COMP 918: Research Administration for Scientists

Volume 4: Intellectual Property: Patents, Copyrights, Trade Marks and Trade Secrets

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These materials were prepared for the "Research Administration for Scientists" course by Timothy L. Quigg, Lecturer and Associate Chair for Administration, Finance and Entrepreneurship, Computer Science Department, UNC-Chapel Hill. They are published in four volumes: Volume 1 – Research Funding, Grantsmanship, and Research Ethics, Volume 2 – Sponsored Research Agreement Types, Budgeting, FAR, and OMB Circulars A-21 and A-110, Volume 3 – Management in the Academic and Scientific Enterprise, and Volume 4 – Intellectual Property: Patents, Copyrights, Trademarks and Trade Secrets.

Tim created and taught this course each year from 2001-2013. More than 600 graduate students, post-docs, faculty and staff from over 40 UNC-Chapel Hill departments have taken the course, many for credit and many others as auditors. In 2009, the Computer Science Graduate Student Association honored Tim with the Excellence in Teaching Award for his work with this course!

What is intellectual property?

Any product of the human mind that has value in the marketplace:

- ✓ Idea
- ✓ Invention
- ✓ Expression
- ✓ Unique Name
- ✓ Business Method
- ✓ Industrial Process
- ✓ Chemical Formula

and can be reduced to a tangible form.

Abstract ideas are not subject to IP protection under the law!

The history of U.S. intellectual property law can be traced to England

1710 – Statute of Anne

- ✓ Established principles for an author's ownership of copyright.
- ✓ Fixed the term of protection at 14 years, renewable for 14 more if the author is still alive upon expiration of the initial period of protection.
- ✓ Created a "public domain" for literature by limiting the term of protection and ensured that once a work was purchased the author no longer had control over its use.

1787 - United States Constitution Article 1, Section 8

"The Congress shall have power… to promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries …"

Let's parse this definition!

1787 - United States Constitution Article 1, Section 8

"The Congress shall have power… to promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries …"

The initial Congressional intent was to serve the "public interest" – the protection of individual property rights was important, but secondary !

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"Limited times" – Is 120 years of protection for some copyrights reasonable?

1787 - United States Constitution Article 1, Section 8

"The Congress shall have power… to promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries …"

It was a balanced approach - the Government offered a period of exclusivity as an incentive to invent/create and society benefited from the innovations!

1787 - United States Constitution Article 1, Section 8

"The Congress shall have power… to promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries …"

Authors and writings refer to copyrights and trademarks!

1787 - United States Constitution Article 1, Section 8

"The Congress shall have power… to promote the progress of science and the useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries …"

Inventors and discoveries refer to patents!

Three levels of law apply

- ✓ U.S. Constitution - Provides the legal foundation for all U.S. IP law.
- ✓ Specific legislation, e.g., Patent Act of 1952, Digital Millennium Copyright Act of 1998, the America Invents Act of 2011.
- ✓ Case law – Case law produces legal precedents that help answer "how" IP laws apply to new circumstances and new technologies.
  - When a patent, copyright or trademark has value, it will be challenged in court!
  - Some say that U.S. IP law should be called the "Full employment act for lawyers!"

Intellectual property law determines

- ✓ Who owns the IP.
- ✓ When and how owners can exercise their "rights" to prevent others from exploiting inventions (patents) or creative works (copyrights).

What "right" is granted to patent owners?

The right to exclude others from making, using or selling the patented invention for a fixed period of time (a time-limited monopoly).

Intellectual property law determines

- ✓ Who owns the IP.
- ✓ When and how owners can exercise their "rights" to prevent others from exploiting inventions (patents) or creative works (copyrights).

What "right" is granted to copyright owners?

The right to make, copy, display, distribute, perform, import or export creative works or to allow others to do so for a fixed period of time (a time-limited monopoly).

Intellectual property law determines

- ✓ Who owns the IP.
- ✓ When and how owners can exercise their "rights" to prevent others from exploiting inventions (patents) or creative works (copyrights).
- ✓ The degree of recognition and protection the courts are willing to give IP.

If the owner has not practiced due diligence in defending a right, the courts may take this into account when hearing an infringement suit.

Intellectual property law determines

- ✓ Who owns the IP.
- ✓ When and how owners can exercise their "rights" to prevent others from exploiting inventions (patents) or creative works (copyrights).
- ✓ The degree of recognition and protection the courts are willing to give IP.
- ✓ IP law determines when and how a person can control his/her invention/creation.

Control may mean licensing rights to a new drug to the W.H.O. for $1 so it can be made available in developing countries at affordable prices…

Intellectual property law determines

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- ✓ IP law determines when and how a person can control his/her invention/creation.

…or licensing the commercial rights at competitive rates and using the profit to finance free licenses for educational and charitable uses.

How U.S. universities have traditionally addressed intellectual property issues

Traditional scholarly practice has been to publish all research results. As a result, most university IP simply became part of the public record (prior art).

- ✓ This was perceived as fair because everyone had equal access to this information.
- ✓ Inventions supported by federal funds were owned by the Government and when licensed to industry, the rights were granted on a non-exclusive basis.
- ✓ In 1980 the Government held title to 28,000 patents, but fewer than 5% were licensed to industry for the development of commercial products. **Why such a small %?**

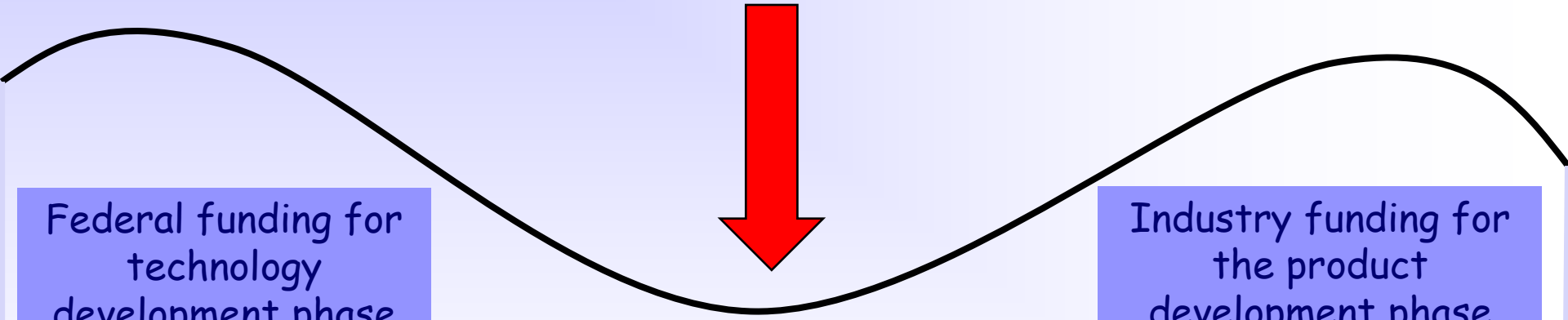
How U.S. universities have traditionally addressed intellectual property issues

Most university inventions are far from being product-ready, so large investments of capital are required to further develop and productize these inventions. Most businesses are understandably unwilling to make these large investments without first securing a period of "exclusive protection" from competition, so few university inventions ever became products!

Why are so many university inventions far from being product ready?

Because they suffer from being in the

"Valley of Death"



Federal funding for technology development phase

Industry funding for the product development phase

No funding for the Proof of Concept and Proto-type Development Phase

One approach to mitigating the valley of death problems is RCPE

Industry research is known for being quite well organized, but risk adverse. University research is known for being rather innovative, but poorly organized.

Many advocate an approach to university research called:

Reverse
Conceptual
Product
Engineering

Start with the product and then plan backward designing experiments and writing specifications and code with the final product in mind.

How U.S. universities have traditionally addressed intellectual property issues

During the 1970's the U.S. experienced a period of double-digit inflation, our industrial heartland was failing, and many experts predicted a loss of U.S. leadership in high technology.

- ✓ Congress grew increasingly frustrated by the situation and adopted a new strategy – the use of federally-funded inventions as an economic stimulus for the U.S. economy!
- ✓ In 1980 Congress passed the Bayh-Dole Act (named for Senators Birch Bayh and Bob Dole) which redefined and redirected IP management at most universities.

Provisions of the Bayh-Dole Act of 1980

- ✓ Allowed recipients of federal funds to retain ownership of federally-supported inventions/patents.
- ✓ In exchange, recipients were required to ensure the commercial use of patents through either licensing to industry or creating new companies (start-ups or spin-offs).
- ✓ Preference in licensing was given to small business.
- ✓ Government retained non-exclusive, government-use licenses to practice the invention and march-in rights.
- ✓ University Technology Transfer Offices were created and modern academic tech transfer was born!

Early reaction to Bayh-Dole Act of 1980

- Some academics enthusiastically welcomed these changes, others felt they were at odds with the academic traditions of "open labs" and the "free sharing of information." And the pursuit of economic gain was viewed by some as a major conflict with the scholarly traditions of the academy.
- While the Bayh-Dole Act has both supporters and detractors, there are many positive results.
- In 2005 alone, universities helped introduce 527 new products into the marketplace, received 3,641 new patents and created billions of dollars in direct benefit to the U.S. economy.

Bayh-Dole Act of 1980

Whole new industries employing tens of thousands of people, e.g., biotechnology have been enabled by the licensing of federally-funded university patents to existing businesses and the formation of spin-off companies!

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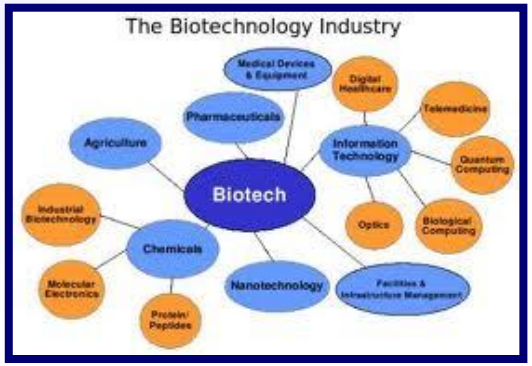


Bayh-Dole Act of 1980

Two decades after its passage, the Economist Technology Quarterly (December 2002 issue) declared the Bayh-Dole Act to be:

> "Possibly the most inspired piece of social legislation to be enacted in America over the past half-century. More than anything, this single policy measure helped reverse America's precipitous slide into industrial irrelevance."

My view of the "wrong" approach to handling University Tech Transfer

The Tech Transfer Office as "Profit Center"

Cherry-picking - Inventions are evaluated using strict business criteria and only the ones predicted to produce the "greatest financial gain" are pursued!

- ✓ Problem 1 – Can't predict winners accurately.
- ✓ Problem 2 - Many good inventions are "left on the shelf" and are not given the attention they deserve.
- ✓ Problem 3 – IP that ultimately provides the most societal benefit can't always be measured purely in financial terms.

My view of the "right" approach to handling University Tech Transfer

The Tech Transfer Office as "Provider of Service" to the faculty research community!

The goal should be to select the best approach for transferring each invention or creative work into the marketplace. "One size does not fit all!"

Patenting, Copyrighting, Licensing, Publishing, Distribution via "Open Source" channels, Start-up companies, consulting or just transferring technology by training and sending graduates to industry! All of these approaches should be considered!

Four categories of IP law

Each protects a different form of IP and each extends different rights to the inventor/author.

- ✓ Patent Law - Inventions
- ✓ Copyright Law – Creative works
- ✓ Trademark Law – Marks, symbols, words
- ✓ Trade Secret Law - ???

The strongest protection is when products are covered under multiple categories!

For example, the Apple iPad is protected by

- ✓ Patent Law – multiple inventions
- ✓ Copyright Law – software, manuals
- ✓ Trademark Law – Apple and iPad names, logos
- ✓ Trade Secret Law - ???

Even when all the patents expire, the Apple trademark, the copyrighted materials and the information protected as trade secrets will still have substantial value!

We'll begin with patent law, but first let's examine two common patent misconceptions

1. If a product is patented, it is bound to be superior to other products.

   Fact – A patent merely means the invention is different from similar products, not necessarily superior.

2. Once a patent issues, the owner will make money.

   Fact – Less than 5% of all U.S. patents generate enough revenue to pay the costs of their prosecution.

U.S. Patent Law

What is a patent?

Patent - A grant made by a government that confers upon the creator of an invention the sole right to make, use, and sell that invention for a set period of time.

Who can apply for a patent?

Any true inventor regardless of:

- ✓ Age
- ✓ Nationality
- ✓ Mental Competency
- ✓ Incarceration
- ✓ Even deceased persons through their legal representatives

Different type of patents

Utility patents…

…cover inventions that function in a unique manner to produce a utilitarian result:

- Electronic circuits
- Software
- New drugs
- Manufacturing processes
- New bacteria, animals, plants
- Machines
- Manufactured products

Design patents…

…protect the unique, ornamental or visible shape or design of an object and have only one claim.

Uniqueness of shape must be purely for aesthetic reasons – if functional reasons apply, it's a utility patent!

- ✓ Workshop wall clock in the shape of a saw blade – design patent.
- ✓ Special shape for wing of an airplane to reduce turbulence – utility patent.

Duration and scope of U.S. patents

Duration of a U.S Patent?

20 years from the date of filing – if periodic maintenance fees are paid!

Scope and reach of U.S patent rights?

Throughout the U.S., its territories and possessions.

Patent Cooperation Treaty (PCT) allows for filing in the U.S. and within one year, making a single international filing. When used with a provisional patent application, the applicant has up to 30 months from the U.S. filing date before having to select the countries in which to file individually.

How can an issued patent be invalidated?

- ✓ Failure to pay maintenance fees.
- ✓ A Court (rather than the PTO) concludes that one or more previously undiscovered (but existing at the time of the invention) prior-art references prove the invention wasn't novel.
- ✓ The patent owner engages in illegal conduct, e.g., uses the patent in violating federal antitrust law.
- ✓ The patent owner commits fraud by intentionally failing to disclose material information (e.g., prior art) to the PTO while the patent application is being prosecuted.

U.S. patent application process

What federal agency prosecutes patent applications?

The Patent and Trademark Office (PTO) prosecutes patent applications and, if the proper requirements are met, issues patents.

Role of PTO Examiner?

- ✓ Advocate for the public.
- ✓ Tries to prevent a patent from being issued (your first opponent).
- ✓ The adversarial process usually strengthens an issued patent.
- ✓ Definition of a strong patent:

"One that can be defended in the courts when infringed!"

What is patent infringement?

Infringement is a battle between a product or process and a patent, i.e., the protected rights are being used without a license.

If a patent is being infringed, what can the owner do?

Sue the infringer in federal court!

Divisional patent application

If a patent examiner determines that a patent application actually includes more than one invention, he/she may…

…order it to be divided into two or more separate applications to be prosecuted independently (and charge the applicant the appropriate extra filing fees).

What kind of property is a U.S. patent?

It's personal property similar to land!

Land

- Sold
- Leased
- Willed
- Boundaries Defined by Deed
- Exclusionary Rights
- Yours Till You Dispose of It

Patent

- Sold
- Leased (Licensed)
- Willed
- Boundaries Defined by Claims
- Exclusionary Rights
- Limited Life

What kind of property is a U.S. patent?

It's personal property similar to land!

Patent rights are personal property and may be conveyed by operation of law, bequeathed by will or pass as personal property by the applicable laws of intestate succession. They are subject to state laws and regulations governing ownership, inheritance, or transfer of personal property as well as terms of contracts or conduct of business.

How are rights divided between joint owners of a patent?

- ✓ Each owner has full rights to make, use, sell and license rights without gaining approval from the other owners.
- ✓ Therefore, it is important to negotiate and execute a separate business agreement addressing financial, marketing, and related issues.

Negotiate the agreement before a patent issues and before its full commercial value is known.

Ownership of patents from federally funded research

- ✓ Bayh-Dole requires universities to maintain ownership of patents from federally-funded research.
  - ✓ Patents are issued in the name of the inventor(s) with the university as the Assignee.
- ✓ Universities may license rights (exclusive or non-exclusive), but may not assign or sell ownership of the patent.

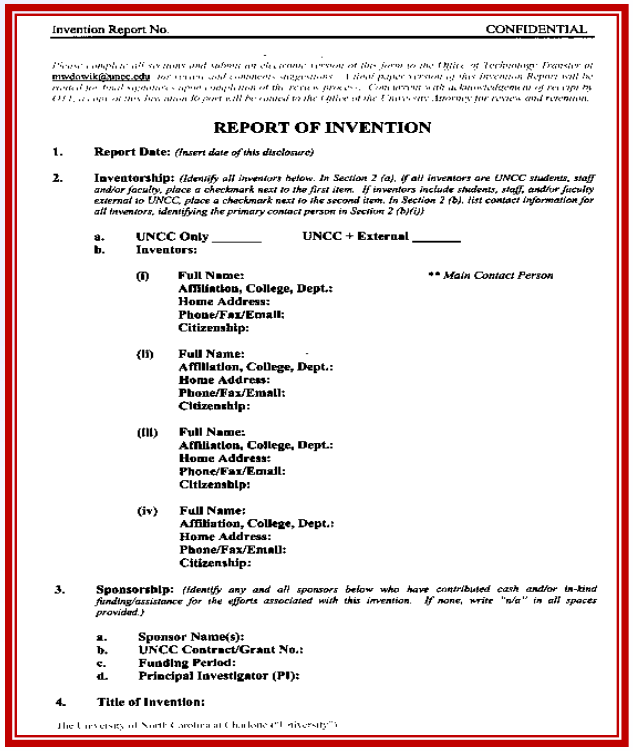
"Owning" a patent or having an "exclusive license" convey similar rights: the right to make or use.

Bayh-Dole Act requires universities to protect federally-funded inventions

Faculty are required to disclose inventions to allow for protection (through either a CDA/NDA or by filing a Provisional Patent Application) before:

- ✓ Publication Submission
- ✓ Proposal Submission
- ✓ Presentations
- ✓ Discussions with Non-University Personnel
- ✓ Web Postings
- ✓ Thesis/Dissertation Submission

An "enabling public disclosure" creates a bar to full patent protection.



Invention Report No. CONFIDENTIAL

Please complete all sections and submit an electronic version of the form to the Office of Technology Transfer at mwdowvik@uncc.edu for review and comments/suggestions. A hard copy version of this Invention Report will be mailed for final signature upon completion of the review process. Concurrent with acknowledgement of receipt by OTT, a copy of this Invention Report will be routed to the Office of the University Attorney for review and execution.

REPORT OF INVENTION

1. **Report Date:** *(Insert date of this disclosure)*

2. **Inventorship:** *(Identify all inventors below. In Section 2 (a), if all inventors are UNCC students, staff and/or faculty, place a checkmark next to the first item. If inventors include students, staff, and/or faculty external to UNCC, place a checkmark next to the second item. In Section 2 (b), list contact information for all inventors, identifying the primary contact person in Section 2 (b)(i).)*

   a. **UNCC Only** _____ **UNCC + External** _____
   b. **Inventors:**

   (i) **Full Name:** ** *Main Contact Person*
   Affiliation, College, Dept.:
   Home Address:
   Phone/Fax/Email:
   Citizenship:

   (ii) **Full Name:**
   Affiliation, College, Dept.:
   Home Address:
   Phone/Fax/Email:
   Citizenship:

   (iii) **Full Name:**
   Affiliation, College, Dept.:
   Home Address:
   Phone/Fax/Email:
   Citizenship:

   (iv) **Full Name:**
   Affiliation, College, Dept.:
   Home Address:
   Phone/Fax/Email:
   Citizenship:

3. **Sponsorship:** *(Identify any and all sponsors below who have contributed cash and/or in-kind funding/assistance for the efforts associated with this invention. If none, write "n/a" in all spaces provided.)*

   a. **Sponsor Name(s):**
   b. **UNCC Contract/Grant No.:**
   c. **Funding Period:**
   d. **Principal Investigator (PI):**

4. **Title of Invention:**

The University of North Carolina at Charlotte ("University")

Enabling public disclosures

Before AIA, if an enabling public disclosure occurred before the patent application was filed, a bar to international patent protection was created and the discloser had triggered a "one-year clock" to file a patent application in the U.S.!

- ✓ Enabling: Enough information is provided to enable a person to reproduce your invention.
- ✓ "White bread example" – If only the features and benefits of the invention are disclosed (you can slice it to make sandwiches, heat it to make toast), the disclosure is not enabling. However, if the recipe and the instructions for baking are provided, the disclosure is enabling.

Enabling public disclosures

Before AIA, if an enabling public disclosure occurred before the patent application was filed, a bar to international patent protection was created and the discloser had triggered a "one-year clock" to file a patent application in the U.S.!

- ✓ Public: Any forum involving members of the public not covered under a CDA or conducted under established rules providing confidentiality such as academic journals and federal grant proposal submissions. When in doubt, file a provisional patent application before the public forum occurs.

Bayh-Dole Act requires universities to protect federally-funded inventions

Faculty are required to disclose inventions to allow for protection (through either a CDA/NDA or by filing a Provisional Patent Application)

CDA – Confidential Disclosure Agreement
NDA – Non-disclosure Agreement

CONFIDENTIAL DISCLOSURE AGREEMENT

This confidentiality agreement (this "Agreement"), effective as of _____, 200_ (the "Effective Date") is by and between _____, a company organized under the laws of _____ and having a primary place of business _____, and The University of North Carolina at Chapel Hill, having a business address at 308 Bynum Hall, CB 4105, Chapel Hill, NC 27599-4105 (each a "Party" and collectively the "Parties") to assure the protection and preservation of the confidential and/or proprietary nature of information to be disclosed or made available between the Parties in connection with certain negotiations or discussions in possible contemplation or furtherance of a business relationship between the Parties.

Bayh-Dole Act requires universities to protect federally-funded inventions

Faculty are required to disclose inventions to allow for protection (through either a CDA/NDA or by filing a Provisional Patent Application)

- ✓ 1-way or 2-way? If in doubt make it mutual (2-way).
- ✓ When defining confidential information, be as specific as possible by referencing an ROI or some other document.
- ✓ Who signs, faculty, student, university official? If an alleged breach occurs, you want the other party suing the university – not the individual. So it's best for a university official to sign.
- ✓ Duration of confidential period? 3 to 5 years is standard, but even if longer, there should always be a limit - never forever! There should also be a provision negating the agreement if the confidential material becomes public through some other means.

Bayh-Dole Act requires universities to protect federally-funded inventions

Faculty are required to disclose inventions to allow for protection (through either a CDA/NDA or by filing a Provisional Patent Application)

Definition: A provisional patent application is a type of interim utility patent introduced to U.S. patent law with a 1994 amendment of the Patent Act of 1952. It can be filed without including any formal patent claims, oath/declaration or any information disclosure (prior art) statement. The keyword with a provisional patent application is "provisional" – it only gives one year of potential protection. After that you must file for a non-provisional patent or abandon your patent.

Note: There is no such thing as a "provisional patent."

Bayh-Dole Act requires universities to protect federally-funded inventions

Faculty are required to disclose inventions to allow for protection (through either a CDA/NDA or by filing a Provisional Patent Application)

- ✓ Establishes an early effective filing date.
- ✓ Allows one year to either file a full application or abandon the application entirely.
- ✓ No claims are required (articles or papers may be included).
- ✓ No examination of the patentability in view of prior art.
- ✓ Allows use of "Patent Pending" label.
- ✓ Strategy under AIA (America Invents Act) – Multiple serial provisional applications may become the new norm.
- ✓ Disadvantage – Nothing new can be added later.

Common Issue: An invention is improved after a provisional patent application has been filed. The new material can't be included in the converted full application.

Suggested Strategy: Convert the provisional to a full application and file a Continuation-in-Part (C-I-P) on the new material.

Continuation-in-Part: A patent application filed by the same applicant during the lifetime of an earlier patent application. A CIP patent application repeats a substantial part of the original application and adds new material not disclosed in the original application.

- ✓ Prior art that arose after the filing date of the original patent application but not after the filing date of the C-I-P can be cited against the C-I-P.
- ✓ If patents are issued, the material included in the full application would have the earlier date and the new material in the C-I-P would have the later date.

Bayh-Dole Act requires universities to protect federally-funded inventions

When submitting an ROI, the inventor must also identify the specific <u>funding source(s)</u> that enabled the invention.

It is important to list all sources that contributed to the invention from conception through reduction to practice, not just the current funding source.

A Real Federal Trade Commission (FTC) case involving University/Company/UNC (names kept confidential):

- ✓ Subcontract to UNC (12 years earlier) granted exclusive rights to any project-funded invention reduced to practice at UNC.
- ✓ After the project ended, PI from prime submitted ROI to his home institution and only listed the current funding source, inadvertently omitting the funding source for UNC subcontract.

University/Company FTC case study

- ✓ University filed U.S. patent application and patent issued.
- ✓ UNC was never informed of the patent filing (because the funding source for subcontract wasn't listed on the ROI), so UNC's rights were never perfected.
- ✓ University granted an exclusive license to Company.
- ✓ Patent proved to be quite valuable to semi-conductor companies, so Company was able to gain a significant competitive advantage in the U.S..
- ✓ Consortia of 10 large semi-conductor companies sought to either invalidate the patent (making it public domain material) or otherwise eliminate the bar from practicing the invention in the U.S..

University/Company FTC case study

- ✓ Company filed a Federal Trade Commission (FTC) suit against the Consortia members to prevent them from importing products infringing their patent rights into the U.S..
- ✓ During their due diligence investigation, Consortia lawyers discovered that the PI had been on sabbatical at UNC around the time the invention was conceived.
- ✓ In addition, they discovered reference to a DARPA funded subcontract from University to UNC.
- ✓ As the inquiry progressed, the Consortia lawyers discovered, consistent with the University's approved record retention policy, that all records for the subcontract had been destroyed.

University/Company FTC case study

- ✓ The initial inquiry at UNC produced the same result – all applicable records had been destroyed consistent with UNC's approved record retention policy.
- ✓ The Consortia lawyers then requested records from the Computer Science department and a copy of the signed subcontract was produced. Lesson: Don't destroy any records pertaining to funding or intellectual property!
- ✓ The language of the UNC subcontract was clear - it granted exclusive rights to UNC for any project-funded invention reduced to practice at UNC.
- ✓ PI testified that the invention was reduced to practice at UNC while the subcontract was in effect, so this was accepted as a point of fact.

University/Company FTC case study

- ✓ Consortia lawyers requested a non-exclusive license from UNC without requiring UNC to warrant anything – the license would be for "whatever rights UNC was ultimately determined to have."
- ✓ The license from UNC would be used at the aforementioned Federal Trade Commission (FTC) hearing to substantiate the Consortia companies' right to use the patent in the U.S..
- ✓ It was later learned the Consortia lawyers were pursuing a parallel process of contesting the patent on the basis of prior art that had not been considered by the patent examiner.

University/Company FTC case study

- ✓ First offer from the Consortia lawyers to UNC was a $50K license fee.
- ✓ Since UNC's rights under the subcontract would likely be contested by Company, the uncertainty associated with drawn-out litigation made the $50K look like a fair deal to both OTD and UNC general counsel calling it "found money."
- ✓ My observation – Three high priced lawyers in expensive suits representing 10 of the largest semi-conductor manufacturers in the world coming to Chapel Hill to make an offer of $50K? Something is wrong!
- ✓ It took a couple of weeks of negotiations, but the final license fee was **$1.2 million!**

University/Company FTC case study

I testified at the FTC hearing – interesting process:

- ✓ Quasi-judicial administrative hearing with a judge asking questions and 3 sets of lawyers (one for each side and one representing the public interest).
- ✓ Sworn testimony.
- ✓ As confidential information was presented, the judge asked everyone on the opposing side to leave the room. They stayed in the hall while a single question was asked and answered before re-entering the room - this process repeated numerous times.
- ✓ At one point, I counted 65 lawyers in the room.

Maybe $1.2 million wasn't enough!

Definition of inventor

It is a "fact driven" process guided by two well-established and inter-connected legal concepts: intellectual domination and conception.

1. U.S. case law emphasizes the importance of inventors having "intellectual domination" over the inventive process or at least a portion of it, e.g., at least one claim.
2. To be an inventor, one must have contributed to the "conception" of the invention as set forth in at least one claim.

- ✓ "Conception" is the formation in the mind of the inventor of a definite and permanent idea of the invention as it is later applied in practice.
- ✓ An idea is sufficiently definite and permanent when only ordinary skill is necessary to reduce it to practice.
- ✓ Note: The act of reducing the invention to practice does not constitute an inventive contribution.

How do the rules of inventorship apply to inventions with multiple inventors?

The contribution of each inventor need not:

- ✓ be equal or of the same type
- ✓ address every claim
- ✓ be accomplished at the same time or place.

Any "inventive contribution" to even one claim is enough to establish inventorship!

Important Note!

Since inventorship is claim-dependent, as a patent application is prosecuted, the list of inventors may change as claims are allowed or disallowed, narrowed or expanded!

Alert: A patent may be invalidated if the list of inventors is inaccurate, e.g., failure to name someone who made an inventive contribution on a U.S. patent application may constitute fraud and provide grounds for invalidation.

- ✓ Question: If a party wishes to seek invalidation of a university patent, what might be a good strategy to consider?
- ✓ Find a disgruntled former graduate student who was not named as an inventor on a patent application and make a case for inventorship!

Number and characteristics of inventors on U.S. patent applications

- ✓ Prior to 1990, most patents listed only one inventor.
- ✓ The number of inventors listed per patent has been steadily increasing over the past 25 years.
- ✓ Patents issued during the past six months of 2010 had an average of 2.7 inventors per patent, 68% listed multiple inventors, and 13% listed five or more inventors.
- ✓ In 2011, 76% of patents issued to the top 10 universities had at least one foreign-born inventor and 28% of the new business start-ups that year were founded by immigrants.

Number and characteristics of inventors on U.S. patent applications

Why the big change?

- ✓ An "over-correction" caused by the increased attempts to invalidate patents for incomplete inventor lists?
- ✓ Or perhaps it's an artifact of the way modern science is practiced, e.g., more collaborations involving scientists from multiple fields and from multiple countries?

What constitutes patentable subject matter?

Patentable Subject Matter Includes:

- Processes
- Machines
- Articles of manufacture
- Composition of matter
- New uses for any of the above

The requirements of novelty, utility and non-obviousness must be met.

Non-Patentable Subject Matter

- Mental processes
- Abstract ideas
- Laws of nature
- Naturally occurring articles
- Artistic works

Artistic works are covered by copyright!

What constitutes patentable subject matter?

In April of 2013, the Supreme Court heard the Myriad Genetics case and will determine if, under U.S. patent law, human genes are patentable subject matter. If they are "naturally occurring articles" they are not subject to patent protection!

Non-Patentable Subject Matter

- Mental processes
- Abstract ideas
- Laws of nature
- Naturally occurring articles
- Artistic works

Aren't genes "naturally occurring articles?"

35 U.S.C. 101 Patentable Inventions

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement there of, may obtain a patent therefore, subject to the conditions and requirements of this title."

Definition of new?

- ✓ New or novel means the invention does not exist anywhere in the world!
- ✓ To invent means to create something that has not existed before.
- ✓ 35 U.S.C. 102 sets forth the legal definition of prior art and defines "new" as anything not included in this prior art definition.
- ✓ The America Invents Act (AIA) makes significant changes in the definition of prior art as documented in 35 U.S.C. 102! So let's take a look at the new provisions.

Leahy-Smith America Invents Act

The most significant change to the U.S. patent system since 1952. It even changed the grace period which has been in effect since 1839.

- ✓ Named for Senators Patrick Leahy and Lamar Smith, it passed the Senate 95-5, passed the House 304-117 and was signed by President Obama on September 16, 2011.
- ✓ Some provisions were effective immediately, others phased over an 18 month period (full implementation was 3-16-13).

Leahy-Smith America Invents Act

The most significant change to the U.S. patent system since 1952. It even changed the grace period which has been in effect since 1839.

Four major provisions:

- ✓ Changed the U.S. from a First-To-Invent (F-T-I) system to a First-Inventor-To-File (F-I-T-F) system.
- ✓ Expanded the definition of prior art.
- ✓ Eliminated the current interference system (replaced it with new derivation proceedings).
- ✓ Established new PTO pre-grant and post-grant reviews.

Broad bi-partisan support for the AIA created much early excitement


President Barack Obama signs the America Invents Act September 16, 2011, at Thomas Jefferson High School for Science and Technology in Alexandria, VA.

President Obama praised the AIA saying it would "Create new jobs and new opportunities in a fiercely competitive world which demands policies that encourage and support American innovation and ingenuity."

Diverse views on AIA's impact persist

- ✓ U.S. Congressman Mike Pence, (R) Indiana said, "The reform contained in this bill will go a long way toward eliminating lawsuit abuse."
- ✓ Ambassador Joao Vale de Almeida, head of the EU delegation to the U.S. praised the bill as a "shift to harmonization that would provide a boost to the international business community."
- ✓ "First to file is the crown jewel of this historic reform, only, guess what? The number of patent applications where this ever becomes an issue is a tiny, tiny (did I mention TINY?) percentage. First to file is a significant legal change that does little to address what ails the system," wrote Jess Collen in Forbes Magazine.

Diverse views on AIA's impact persist

- ✓ Todd McCraken, National Small Business Association (NSBA), explained his organization's opposition to the bill saying, "The AIA casts heavy clouds of legal uncertainty over patent rights for decades to come because of ambiguous drafting and dubious constitutionality. The reform under the AIA includes the most significant changes to the U.S. patent law in over a century and they are not good changes."
- ✓ Paul Michel, retired judge of the U.S. Court of Appeals predicted, "There will be heightened uncertainty for the rest of the decade. The Act makes fundamental changes, and many sections are poorly written and ambiguous."

Leahy-Smith America Invents Act

Supporters claim it will:

- ✓ Increase the certainty of issued patents by eliminating frivolous and poorly supported patents.
- ✓ Reduce the cost of litigation over who was first to invent.
- ✓ Simplify the application process thus increasing the speed of processing.
- ✓ Bring the U.S. into harmony with the patent laws of other countries.
- ✓ Aid entrepreneurs in creating start-up companies.
- ✓ Eliminate costly interference proceedings and reduce applicants' disadvantages in seeking patent rights outside the U.S..

Leahy-Smith America Invents Act

Opponents claim it will:

- ✓ Favor larger firms with well-established patenting procedures and in-house attorneys over small business inventors (including universities).
- ✓ Create a race to the PTO with every new idea and increase the number of patents filed (with the attendant increased attorney's fees).
- ✓ This flood of additional applications will clog the system, delay reviews and increase prosecution times.
- ✓ Shift the competitive balance between patents and trade secrets in favor of trade secrets.
- ✓ Prevent start-up companies from raising capital.

Whatever the final impact of the AIA might be, one thing is perfectly clear.

"The cost of implementing the AIA will be considerable, including the need to keep several systems working at once as the transition takes place, new systems come into effect and holdover proceedings under the old system continue for years into the future."

Paul R. Gupta in European Intellectual Property Review (Issue 1, 2012)

Leahy-Smith America Invents Act

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- ✓ Established new administrative pre-grant and post-grant reviews at the PTO.

The U.S. patent system is changed from a First-To-Invent to a First-Inventor-To-File system.

Effective March 16, 2013

Old System:

Inventor A files but Inventor B is able to prove in an interference proceeding that he was the 1st to invent. Inventor B gets patent!

- ✓ Patent rights were reasonably secure (subject to small but manageable risks) when the inventor believed he/she was able to prove first to invent.
- ✓ So there wasn't a "mad rush" to file patent applications early except when an enabling public disclosure was about to occur.

The U.S. patent system is changed from a First-To-Invent to a First-Inventor-To-File system.

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Old System:

Inventor A files but Inventor B is able to prove in an interference proceeding that he was the 1st to invent. Inventor B gets patent!

Important concepts:

- ✓ Date of conception
- ✓ Due diligence
- ✓ Reduction to practice
- ✓ Abandonment
- ✓ Suppression
- ✓ Concealment

Under the new system, none of these concepts matter!

The U.S. patent system is changed from a First-To-Invent to a First-Inventor-To-File system.

Effective March 16, 2013

New System:

Inventor A files and even though Inventor B may have been 1st to invent, Inventor A gets patent!

- ✓ It doesn't matter who invented first, so the date of invention is irrelevant.
- ✓ Patent interference proceedings are eliminated and are…
- ✓ …replaced with something called derivation proceedings before a renamed Patent Trial and Appeal Board.

The U.S. patent system is changed from a First-To-Invent to a First-Inventor-To-File system.

Effective March 16, 2013

New System:

Inventor A files and even though Inventor B may have been 1st to invent, Inventor A gets patent!

- ✓ The new derivation proceedings are designed to resolve disputes over the first filer's status as a true inventor.
- ✓ They will likely be used primarily in cases of alleged theft or misconduct.
- ✓ Remember, it's a F-I-T-F system, not a first person to steal system!

The U.S. patent system is changed from a First-To-Invent to a First-Inventor-To-File system.

Effective March 16, 2013

The new First-Inventor-To-File system created by the AIA is a **new and unique system** with characteristics of both the F-T-I and the F-T-F systems.

- ✓ This hybrid F-I-T-F system is not the F-T-F system practiced in most countries.
- ✓ We used to have two systems, now we have three (remember the old rules will apply to all U.S. patent applications through 3-15-13).
- ✓ This new system may actually create more confusion (rather than more harmony) within the international patent law system!

Leahy-Smith America Invents Act

Four major provisions were to:

- ✓ Changed the U.S. from a First-To-Invent (F-T-I) system to a First-Inventor-To-File (F-I-T-F) system.
- ✓ Expanded the definition of prior art.
- ✓ Eliminated the current interference system (replaced by the new derivation proceedings).
- ✓ Established new administrative pre-grant and post-grant reviews at the PTO.

Novelty requirement in OLD 35 U.S.C. 102
An invention is not novel if:

1. **Before date of invention** – it is described in a printed publication (including previous patents) *anywhere in the world.*
2. **Before date of invention** – it is in public use, disclosed, on sale, or known or used by others (publicly or privately) *in the U.S..* "Public use" means at least one open, unconcealed use for profit including an offer for sale. "Others" means more than one other person.
3. **More than one year before the date of a patent application** – it is described in a printed publication *anywhere in the world* or put on sale or is in public use *in the U.S..*

Novelty requirement in NEW 35 U.S.C. 102
An invention is not novel if:

1. **Before date of invention** – it is described in a printed publication (including previous patents) *anywhere in the world.*

No Change under AIA!

Novelty requirement in NEW 35 U.S.C. 102
An invention is not novel if:

2. **Before date of invention** – it is in public use, disclosed, on sale, or known or used by others (publicly or privately) *in the U.S.*. "Public use" means at least one open, unconcealed use for profit including an offer for sale. "Others" means more than one other person.
   - ✓ **AIA change #1**: Adds the phrase "or otherwise available to the public."
   - ✓ **Question**: What does "or otherwise available to the public" mean? The ambiguity of this phrase is likely to foster considerable litigation over the coming years.
   - ✓ **AIA change #2**: Changes the reference *"in the U.S."* to *"anywhere in the world."*

Novelty requirement in NEW 35 U.S.C. 102 An invention is not novel if:

- **Implication of change**: Years of case law have helped to define the meaning of public use, disclosed, on sale, or known or used by others in the U.S., but what are the implications when applying these definitions and the new "or otherwise available to the public" worldwide?
- The following changes are clear:
  - U.S. patents and published patent applications of other persons filed before the effective filing date of the claimed invention (including foreign patent filing dates) will be prior art and will be used in determining obviousness.
  - Confidential sales are now prior art in the U.S., but not in Europe.
  - A public prior use is prior art in the U.S. unless it falls under the new inventor's disclosure exception.

Novelty requirement in NEW 35 U.S.C. 102
An invention is not novel if:

3. **More than one year before the date of a patent application** – it is described in a printed publication *anywhere in the world* or put on sale or is in public use *in the U.S.*.

   - ✓ **AIA change**: Eliminates the one year general grace period which has been in effect for 170 years (after an enabling public disclosure all international rights were lost and the inventor had one year to file a U.S. patent application) and replaces it with a narrower inventor's publication conditioned grace period which applies only to the inventor's printed publications. The publication conditioned grace period also maintains U.S. patent rights if an application is filed within one year.

Potential impact of new grace period on start-up companies and small businesses

The old law:

- ✓ permitted start-up companies, small businesses and universities to initiate discussions with 3rd parties such as investors, subcontractors or potential strategic partners and
- ✓ engage in testing to perfect the invention and
- ✓ test for market potential before
- ✓ having to incur significant expenses to file for patent protection because
- ✓ patent rights were reasonably (subject to small but manageable risks) secure when the inventor believed he/she was able to prove first to invent.

Potential impact of new grace period on start-up companies and small business

The new law:

Provides the inventor with two options:

- ✓ either file a patent application before beginning outside discussions (assuming nobody has made a public disclosure of the identical information contained in your invention before you file your application) or
- ✓ publish all details of the invention before beginning outside discussions (then file a patent application within one year assuming nobody has filed an application on the invention before your public disclosure).

Potential impact of new grace period on start-up companies and small business

- ✓ Problem with Option 1 (file first) – It can be quite expensive and many start-ups are caught in a Catch 22 situation. They don't have funds to file a patent application until they have outside investors and they can't get outside investors until they show value by filing a patent application.
- ✓ Problem with Option 2 (publish first) – All international patent rights are lost.

My view of the best strategy

File first!

Don't rely on the grace period.

- ✓ Protection for patent applications is limited to those with identical prior disclosures.
- ✓ Third party disclosures of obvious variants might defeat later patent applications by inventor.
- ✓ And filing before disclosure is the only way to protect international patent rights.

Potential impact of new grace period on start-up companies and small business

Potential long-term impact of new law:

- ✓ Many poorly financed start-up companies will not survive in a F-I-T-F system because the venture capital funding previously available will be diverted to less risky investments!
- ✓ Some believe the first-to-file system is the primary reason Europe has lagged behind the U.S. in establishing a "vibrant start-up and venture capital ecosystem." (Todd McCracken, NSBA in Westlaw Journal Intellectual Property Journal)
- ✓ And they fear the AIA will lead the U.S. to the same end!

Potential impact of new grace period on start-up companies and small business

- ✓ No grace period exists in EU patent law (except with limited exceptions), thus this provision of the AIA adds to the discontinuity between U.S. and EU laws.
- ✓ Previous unsuccessful attempts at U.S. patent reform were contingent upon reciprocal adoption by the EU and Japan of a grace period, but the AIA did not include this provision.
- ✓ Is a "public use" or "on sale" activity a disclosure for grace period purposes? The ambiguity over what constitutes a disclosure under this grace period is likely to foster litigation over the coming years.

Implications for universities

- ✓ The in-house invention disclosure and review process will need to operate with a greater sense of urgency under the F-I-T-F rules.
- ✓ The likely "new norm" will be increased reliance on provisional patent applications.
- ✓ The use of serial provisional patent applications filings to secure early dates for subject matter as it is invented.
- ✓ These additional filings will generate increased cost and put additional pressure on already tight budgets.
- ✓ Prior art/validity searches must now include the new expanded definitions of prior art.

Novelty requirement in NEW 35 U.S.C. 102
An invention is not novel if:

3. **More than one year before the date of a patent application** – it is described in a printed publication *anywhere in the world* or put on sale or is in public use *in the U.S..*
   - ✓ **Question**: Does "on sale" and "public use" encompass uses that are in fact secret but are involved in producing a commercial product?
   - ✓ Past case law has held that secret commercial exploitation of an invention begins the one-year general grace period (referenced in *Metallizing Engineering v. Kenyon Bearing and Auto Parts*). The inventor must content himself with either secrecy or a legal monopoly – not both.

Novelty requirement in NEW 35 U.S.C. 102 An invention is not novel if:

- ✓ One reading of the new language in 35 U.S.C. 102 (Noonan 1-31-12 *Patent Docs*) suggests that an inventor might not have to forfeit patent eligibility for secret commercial use if the use is a process or other "intermediate" that is not sold directly as a product, but instead is used in making a product or to support some other business function.
- ✓ The NSBA has taken the view that this provision is unconstitutional because it changes the constitutional balance between trade secrets and patents to now favor trade secrets because it allows owners to protect an invention as a trade secret for a period of time and then seek patent protection. This effectively extends their competitive advantage for an additional 20 years with no "promotion of the useful arts" advantage to society.

Additional AIA prior art changes

- ✓ Any invention "directed to or encompassing a human organism" is deemed prior art.
- ✓ Some believe this is an attempt to restrict the patenting of genes, but the phrase "directed to or encompassing" is not clearly defined within the life science community and will likely create considerable litigation in the coming years.
- ✓ Any strategy for reducing, avoiding or deferring tax liability is deemed prior art. This provision seems to address Congressional concern over the impact of the 1998 State Street case when the Court said that "anything under the sun invented by man that produces a useful, concrete and tangible result" is patentable. It opened the floodgates to thousands of business method patent applications.

Joint Research Agreements (JRA)

The new wording of 35 U.S.C. 102 allows for a prior art exception in cases of common ownership of inventions if three requirements are met:

- ✓ The claimed inventions resulted from the JRA.
- ✓ The patent application names the JRA parties.
- ✓ The JRA was in effect on or before the effective filing date of the patent application.

Example:

- ✓ Company A invents X.
- ✓ Company B (having some collaboration with Company A) invents broader genus WXY.
- ✓ Company A and B sign a JRA before filing a patent application on WXY.

X is not prior art on WXY!

Leahy-Smith America Invents Act

Four major provisions:

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- ✓ Expanded the definition of prior art.
- ✓ Eliminated the current interference system (replaced by the new derivation proceedings).
- ✓ Established new administrative pre-grant and post-grant reviews at the PTO.

Interference proceedings eliminated!

An interference proceeding is an administrative proceeding conducted by a panel of administrative patent judges sitting on the Board of Patent Appeals and Interferences of the USPTO. The purpose is to determine which applicant is not entitled to the patent if both claimed the same invention in:

- ✓ two or more pending patent applications or
- ✓ at least one pending patent application and at least one patent issued within a year of the pending application's filing date.

The panel's final judgment adjudicating one party as an earlier inventor is called a priority award, or simply an award.

Leahy-Smith America Invents Act

Four major provisions:

- ✓ Changed the U.S. from a First-To-Invent (F-T-I) system to a First-Inventor-To-File (F-I-T-F) system.
- ✓ Expanded the definition of prior art.
- ✓ Eliminated the current interference system (replaced by the new derivation proceedings).
- ✓ Established new administrative pre-grant and post-grant reviews at the PTO.

Establishes new administrative pre-grant and post-grant reviews at the PTO

- ✓ **Pre-grant Review** – The new submission procedures allow for third-party involvement in examination because any party may submit prior art references with statements of relevance for the examiner's consideration while an application is pending.
- ✓ **Post-grant Review** – A patent may be challenged by any non-owner during the nine months after it issues on any grounds that would be available in district court litigation. This is a much broader scope that current re-examination proceedings.
- ✓ The intent is to handle these reviews administratively in the PTO and minimize the litigation going to the courts!

Additional changes to the U.S. patent system under AIA

- ✓ **Transitional Program for Business Method Patents**
  Parties charged with infringement of a business method patent (except for patents covering "technological inventions") will be able to challenge the patent's validity. This special post-grant review for business patents will last for an eight year period from enactment of the AIA, unlike the general post-grant review which is limited to nine-months following the issuance of the patent.

- ✓ The definition of "technological inventions" remains unclear. It may be adequately defined by PTO regulations, otherwise it will be another topic for future litigation.

Additional changes to the U.S. patent system under AIA

- ✓ **Prior User Rights** – If an individual/entity (user) begins using an invention more than one year before a subsequent inventor files a patent application on the same invention, the user will have the right to continue using the invention in the same way after the subsequent inventor is granted a patent provided the user did not derive the invention from the subsequent inventor.

- ✓ **Establishes Micro-entities (includes universities)** Entitled to fee discounts of 75% for most filings.

Additional changes to the U.S. patent system under AIA

- ✓ **Best Mode** – Previously a U.S. patent could be invalidated on the grounds that the inventor failed to disclose the best mode of practicing the invention. Interestingly, AIA keeps the statutory requirement for the inventor to disclose the best mode as a condition for patent filing, but it removes failure to disclose best mode as a cause for invalidation. Since EU patent law has no best mode equivalent, the removal of this condition as a cause for invalidation is a small step toward harmonization of U.S. and EU patent law.

Additional changes to the U.S. patent system under AIA

- ✓ **New "joinder" rule** – Under the previous system, large multi-party infringement lawsuits were sometimes brought even when there was no relation between the defendants other than their alleged infringement of the same patent.
- ✓ By suing many geographically dispersed defendants, the plaintiff could "shop for favorable venues," e.g., the Eastern District of Texas was quite popular. On September 15, 2011 more than 20 patent infringement suits were filed involving companies including Microsoft, Samsung, Nokia, Google and others as defendants.
- ✓ The only explicit venue reform is the elimination of an ATM's presence as evidence of business activity when establishing jurisdiction.

Additional changes to the U.S. patent system under AIA

Under AIA, in order to join parties in a law suit, defendants must be either:

- ✓ jointly and severally liable or
- ✓ the infringement must arise from the same transaction(s) or occurrence(s) and have common questions of fact.

AIA won't completely eliminate all multi-party law suits, but it will drastically limit their frequency!

Early business method patent

The Art of Compiling Statistics in 1889 (Herman Hollerith)

- ✓ Invented punch card system.
- ✓ Used in 1890 census.
- ✓ Formed Tabulating Machine Company.
- ✓ Merged to form Computing Tabulating Recording Company (CTR).
- ✓ Renamed IBM in 1911.

The traditional "test" to determine patentable subject matter for a process claim

- ✓ For decades, the courts said the invention must be tied to a machine (the machine test) or transform something from one state to another (the transformation test).
- ✓ These tests date back to the 19th century in the Gottschalk v. Benson and Parker v. Flook cases.
- ✓ Process claims have become increasingly important as technology has developed. They impact both business method and software patents!

Diamond v. Chakrabarty - 1980

- ✓ The Supreme Court held that a "synthetic rubber curing process" including computer program calculations based on a well-known mathematical formula was patentable subject matter.
- ✓ The Court reasoned that the method was an "industrial process" of the type that had historically been protected.
- ✓ In its ruling, the Supreme Court said "anything under the sun that is made by man" is patentable.
- ✓ This established a new, expansive standard for determining patentable subject matter (reversing the machine or transformation test)!

State Street Bank v. Signature Financial Services - 1998

- ✓ Signature held a patent on an automated data processing system that used a hub-and-spoke structure to organize financial services.
- ✓ State Street Bank filed suit claiming the patent was invalid because it claimed a business method that was not appropriate patentable subject matter.
- ✓ The Court of Appeals for the Federal Circuit (CAFC) upheld Signature's patent but qualified the "anything under the sun made by man" doctrine to require a "useful, concrete and tangible result."

State Street Bank v. Signature Financial Services - 1998

- ✓ The Supreme Court decided not to review the case, thus allowing the lower court's ruling to stand.
- ✓ Since then, tens of thousands of business method patent applications have been filed and many were subsequently issued.
- ✓ This ruling was extremely controversial. The question of whether and to what extent business methods are patentable subject matter remained a point of controversy.

Bilski v. Kappos - 2011

- ✓ Starting in 2006, the Supreme Court began "signaling" in various cases its dissatisfaction with this broad definition of patentable subject matter - anything under the sun made by man with a useful, concrete and tangible result.
- ✓ The PTO responded by denying applications for many business method patents – including one from **Bilski** for a "hedging program designed to mitigate risk in energy markets based on historical pricing and weather patterns."
- ✓ Legal question: Was Bilski's invention patentable subject matter as a "process" under Patent Law?

Bilski v. Kappos - 2011

- ✓ Bilski sued and in October 2008 the CAFC ruled that Bilski's method was not patentable because it was not "tied to a machine" nor did it "transform anything from one state to another." This use of the machine and transformation tests was a return to previous Supreme Court requirements for determining patentable subject matter.
- ✓ Bilski appealed to the Supreme Court which heard arguments in the Bilski v. Kappos case.
- ✓ The Supreme Court upheld the decision of the lower court (Bilski lost); however, they revised many aspects of the CAFC's decision.

Bilski v. Kappos - 2011

Writing for the majority, Justice Kennedy clearly established that the machine-or-transformation test is not a valid standard with regard to process patents.

> "The test would create uncertainty as to the patentability of software, advanced medicine techniques, and inventions based on linear programming, data compression, and the manipulation of digital signals."

Bilski v. Kappos - 2011

- ✓ In its ruling the Court said there should be no "categorical exclusion" of business methods, as the "Patent Act…may include as patentable subject matter at least some methods of doing business."
- ✓ Rather, business method patents should be examined and limited by the "unpatentability of abstract ideas" standard. Patent protection should only cover ideas which are "novel, non-obvious and fully and particularly described."
- ✓ **Confused? You aren't alone!** This is why Congress addressed the matter with the Transitional Program for Business Method Patents in the AIA.

35 U.S.C. 101 Patentable Inventions

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement there of, may obtain a patent therefore, subject to the conditions and requirements of this title."

Usefulness – Utility

The term "useful" in this context refers to the condition of the subject matter having a useful purpose which includes the concept of operativeness. A machine which will not operate properly to perform its intended purpose would not be called useful, and therefore would not be granted a patent.

Useful doesn't mean the invention has any significant societal benefit, only that it "works" as described.

Using this narrow definition of "useful", patents like this one have been issued!

United States Patent 7,681,885 Breese March 23, 2010

Card game

Abstract A card game that includes a first deck and a second deck of standard playing cards, a hat and a game board to facilitate playing of the card game. The first deck includes a complete set of fifty two standard playing cards and are utilized to facilitate a first round of play comprising of a plurality hand. The second deck is a rank establishing deck and is utilized to establish each players rank prior to the initial round of play. A hat is worn by a player subsequent to the first round of play functioning to identify the loser of the first round. A game board is further included to control the term of the game.

Inventors: **Breese; David L.** (Glen Burnie, MD) Appl. No.: **11/805,928** Filed: **May 25, 2007**

1. A method of playing a card game comprising: providing at least one physical deck of cards to a plurality of players; establishing a rank order for the plurality of players; each of the plurality of players selecting a game piece, in their order of rank, from highest to lowest; seating each of the plurality of players in a circle in decreasing rank order with the lowest ranked player sitting to the right of the highest ranked player; dealing a preselected number of cards from the at least one deck of cards to each of the plurality of players; starting a hand by a first player playing a first card; moving in a clockwise order, the next player making a play pursuant to the following rules: playing a card if they have a card of equal or greater value than the previously played card, such that if the card is equal in value to the previously played card, the subsequent next player is skipped and the subsequent second next player takes their turn; if the next player plays a card of greater value that the previously played card, the subsequent next player is next to play a card; if the next player does not have a card of equal or great value than the previously played card, the next ranked player does not play a card, and is required to perform a first predetermined task; and continuing the hand to the next player pursuant to the rules of the step of moving in a clockwise order player and making a play until a player either plays a card of a preselected value, or until a player has played all their cards.

2. The method of playing a card game as recited in claim 1, further comprising the step of requiring the subsequent next player to perform a second predetermined task if the next player plays a card of equal value to the previously played card.

3. The method of playing a card game as recited in claim 2, wherein said step of establishing a rank order includes the step of each of the plurality of players selecting a card from the at least one deck, wherein the rank order is determined by the value of the selected cards.

4. The method of playing a card game as recited in claim 3, wherein the plurality of players is at least 3 players.

5. The method of playing a card game as recited in claim 4, wherein the first predetermined task is **drinking an alcoholic beverage**.

6. The method of playing a card game as recited in claim 5, wherein the second predetermined task is **drinking an alcoholic beverage**.

35 U.S.C. 103
Non-obvious Subject Matter

"A patent may not be obtained…if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

The determination of whether a particular invention is "obvious" is one of the most difficult determinations in patent law. Most PTO examiners use the following two step approach.

Step 1 - Patent Examiner's Review

First, the examiner will review previous patents to find the ones that are closest to the subject invention. If all the features of the invention can be found in a single patent, the examiner will reject the patent as lacking novelty, i.e., it is exactly the same as what was previously known and therefore is not new.

Step 2 - Patent Examiner's Review

Second, if no patent contains all the features of the subject invention, the patent examiner will look for various combinations of two or more of these prior patents. If all the features of the invention can be found in one of these combinations, the examiner will reject the invention as an obvious combination of items known in the prior art.

Common Legal Rebuttal to Step 2

If the patents used in this process are all closely related to the subject invention, the process is sound.

However, if the patent examiner begins "fishing" for unrelated patents just to manipulate a result, the process is likely to be challenged. There must be a logical reason to select the patents to be combined. When the cited patents are in diverse fields unrelated to the subject invention, it will be asserted that the process is unreasonable!

35 U.S.C. 103
Non-obvious Subject Matter

"A patent may not be obtained…if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains."

Person having ordinary skill in the art!
"PHOSITA"

- ✓ "A legal fiction found in many patent laws throughout the world!"
- ✓ This person is considered to have normal skills and knowledge – not an expert or a genius.
- ✓ The patent examiner must pretend to know this person and pretend to know what this person would have known about the subject invention at a specified point in time (always in the past).

Summary - for an invention to be patentable, it must be:

- ✓ Novel – It must be different from what is known, any difference, even slight, will suffice (35 U.S.C. 102).
- ✓ Useful – It must work as described in the patent application (as perceived by patent examiner).
- ✓ Non-obvious – At the time of invention, it would be non-obvious to a person having ordinary skill in the art (35 U.S.C. 103).

35 U.S.C. 101 Patentable Inventions

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement there of, may obtain a patent therefore, subject to the conditions and requirements of this title."

Sample Process Claim

A method for joining two pieces of cloth together at their edges, comprising the steps of:

a. Positioning said two pieces of cloth together so that an edge portion of one piece overlaps an adjacent edge portion of the other piece, and

b. Passing a thread repeatedly through and along the length of the overlapping portions in sequentially opposite directions and through sequentially spaced holes in said overlapping adjacent portions, whereby said two pieces of cloth will be attached along said edge portions.

SEWING

Process Claim

- ✓ If possible, always try to include a process claim (the process followed to use the invention) in every patent application.
- ✓ Even if an infringer can "design around" the physical claims, you will often retain some protection from the process claim.

35 U.S.C. 101 Patentable Inventions

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement there of, may obtain a patent therefore, subject to the conditions and requirements of this title."

Sample Machine Claim

" An apparatus for catching mice, said apparatus comprising a base for placement on a surface, a spring member..."

MOUSE TRAP

Sample Machine Claim

A self-propelled vehicle, comprising:

a. a body carriage having rotatable wheels mounted thereunder for enabling said body carriage to roll along a surface,

b. an engine mounted in said carriage for producing rotational energy, and

c. means for controllably coupling rotational energy from said engine to at least one of said wheels, **whereby** said carriage will be self-propelled along said surface.

AUTOMOBILE

Sample Software Machine Claim

A machine for inserting additional characters within an existing series of characters on a display, comprising:

a. a memory which is able to store a series of characters at an adjacent series of addresses in said memory,

b. a character input means which a human operator can use to store a series of characters in said memory at said adjacent series of addresses,

c. A display which is operatively connected to said memory for displaying said series of characters stored in said memory at said adjacent series of addresses,

d. a pointer means which said operator can manipulate to point to any location between any adjacent characters within said series of characters displayed on said display,

Sample Software Machine Claim

e. a memory controller which will:

1) direct any additional character which said operator enters via said character input means to a location in said memory, beginning at an address corresponding to the location between said adjacent characters as displayed on said display, and

2) cause all characters in said series of characters which are stored in said memory at addresses subsequent to said location in said memory to be transposed to subsequent addresses in said memory so that said additional characters will be stored in said memory at said location and before all of said subsequent characters, whereby said display will display said additional characters within said series of characters at said location between said adjacent characters, and whereby a writer can add words within the existing body of text and the added words are displayed in an orderly and clean fashion without having to reenter said existing body of text.

Word insertion feature of Word-Processor

35 U.S.C. 101 Patentable Inventions

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement there of, may obtain a patent therefore, subject to the conditions and requirements of this title."

Sample Article of Manufacture Claim

A hand-held writing instrument comprising:

a. elongated solid core-element means that will leave a marking line if moved across paper or other similar surface, and

b. an elongated holder surrounding and encasing said holder being removable from an end thereof to expose an end of said core-element means so as to enable said core-element means to be exposed for writing, whereby said holder protects said core-element means from breakage and provides an enlarged means for holding said core-element means conveniently.

c. said core means is lead.

PENCIL

35 U.S.C. 101 Patentable Inventions

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement there of, may obtain a patent therefore, subject to the conditions and requirements of this title."

Sample Composition of Matter Claim

A rigid building and paving material comprising a mixture of sand and stones, and a hardened cement binder filling the interstices between and adhering to sand and stone, whereby a hardened, rigid and strong matrix for building and paving will be provided.

CONCRETE

35 U.S.C. 101 Patentable Inventions

"Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement there of, may obtain a patent therefore, subject to the conditions and requirements of this title."

If you invent a new use for an existing product you can file what is known as a use patent. If the use patent is approved, you would have patent protection for that particular use of the product and could license those rights.

Note: You don't have a patent on the actual product, only the "new use" of that product.

The new use must be unique

Some industries lend themselves to the new use patent scenario better than others. The pharmaceutical industry is a good example. Some drugs, developed to treat a particular condition, are later discovered to be an effective treatment for one or more other conditions. A use patent can be filed for the new uses of the drug as long as the new uses are unique and distinct from existing uses.

The History Of Rogaine - How A Blood Pressure Medication Became A Hair loss Solution.

The very first hair restoration medication that was approved by the Food and Drug Administration in order to treat men and women suffering from hair loss was called "Rogaine" (known as Regaine in the UK). Rogaine hit the market back in 1988 after many years of thorough testing and successful clinical trials.

Rogaine is actually the product name but is made up of a drug called "minoxidil." It comes in the form of a lotion which is rubbed on the scalp and is odorless, as well as colorless. Although Rogaine was officially made available in 1988, the drug minoxidil was already approved by the FDA as a prescription in pill form. However, the drug itself was used to treat high blood pressure. These pills were sold under the name "Loniten".

What started to happen is that patients with high blood pressure that were taking this prescription drug began to notice increased new hair growth on areas of their scalp that had been balding for a long period of time. However, this side effect also affected different parts of the body with unwanted hair growth.

Sample "New Use" Claim

A unique combination including acetylsalicylic acid (aspirin), ethylenediamine dihydriodide (EDDI), potassium iodide, sodium acetate and sodium diacetate, useful in helping poultry, swine, and cattle overcome certain symptoms after vaccination. The inventive combinations readily dissolve in water at room temperature to form an effective concentration for inclusion in the animal's drinking water.

Sample "New Use" Claim

A method of stimulating the growth of swine comprising feeding such swine aspirin in a specified amount which is an effective method to increase their rate of growth.

Parts of a Patent Application

- ✓ Title
- ✓ Field of the invention
- ✓ Background
- ✓ Objects and advantages
- ✓ Detailed description
- ✓ Claims
- ✓ Abstract

Parts of a Patent Application

Title – Should reflect the essence of the invention. Be careful that the title is neither too long nor so specific that it is narrower than the full scope of the subject invention.

Field of Invention – A one-sentence paragraph stating the general and specific field in which the invention falls, e.g., "This invention relates to bicycles, specifically to an improved pedal mechanism for a bicycle."

Parts of a Patent Application

Background – Explain how the problem to which the invention is directed was approached previously, and then list all the disadvantages of the former approaches.

- Don't be too derogatory, but make the invention look as good as possible by explaining why the prior art isn't as good.
- Keep statements factual – not opinionated.
- Explain why a solution to the problem is needed.

Parts of a Patent Application

Objects and Advantages

- ✓ Objects – "What the invention accomplishes."
- ✓ Advantages – "Sing the Praises" of the invention over prior art.
- ✓ The more information placed here the better.
- ✓ Remember – once the patent issues, the entire patent application becomes part of the public record (prior art).
- ✓ The more information that is provided, the less likely it will be that someone else can get an improvement patent on the invention due to obviousness.

Parts of a Patent Application

Detailed Description

- ✓ Description of drawings – a series of separate paragraphs, each briefly describing a respective figure or drawing, e.g., "Figure 1 is a perspective view of the invention."
- ✓ Description of invention – a detailed description of the static physical structure of the invention. If the invention is a process, describe the procedures or machinery used in the process.

Parts of a Patent Application

Abstract – A one paragraph (~250 words) concise summary of the invention.

- ✓ Examiner usually reads it first.
- ✓ While it appears at the end of application, it goes on the first page of issued patents.
- ✓ So, it is best to **Write it last!**

Parts of a Patent Application

The claim - It is the invention!

- ✓ Purpose of claim – to unambiguously define the invention in words (no diagrams or charts here).
- ✓ Structure of claim – one "sentence" using as many , ; : as you wish, but only one period can be used and that is at the end.
- ✓ The rules of proper grammar do not apply when writing patent claims!

The Claim

Five types of claims:

- ✓ Process or method
- ✓ Machine
- ✓ Article of manufacture
- ✓ Composition of matter
- ✓ New use of previous four statutory classes (always a method claim)

Good News: You don't have to classify the type of claim unless the PTO Examiner decides your claim doesn't fit any one of the five!

The Claim

Claims are governed by the PTO "Rules of Practice." The filing fee allows:

- ✓ Three independent claims
- ✓ Twenty total claims
- ✓ More are allowed for an additional filing fee
- ✓ Multiple dependent claims are allowed for an additional fee

Limit the claim to a description of what the invention is, not what it isn't and not its advantages!

Strategies for Writing Claims

Characterization of claim

- ✓ Broad (the less said, the broader)
- ✓ Narrow (the more said, the narrower)

Ways to make a claim narrower

- ✓ Qualify an existing element
- ✓ Add additional elements

Strategies for Writing Claims

- ✓ Write the claim based upon your understanding of the invention.
- ✓ Broaden to extent allowed by prior art search.
- ✓ Narrow based upon your instincts concerning non-discovered prior art.
- ✓ Don't be greedy! Seek adequate protection for your invention – but don't try to "cover the waterfront."

Remember - If a claim is too broad, it may "read on" prior art that you never intended as your invention, thus invalidating the claim.

Important Distinction

Comprising – including all of the following items, but can also include others. (open-ended)

Consisting of – including only the following items. (closed-ended)

Strategies for Writing Claims

- ✓ **Independent Claims** – They don't refer back to any preceding claim, they "stand alone." The first claim is always independent.
- ✓ **Dependent Claims** – They refer back to a preceding or "parent" claim. A standard practice is to write a series of successively narrower dependent claims by adding another element (qualifier) to each new claim.
- ✓ If a broader claim is disallowed, a more specific (narrower) one may be allowed. It then becomes the new independent claim.

Strategies for Writing Claims

Many inventors have difficulty writing more than one independent claim for their invention. Some strategies for writing multiple independent claims include:

- ✓ Describe the invention from several different perspectives.
- ✓ Write a claim on part of the invention, then on the remainder of invention, then on both parts combined.

Strategies for Writing Claims

Important: Always chart claims to be certain no claims are "left hanging!"

Strategies for Writing Claims

Independent Claim (with 3 elements)

An article of furniture for holding objects for a sitting human, comprising:

(a) a sheet of rigid material of sufficient size to accommodate use by a human being for writing and working;

(b) a plurality of elongated support members of equal length; and

(c) means for joining said elongated support members at right angles to the underside of said top at spaced locations so as to be able to support said top horizontally.

Strategies for Writing Claims

Independent Claim (1st element)

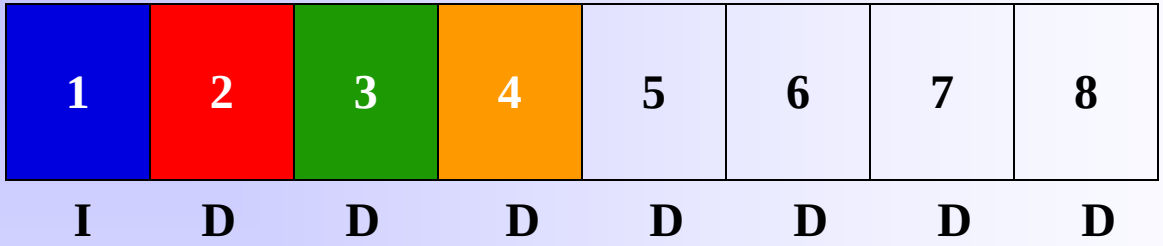
An article of furniture for holding objects for a sitting human, comprising:

(a) a sheet of rigid material of sufficient size to accommodate use by a human being for writing and working;

(b) a plurality of elongated support members of equal length; and

(c) means for joining said elongated support members at right angles to the underside of said top at spaced locations so as to be able to support said top horizontally.

Simple Claims Map



1. An article of furniture for holding. . .
   2. The article of furniture of Claim 1 wherein said sheet of rigid material is made of wood.
      3. The article of furniture of Claim 2 wherein said sheet of rigid material of wood is made of chipboard.
         4. The article of furniture of Claim 3 wherein said sheet of chipboard has a rectangular shape.

Strategies for Writing Claims

Independent Claim (2nd element)

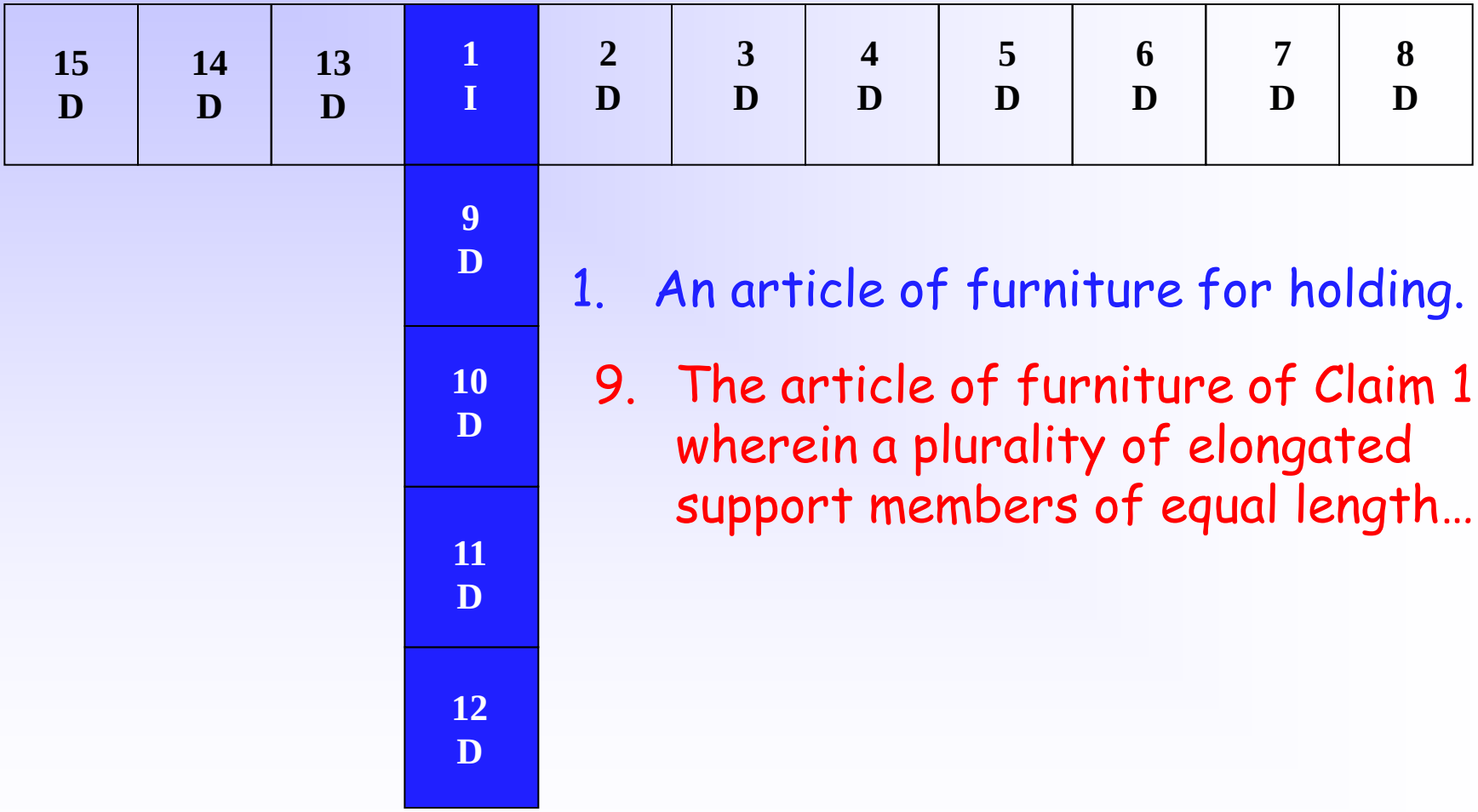
An article of furniture for holding objects for a sitting human, comprising:

(a) a sheet of rigid material of sufficient size to accommodate use by a human being for writing and working;

(b) a plurality of elongated support members of equal length; and

(c) means for joining said elongated support members at right angles to the underside of said top at spaced locations so as to be able to support said top horizontally.

Multiple Dependent Claims Map



1. An article of furniture for holding. . .

9. The article of furniture of Claim 1 wherein a plurality of elongated support members of equal length…

Strategies for Writing Claims

Independent Claim (3rd element)

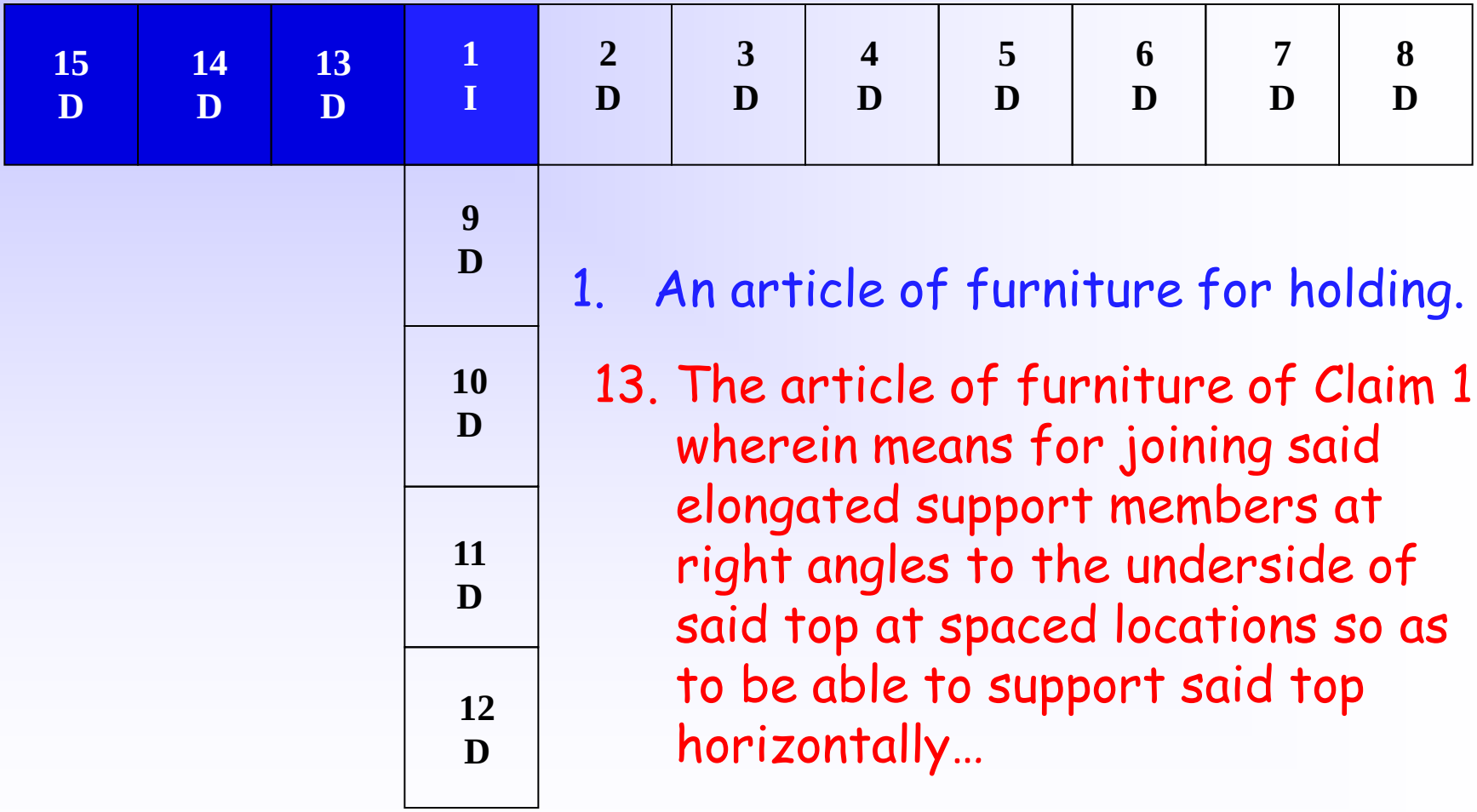
An article of furniture for holding objects for a sitting human, comprising:

(a) a sheet of rigid material of sufficient size to accommodate use by a human being for writing and working;

(b) a plurality of elongated support members of equal length; and

(c) means for joining said elongated support members at right angles to the underside of said top at spaced locations so as to be able to support said top horizontally.

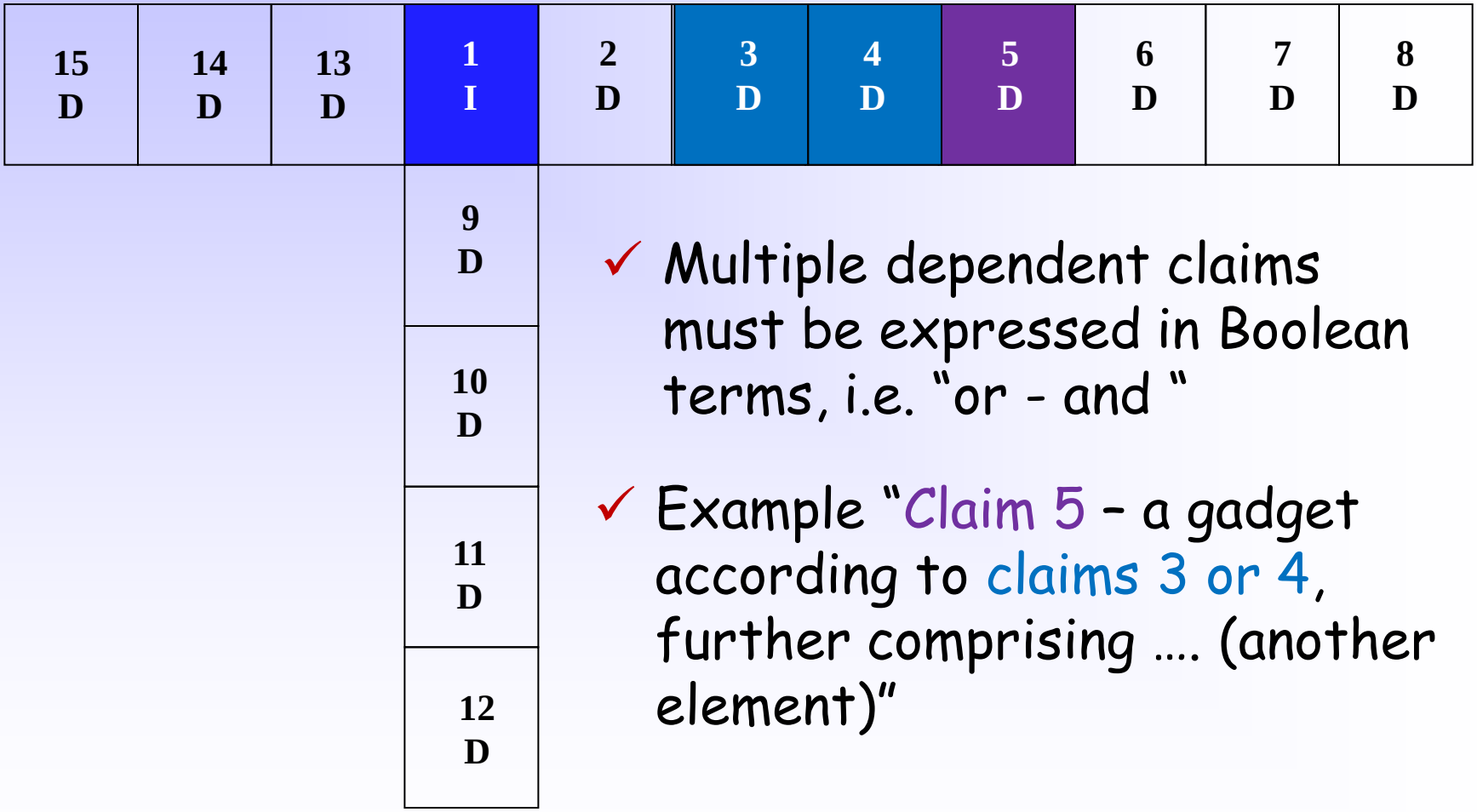
Multiple Dependent Claims Map



1. An article of furniture for holding. . .

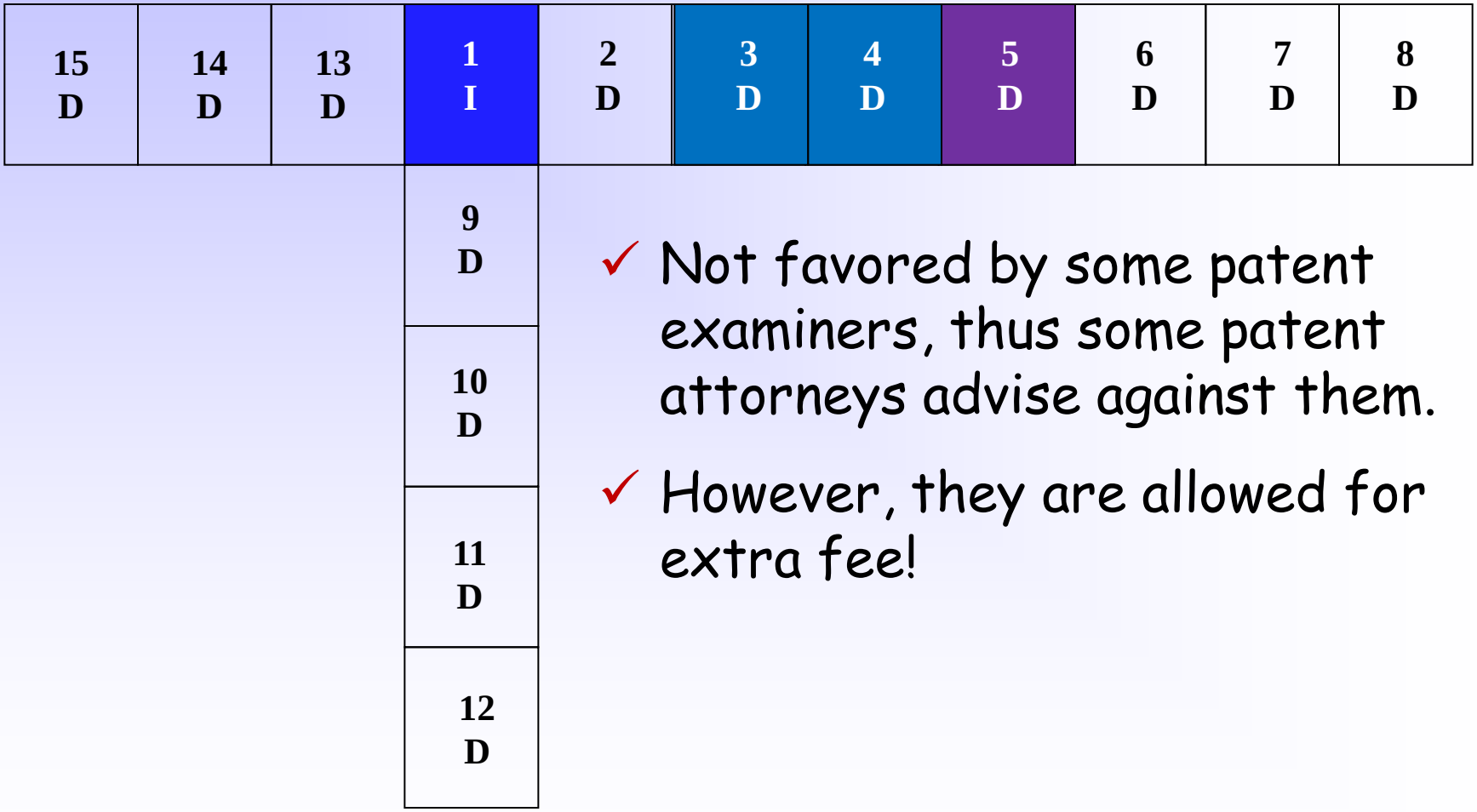
13. The article of furniture of Claim 1 wherein means for joining said elongated support members at right angles to the underside of said top at spaced locations so as to be able to support said top horizontally…

Multiple Dependent Claims Map



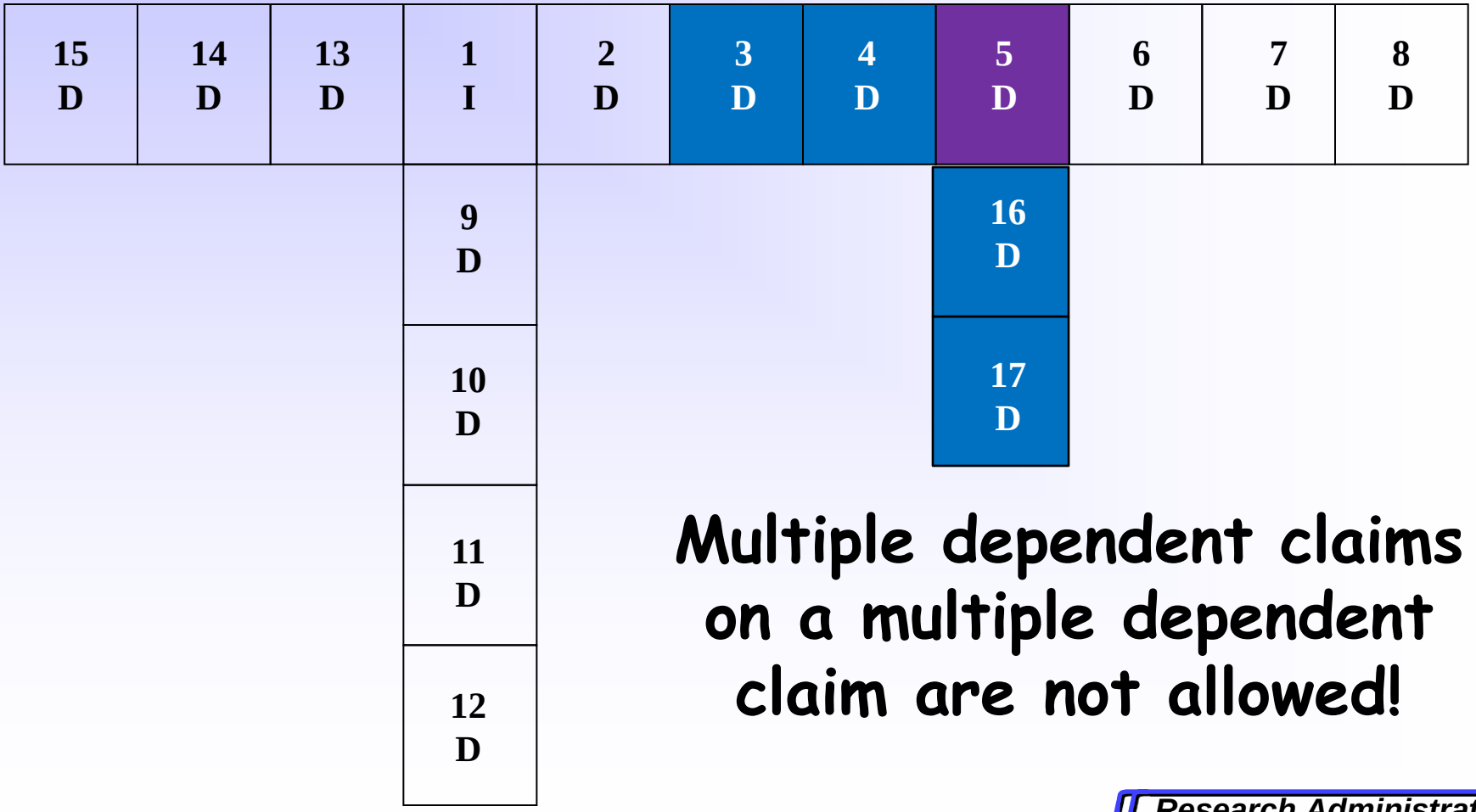
- ✓ Multiple dependent claims must be expressed in Boolean terms, i.e. "or - and "
- ✓ Example "Claim 5 – a gadget according to claims 3 or 4, further comprising …. (another element)"

Multiple Dependent Claims Map



- ✓ Not favored by some patent examiners, thus some patent attorneys advise against them.
- ✓ However, they are allowed for extra fee!

Multiple Dependent Claims on a Multiple Dependent Claim Map



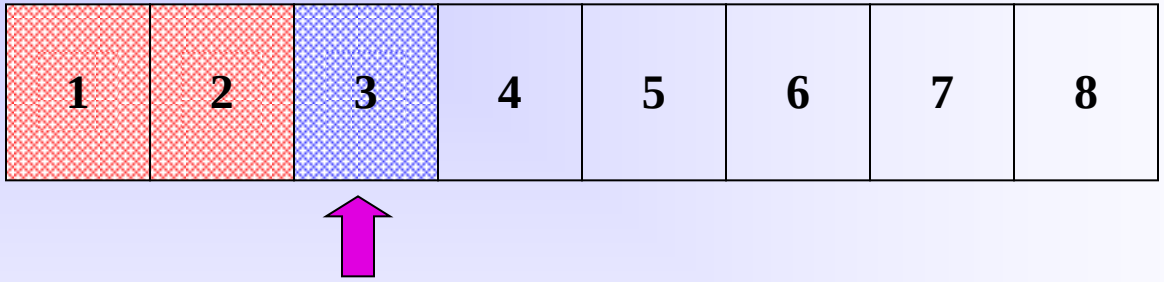
Multiple dependent claims on a multiple dependent claim are not allowed!

Understanding Infringement

- ✓ Battle between a product/process and a patent.
- ✓ To infringe a claim, an accused product or process must have all the elements of the claim.
- ✓ If it has more elements than recited in a claim, it still infringes (if "comprising").
- ✓ If it has fewer elements than recited in the claim, it does not infringe!

Understanding Infringement

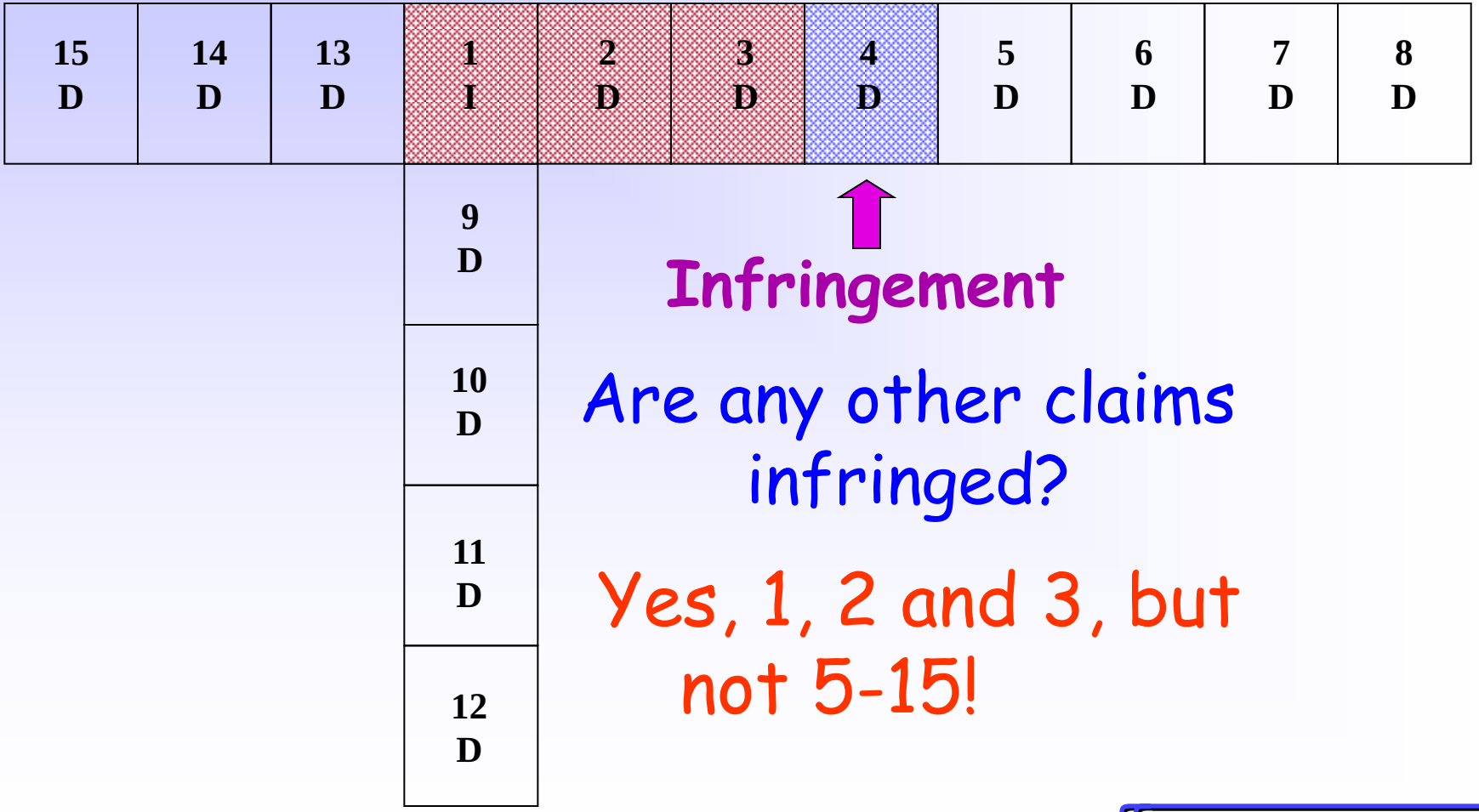
Battle between a product/process and patent



Are any other claims infringed?

Yes, 1 and 2 but not 4-8!

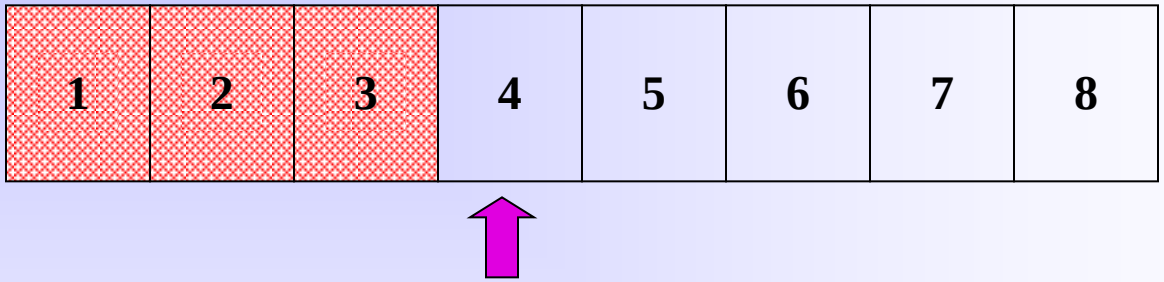
Understanding Infringement



Are any other claims infringed?

Yes, 1, 2 and 3, but not 5-15!

Understanding Invalidation

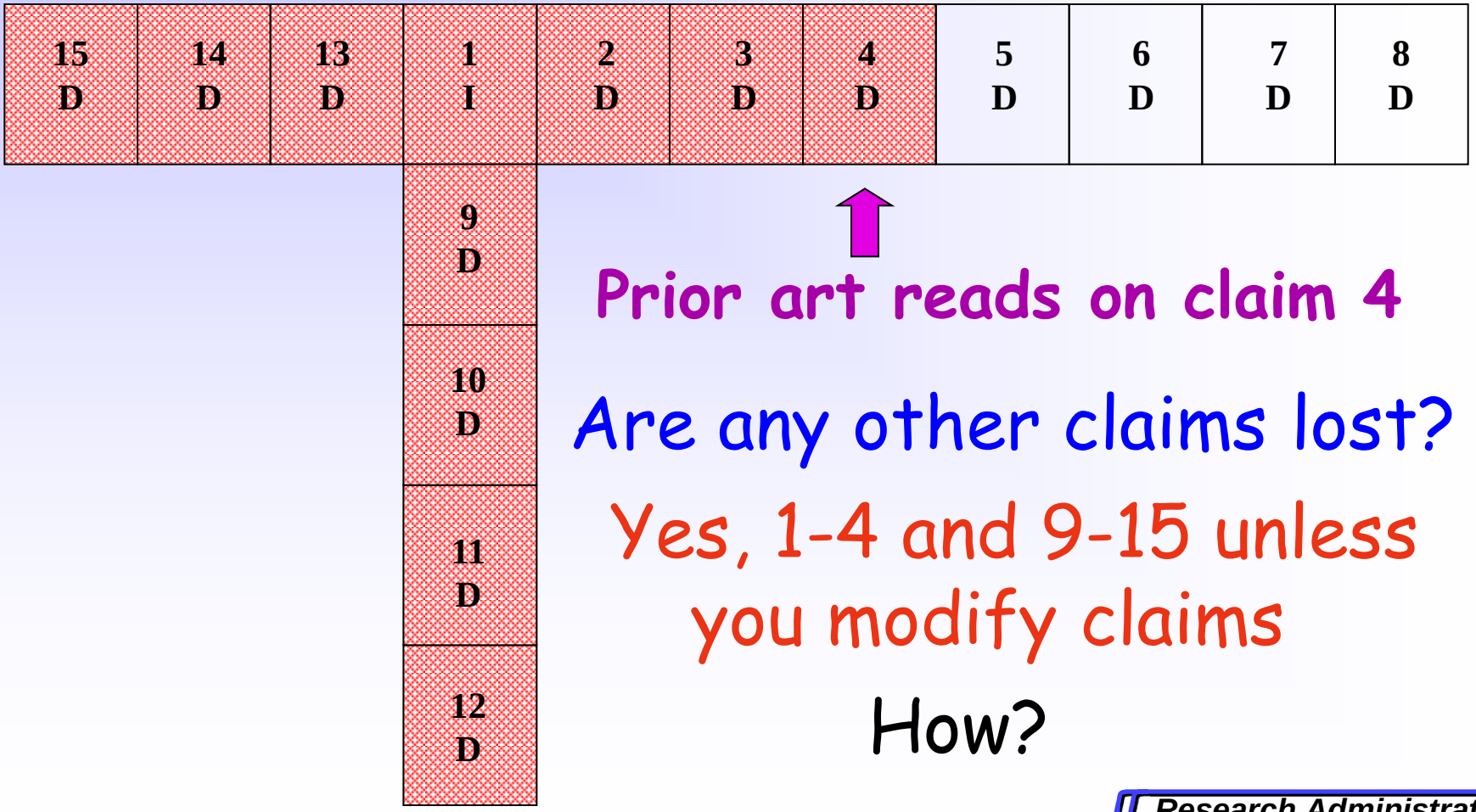


Prior art reads on claim 4

Are any other claims lost?

Yes, 1-4 but not 5-8!

Understanding Invalidation



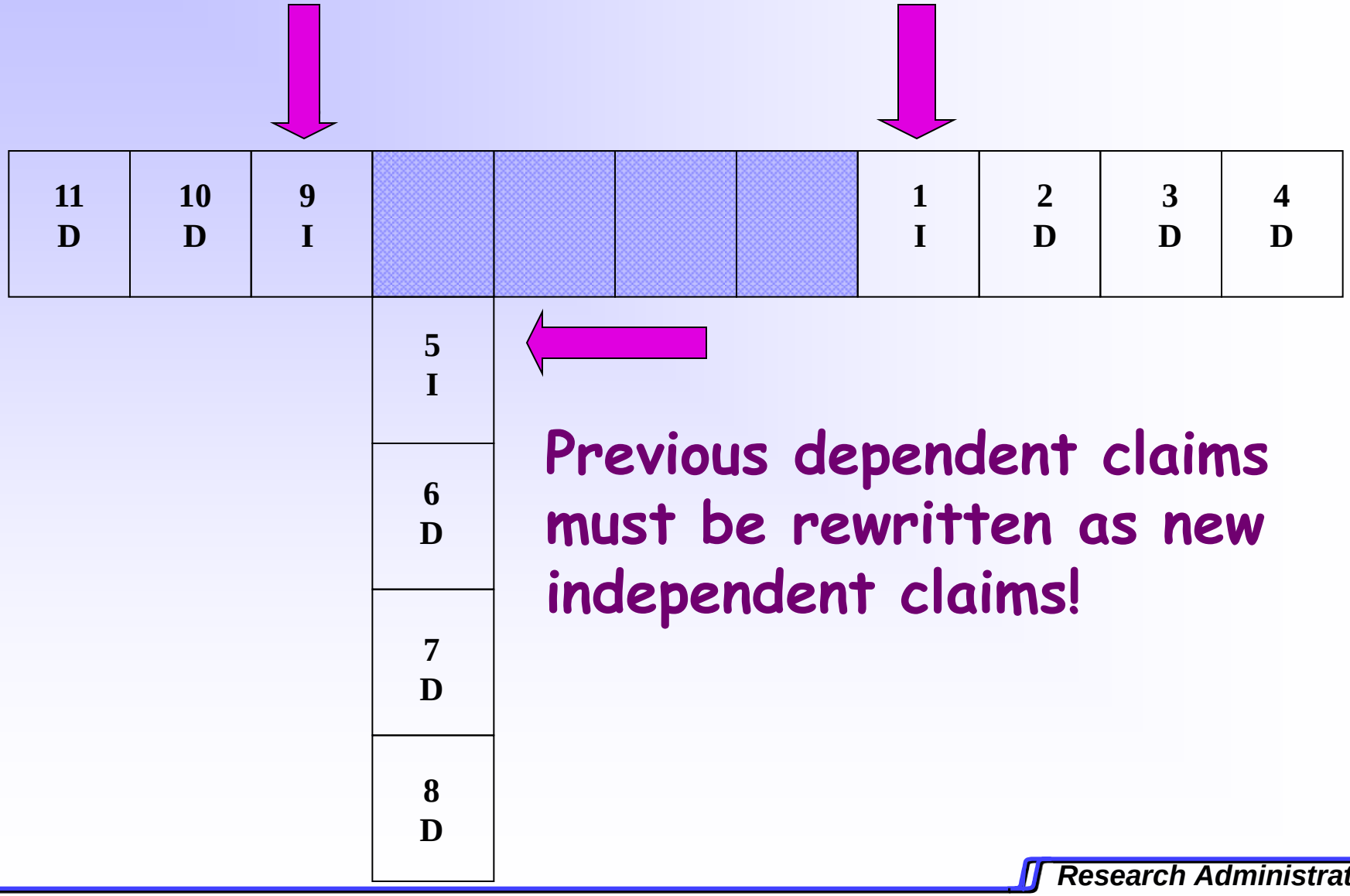
Prior art reads on claim 4

Are any other claims lost?

Yes, 1-4 and 9-15 unless you modify claims

How?

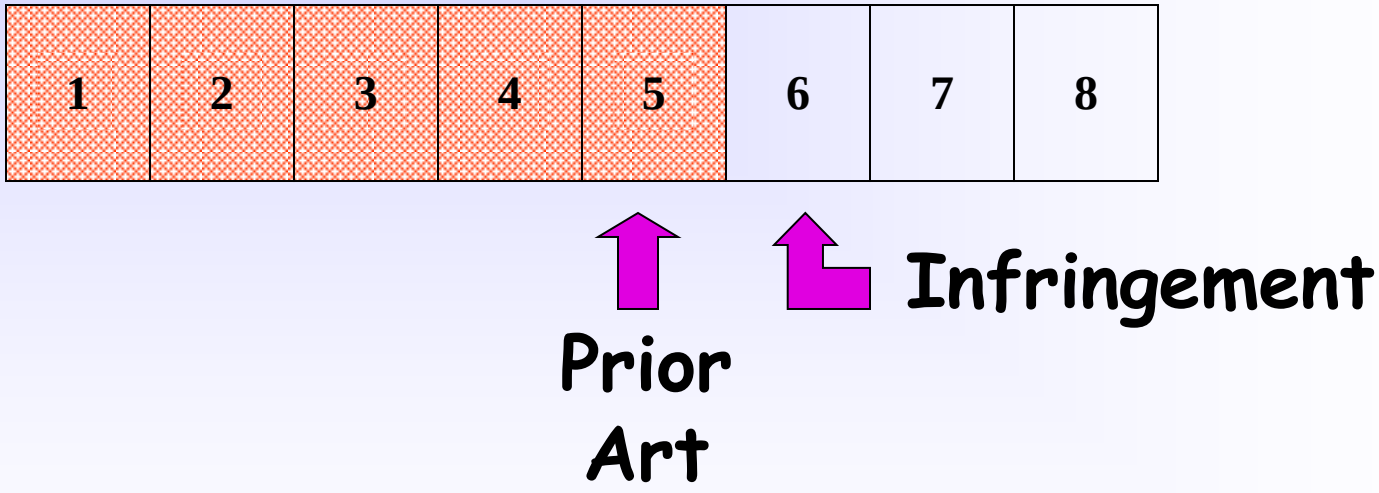
Understanding Invalidation



Previous dependent claims must be rewritten as new independent claims!

Can You Sue for Infringement If?

A product comes on the market that infringes on Claim 6 and prior art is found that "reads on" Claim 5.



Yes, Claims 1-5 are invalidated, but Claims 6-8 remain so infringement is valid!

History of copyright

Late 15th Century England
Introduction of Printing Press

In 1440, German inventor Johannes Gutenberg invented a printing press process that, with refinements and increased mechanization, remained the principal means of printing until the late 20th century. The inventor's method of printing from movable type, including the use of metal molds and alloys, a special press, and oil-based inks, allowed for the first time the mass production of printed books.

With the invention of the printing press, issues related to the protection of books and other printed documents gave rise to the concept of copyright protection.

History of copyright in England and the U.S.

- 1710 – Statute of Anne
  - Established principles for an author's ownership of copyright.
  - Fixed term of protection (14 years, renewable for 14 more if author is still alive upon expiration of protection).
  - Created a "public domain" for literature by limiting the term of protection and ensuring that once a work was purchased the author no longer had control over its use.
- 1787 – U.S. Constitution
  - According to Article I, Section 8, Clause 8 of the U.S. Constitution, "the Congress shall have power . . . to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."

History of copyright in the U.S.

- 1790 – U.S. Copyright Act
  - Granted American authors the right to print, re-print or publish their work with copyright protection for a period of **14 years** and to renew for another 14 years.
- 1831 – Revision of the U.S. Copyright Act
  - Extended term of protection to **28 years** with the possibility of a **14 year** extension.
  - Conformed with European law.
- 1870 – Revision of the U.S. Copyright Act
  - Administration of copyright registrations moved from the District Courts to the Library of Congress Copyright Office.
  - No change in term of protection.

In the past our **laws**, **public policy**, **economics** and **technology** were in relative balance! A book could be copied on a copy machine, but it was expensive to do so and the quality of the copy was poor. If you loaned the book to someone else, you were deprived of the ability to read it yourself!

Digital media and the internet have created an inbalance in these important societal systems!

Expectations & Behavior for internet users

- ✓ 89% of knowledge workers share documents with their colleagues on a weekly basis.
- ✓ 85% regularly forward content to others without thinking of copyright issues.
- ✓ 70% say the WWW is a main source of gaining information.
- ✓ 30% think it's legal to share information they pay for (music, electronic books).

When the expectations and behavior of the majority support infringement, enforcement of copyright laws is nearly impossible!

Digital media and the internet

- ✓ The switch from difficult to copy analog media (books, records, movies) to easy to copy digital media…
- ✓ …allows an infinite number of high quality copies to be distributed world-wide at the "press of a button."
- ✓ The internet knows no borders, but copyright laws are country-specific.

When infringement is easily enabled by technology, enforcement of copyright laws is nearly impossible!

Excessive duration of exclusivity

- ✓ The substantial extensions of the "copyright monopoly" period are viewed by the public as unreasonable and completely "out of balance" with public interest.
- ✓ Congress has, and likely will continue to be influenced by powerful special interests who wish to push copyright protection to perpetuity.

When the public no longer believes the law is fair, enforcement of copyright laws is nearly impossible!

Future Trends

- ✓ Current trends will likely escalate as our digital environment becomes increasingly information rich and new technologies continue to disrupt the status quo.
- ✓ Dynamic Documents will replace static ones further complicating issues of ownership.
- ✓ Participation will increasingly be central to our content experience.

The concept of copyright as we currently understand it will be increasingly challenged!

These powerful societal and technological forces…

- ✓ Expectations and Behavior
- ✓ Technology
- ✓ Perceived Unfairness of Law
- ✓ New Paradigms for Understanding and Relating to Content

…are contributing to what some have called…

The Digital Intellectual Property Dilemma

The internet offers access to an ever increasing quantity of high quality information **while**

potentially imperiling the means for rewarding those who create and publish the information **thus**

Reducing the incentive to create!

Our laws, public policy, economics and technology are Out of Balance!

- ✓ Laws always lag behind technology – the faster the pace of change, the greater the lag.
- ✓ Every country's IP laws operate in the context of a global economy where laws and enforcement vary widely.
- ✓ Test cases are common, thus new case law is modifying our understanding of copyright.

We are in the early stages of rethinking our fundamental assumptions and practices associated with copyright.

Creative attempts to make the current system work

- ✓ The Copyright Clearance Center, Creative Commons, Rightslink and Rightsconnect are all attempts streamline complex licensing requirements.
- ✓ Copyleft Licenses – Licenses to distribute copies of copyrighted works (software, documents, music, art) with minimal stipulations while requiring the same rights be preserved in modified versions.

Well-intentioned, but short-term fixes!

Creative attempts to "re-balance" the system!

New markets are being developed (iTunes) and new economic models are being tested (music provided on the internet for free in order to generate interest and subsequent revenue from concert tickets).

Some new approaches are actually working.

Even though things are in flux, we can't ignore existing laws! So what laws apply?

U.S. Copyright Law

What is a copyright?

Copyright - the legal right granted to an author, composer, playwright, publisher, or distributor to exclusive publication, production, sale, or distribution of a literary, musical, dramatic, or artistic work.

Copyright protection begins at the time the work is created in fixed form. The copyright in the work of authorship immediately becomes the property of the author who created the work. Only the author or those deriving their rights through the author can rightfully claim copyright.

Who is an author?

One who originates or creates a work.

Who owns the copyright?

Under federal law, ownership initially vests with the author except in case of work-for-hire. In addition, many employees are subject to policies that may require assignment of copyright.

What are joint works?

Works created by multiple authors with the intent of being merged into inseparable or interdependent parts of a whole.

Who owns the copyright for joint works?

Co-authors are deemed tenants in common - each has undivided ownership, but must account to the other owners.

Who owns a copyright when the work was created in a Work-for-Hire situation?

Under the 1976 Copyright Act, an exception to the author ownership principle is specified where in cases of work-for-hire, the employer is considered the author.

The work prepared is deemed within the scope of employment as if it was ordered or commissioned by the employer.

What is standard university policy concerning copyright ownership?

Ownership vests with the author.

Exceptions may occur if a work is developed under a sponsored research agreement (university has obligations to the sponsor) or if the work is deemed a work-for-hire, e.g., the person was hired to produce the work such as a computer programmer hired to write code!

Who owns the copyright in IP from external consulting agreements?

These agreements are usually viewed as works-for-hire, thus ownership is assigned to the company or other entity "paying" for the work to be done.

Be careful that you don't create a "bar" to your future research by assigning the IP rights in consulting agreements, e.g., graduate student summer internships.

Copyrightable Material

- literary works
- musical works, including any accompanying words
- dramatic works, including any accompanying music
- pantomimes and choreographic works
- pictorial, graphic, and sculptural works
- motion pictures and other audiovisual works
- sound recordings
- architectural works

All works must meet the test of originality!

Simply collecting and presenting data does not qualify.

Case Law: Emphasis on Originality

1991 – Feist Publications v. Rural Telephone Service Co.

The U.S. Supreme Court found that the U.S. Constitution requires for a work to receive copyright protection, it must reflect creative expression or originality. Thus, the compilation of a telephone directory by Feist was not an infringement even though it was compiled from the information in the Rural Telephone Service White Pages. The information in the white pages was not copyrightable because it comprised "comprehensive collection of facts arranged in conventional formats."

What rights are conferred?

- ✓ Reproduction – copying a work.
- ✓ Distribution – distributing work publically.
- ✓ Performance – performing work publically.
- ✓ Display - displaying work publically to include posting on web.
- ✓ Sound Recording and Digital Audio Transmission - includes all mediums (present and future).
- ✓ Adaptation – preparing derivative works.

What constitutes copyright infringement?

- ✓ Reproducing the work in copies (piracy).
- ✓ Preparing derivative works.
- ✓ Distributing copies of the work to the public for sale, rent, lease.
- ✓ Displaying work publically.
- ✓ In the case of sound recordings, performing the work publically by means of any digital audio transmission.

Without obtaining a license from the copyright owner!

What can a copyright owner do when an infringement occurs?

- ✓ **Note**: The Copyright Office is an "Office of Record" only. It is not charged with enforcement!
- ✓ The first step is to send a "Notice of Infringement" letter to the infringer identifying yourself as the owner of the materials and requesting them to "cease and desist" from their illegal use. This often works.
- ✓ If not, you can file suit in federal court.

"My Sweet Lord" – "He's So Fine"

Background - "My Sweet Lord" written and recorded by George Harrison in 1970 and "He's So Fine" written by Ronald Mack and recorded by the Chiffons in 1962

- ✓ Copyright infringement suit filed in 1971 by Bright Tunes Music Corp. (owner of "He's So Fine" copyright).
- ✓ Harrison's offer of $148,000 to settle with him keeping copyright to My Sweet Lord was rejected.

"My Sweet Lord" – "He's So Fine"

- ✓ Judge found a highly unusual pattern of notes present in each song, with MSL making only small changes from HSF.
- ✓ Harrison's attorneys acknowledged that no other example of this pattern could be found.
- ✓ Judge said it is "perfectly obvious that the two songs are virtually identical."
- ✓ Harrison conceded he had heard HSF and that the tune could have been in his subconscious when he wrote "My Sweet Lord."

"My Sweet Lord" – "He's So Fine"

- ✓ Judge ruled that MSL infringes HSF copyright.
- ✓ In opinion he says "infringement can be established when the 2nd work is substantially similar to the 1st and the second composer had access to the 1st work."
- ✓ Harrison's defense of "subconscious copying" was rejected.

Case Law Principle: "Intent to infringe" is not necessary to establish copyright infringement!

1993: Playboy Enterprises Inc v. Frena

"The Florida Northern District Court held that Frena, an electronic bulletin board operator, had violated Playboy's copyright when one of their photographs was digitized and placed on the bulletin board system by one subscriber and downloaded by another subscriber. According to the decision, "it does not matter that Defendant Frena may have been unaware of the copyright infringement. Intent to infringe is not needed to find copyright infringement. Intent or knowledge is not an element of infringement, and thus even an innocent infringer is liable for infringement; rather innocence is significant to a trial court when it fixes statutory damages, which is a remedy equitable in nature."

2000: Recording Industry Association of America v. Napster

1998 – 19 year old Shawn Fanning (nickname Napster), a college student at Northeastern University, developed a software application to search for MP3 files on line.

- ✓ MP3's – greatly compressed file size (12:1) and high sound quality, made them the preferred means to digitally transmit music files over internet.
- ✓ His peer-to-peer (P2P) file sharing technology allowed users to connect with each other and share individual files stored on their individual hard drives (without regard to copyright).

2000: Recording Industry Association of America v. Napster

- ✓ June 12, 2000 – Recording Industry Association of America (RIAA) filed a lawsuit against Napster for copyright infringement.
- ✓ February 12, 2001 – 9th Circuit Court of Appeals ruled Napster liable.
- ✓ **Case Law Principle**: enabling others to commit copyright infringement is contributory and vicarious copyright infringement!

"Happy Birthday to You"

It is protected by copyright, so do you infringe when you sing it to your child?

- ✓ Background: Melody was written by Mildred and Patty Hill in Kentucky with the first words being "Good Morning to You" and used in their kindergarten classroom.
- ✓ The "Happy Birthday" words first appeared in a song book edited by Robert H. Coleman in 1924.
- ✓ With the various extensions to the duration of copyright passed by Congress, the current protection extends through 2030 – there is some challenge to the copyright!

"Happy Birthday to You"

So are you a copyright infringer when you sing the Happy Birthday song to your child?

- ✓ **It Depends!**
- ✓ When sung at home – no license is required.
- ✓ So, how about when you sing it at your child's party at a local restaurant?
- ✓ Technically you may be an infringer, but the copyright owner (a subsidiary of AOL/Time Warner) says such infringements are rarely prosecuted!
- ✓ If performed in public or for commercial gain, you need a license – without one, you are an infringer.

"Happy Birthday to You"

Commercial use is an infringement:

- ✓ Most restaurant chains have developed their own birthday songs to sing to customers rather than running the risk of an infringement suit by singing "Happy Birthday to You."
- ✓ Use in a play or movie requires a license.
- ✓ Use at a sporting venue would also require a license.

Non-Copyrightable Material

Works that have not been fixed in a tangible form of expression (for example, choreographic works that have not been notated or recorded, or improvisational speeches or performances that have not been written or recorded).

Ideas, procedures, methods, systems, processes, concepts, principles, discoveries, or devices, as distinguished from a description, explanation, or illustration.

Titles, names, short phrases, and slogans, familiar symbols or designs; mere variations of typographic ornamentation, lettering or coloring; listings of ingredients or contents.

Works consisting entirely of information that is common property and containing no original authorship (for example: standard calendars, height and weight charts. Tape measures and rulers, and lists or tables taken from public documents or other common sources.

Notice of Copyright

The symbol © (the letter C in a circle), or the word "Copyright," or the abbreviation "Copr." are all acceptable plus the year of first publication of the work.

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In the case of compilations or derivative works incorporating previously published material, the year of the first publication in the compilation or derivative work is sufficient.

The Library of Congress processes all applications for copyright registrations. Registration of copyright is not necessary, but there are benefits.

Registered Copyright

The symbol ® (the letter R in a circle), or the words "Registered Copyright," are all acceptable plus the year of first publication of the work.

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Benefits of Registration

- Registration establishes a public record of the copyright claim.
- Before an infringement suit may be filed in court, registration is necessary for works of U.S. origin.

If registration is made within three months after publication of the work or prior to an infringement of the work, statutory damages and attorney's fees will be available to the copyright owner in court actions.

If made before or within five years of publication, registration will establish prima facie evidence in court of the validity of the copyright and of the facts stated in the certificate.

Otherwise, only an award of actual damages and profits is available to the copyright owner. Registration may be made at any time within the life of the copyright.

Copyright Duration

Copyrights:

- ✓ Life of author + 70 years.
- ✓ Joint authors - 70 years after the last surviving author's death.
- ✓ Works for Hire - 95 years from the date of publication or 120 years from the date of creation. Whichever expires first!

1998 Copyright Term Extension Act

"Sonny Bono Copyright Extension Act"
"Mickey Mouse Protection Act"

He is the world's most famous personality, better known in this country than anyone living or dead, real or fictional. Market researchers say his 97% recognition rate in the U.S. edges out even Santa Claus.

He is the one -- and, for now, only -- Mickey Mouse.

As Mickey turns 80 this fall, the most beloved rodent in show business is widely regarded as a national treasure. But he is owned lock, stock and trademark ears by the corporate heirs of his genius creator, Walt Disney.

Transfer of Copyright

Copyright is a personal property right, and is subject to the various state laws and regulations that govern the ownership, inheritance, or transfer of personal property as well as terms of contracts or conduct of business.

A copyright may be conveyed by operation of law and may be bequeathed by will or pass as personal property by the applicable laws of intestate succession.

What is a Derivative Work?

- **Definition** – An expressive creation that includes major, copyright-protected elements of one or more pre-existing work; a work based upon one or more pre-existing work (see Circular 14).
- Includes translation, dramatization, motion picture version of a book, musical arrangement, dramatization, fictionalization, sound recording, art reproduction, abridgement, condensation, or any other form in which a work is recast, transformed or adapted.
- For software, derivative works include original modifications to someone else's code.

Can a Derivative Work be Copyrighted?

- If the copyright is still in effect on the original works, permission to use the rights needs to be obtained.
- A copyright on the derivative work may be obtained if it displays some originality of its own containing sufficient new expression.
- It must be different enough from the original work to be regarded as a "new work" or must contain a substantial amount of new material.
- The copyright only extends to the new material contributed by the author.

"Fair Use" Doctrine

1976 – Revision to the U.S. Copyright Act

"The fair use of a copyrighted work … for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright."

Folsom v. Marsh – 1841

The defendant copied 343 pages from the plaintiff's 12-volume biography of George Washington into his own work. He claimed a "fair use" defense in that his work was a "criticism." In this famous decision, Justice Joseph Story wrote:

Folsom v. Marsh – 1841

"A reviewer may fairly cite largely from the original work, if his design be really and truly to use the passages for the purpose of fair and reasonable criticism. On the other hand, it is as clear, that if he thus cites the most important parts of the work, with a view not to criticize, but to supersede the use of the original work, and substitute the review for it, such a use will be deemed in law a piracy…"

Folsom v. Marsh – 1841

"In short, we must often … look to the nature and objects of the selections made, the quantity and value of the materials used, and the degree in which the use may prejudice the sale, or diminish the profits, or supersede the objects, of the original work."

Four principles were later written into copyright law

To determine whether a use is a "fair use", one must consider the:

1. Purpose and character of use (including whether the use is commercially motivated or is for nonprofit educational purposes).
2. Nature of the copyrighted work.
3. Amount and substantiality of the portion used in relation to whole.
4. Effect the use has on potential market opportunities for the original work.

1. Purpose and Character of Use

To justify the use as fair:

- ✓ One must demonstrate how the use either advances knowledge or the progress of the arts through the addition of <u>something new</u>!
- ✓ The use must be **transformative**, not merely for personal gain!

2. Nature of the Copied Work

- ✓ Facts and ideas are separate from copyright – only their particular expression or fixation is subject to copyright protection.
- ✓ The social importance of the work may trump copyright protection:
  - ✓ Zapruder's film of JFK's assassination was purchased by Time Magazine and copyrighted.
  - ✓ The copyright was challenged and overturned in "Time Inc. v. Bernard Geis Associates" which dealt with publishing stills from the film.

3. Amount and Substantiality

- Generally the less that is used in relation to the whole, the more likely the use will be viewed as fair.
- However, in "Harper & Row Publishers, Inc. v. Nation Enters":
  - The use of 400 words from President Ford's memoir by a political opinion magazine was ruled an infringement because those particular words were viewed as the "heart of the book" - thus substantial!

4. Effect Upon the Work's Value

- The Supreme Court, in the previously mentioned "Nations" case, called this the "single most important issue" in determining fair use.
- Two kinds of harm to potential markets are considered:
  - Is the use a direct market substitute for the original work?
  - Does the use limit other potential market opportunities, e.g., licensing?

Case Law: Test of "Fair Use"

1991 – Basic Books, Inc. v. Kinko's Graphics

A Federal District Court in New York ruled that Kinko's Graphic Corporation infringed copyrights, and did not exercise fair use, when it photocopied course packs that included book chapters, and then sold them to students for class work. The court found that most of the fair use factors worked against Kinko's in this case, especially given Kinko's profit motive in making the copies. Additionally, the court found that the classroom guidelines did not apply to Kinko's. The court did not rule that course packs cannot constitute fair use in other circumstances.

Other factors considered by the courts in determining Fair Use

Codes Developed by Professional Groups:

- ✓ Documentary Filmmakers Statement of Best Practices for Fair Use - 2005
- ✓ Code of Best Practices for Fair Use in Media Literacy Education - 2008
- ✓ Code of Best Practices for Fair Use for Online Video - 2009

Fair Use summary for educators

Examples of Fair Use in education:

- ✓ Minimal use for classroom instruction.
- ✓ Using quotes in a book review to illustrate the author's style.
- ✓ Be careful with web postings! In 2000, the court found Free Republic guilty of copyright infringement for copying the full text of LA Times news articles and posting them for free on their website, thus allowing readers to avoid paying normal fees to the LA Times!

Parody: Fair Use or Copyright Infringement?

A parody, because it is a method of criticism, must inevitably make use of another creative work. This inherently creates a conflict between the creator of the work that is being parodied (no one likes to be criticized, made fun of or ridiculed) and the creator of the parody. It is also highly unlikely that a copyright owner will grant permission or a license to a parodist to use their copyright protected work in creating a parody.

Parody: Fair Use or Copyright Infringement?

- ✓ Since copyright law prohibits the substantial use of a copyrighted work without permission of the copyright owner, it may be necessary for the parodist to rely on the fair-use defense to forestall any liability for copyright infringement.
- ✓ Another defense – first amendment right of free speech!

Parody: Fair Use or Copyright Infringement?

- ✓ The courts have distinguished between parody (using a work in order to poke fun at or comment on the work itself) and satire (using a work to poke fun at or comment on something else).
- ✓ Parodies seem to get more favorable treatment.
- ✓ In the end, "fair use" is determined by application of the same four rules.

1991 Campbell v. Acuff-Rose Music

- ✓ Roy Orbison's publisher, Acuff-Rose Music Inc. sued 2 Live Crew in 1989 for their use of Orbison's "Oh, Pretty Woman" in a mocking rap version with altered lyrics.
- ✓ The court viewed 2 Live Crew's version to be a "ridiculing commentary" (thus a parody) on the earlier work.
- ✓ The court established that a commercial use could be a fair use especially when the markets for an original work and a transformative work are different.

Food Chain Barbie!





- ✓ Artist Tom Forsythe's series of 78 photographs titled "Food Chain Barbie" showed pictures of Barbie being attacked by vintage household appliances as a parody of "**mindless consumer advertising**."
- ✓ Mattel sued for copyright & trademark infringement.
- ✓ Forsythe, defended by the ACLU, prevailed and Mattel lost its final appeal in 2003.

Trademark Law

A trademark is a word, phrase, symbol or design, or a combination thereof, that identifies and distinguishes the source of the goods of one party from those of others.

The Patent and Trademark Office (PTO) processes applications for registering trademarks.

Benefits of Registration

- ✓ The right to put an ® after the mark, which puts users on notice that the mark has been registered.
- ✓ The legal presumption that the registrant is the owner of the mark.
- ✓ The ability to bring an action concerning the mark in federal court.
- ✓ The use of the U.S registration as a basis to obtain registration in foreign countries.

What is a trademark?

- ✓ Any word, symbol or phrase that is consistently attached to a product to identify and distinguish it from others in the marketplace, e.g., a brand name.
- ✓ So the trademark "Coca-Cola" distinguishes the brown-colored soda water of one particular manufacturer from the brown-colored soda water from another manufacturer "Pepsi".

What can be protected by trademark law?

BlueCross BlueShield of North Carolina

Service Marks
(Blue Cross/ Blue Shield Emblem)

Certification Marks
(Good Housekeeping Seal of Approval)

LIMITED WARRANTY TO CONSUMERS
Good Housekeeping
Promises
REPLACEMENT OR REFUND IF DEFECTIVE

Collective Marks
(FDIC Symbol)

TEMPORARY FEDERAL DEPOSIT INSURANCE FUND
FDIC
MEMBER

Product Names
(Ivory soap)

What else can be protected by trademark law?

In some cases, trademark protection may extend beyond a word, symbol or phrase. For example, the color pink is trademarked by Owens-Corning fiberglass insulation and the unique shape of a Coca-Cola bottle is also trademarked. These are generally called "trade dress."

Trademark names are common in our vocabulary!

So, you need a Band-Aid (sterile bandage strip) and an Aspirin (acetylsalicylic acid), because while you were in the park Roller-blading (in-line skating) and rocking out to your iPod (portable music device), a Frisbee (plastic flying disk toy) hit you on the **noggin** (head).

Noggin isn't trademarked yet!

Charlie Sheen's recent trademarks on his "Catchphrases" (registered 3-19-11)

- ✓ Tiger Blood
- ✓ Rock Star from Mars
- ✓ Duh, Winning
- ✓ Adonis DNA
- ✓ I'm Not Bi-Polar, I'm Bi-Winning
- ✓ Sober Valley Lodge (the nickname for one of his homes)
- ✓ Sheen's Goddesses
- ✓ Defeat is Not an Option
- ✓ Violent Torpedo of Truth
- ✓ and "of course" Charlie Sheen

Aren't you glad IP law deals with such important issues?

Issues to consider when selecting a trademark!

The Strongest (easiest to defend)

- ✓ Arbitrary (Apple Computers, Exxon, Kodak)
- ✓ Fanciful (Double Rainbow Ice Cream or the Nike "swoosh")
- ✓ Coined (invented) terms like Intel (for **Int**egrated **El**ectronics)

None of these terms have any inherent relationship to the underlying product!

Issues to consider when selecting a trademark!

The Weakest (hardest to defend)

- ✓ Generic ("The Pill" for birth control pills)
- ✓ Descriptive (Electric Fork, Vision Center, Holiday Inn, All Bran)
  - ✓ These directly describe rather than suggest the characteristic or quality of the underlying product.
  - ✓ Over time they may acquire a "secondary meaning" if the consuming public primarily associates the mark with a particular product or producer.

Court tests for "Secondary Meaning"

- ✓ Amount and manner of advertising
- ✓ Volume of sales
- ✓ Length and manner of the mark's use
- ✓ Results of consumer surveys

Over time a weak trademark can be strengthened if it is accepted by the public!

Issues to consider when selecting a trademark!

- ✓ Generally, it is best not to select a mark already in use (or close enough to one in use to cause customer confusion, mistake or deception); **however**
- ✓ There are many duplicate trademarks used in different fields: Apple Computers and Apple Records, Delta Airlines and Delta Faucets.

How is a trademark obtained?

Two different ways:

- ✓ Be the first to use it in commerce - often this only confers regional rights.
- ✓ Be the first to register the mark with the PTO.
- ✓ Note: Protection for "descriptive" marks requires a secondary meaning thus there is usually a time lag before it is protected.

What protection does a registered trademark provide?

- ✓ Registration confers national rights.
- ✓ Allows infringement suits in federal court, and if successful, one can collect attorney fees as well as damages.
- ✓ After five years the mark becomes "incontestable" – the right to use the mark is conclusively established.

Limitations of coverage for trademarks

- ✓ Trademark laws are country specific.
- ✓ Some countries don't even have laws protecting trademarks.
- ✓ Many countries do a poor job enforcing trademark (and copyright) laws.
- ✓ U.S. courts often grant protection consistent with the trademark owners defense of the mark!

Can trademark rights be lost?

- ✓ Abandonment – Non-use for three consecutive years is prima facie evidence.
- ✓ Improper licensing or assignment – Adequate quality control and supervision of mark must be exercised by owner (especially with franchisees or other licensees).
- ✓ Genericity – Over time a word that once was protected may become viewed as generic (thermos) – appearing in the dictionary is a bad sign for maintaining trademark pprotection!

What constitutes trademark infringement?

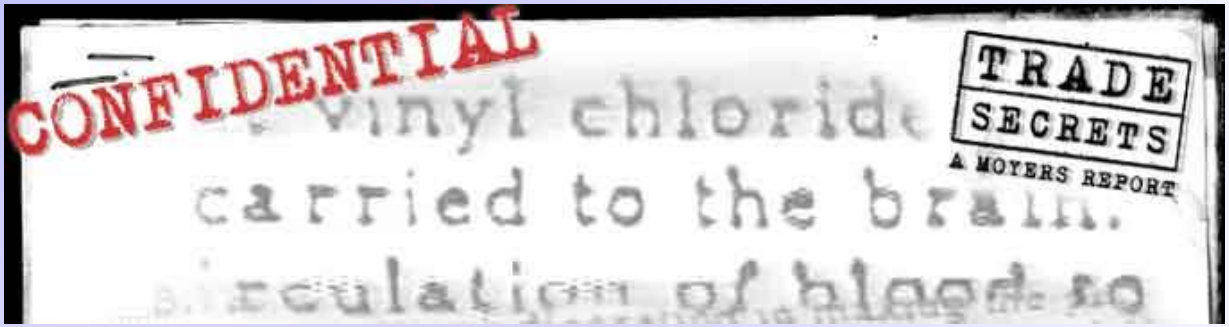
- ✓ "Likelihood of Confusion" is the standard. Are consumers likely to be confused as to the source of the goods or the sponsorship?
- ✓ Use of Identical Mark Is Infringement. Use of a similar mark may also be infringement. Courts consider:
  - Evidence of actual confusion
  - Similarity of marketing channels

Victoria's Secret v. Victor's Little Secret

January, 2003 – The case involved a Kentucky mom-and-pop business called Victor's Little Secret that sold "adult novelty" and "wild outfits." They claimed the name was inspired by owner Victor Moseley's desire to keep the business secret from a former employer. The lingerie manufacturer Victoria's Secret, which had held the trademark on its name since 1981, claimed unfair competition, trademark infringement, and sued Mr. Moseley.

- ✓ At issue for the Supreme Court was whether Victoria's Secret had to show its trademark was "diluted" or whether there was merely the likelihood of economic harm if Moseley was allowed to keep the name.
- ✓ A unanimous court ruled that while Victoria's Secret unquestionably had an interest in protecting its famous name, federal trademark law requires more evidence that a competitor actually caused harm by using a sound-alike or knockoff name.
- ✓ **Ruling for Victor's Little Secret.**

Trade secret law



In the U.S. trade secrets are not protected by federal law in the same manner as patents, copyrights or trademarks. Instead, trade secrets are protected by state laws. All states except MA, NY, NJ, NC and TX have adopted the Uniform Trade Secrets Act (UTSA).

Trade Secret protection is largely governed by state law (Uniform Trade Secrets Act).

What can be protected as a trade secret?

Any information, design, devise, process, composition, technique, or formula that is not known generally and that affords its owner a competitive business advantage.

Trade secrets may also take the form of "Business Information"

- ✓ Customer lists
- ✓ Names of suppliers
- ✓ Pricing data

Perhaps the most famous trade secret Coke Formula

"The company presents the formula as a closely held trade secret known only to a few employees, mostly executives!"

May 23 2007: 3:54 PM EDT

ATLANTA (CNN) -- Two former Coca-Cola employees were sentenced Wednesday to serve federal prison terms for conspiring to steal and sell trade secrets to rival Pepsi. Joya Williams, 42, of Norcross, Ga., received an eight-year prison term, while Ibrahim Dimson, 31, got a five-year term, according to a news release from the U.S. attorney's office for the Northern District of Georgia. They were arrested last July after a federal sting operation was launched when Pepsi tipped off Coke that it was being offered inside information.

The Uniform Trade Secrets Act affords protection:

1. Proportional to the business value of the trade secret **and**
2. Consistent with how well the business has protected the trade secret.

The courts have consistently rejected requests for relief if the company has sloppy procedures for protecting its secrets!

Why would an owner choose protection under trade secret law rather than patent protection?

- ✓ Perpetual protection is possible.
- ✓ Cost.
- ✓ Confidentiality may make it hard to "design around."
- ✓ Inventors aren't named in trade secret rights, so there is no issue concerning ownership.
- ✓ Trade secret rights are obtained immediately.

Why would an owner choose patent protection over trade secret law?

- ✓ Reverse engineering is possible with trade secrets.
- ✓ Patents are presumed valid by the court, trade secrets must be proven to exist before the suit may proceed.
- ✓ Trade secrets discovered by legitimate means may be patented by others.
- ✓ If an invention is protected under trade secret law **and** has been practiced commercially, a patent must be filed within one year.