Protecting Your Intellectual Property

ECE2799 Lecture
Prof. W. Michalson

I am not a lawyer. This presentation is not intended to convey legal advice. If you intend to pursue a patent, seek competent legal counsel.
Who is Elisha Gray?

• Everyone has heard the famous story:
  – On February 14, 1876, Alexander Graham Bell's telephone patent application entitled "Improvement in Telegraphy" was filed at the USPTO by Bell's attorney Marcellus Bailey; Elisha Gray's attorney filed a caveat for a telephone just a few hours later entitled "Transmitting Vocal Sounds Telegraphically". Alexander Graham Bell was the fifth entry of that day, while Elisha Gray was 39th.
  – Therefore, the U.S. Patent Office awarded Bell with the first patent for a telephone, US Patent 174,465 rather than honor Gray's caveat.

• In fact, the story is a lot more complicated.
• Today, due to the recent AIA, Bell would still be the inventor, but for different reasons...

Source: http://inventors.about.com/od/gstartinventors/a/Elisha_Gray.htm
What is a Caveat???

• They don’t exist anymore, but circa 1876:

According to the Guide to the Practice of the Patent Office 1853,[4] the primary objective of a caveat was to prevent the issuing of a rival patent for the same invention to a subsequent inventor. Before the issuing of a patent, the caveats filed within the preceding year were searched. If one was found for the same invention as the proposed patent, the Patent Office notified the holder of the caveat, who then had three months to submit a formal patent application with claims. If the two patent applications claimed the same invention, an interference would then be declared and neither patent could be issued until it was determined which was the first to invent.

Who Has Patent Rights?

• In the United States (before the AIA):
  – “First to invent”
    • In the United States, the first person to \textit{invent} a device (or process) has a right to a patent on that invention.
    • However, that person must \textit{diligently} attempt to reduce the invention to practice.

• The rest of the World (and now the United States):
  – “First to file”
    • A record of diligence is no longer as important.
What can be Patented?

• In the US, anyone who:
  – “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,”
    • “process” is defined by law as a process, act or method, and primarily includes industrial or technical processes
    • “manufacture” refers to articles which are made, and includes all manufactured articles
    • “composition of matter” relates to chemical compositions
  – In short, anything made by man may be patentable.

Source: http://www.uspto.gov/web/offices/pac/doc/general/what.htm
Requirements for Patentability

• In order to be patentable:
  – The invention must be “new.”
    • There must be novelty that makes the invention new. Ideas that are already out there, are not patentable.
  – The invention must be “non-obvious.”
    • Simply hooking two things together that have not been hooked together before is only patentable if the connection was not obvious.
  – The invention must be “useful.”
    • The invention must provide some benefit, or solve some problem.
Types of Patents

• Utility Patent
  – This is the “usual” type of patent that is obtained for a “useful” invention.

• Provisional Patent
  – A provisional application may be submitted prior to submission of a non-provisional utility patent application.

• Design Patent
  – Issued to protect the exterior design of a product.

• Plant Patent
  – May be issued to protect certain genetically engineered biological reproducing plants.
Provisional Applications

• Provisional applications are not examined on their merits.
• The benefits of the provisional application cannot be claimed if the one-year deadline for filing a non-provisional application has expired.
• Provisional applications cannot claim the benefit of a previously-filed application, either foreign or domestic.
Provisional Applications

• It is recommended that the disclosure of the invention in the provisional application be as complete as possible. In order to obtain the benefit of the filing date of a provisional application the claimed subject matter in the later filed non-provisional application must have support in the provisional application.

• If there are multiple inventors, each inventor must be named in the application.

• The inventor(s) named in the provisional application must have made a contribution to the invention as described.
Structure of a Patent

• There are three main sections of a utility patent:
  – *Drawings* – A set of drawings of important portions of the invention (if necessary).
  – *Specification* – The specification is the main portion of the text of the patent. It must be written such that “one of skill in the art” can reduce the patent to practice.
  – *Claims* – A utility patent must contain one or more claims that define the inventive material being patented.
Writing a Patent

• The patent specification must disclose sufficient information for “one of skill in the relevant art” to “reduce the invention to practice” without “undue experimentation.”

• The specification contains:
  – Background for the invention.
  – Summary of the invention.
  – Detailed description of the “preferred embodiment”.
  – Claims
Types of Patent Claims

• “Independent” claims:
  – 1. A system for processing positioning signals, the system comprising: a tracker hardware interface for receiving positioning information; a memory comprising a GPS library comprising a user interface, a tracker interface, and an operating system interface, the tracker interface comprising at least one tracker interface function for communicating over the tracker hardware interface; and a processor for running the tracker interface function.
Types of Patent Claims

• Dependent claims:
  – 3. The system of claim 1, wherein the tracker hardware interface comprises a serial interface.
  – 5. The system of claim 3, wherein the positioning control function comprises a positioning engine start function.
Infringement of Patents

• “Innocent” Infringement
  – You are not aware of the existence of a patent, yet you “infringe” one or more claims of someone's patent

• “Willful” Infringement
  – You are aware and yet you continue to infringe the claims.
Types of Infringement

• “Direct Infringement”
  – Your product literally includes each and every element of an applied claim.
  – Your product includes equivalents to each and every element of an applied claim

• “Indirect Infringement”
  – Contributory
  – Inducement
Interpreting Patent Claims

• Consider our first example:
  – A system for processing positioning signals, the system comprising:
    • a tracker hardware interface for receiving positioning information;
    • a memory comprising a GPS library comprising a user interface, a tracker interface, and an operating system interface, the tracker interface comprising at least one tracker interface function for communicating over the tracker hardware interface; and
    • a processor for running the tracker interface function.
Defining Claim Terms

• Step 1 – Plain Language
• Step 2 – Definition in the specification
  – The hardware tracker interface 110 may be virtually any type of data transfer interface (as examples, a serial, parallel, compact flash, PC Card, or network interface). The interface connection 126 may then be, as examples, a serial cable, parallel cable, or network cable, and may optionally be wireless. In one implementation, the hardware tracker interface 110 is an RS232 port running at 38,400 bps, N-8-1 that communicates up to 2 KB of data per second between the host 102 and the tracker hardware 104.
• Step 3 – Other definitions
  – How would one of skill in the art interpret the claim term?
Patent Prosecution

• Step 0 – Work with a good attorney!

• Step 1 – Perform a “patent search”
  – Determine if the idea has already been patented.
  – Review relevant art

• Step 2 – Write the specification
  – Clearly describe the preferred embodiment
  – Be as complete as possible!
  – Make sure all methods, means, and claim terms are defined (supported) by the specification!
Patent Prosecution

• Step 3 – Agonize over the claims
  – Broad claim coverage is good, but:
    • Too broad and there may be prior art that applies which you’re not aware of.
    • Too narrow, and minor deviations may fall outside the protection of the patent.
  – Use good, solid, independent claims as your basis.
  – Cover narrower options with dependent claims.
  – Every word matters!!!

• Step 4 – Wait (sometimes a couple of years)
Patent Prosecution

• Step 5 – Don’t be disappointed!
  – It is not unusual for all of your claims to be rejected by the examiner!
  – The examiner will explain what the problem is.
  – You have an opportunity to revise your claims and/or to explain your position to the examiner.
  – Anything you say to the examiner may become a limitation on the claims (use a lawyer!).
  – You may not revise the patent specification (except to correct minor typographical errors).

• Step 6 – Notice of Allowance!