

## **LECTURE TWENTY TWO:      *Intellectual Property and Patents***

**Remark:** This lecture note is the continuation of the preceding one and as such shares the special resources and additional references of that lecture note. In the following issues pertaining to intellectual property and preliminary steps to apply for patents are discussed. Again, the purpose of this and the previous lecture note is to clarify these matters and give further information on what some of these terminologies mean and how to seek a patent. Clearly, and as stated before, it is not our intention to serve as an attorney nor do we plan to provide a plethora of forms and documents in this regard. Special credit in preparation of this lecture note, is the same as the preceding note.

### **Introduction**

In this lecture we concentrate on issues pertaining to patents. Again, what is common in these topics, however, is the method of bookkeeping that is described in Lecture Four. Just a reminder that this laboratory notebook in whatever shape and form must be maintained and archived regularly as described. Here, the current and evolving thoughts and work performed must be recorded in an orderly manner that is *easily verifiable*. The patent examiner wants it that way. The record must establish the priority of inventorship. Be particularly careful in providing proofs against allegations of any impropriety and conflict of interest.

### **I. Issues Pertaining to Patents**

In the following we concentrate on issues pertaining to patents. The forthcoming definitions in subsequent sections of this note closely follow Ms. Deanna L. Dietrich and Ms. Nancy Spitzer's lecture, with some input from Dr. Steven Price's lecture.

***What is a patent?*** A legal right that permits the owner to exclude others from making, using, and selling an invention. A patent is granted to individuals who invent *new* and *useful* inventions. Here, the keywords are *new* and *useful*. During a patent's *limited term*, its owner has the right to exclude others from making, using, selling, offering for sale or importing the patented invention. Exclusionary rights lasts for 20 years from the date of the patent application was filed (below). In return, the inventor must disclose his or her invention to the world in such detail that other people will be able to make and use it. When a patent is issued, someone else may also have part of that idea. In that case, a patent owner may be prohibited from using his/her own invention if an earlier patent covers a portion of that invention. In some instances, some other laws may prohibit practicing an invention, which in that case the inventor may need permission to use his/her own invention. Thus, the patent alone does not give the owner the rights to make, use, sell offer for sale or import an invention.

***What is the life of a Patent?*** Effective June 6, 1995, the patent law changed so that all patents filed on or after that date will be in effect (called its "term") for 20 years from the date the patent application was *filed* with the United States Patent and Trademark Office. This has replaced the previous term of 17 years from the *issue date* of the patent.

***What is Prior Art?*** General state of knowledge existing or publicly available at least one year prior to patent application date.

**What are patentable subject matters?** Generally, there are three major types of patents.

- **Utility Patents:** referring to processes, machines, manufactures, composition of matter.
- **Plant Patents:** referring to asexually reproduced plants.
- **Design Patents:** referring to ornamental designs.
- Recently, **software patents** are also being entertained as part of utility patents.

There are certainly items, which *cannot* be patented. A partial list is as follows.

- **An inoperative device.**
- **Inventions that are already known in the prior Art.**
- **Laws of nature.**
- **Mathematical formulas.**
- **Method of doing business.**
- **Printed material.**

## II. Preliminary Steps Towards Securing Patents

Determining the patentability of an invention is certainly the first step in a long and arduous process of securing a patent. The patent examiner in the United States will look at an application and ask the following questions (From Patent Status, Title 35 U.S. Code, Sections 101, 102, 103)

- **Is this the first person to invent?** In some other countries the examiner looks at the first person that applies. One cannot patent an invention in the U.S. if it is known or used by the public more than one year prior to the date of a patent application being filed. In foreign countries, one cannot obtain a foreign patent if there is any public disclosure before a patent application is filed. Public disclosure includes seminars, poster sessions, and articles.
- **Utility – Is this a useful subject matter?** “... Useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof...” Usefulness of the invention plays a central role in this process.
- **Novelty – Is this a novel approach?** Novel means no prior work of that type is out there. Cannot patent an invention if it is known or used by the public more than one year prior to the date of the patent application. Do not publish until your application is ready. In foreign countries it pays to be the first to apply, but do not publish about the work until all applications are ready. Unless one is seeking a *provisional* patent.
- **Non-obvious?** This means the invention must not be the next logical step in the area and cannot be an obvious extension of what is already known to a person having ordinary skill in the art.”

**Provisional Application:** In order to secure an earlier filing date, effective June 8, 1995, a Provisional Patent Application can be filed. A Provisional Application is a simpler form of a patent application, enabling rapid securing of a filing date. If a provisional Application is filed, a complete application must be filed within one year of the provisional filing date.

**Important dates to remember:** The patent examiner looks into the proof, or lack of it, of the following dates.

- (1) When is the earliest date of “conception?”
- (2) When is the earliest date of “reduction to practice?”
- (3) When is the first date of public use?
- (4) When is the first publication date?
- (5) When is the first date of offer for sale?
- (6) When is the date for the first sale?

It is clear that one tool to establish the above is the “Laboratory Notebook,” which must have been developed throughout this process.

### • ***Publishing and Seminars***

- In the U.S., a person has one year from the time of public disclosure of an invention to file a patent application.
- However, this “grace period” is not recognized outside the U.S., and in most foreign countries one cannot obtain a foreign patent if public enabling occurs before filing a U.S. patent.
- Therefore, it is recommended to begin the patent process before one discloses an idea.
- Provisional patent applications are expected to be very helpful because if an applicant is about to make a public disclosure, the filing of a provisional application, which in theory can be done rapidly and with limited expense, will preserve an early filing date.

## **III. Secondary Steps - Searching**

Searching is the second logical step to entertain before a formal application is submitted to the patent office. In this phase we study the following concerns by searching for prior Arts and patents through resources listed above, particularly [2].

- ***Has this invention already been patented?*** This is done through a novelty search [2]. This is difficult to perform since it seeks to prove a negative – an invention has not existed previously. When reviewing this site, and searching for patents, consider the following very carefully as the immediate benefits of this search.
  - ***Look at the sample patents to help prepare the application.***  
*Get valuable background information on prior Art that you can use in your application.*
  - ***Get valuable technical information from similar patents.***  
*This helps you to understand the current and prior state of technology – That whether you have really invented a patentable project.*
  - ***Help identify the novel features of your invention.***
  - ***Search patent applications for similar “pending patents.”***  
*Now, you search U.S. patent applications since March 2001. Applications are made public if the invention is also filed in a foreign country. The application may not be granted, but you can see what is out there.*

Using the US patent classification, we search for patents by subject. First, determine patent classification and sub-classification numbers using the Manual of Classification. This is the most precise and comprehensive way to search the patent database looking for prior Art.

Then search patent data base by class number, and read relevant patents. This system consists of 300 main classes and 120,000 subclasses.

Each class represents an invention's function, structure, substance or field of use.

This is used by patent examiners to categorize every new application and to do a prior Art search.

It is detailed, hierarchical and fast changing (can expand or be reorganized over time).

Or, search patent data base by keyword (back to 1976) first, then locate relevant patents and appropriate class numbers. Continue the search by classification number to retrieve patents back to 1790.

- ***Patent Prosecution***

- Upon receipt of a favorable patentability opinion, together with a consideration of the inventions' commercial utility, the attorney may be instructed to draft a patent application covering the invention.
- In some instances further work may be required of the inventors or others so that a proper application can be drafted.
- After a period usually lasting several months and including a detailed review of the final draft, an application will be submitted to the U.S. Patent and Trademark Office.
- Inventor has one year from filing date to decide on foreign filing.

#### **IV. Final Steps Disclosure and Application**

The process consists of the following steps, which must be completed by a competent counsel. However, the applicant must compile the necessary information listed below.

##### ***Step 1 – Patent Disclosure***

- The patent journey begins when you believe you have made a discovery.
- Discoveries are summarized in an "Invention Disclosure Report."

##### ***Step 2 – The Invention Disclosure Report***

This report asks for the following entries that must be prepared by the applicant, just as the final report for any project.

- A good descriptive title.
- A simple description of the invention and date it was made.
- A description of all the ways it could be used.
- Recent literature including talks that have been given and reports that have been prepared.
- Names of all inventors.
- Names of others to whom you have disclosed the invention.
- Funding sources (work-for-hire?).
- Signatures.

### ***Step 3 – A Patent Application***

This application asks for the following information (a sample application is attached).

- ***Title***
- ***Inventor(s)*** – Can be more than one inventor or “*patentee*.”
- ***Assignee (Applicant)*** – Company or person to whom the patentee has assigned the patent rights usually because he/she is an employee of that company.
- ***Classification Numbers*** – This is organized by the USPTO, currently into 300 main classes and 120000 subclasses. There is an international class system called the IPC, and foreign patent can be searched using those numbers.
- ***Prior Art References*** – Citations to other patents, journal articles or books as well as other patents that are closely related to this application.
- ***Abstract*** – Summary of the technical disclosures made in the patent.
- ***Specification*** – Consists of the description of the claims.
- ***Claims*** – Describe the structure of an invention in precise terms and in one sentence define the invention. The more precise, the better is received by the examiner. Describe the subject matter and from the legal description and boundaries of invention. This is used to set the basis for an infringement suit.
- ***Drawings***

### ***Step 4 – Plan of Action***

Steps for obtaining a patent culminates in a package containing the following segments:

- Invention disclosure report.
- Patent application that is prepared by an attorney.
- Patent applications sent to U.S. patent and Trademark Office for “filing.” Patent is now “pending.”

Then

- Patent prosecuted, “allowed,” is issued – possible grant is made to the inventor, publications can move forward.

### **Final Thought**

The importance of a well-prepared and well-archived “Laboratory Notebook” in this entire process cannot be overemphasized. Having that notebook is of paramount importance in successfully obtaining a patent, or any IP license.

### **Closure**

It is very important that we start with a patent search in [2], in order to get the “Big Picture” and see how this invention will add to the state of technology before spending additional time and money to seek a license. Also, one needs a competent counsel to finish the task. Thus, ask for an attorney with experience in this field. A summary of relationships among these IP’s is given subsequently.

**Essential thoughts in this lecture**

Issues.	Applicability to your project, if any.
Patents.	Is your project patentable?
Do you want to add anything else?	Please elaborate.

***Relationships among Trade Secrets, Patents,  
Trade Names, Trademarks and Copyrights***

	Origin of Rights	Prerequisites to Protection	Scope of Protection	Life	Test for Infringement
Trade Secret	Investment of time and money.	Recognition of value and utility, access.	Confidential subject matter.	Life of confidentiality.	Derivation.
Utility patent	Grant by Federal Government, on application by inventor.	New, useful, and non-obvious subject matter.	Useful process, machine article of manufacture, or composition of matter.	17 years from date of grant. Since June 6, 1995, 20 years from the date filed.	Manufacture, use or for sale in U.S.A., of claimed invention, including use or sale of invention made outside U.S.A., by a process patented in the U.S.A.
Design Patent	Grant by Federal Government, on application by inventor.	New, original and ornamental subject matter.	Ornamental design for article of manufacture	14 years from date of grant.	Designs look alike to eye of an ordinary observer.
Copyright	Creation of “works of authorship”.	Originality – registration before infringement or within three months of publication required for attorney fees and statutory remedies.	Works of authorship.	Variable – on the order 50 years or longer; life of author plus 50 years.	Copying.
Trade Name Trademark Service mark	Adoption and use, or intent to use coupled with registration.	Use to identify and distinguish business goods or services.	Words, names, symbols, or devices.	As long as property used as a mark.	Likelihood of confusion, mistake, or deception.

**Appendix A:**

Attached is a set of sample forms for patent application [2]. This compilation is the courtesy of Ms. Nancy Spitzer of the K.F. Wendt Library at the University of Wisconsin-Madison.

PTO/SB/01 (10-01)

Approved for use through 10/31/2002. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**DECLARATION FOR UTILITY OR  
DESIGN  
PATENT APPLICATION  
(37 CFR 1.63)**

☐ Declaration Submitted with Initial Filing      **OR**      ☐ Declaration Submitted after Initial Filing (surcharge (37 CFR 1.16 (e)) required)

Attorney Docket Number

First Named Inventor

**COMPLETE IF KNOWN**

Application Number

Filing Date

Art Unit

Examiner Name

**As the below named inventor, I hereby declare that:**

My residence, mailing address, and citizenship are as stated below next to my name.

I believe I am the original and first inventor of the subject matter which is claimed and for which a patent is sought on the invention entitled:

*(Title of the Invention)*

the specification of which

☐ is attached hereto**OR**☐ was filed on (MM/DD/YYYY)  as United States Application Number or PCT InternationalApplication Number  and was amended on (MM/DD/YYYY)  (if applicable).

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment specifically referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR 1.56, including for continuation-in-part applications, material information which became available between the filing date of the prior application and the national or PCT international filing date of the continuation-in-part application.

I hereby claim foreign priority benefits under 35 U.S.C. 119(a)-(d) or (f), or 365(b) of any foreign application(s) for patent, inventor's or plant breeder's rights certificate(s), or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, by checking the box, any foreign application for patent, inventor's or plant breeder's rights certificate(s), or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Not Claimed	Certified Copy Attached?	
				YES	NO
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

☐ Additional foreign application numbers are listed on a supplemental priority data sheet PTO/SB/02B attached hereto:

[Page 1 of 2]

Burden Hour Statement: This form is estimated to take 21 minutes to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.

PTO/SB/01 (10-01)

Approved for use through 10/31/2002. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

**DECLARATION — Utility or Design Patent Application**Direct all correspondence to: ☐ Customer Number  or ☐ Correspondence address below

Name

Address

City

State

ZIP

Country

Telephone

Fax

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

NAME OF SOLE OR FIRST INVENTOR : ☐ A petition has been filed for this unsigned inventorGiven Name  
(first and middle [if any])Family Name  
or SurnameInventor's  
Signature

Date

Residence: City

State

Country

Citizenship

Mailing Address

City

State

ZIP

Country

NAME OF SECOND INVENTOR: ☐ A petition has been filed for this unsigned inventorGiven Name  
(first and middle [if any])Family Name  
or SurnameInventor's  
Signature

Date

Residence: City

State

Country

Citizenship

Mailing Address

City

State

ZIP

Country

☐ Additional inventors are being named on the \_\_\_\_ supplemental Additional Inventor(s) sheet(s) PTO/SB/02A attached hereto.



PTO/SB/16 (10-01)

Approved for use through 10/31/2002. OMB 0651-0032  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**PROVISIONAL APPLICATION FOR PATENT COVER SHEET**

This is a request for filing a PROVISIONAL APPLICATION FOR PATENT under 37 CFR 1.53(c).

Express Mail Label No. 

INVENTOR(S)					
Given Name (first and middle [if any])	Family Name or Surname	Residence (City and either State or Foreign Country)			
<input type="checkbox"/> Additional inventors are being named on the _____ separately numbered sheets attached hereto					
<b>TITLE OF THE INVENTION (500 characters max)</b>					
Direct all correspondence to: <b>CORRESPONDENCE ADDRESS</b>					
<input type="checkbox"/> Customer Number <span style="border: 1px solid black; display: inline-block; width: 150px; height: 1.2em; vertical-align: middle;"></span>		→		Place Customer Number Bar Code Label here	
OR					
<input type="checkbox"/> Firm or Individual Name					
Address					
Address					
City		State		ZIP	
Country		Telephone		Fax	
<b>ENCLOSED APPLICATION PARTS (check all that apply)</b>					
<input type="checkbox"/> Specification Number of Pages <span style="border: 1px solid black; display: inline-block; width: 60px; height: 1.2em; vertical-align: middle;"></span>		<input type="checkbox"/> CD(s), Number <span style="border: 1px solid black; display: inline-block; width: 60px; height: 1.2em; vertical-align: middle;"></span>			
<input type="checkbox"/> Drawing(s) Number of Sheets <span style="border: 1px solid black; display: inline-block; width: 60px; height: 1.2em; vertical-align: middle;"></span>		<input type="checkbox"/> Other (specify) <span style="border: 1px solid black; display: inline-block; width: 150px; height: 1.2em; vertical-align: middle;"></span>			
<input type="checkbox"/> Application Data Sheet. See 37 CFR 1.76					
<b>METHOD OF PAYMENT OF FILING FEES FOR THIS PROVISIONAL APPLICATION FOR PATENT</b>					
<input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.				<b>FILING FEE AMOUNT (\$)</b>  <div style="border: 1px solid black; width: 80px; height: 40px; margin: 0 auto;"></div>	
<input type="checkbox"/> A check or money order is enclosed to cover the filing fees					
<input type="checkbox"/> The Commissioner is hereby authorized to charge filing fees or credit any overpayment to Deposit Account Number: <span style="border: 1px solid black; display: inline-block; width: 100px; height: 1.2em; vertical-align: middle;"></span>					
<input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.					
The invention was made by an agency of the United States Government or under a contract with an agency of the United States Government.					
<input type="checkbox"/> No.					
<input type="checkbox"/> Yes, the name of the U.S. Government agency and the Government contract number are: _____					

Respectfully submitted,

Date 

SIGNATURE \_\_\_\_\_

 REGISTRATION NO.   
 (if appropriate)  
 Docket Number: 

TYPED or PRINTED NAME \_\_\_\_\_

TELEPHONE \_\_\_\_\_

**USE ONLY FOR FILING A PROVISIONAL APPLICATION FOR PATENT**

This collection of information is required by 37 CFR 1.51. The information is used by the public to file (and by the PTO to process) a provisional application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 8 hours to complete, including gathering, preparing, and submitting the complete provisional application to the PTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, D.C. 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Box Provisional Application, Assistant Commissioner for Patents, Washington, D.C. 20231.

