175, 187 (1981)
5. MPEP 2111
6. *In re Beauregard*, 53 F.3d 1583 (Fed. Cir. 1995)
7. 500 F.3d 1346, 1357 (Fed. Cir. 2007)

Authors Robert D. Gunderman P.E. (Patent Technologies, LLC www.patenttechnologies.com) and John M. Hammond P.E. (Patent Innovations, LLC www.patent-innovations.com) are both registered patent agents and licensed professional engineers. They offer several courses that qualify for PDH credits. More information can be found at www.patenteducation.com. Copyright 2013 Robert Gunderman, Jr. and John Hammond



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PHOTO CREDIT: Robert D. Gunderman, Jr.- Leslie Speaker from a Conn organ, circa 1971. U.S. Patent 3,245,284 to Donald J. Leslie, now expired.

The Leslie Speaker was famous for imparting an eerie church organ-like sound to electric organs “back in the day.” Donald Leslie invented a system where a speaker or a baffle was rotated by an electric motor to create a Doppler shift effect on the sound emanating from the speaker. The musician could vary the speed of the motor, and thus the sound of the organ. Such a beautiful, analog sound cannot be rendered by today’s digital techniques, and makes the Leslie speaker not only a curiosity, but also a favorite of many musicians.