

PATENT LAW 101 (MPEP 2100 SUMMARY)

[Young Patent Practitioner Series] Patent Law 101 (MPEP 2100 Summary)

The Young Patent Practitioners Series is designed to help young patent practitioners, including patent attorneys, patent agents, law school students, and persons who are preparing for the patent bar examination for registration to practice before the United States Patent and Trademark Office (USPTO).

This post explains basic patent law and procedures by summarizing the USPTO's Manual of Patent Examining Procedure (MPEP) Chapter 2100 (Patentability) (Ninth Edition, Revision 08.2017, Last Revised January 2018 and 2019 Revised Patent Subject Matter Eligibility Guidance). In the attached document, each section is summarized with a chart or diagram to help the reader's understanding.

In general, MPEP Chapter 2100 provides guidelines that patent examiners use to determine what subject matter is patent eligible (35 U.S.C. § 101), whether a patent application is novel and non-obvious over prior art (35 U.S.C. §§ 102 and 103), and whether a patent application describes the claimed invention sufficiently to a person having ordinary skill in the art (35 U.S.C. §112). It is essential for patent practitioners to understand this Chapter because the information in this Chapter is applied to every patent application examined by the USPTO and forms the basis for the questions in the patent bar examination. Among other sections, patent eligibility subject matter (Section 2106) deserves particular attention, as the USPTO is constantly updating its guidance and case law due to the seemingly ever-changing and incoherent jurisprudence in this area.

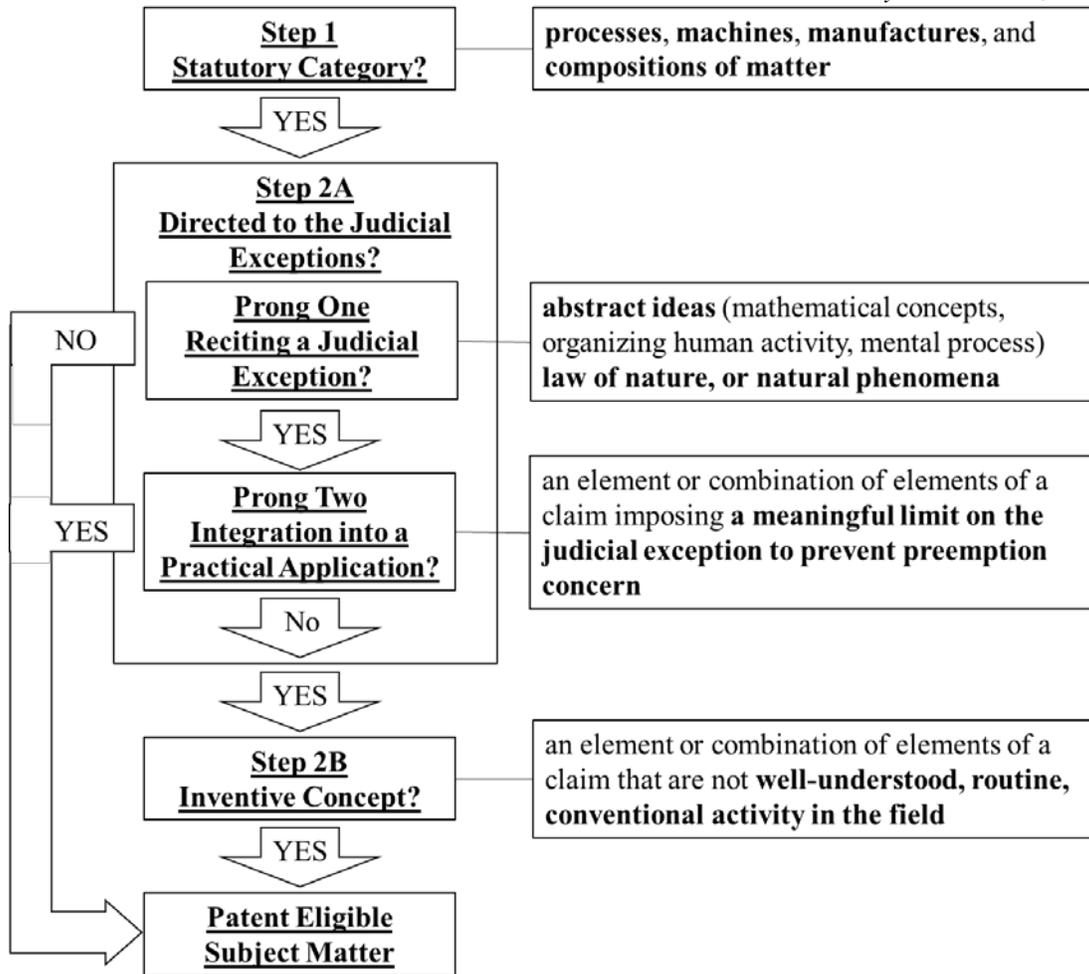
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- **2111 Claim Interpretation (Broadest Reasonable Interpretation (BRI))**
 - **Broadest Reasonable Interpretation (BRI):** During patent examination, the pending claims must be given their broadest reasonable interpretation consistent with the specification.
 - **Limitations (Plain meaning):** Under a BRI, the words of a claim must be given their plain meaning unless such meaning is inconsistent with the specification
 - ◆ **Definition & evidence:** Plain meaning refers to the ordinary and customary meaning given to the term by those of ordinary skill in the art at the time of the invention. Best evidence to support the ordinary and customary meaning is intrinsic evidence: specification. If the intrinsic evidence is not clear, extrinsic evidence (prior art patents, published applications, trade publications, and dictionaries) can be used.
 - ◆ **Exception:** However, the presumption that a term is given its ordinary and customary meaning may be rebutted by the applicant by clearly setting forth a different definition of the term in the specification. The applicant may be own lexicographer and/or may disavow claim scope. To act as their own lexicographer, the applicant must clearly set forth a special definition of a claim term in the specification that differs from the plain and ordinary meaning it would otherwise possess.
 - ◆ But, it is improper to import claim limitations from the specification
 - **2111.02 Preamble:** There is no litmus test defining when a preamble limits the scope of a claim.
 - ◆ **Preamble limiting structure (like a claim):** Any terminology in the preamble that limits the structure of the claimed invention must be treated as a claim limitation.
 - ◆ **Preamble reciting purpose or intended use:** If so, preamble is not considered a limitation and is of no significance to claim construction.
 - ◇ **Determination in the context of the entire claim:** The claim preamble must be read in the context of the entire claim to gain an understanding of what the inventors actually invented and intended to encompass by the claim
 - **2111.03 Transitional phrases:** “Comprising”, “consisting essentially of”, and “consisting of” define the scope of a claim with respect to what unrecited additional components or steps are excluded from the scope of the claim.
 - ◆ **Comprising (including, containing, or characterized by):** is inclusive and open-ended and does not exclude additional, unrecited elements or method steps.
 - ◆ **Consisting of:** excludes any element, step, or ingredient not specified in the claim.
 - ◆ **Consisting essentially of:** limits the scope of a claim to the specified material or steps and those that do not materially affect the basic and novel characteristic of claimed invention.
 - ◆ **Having:** must be interpreted in light of the specification to determine whether open or closed claim language is intended.
 - **2111.05 Functional and Nonfunctional descriptive material:** To be given patentable weight, the printed matter and associated product (process) must be in a functional relationship. (e.g., indicia on a measuring cup). However, where a product merely serve as a support for printed matter, no functional relationship exists. (e.g., number on a dice) Thus, a program in a computer-readable medium can be patentable if the program performs some function with respect to the computer with which it is associated.
- **2113-2116 Types of Claims**
 - **2113 Product-by-process claims**
 - ◆ **Limited by structure:** Although product-by-process claims are limited by the process, determination of patentability is based on the structure implied by the process steps.
 - ◇ **Exceptions:** However, the structure implied by the process steps should be considered when assessing the patentability of product-by-process claims over the prior art, especially where the product can only be defined by the process steps by which the product is made, or where

the manufacturing process steps would be expected to impact distinctive structural characteristics to the final product.

- ◆ **Burden shift:** The PTO bears a lesser burden of proof in a case of prima facie obviousness for product-by-process claims. Then the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product.
- **2114 Functional language in apparatus and article claims**
 - ◆ **Inherency:** Features of an apparatus may be recited either structurally or functionally. If an examiner explains that a functional limitation is an inherent characteristic of the prior art, a prima case of anticipation or obviousness is established.
 - ◆ **Same structural limitations:** But if the prior art apparatus teaches all the structural limitations of the claims, the mere functional limitations do not differentiate the claimed apparatus from a prior art apparatus.
 - ◆ **Same function but different structure:** Even if the prior art device performs all the functions recited in the claim, the prior art cannot anticipate the claim if there is any structural difference.
 - ◆ **Computer-implemented functional claim:** Computer-implemented functional claim limitations may narrow the functionality of the device, by limiting the specific structure capable of performing the recited function.
- **2116 Markush Claims**
 - ◆ **Definition:** A Markush claim sets forth a list of alternatives. It requires selection from a closed group “consisting of” the alternative members.
 - ◆ **Usage:** A Markush grouping is proper if the members of a group share a single structural similarity and a common use.
 - ◆ **Example:** A material selected from the group consisting of A, B, or C.
- **2106 Patent Subject Matter Eligibility (35 U.S.C. § 101)**
 - **Summary:** Since current §101 jurisprudence does not provide any certainty of whether an invention is patent eligible, practitioners should check <https://www.uspto.gov/patent/laws-and-regulations/examination-policy/subject-matter-eligibility> in a regular basis to see any updated guidance or any new legislation. Most recent guidance was issued on January 7, 2019.



- o **Law – 35 U.S.C. § 101:** Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.
- o **Broadest Reasonable Interpretation (BRI):** Patent subject matter eligibility should be determined based on interpretation of claims in accordance with their BRI. Ex. Claiming machine readable media covers both statutory and non-statutory embodiments (non-statutory transitory forms of signal transmission (signal per se)) → non-statutory embodiment, recommending claim language (non-transitory computer-readable medium)
- o **Eligibility Step 1: The Four Categories of Statutory Subject Matter**
 - ◆ **Four statutory categories as patentable subject matter:** processes, machines, manufactures, and compositions of matter.
 - ◇ **Process:** Actions (an act or step or a series of acts or steps) to be transformed and reduced to a different state or thing.
 - ◇ **Machine:** A concrete thing, consisting of parts, or of certain devices and combination of devices.
 - ◇ **Manufacture:** A tangible article that is given a new form, quality, property, or combination through man-made or artificial means or that result from the process of manufacturing.
 - ◇ **Composition of matter:** A combination of two or more substances and includes all composite articles.

- ◆ **Non-eligible claim examples:** Data per se and software per se claimed as a product without any structural recitations; signals per se (a propagating electrical or electromagnetic signal or carrier wave), humans per se which is excluded under The Leahy-Smith America Invents Act (AIA).
- **Streamlined Analysis**
 - ◆ **Self-evident claim:** A claim is eligible without Step 2 eligibility analysis when the claim is self-evident. It is self-evident if when as a whole the claim clearly does not seek to tie up any judicial exception to prevent others from practicing it. It is also self-evident if the claim clearly improves a technology or computer functionality. (*Enfish, McRO*)
 - **Eligibility Step 2:** Even if a claim passes Step 1, the claim may not be patent eligible if the claim as a whole is directed to at least one judicial exceptions (abstract ideas, law of nature, or natural phenomena) (**Step 2A**) without amounting to significantly more than the judicial exception itself (inventive concept) (**Step 2B**). In particular, Step 2A can be interpreted with two prongs: **Prong One:** whether the claimed invention recites a judicial exception, and **Prong Two:** if so, whether the recited judicial exception is integrated into a practical application. The Supreme Court created these judicial exceptions because its concern was pre-emption of basic tools of scientific and technological work.
 - ◆ **Step 2A: Whether a Claim is Directed to a Judicial Exception**
 - ◇ **Step 2A asks:** Is the claim as a whole directed to a law of nature, a natural phenomenon (product of nature) or an abstract idea?
 - * **Prong One:** Does the claim recites a judicial exception, and
 - * **Prong Two:** if so, whether the recited judicial exception is integrated into a practical application.
 - ◇ **Abstract ideas:** USPTO provides groupings of abstract ideas to determine whether the claim recites an abstract idea. If the claim does not recite at least one enumerated groupings of abstract ideas, the claim would be eligible. However, even if not, the claim would be eligible if the claim as a whole integrates the recited abstract idea into a practical application. The integration into a practical application means that the claim imposes a meaningful limit on the judicial exception, such that the claim is more than a drafting effort design to monopolize the judicial exception
 - * **Prong One determination:** 1) identifying the specific limitation(s) in the claim under examination (individually or in combination) that the examiner believes recites an abstract idea; and 2) determining whether the identified limitation(s) falls within the subject matter groupings of abstract ideas
 - **Groupings of abstract ideas**
 - Mathematical concepts— mathematical relationships, mathematical formulas or equations, mathematical calculations;
 - Certain methods of organizing human activity—fundamental economic principles or practices (including hedging, insurance, mitigating risk); commercial or legal interactions (including agreements in the form of contracts; legal obligations; advertising, marketing or sales activities or behaviors; business relations); managing personal behavior or relationships or interactions between people (including social activities, teaching, and following rules or instructions); and
 - Mental processes—concepts performed in the human mind (including an observation, evaluation, judgment, opinion).
 - **Tentative abstract idea:** An examiner might treat a claim limitation which does not fall within the enumerated grouping of abstract ideas as reciting an abstract idea with approval by the Technology Center Director.

- * **Prong Two determination:** 1) identifying whether there are any additional elements recited in the claim beyond the judicial exception(s); and 2) evaluating those additional elements individually and in combination to determine whether they integrate the exception into a practical application, using one or more of the considerations laid out by the Supreme Court and the United States Court of Appeals for the Federal Circuit (Federal Circuit).
 - **Examples (integrated into a practical application):**
 - An additional element reflects an improvement in the functioning of a computer, or an improvement to other technology or technical field (*Enfish, DDR Holdings, Bascom, Research Corp. Tech., Amdocs, Visual Memory, Thales*);
 - An additional element that applies or uses a judicial exception to affect a particular treatment or prophylaxis for a disease or medical condition (*Classen, Vanda*);
 - an additional element implements a judicial exception with, or uses a judicial exception in conjunction with, a particular machine or manufacture that is integral to the claim; (*Mackay Radio, Eibel*)
 - An additional element effects a transformation or reduction of a particular article to a different state or thing (*Diehr, Tilghman*); and
 - An additional element applies or uses the judicial exception in some other meaningful way beyond generally linking the use of the judicial exception to a particular technological environment, such that the claim as a whole is more than a drafting effort designed to monopolize the exception (*Finjan, Core Wireless*).
 - **Examples (not integrated into a practical application):**
 - an additional element merely recites the words “apply it” (or an equivalent) with the judicial exception, or merely includes instructions to implement an abstract idea on a computer, or merely uses a computer as a tool to perform an abstract idea (*Electric Power Group, Intellectual Venture I, Credit Acceptance*);
 - an additional element adds insignificant extra-solution activity to the judicial exception (*Mayo, Bilski, Flook, Intellectual Ventures I, Ultramercial, Ameranth, OIP*); and
 - an additional element does no more than generally link the use of a judicial exception to a particular technological environment or field of use (*Mayo, Bilski, Flook, FairWarning, Intellectual Ventures I, Electric Power Group, Ultramercial, buySafe*).
- ◇ **Laws of Nature and Natural Phenomena:** The laws of nature and natural phenomena include naturally occurring principles/relations and nature-based products that are naturally occurring or that do not have markedly different characteristics compared to what occurs in nature.
 - * **Examples (not law of nature or natural phenomena):** Gravity-fed paper machine, *Eibel Process*, cryopreserving liver cells, *Rapid Lit. Mgmt. v. CellzDirect*, method of hydrolyzing fat, *Tilghman*.
 - * **Examples (law of nature or natural phenomena):** Isolated DNA, *Ass’n for Molecular Pathology*, a cloned farm animal such as a sheep, *In re Roslin Institute (Edinburgh)*, a correlation between variations in non-coding regions of DNA and allele presence in coding regions of DNA, *Genetic Techs. Ltd.*, a correlation that is the consequence of how a certain compound is metabolized by the body, *Mayo Collaborative Servs.*, a correlation between the presence of myeloperoxidase in a bodily sample (such as blood or plasma)

and cardiovascular disease risk, *Cleveland Clinic Foundation*, electromagnetism to transmit signals, *O'Reilly*, qualities of bacteria such as their ability to create a state of inhibition or non-inhibition in other bacteria, *Funk Bros.*, single-stranded DNA fragments known as “primers”, *University of Utah Research Foundation*, the chemical principle underlying the union between fatty elements and water, *Tilghman*, the existence of cell-free fetal DNA (cffDNA) in maternal blood, *Ariosa Diagnostics, Inc.*

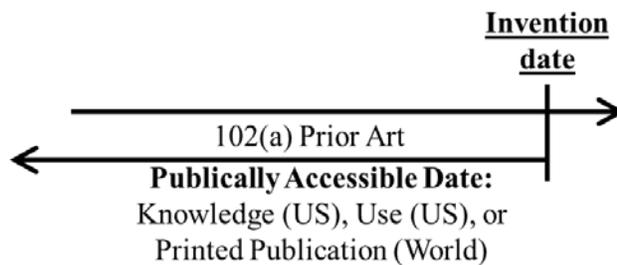
- * **Products of nature:** When a law of nature or natural phenomenon is claimed as a physical product, it is a “product of nature” which is considered to be an exception. Product of nature exceptions include both naturally occurring products and non-naturally occurring products that lack markedly different characteristics from any naturally occurring counterpart.
 - **The markedly different characteristics analysis:** If the claimed nature-based product has markedly different characteristics, the claim is not directed to a product of nature (Step 2A). Thus, if a claim includes a nature-based product that has markedly different characteristics, the claim is eligible unless the claims recited another exception. However, if the claim does not include this, further analysis in Step 2B to determine whether any additional elements in the claim add significantly more to the exception is required.
 - **When to perform:** When the claim is to 1) a nature-based product by itself, 2) a nature-based product produced by combining multiple components, or 3) a nature-based product in combination with non-nature-based elements. Generally, a process claim is not subject to the analysis, but a process claim which is in substance a product claim is subject to the analysis.
 - **How to perform:** By a) selecting the appropriate naturally occurring counterpart(s) to the nature-based product limitation, b) identifying appropriate characteristics for analysis, and c) evaluating characteristics to determine whether they are markedly different. To show a marked difference, a characteristic must be changed as compared to nature, and cannot be an inherent or innate characteristic of the naturally occurring counterpart or an incidental change in a characteristic of the naturally occurring counterpart.
 - **Examples:** Genetically modified bacterium, *Chakrabarty*, cDNA with modified nucleotide sequence, *Myriad*.
- ◆ **Step 2B: Whether a Claim Amounts to Significantly More (an Inventive Concept)**
 - ◇ **Inventive concept:** If a claim does not integrate a recited judicial exception, the claim may still be patent eligible provided additional element(s) provides significantly more than the recited judicial exception (an inventive concept).
 - ◇ **Analysis:** The inventive concept can be found if the additional element(s) in addition to the recited judicial exception **individually** or **in combination** is **not well-understood, routine, conventional activity in the field**.
 - ◇ **Different from a novelty or obviousness analysis:** Patentability of claimed invention under §§ 102 or 103 over prior art is of no relevance in determining patentability subject matter under § 101. Lack of novelty under § 102 or obviousness under § 103 of a claimed invention does not necessarily indicate that additional elements are well-understood, routine, conventional elements.
 - ◇ **Determination of well-understood, routine, conventional activity:** The determination is a question of fact. (*Berkheimer*). The activity should be determined **only** when the examiner can readily conclude that the element(s) is widely prevalent or in common use in the relevant industry. What is simply known in the prior art does not mean it was the activity.

- * Other meaningful limitations beyond generally linking the use of the judicial exception to a particular technological environment (*Classen Immunotherapies*)
- ◇ **Examples (not well-understood, routine, conventional activity)**
 - * Adding a specific limitation other than what is well-understood, routine, conventional activity in the field, or adding unconventional steps that confine the claim to a particular useful application (*Bascom*).
 - ◇ **Examples (not to be enough to qualify as significantly more)**
 - * Adding the words apply it (or an equivalent) with the judicial exception, or mere instructions to implement an abstract idea on a computer (*Alice*)
 - * Simply appending well-understood, routine, conventional activities previously known to the industry, specified at a high level of generality, to the judicial exception (*Alice*)
 - * Adding insignificant extra-solution activity to the judicial exception (*CyberSource*)
 - Insignificant extra-solution activity: Well-known activity, mere data gathering, selecting a particular data source or type of data to be manipulated, insignificant application.
 - * Generally linking the use of the judicial exception to a particular technological environment or field of use. (*Bilski*; *Flook*)
- **2107 Utility Requirement (35 U.S.C. § 101)**
 - **Summary:** The utility requirement requires a patent to be a “useful invention” to limit patents to have a certain level of real-world value. To satisfy the requirement, through claims and the supporting written description, an applicant provides at least one specific, substantial, and credible assertion that the claimed invention is useful. The assertion is assessed by a person of ordinary skill in the art (PHOSITA).
 - **Law:** 35 U.S.C. § 101 requires a patent to be a “useful invention.”
 - **Requirement:** An applicant needs only provide one credible assertion of specific and substantial utility (a particular practical purpose) for each claim invention to satisfy the utility requirement
 - ◆ **Assertion:** An assertion can be any utility asserted statements in the specification (a presumption of utility) or the claimed invention has a well-established utility (a person having ordinary skill in the art immediately appreciates the utility and the utility is specific, substantial, and credible).
 - ◆ **Specific utility:** A specific utility is specific to the subject matter claimed and can provide a well-defined and particular benefit to the public. <-> general utility that is applicable to the broad class of the invention
 - ◆ **Substantial utility:** A substantial utility has a significant and presently available benefit to the public (a real-world use)
 - ◆ **Wholly inoperative inventions:** An inoperative invention is not useful invention and must be totally incapable of achieving a useful result. Partial success in achieving a useful result still satisfies the requirement.
 - ◆ **Therapeutic of pharmacological utility:** Pharmacological or therapeutic inventions that provide any immediate benefit to the public satisfy the utility requirement. The mere identification of a pharmacological activity of a compound provides an immediate benefit to the public.
 - **Relationship between 112(a) and 101 rejections:** A deficiency under the utility requirement under § 101 creates a deficiency under § 112(a) on the basis that the disclosure fails to teach how to use the invention as claimed. It is because the specification cannot enable one to use it if a claimed invention does not have utility.
 - **Evaluation of asserted utility:** An initial presumption of utility can be overcome and rebutted by a preponderance of the evidence.
 - ◆ **Presumption:** Generally, an applicant’s assertion of utility creates a presumption of utility.

- ◆ **PTO burden of proof:** To overcome the presumption of utility, the PTO must establish that it is more likely than not that PHOSITA would doubt the truth of the statement of utility. The PTO must do more than merely question operability, but the PTO must provide factual reasons with a sufficient evidentiary basis.
- ◆ **Response:** the rejections shift the burden of proof to the applicant
 - ◇ Explicitly identify a specific and substantial utility for the claimed invention and provide evidence that one of ordinary skill in the art would have recognized that the identified specific and substantial utility was well-established at the time of filing.
 - ◇ Evidence will be sufficient if, considered as a whole, it leads PHOSITA to conclude that the asserted utility is more likely than not true. (preponderance of evidence)
- **2121-2129 Prior Art**
 - **2121 Prior art**
 - ◆ **Presumed operability:** Prior art is presumed to be operable/enabling. The burden is on applicant to rebut the presumption of operability.
 - ◆ **If not enabling, not prior art under 102:** An anticipating prior art disclosure under § 102 must provide an enabling disclosure of the desired subject matter; mere naming or description of the subject matter is insufficient, if it cannot be produced without undue experimentation.
 - ◆ **If not enabling, still prior art under 103:** A non-enabling reference may qualify as prior art for the purpose of determining obviousness under § 103.
 - ◆ **Support by other evidence:** The operability of the prior art can be supported by secondary evidence, such as other patents or publication.
 - ◆ **Picture of apparatus:** Pictures may constitute an enabling disclosure if the picture shows all the claimed structural features and how they are put together.
 - **2424 Exception to the rule that the critical reference date must precede the filing date**
 - ◆ **Universal facts:** in certain circumstances, references cited to show a universal fact, such as characteristics and properties of a material or a scientific truism, need not be available as prior art before applicant's filing date.
 - ◆ **Tax strategy:** Generally, any tax strategy cannot differentiate a claimed invention from the prior art.
 - ◇ **Exceptions:** The provision does not apply to that part of an invention used solely for 1) preparing a tax or information return or other tax filing or 2) financial management to the extent that is severable from any tax strategy or does not limit the use of any tax strategy by any tax payer or tax advisor.
 - **2125 Drawings as prior art**
 - ◆ **Drawings as prior art:** Drawings can be used as prior art even if the drawings are unintended or unexplained in the specification. If the specification gave no indication that the drawing is drawn to scale, proportions of features in the drawing are not evidence of actual proportions.
 - **2127 Domestic and foreign patent application as prior art**
 - ◆ **Abandoned or provisional application:** An abandoned patent application may become prior art only when it has been appropriately disclosed. However, it may be relied on in a 102(a)(2) or 102(e) rejection based on that the patent or patent app publication if the disclosure of the abandoned application is actually included or incorporated by reference in the patent.
 - ◆ **Canceled matter:** Canceled matter in the application file cannot be relied upon a 102(a)(2) or 102(e) rejection until the application becomes a patent because that is the date the application file history becomes available to the public. But, the canceled matter which was publicly accessible can be basis of a 102(a)(1) or 102(b) rejection.

- ◆ **Pending US Application:** All pending US applications are preserved in confidence except for the applications that become accessible to the public.
- **2128 Printed publication as prior art**
 - ◆ **Definition:** A printed publication shows that such document has been disseminated or otherwise made available to the extent that persons interested and ordinarily skilled in the subject matter or art, exercising reasonable diligence, can locate it.
 - ◆ **Electronic publications:** An electronic publication is considered to be a printed publication. It is considered to be publicly available as of the date the item was publicly posted. If the publication itself does not include a publication date (or retrieval date), it cannot be relied upon as prior art under a 102(a)(2) or 102(e). However, it may be relied upon to provide evidence regarding the state of the art.
 - ◆ **Example (thesis in a university):** If a thesis in university library has been indexed, cataloged, and shelved, it is sufficiently accessible to the public. However, a thesis that is indexed by index cards filed alphabetically by student name is not accessible to the public because the name bears no relationship to the subject of the thesis.
 - ◆ **Example (orally presented paper):** Orally presented paper can constitute a printed publication if written copies are available without restriction.
 - ◆ **Example (internal documents):** Internal documents intended to be confidential are not printed publications.
 - ◆ **Example (publicly displayed documents):** Publicly displayed documents can be a printed publication even if the duration of display is for only a few days and the documents are not disseminated by copies or indexed in a library or database.
- **2129 Admissions as prior art**
 - ◆ **Admissions by Application:** A statement by an applicant in the specification or made during prosecution identifying the work of another as prior art is an admission as prior art.
 - ◆ **Jepson claims:** Drafting a claim in Jepson format is taken as an implied admission that the subject matter of the preamble is the prior art work of another.
 - ◆ **Information disclosure statement (IDS):** Mere listing of a reference in an IDS is not taken as an admission that the reference is prior art against the claims. The filing of an IDS is an admission that the information cited in the statement is material to patentability.
- **2112 Inherency**
 - **Definition:** The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under §§ 102 and 103.
 - **Discovery of properties of a known material:** The claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable.
 - **No recognition requirement:** Inherent feature need not be recognized at the time of the invention, but only that the subject matter is in fact inherent in the prior art.
 - **Rationale requirement:** In relying upon inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the prior art. The mere possibility of inherency is not sufficient.
 - **Burden shift:** Once the inherency is established by the examiner, the burden of production shifts to the applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of the claimed product.
 - **Treatment based on a type of claim**
 - ◆ **Product and apparatus claims:** When the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent.

- ◆ **Composition claims:** If the composition is physically the same, it must have the same properties.
- ◆ **Process claim:** If a prior art device would necessarily perform the method claimed in its normal and usual operation, it is assumed the device will inherently perform the claimed process. However, new and unobvious uses of old structures and compositions may be patentable.
- **2131 Anticipation 35 U.S.C. 102**
 - **Definition:** A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.
 - ◆ **Multiple references in § 102 rejection:** In a 102 rejection, multiple references may be used to 1) prove the primary reference contains an enabled disclosure, 2) explain the meaning of a term used in the primary reference, or 3) show an inherent characteristic of the thing taught by the primary reference.
 - **Genus-Species:** A species will anticipate a claim to a genus. However, a genus does not always anticipate claim to a species within the genus. A generic disclosure will anticipate a claimed species covered by that disclosure when the species can be at once envisaged from the disclosure.
 - **Anticipation of ranges:** Prior art teaching a range overlapping, approaching or touching the claimed range anticipates if the prior art range discloses the claimed range with sufficient specificity. However, in instances of prior art teaching a value or range that is very close to but does not overlap or touch, the claimed range does not anticipate the claimed range.
- **Pre-AIA 35 U.S.C. § 102**
- **2132 Pre-AIA 35 U.S.C. § 102(a)**



- **Summary:**
- **Law:** A person shall be entitled to a patent unless (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- **Known or used:** means knowledge or use which is accessible to the public. Another's sale of a product made by a secret process can be a pre-AIA 102(a) public use if the process can be determined by examining product. If not, the product is not 102(a) prior art.
- **In this country:** Only knowledge or use in the U.S. can be used in a pre-AIA 102(a) rejection.
- **By others:** "Others" means any combination of authors or inventors different than the inventive entity. The entity need only differ by one person to be by others.
- **Patented or described in a printed publication in this or foreign country:** 102(a) prima facie case is established if reference publication is by others.
 - ◆ **Exception:** However, where the applicant is one of the co-authors of a publication cited against his or her application within the year before the application filing date, the publication may be removed as a reference by the filing of affidavits made out by the other authors establishing that the relevant portions of the publication originated with or were obtained from applicant. Such affidavits are called disclaiming affidavits.
 - ◇ **37 CFR 1.131/1.132 Affidavit:** can be used to overcome a pre-AIA 102(a) rejection. Only used for old pre-AIA cases. To overcome 102(a), applicant may submit either 1.131 affidavit

is to antedate the reference or 1.132 affidavit to show derivation of the reference subject matter from applicant and invention by applicant.

- **2133 Pre-AIA 35 U.S.C. § 102(b)**



- o **Summary:**
 - o **Law:** A person shall be entitled to a patent unless (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the US.
 - o **Measured from US filing date:** The 1-year time bar is measured from the US filing date.
 - ◆ **Holiday or weekend:** The 1-year grace period is extended to the next working day if it would otherwise end on a holiday or weekend.
 - ◆ **Statutory bar:** A rejection under 102(b) cannot be overcome by 1.131 affidavits and declarations.
 - o **Public use:** The test is whether the purported use 1) was accessible to the public or 2) was commercially exploited.
 - ◆ **Examples:** Even if the invention is hidden, inventor who puts invented machine or article in public view is barred. An inventor's private use of the invention for his own enjoyment is not a public use. The presence or absence of a confidentiality agreement alone is not dispositive of the public use issue. If the inventor allows another to use the invention without restriction or obligation of secrecy, the invention is in public use.
 - o **On sale:** The on-sale bar of 102(b) is triggered if the invention is both 1) the subject of a commercial offer for sale not primarily for experimental purposes and 2) ready for patenting.
 - ◆ **Examples:** Conditional and non-profit sales may bar a patent. A single sale or offer to sell may bar a patent. However, a sale of rights (assignment) is not a sale of the invention and will not in itself bar a patent. If the seller so controls the purchaser that the invention remains out of the public's hands, it will not bar a patent. Sale activity need not be public.
 - ◆ **Offers for sale:** Rejected or unreceived offer for sale is enough to bar a patent. Delivery of the offered item is not required. Goods need not be on hand when the offer for sale is made. But material terms of an offer for sale must be present.
 - o **Invention:** The invention must be ready for patenting for on sale or public use bar. 1.131 Affidavits or declarations to swear behind a reference may constitute an admission that an invention was complete more than 1 year before the filing of an application.
 - o **In this country:** Public use or "on-sale" activity must take place in the US. The on-sale bar does not apply where both manufacture and delivery occur in a foreign country.
 - ◆ **Permitted activity:** Experimental use. Experimentation must be the primary purpose and any commercial exploitation must be incidental. However, the experimental use exception does not include market testing where the inventor is attempting to gauge consumer demand for his claimed invention. The purpose of such activities is commercial exploitation not experimentation. Experimental use ends when the invention is actually reduced to practice. Reasonable disposal of a prototype involving incidental income is not sufficient to trigger a 102(b) bar. But if the prototype is considered complete, unrestricted disposal of the prototype constitutes a 102(b) bar.
- **2134 Pre-AIA 35 U.S.C. § 102(c)**

- o **Law:** A person shall be entitled to a patent unless (c) he has abandoned the invention
- o **Intentional abandonment:** An abandonment must be intentional. Delay alone is not sufficient to infer the requisite intent to abandon. Any inference of abandonment of subject matter disclosed but not claimed in a previously issued patent is rebuttable by an application filed at any time before a statutory bar arises.
- **2135 Pre-AIA 35 U.S.C. § 102(d)**
 - o **Requirements:** Four conditions which establish a bar against the granting of a patent in this country:
 - ◆ 1) the foreign application must be filed more than 12 months before the effective US filing date,
 - ◆ 2) The foreign application must have been filed by the same applicant as in the US or by his legal representatives or assigns,
 - ◆ 3) the foreign patent or inventor's certificate must be actually granted before the US filing date (it need not be published, but an allowed application can be as of the date published for opposition), AND
 - ◆ 4) the same invention must be involved.
- **2136 Pre-AIA 35 U.S.C. § 102(e)**
 - o **Law:** 102(e) allows the use of certain international application publications, US patent application publications, and certain US patents by another as prior art as of their respective US filing dates, including certain international filing dates.
 - o **Critical reference date**
 - ◆ **US Patents and US Application Publications:** The prior art date for US Patents and US Application Publications is the filing date of the international application (IA) if the IA 1) was filed on or after 11/29/2000, 2) designated the US and 3) was published in English.
 - ◆ **WIPO (PCT) Publications of international applications:** The prior art date for a WIPO publication is the IA's filing date if the IA 1) was filed on or after 11/29/2000, 2) designated the US, and 3) published in English, treat the international filing date as a US filing date.
 - ◆ **Priority from provisional application under 119(e):** The filing date of a provisional application is the filing date if the provisional application properly supports the subject matter relied upon to make the rejection.
 - ◆ **Parent's filing date when reference is a Continuation-In-Part (CIP) of the parent:** is an earlier filing date under §120 if the earlier-filed application properly supports the subject matter relied upon in any rejection.
 - ◆ **Not applicable date:**
 - ◇ **Foreign priority date:** 102(e) is limited to certain references filed in the United States before the invention by the applicant. Reference's foreign priority date under 119(a)-(d), (f) or 365(a) cannot be used as 102(e) dates for prior art purposes.
 - ◇ **Date of conception or reduction to practice (RTP):** 102(e) reference date is the filing date not date of inventor's conception or RTP.
 - o **Different inventive entity (By another):** if there is any difference in the inventive entity, the reference is "by another."
 - o **Overcoming a 102(e) rejection**
 - ◆ **By antedating the filing date or showing that disclosure relied on is applicant's own work:** By submitting an affidavit or declaration under 37 CFR 1.131 or 1.132 establishing that the relevant disclosure is the applicant's own work. Terminal disclaimer does not overcome a 102(e) rejection. It is unnecessary to show diligence or RTP when the subject matter disclosed in the reference is applicant's own work.

- ◆ The existence of combination claims in a reference is not evidence that the patentee invented the individual elements or sub-combinations included if the elements and sub-combinations are not separately claimed apart from the combination.
- **2137 Pre-AIA 35 U.S.C. § 102(f)**
 - **Law:** A person shall be entitled to a patent unless (f) he did not himself invent the subject matter sought to be patented.
 - **Derivation:** If an inventor or at least one joint inventor derived an invention from another, a 112(f) rejection is proper. Derivation requires complete conception by another and communication to the alleged deriver.
 - **Inventorship:** an inventor is a person who contributes to the conception of the invention. As long as the inventor maintains intellectual domination over making the invention, ideas, suggestions, and materials may be adopted from others. The inventor is not required to reduce the invention to practice.
 - **Joint inventorship:** To be joint inventors, there must be some quantum of collaboration or connection. Each joint inventor must generally contribute to the conception of the invention.
 - **Applicability of 103(c):** it states that 102(f) will not preclude patentability where subject matter developed by another person if the claimed invention were owned by the same person or involved in a joint research agreement at the time of the invention was made.
- **2138 Pre-AIA 35 U.S.C. § 102(g)**
 - **Law:** 102(g) may form the basis for an ex parte rejection if 1) the subject matter has been actually reduced to practice by another before the applicant's invention and 2) there has been no abandonment, suppression, or concealment.
 - **Reproduction to practice (RTP):** To qualify as 102(g) prior art, there must be evidence that the subject matter was actually or constructively reduced to practice, in that conception alone is not sufficient.
 - ◆ **Actual RTP:** Actual RTP must satisfy a two-prong test: 1) the party constructed an embodiment or performed a process that met every element of the interference count, and 2) the embodiment or process operated for its intended purpose. The invention needs to be sufficiently tested to demonstrate that it will work for its intended purpose, but it need not be in a commercially satisfactory stage of development. RTP requires recognition and appreciation of the invention. An RTP can be done by another on behalf of the inventor.
 - ◆ **Constructive RTP:** A constructive RTP occurs on the filing date. The filing of an application does not need to show an actual RTP.
 - **Conception:** Conception must be done in the mind of the inventor in a definite and permanent idea of complete and operable invention. Conception requires contemporaneous recognition and appreciation of the invention. A previously abandoned application is evidence only of conception.
 - **Reasonable Diligence:** The critical period for diligence for a first conceiver but second reducer begins not at the time of conception of the first conceiver, but just prior to the entry in the field of the party who was first to reduce to practice and continues until the first conceiver reduces to practice. The end of the diligence period is marked by either actual or constructive RTP.
 - ◆ **Affirmative acts or acceptable excuses:** The entire period during which diligence is required must be accounted for by either affirmative acts or acceptable excuses. E.g., RTP of a genus does not establish diligence toward the RTP of a species.
 - ◆ **Directly related:** Work relied upon to show reasonable diligence must be directly related to the reduction to practice.
 - **The invention made in this country:** Subject matter under 102(g) is available only if made in this country. (Acts of conception, RTP, and diligence must be demonstrated in this country.)

- **By another who has not abandoned, suppressed, or concealed it:** The inventor who did not conceal is treated legally as the first to invent while the de facto first inventor who suppressed or concealed is treated as a later inventor.
- **2141 Obviousness under 35 U.S.C. § 103**
 - **Summary:** A claim may not be allowed if at least one element is altered by the mere substitution of another known in the field, and the combination is not more than a predictable result. For the obviousness of a claimed invention over prior art, four inquiries should be determined: 1) the scope and content of the prior art, 2) the differences between the claimed invention and the prior art, 3) the level of ordinary skill in the art, and 4) objective evidence.
 - **Law:** A patent for a claimed invention may not be obtained notwithstanding it passes the muster of §102, if the differences between the claimed invention as a whole would have been obvious over the prior art before the effective filing date to a person having ordinary skill in the art.
 - **Four inquiries:** Obviousness is question of law based on underlying factual inquiries: 1) determining the scope and content of the prior art, 2) ascertaining the differences between the claimed invention and the prior art, 3) resolving the level of ordinary skill in the art, and 4) considering objective evidence present in the application.
 - **Scope and content of the prior art:** Prior art available under 102 is available under 103. Content of the prior is determined at the time the invention was made to avoid impermissible hindsight.
 - ◆ **Pre-AIA 103(c) exception:** Prior art under § 103(a) via §§ 102(e), (f), or (g) can be disqualified if the claimed invention is owned by the same person or assignee at the time the invention was made, or if the claimed invention is subject to a joint research agreement.
 - ◆ **Analogous and non-analogous art:** A 103 reference must be analogous art to the claimed invention. A reference is analogous art to the claimed invention if 1) the reference is from the same field of endeavor as the claimed invention or 2) the reference is reasonably pertinent to the problem faced by the inventor. The same field of endeavor can be proven by showing structural similarities and functional overlap.
 - **Differences between prior art and claimed invention:** requires interpreting the claim language and considering both the invention and the prior art references as a whole.
 - ◆ **Considering every limitation:** As a whole, this requirement does not mean that any express limitations can be disregarded.
 - ◆ **Discovering source/cause of a problem:** Discovering a different source or cause of a problem (shown by the specification, affidavits, or declarations) may lead to non-obviousness over prior art.
 - ◆ **Inherency:** Obviousness cannot be predicated on what is not known at the time an invention is made, even if the inherency of a certain feature is later established.
 - ◆ **Prior art in its entirety:** Prior art must be considered in its entirety as well, including disclosures that teach away from the claims.
 - **Level of ordinary skill in the art:** PHOSITA is a hypothetical person who is presumed to have known the relevant art at the time of the invention. Factors to be considered in determining the level of ordinary skill in the art may include 1) type of problems encountered in the art, 2) prior art solutions to those problems, 3) rapidity with which innovations are made, 4) sophistication of the technology, and 5) educational level of active workers in the field. One or more factors may predominate.
 - **Objective evidence (secondary considerations):** Objective evidence, so called secondary considerations, may include evidence of commercial success, long felt but unsolved needs, failure of others, and unexpected results. The evidence may be included in the specification or filed during the prosecution in a timely manner.

o **2142 Prima Facie Obviousness:**

- ◆ **Summary:** The examiner bears the initial burden of factually supporting any prima facie conclusion of obviousness. To reach the conclusion, all claim limitations must be considered. The key to supporting any 103 rejection is the clear articulation of the reason why the claimed invention would have been obvious.
- ◆ **Exemplary rationales**
 - ◇ Combining prior art elements according to known methods to yield predictable results;
 - ◇ Simple substitution of one known element for another to obtain predictable results;
 - ◇ Use of known technique to improve similar devices (methods, or products) in the same way;
 - ◇ Applying a known technique to a known device (method, or product) ready for improvement to yield predictable results;
 - ◇ Obvious to try – choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
 - ◇ Known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to one of ordinary skill in the art; or
 - ◇ Some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art reference teachings to arrive at the claimed invention.
 - * The mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to PHOSITA.
 - * The fact that references can be combined or modified may not be sufficient to establish prima facie obviousness.
 - * Mere statement that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish prima facie obviousness.
 - * The proposed modification cannot render the prior art unsatisfactory for its intended purpose.
 - * The proposed modification cannot change the principle of operation of a reference.
- ◆ **Reasonable expectation of success:** Reasonable expectation of success is required. At least some degree of predictability is required. Applicants may present evidence showing there was no reasonable expectation of success. Predictability is determined at the time the invention was made (Pre-AIA).
- ◆ **Considering all claim limitations:** All claim limitations must be considered. Indefinite limitations must be considered. (A claim has more than one interpretation, 112(b) rejection over the claim under 112(b) and 103 rejection based on the applicable interpretation.) Limitations without support in the specification must be considered.

o **2144 Supporting a 103 Rejection**

- ◆ **Summary:** The rationale to modify or combine the prior art does not have to be expressly stated in the prior art, it may be expressly or impliedly contained in the prior art or it may be reasoned from knowledge generally available to one of ordinary skill in the art, established scientific principles, or legal precedent established by prior case law.
- ◆ **Official notice & common knowledge:** Official notice without documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known. But it is never appropriate to rely solely on common knowledge in the art without evidentiary support in the record. If an applicant challenges a factual assertion as not properly officially noticed or not properly based upon common knowledge, the examiner must support the finding with adequate

evidence. After applicant's rebuttal, the newly added reference to support the prior common knowledge finding does not constitute a new ground of rejection.

- ◆ **Legal precedent as source of supporting rationale:** Examples: 1) aesthetic design changes, 2) elimination of a step or an element and its function if it is not desired, 3) automating a manual activity, 4) changes in size, shape, or sequence of adding ingredients, 5) making portable, integral, separable, adjustable, or continuous, 6) reversal, duplication, or rearrangement of parts, and 7) purifying an old product.
- ◆ **Obviousness of similar and overlapping ranges, amounts, and proportions:**
 - ◇ Prima facie case of obviousness exists where the claimed ranges overlap or lie inside ranges disclosed by the prior art and where the claimed ranges or amounts do not overlap with the prior art but are merely close.
 - ◇ **Routine optimization:** It is not inventive to discover the optimum or workable ranges by routine experimentation. Difference in concentration or temperature will not support the patentability over prior art.
 - ◇ **Rebuttal:** This can be rebutted by showing that the change is critical (the changes achieve unexpected results relative to the prior art range or showing that the prior art teaches away).
- ◆ **Obviousness of Species when prior art teaches genus:** When a single prior art reference discloses a genus but does not disclose the claimed species or subgenus, office personnel should find additional prior art to show the differences would have been obvious. If not found, office personnel should consider 4 factors above.

o **2145 Applicant's Rebuttal Arguments**

- ◆ **Secondary considerations:** The established prima facie case of obviousness shifts burden to the applicant. Rebuttal evidence may include evidence of secondary considerations such as commercial success, long felt but unsolved needs, and failure of others. Rebuttal evidence may also include evidence that claimed invention yields unexpectedly improved properties or properties not present in the prior art.
- ◆ **Not effective arguments:** Arguing additional advantages or latent properties, arguing that prior art devices are not physically combinable, arguing against references individually, and arguing economic infeasibility.

o **2146 Pre-AIA 35 U.S.C. § 103(c)**

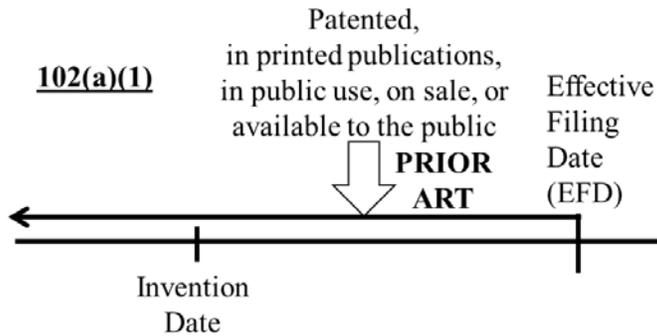
- ◆ Prior art under § 103 via §§ 102(e), (f), and (g) is disqualified as prior art against the claimed invention if that subject matter and the claimed invention were, at the time the invention was made, owned by the same person or assignee.
 - ◇ It includes a joint research agreement if:
 - * The claimed invention was made by or on behalf of parties to a joint research agreement effective on or before the invention date;
 - * The claimed invention was made as a result of activities within the scope of the joint research agreement; and
 - * The application discloses the names of the parties to the joint research agreement.

• 2150 35 U.S.C. §§ 102 and 103 of the first to file of Leahy-Smith America Invents Act

Prior Art 35 U.S.C. 102(a) (Basis for Rejection)	Exceptions 35 U.S.C. 102(b) (Not Basis for Rejection)	
102(a)(1) Disclosure with Prior Public Availability Date	102(b)(1)	(A) Grace Period Disclosure by Inventor or Obtained from Inventor
		(B) Grace Period Intervening Disclosure by Third Party
102(a)(2) U.S. Patent, Published U.S. Patent Application, and Published PCT Application with Prior Filing Date	102(b)(2)	(A) Disclosure Obtained from Inventor
		(B) Intervening Disclosure by Third Party
		(C) Commonly Owned Disclosures

- o **Summary:** from USPTO First Inventor to File (FITF) Comprehensive Training material.
- o **Changes in the AIA:** The major change from pre-AIA to AIA is from **first to invent** to **first to file**. In the pre-AIA, a patent is granted to a person who first invents an invention, while in the AIA, a patent is granted to a person who first file a patent application regardless of the invention date.
- o **AIA effective date (March 16, 2013):** The changes to §§ 102 and 103 in the AIA do not apply any application filed before March 16, 2013. Neither the filing of a request of continued examination, nor entry into the national stage under § 371 constitutes the filing of a new application. A PCT application filed under § 363 before March 16, 2013 is subject to pre-AIA §§ 102 and 103 regardless of whether the application enters the national stage under § 371 before or after March 16, 2013.
- o **Effective filing date:** The earliest date of 1) the actual filing date of a patent application or 2) the filing date of the earliest provisional, nonprovisional, international (PCT), or foreign patent application to which the patent or application is entitled to benefit or priority as to such claimed invention.
 - ◆ The foreign priority date is the effective filing date of the claimed invention if
 - ◇ The foreign application supports the claimed invention under 112(a) AND
 - ◇ The applicant has perfected the right of priority by providing a certified copy of the priority application and a translation of the priority application (if not in English)
 - ◆ As under pre-AIA law, in the AIA law, the effective filing date of a claimed invention is determined on a claim-by-claim basis. However, whether pre-AIA 102 and 103 or AIA 102 and 103 apply is made on an application-by-application basis.
 - ◇ Even if AIA 102 and 103 apply to a patent application, pre-AIA 102(g) also applies to every claim in the application if it 1) contains a claimed invention having an effective filing date before March 16, 2013 or 2) it is ever designated as a continuation, divisional, or CIP of an application that contains such a claim.

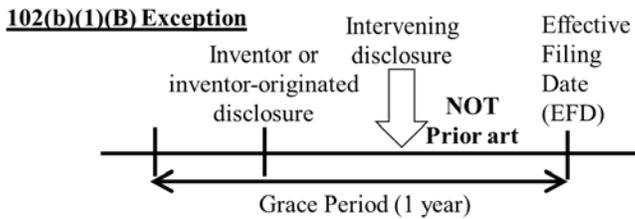
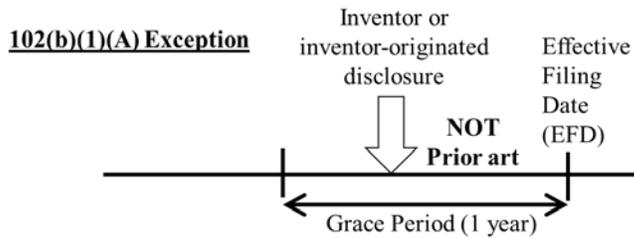
- AIA 35 U.S.C. § 102
 - 2152 AIA 35 U.S.C. § 102(a)(1)
 - ◆ Summary



- ◆ **Law:** prior art - patented, described in a printed publication or in public use, on sale or otherwise available to the public.
- ◆ **102 Prior Art Requirements:** 1) every element must be disclosed and 2) using it, PHOSITA must have been enabled to make the invention without undue experimentation. But unlike 112(a), there is no “how to use” requirement to be a prior art document.
- ◆ **Patented:** If a claimed invention was patented in this or a foreign country (grant date of the patent) before the effective filing date of the claimed invention, a patent on the claimed invention is precluded. There is an exception to this rule if the patent is secret as of the grant date of the patent.
- ◆ **Described in a printed publication (no change from pre-AIA):** This includes a patent, published patent application, or printed publication.
- ◆ **Public use:** The public use is the use either was accessible to the public or was commercially exploited as under pre-AIA law. An inventor’s own prior commercial use, albeit kept secret, may constitute a public use or sale. However, unlike the pre-AIA rule, there is no geographic limitation on where prior public use or public availability occurs.
- ◆ **On sale:** On sale activity will bar patentability if the claimed invention was 1) the subject of commercial sale or offer for sale and 2) ready for patenting. One exception is the on-sale activity is primarily for experimental purposes. Unlike the pre-AIA rule, the AIA rule has no geographic limitation and must be public sale (the pre-AIA does not need to be public).
 - ◇ **Examples:** Sales made public available to the public even if the published portion does not fully disclose the invention. Public offers for sale are considered as prior art.
- ◆ **Otherwise available to the public:** a catch-all provision.
- ◆ **No requirement of “by others”:** Pre-AIA 102(a) relied on “by others.” However, any prior art under AIA 102(a)(1) need not be by another to constitute potentially available prior art.

o **2153 Prior Art Exceptions under 35 U.S.C. § 102(b)(1)**

◆ **Summary**



- ◆ **102(b)(1)(A) Grace period inventor or inventor-originated disclosure exception:** A disclosure made 1 year or less before the EFD is not prior art if (A) the disclosure was made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

- ◇ **Requirement:** Within the grace period and the disclosure that is made by 1) the inventor, 2) a joint inventor or 3) another who obtained the subject matter directly or indirectly from the inventor or joint inventor.

- ◇ **Exception:** if the disclosure is made with a third party and the inventor, this exception does not apply.

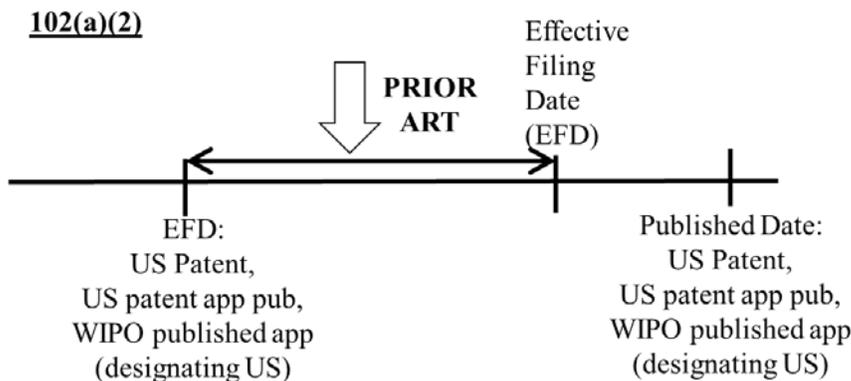
- ◆ **102(b)(1)(B) Inventor or inventor-originated prior public disclosure exception:** A disclosure made 1 year or less before the EFD is not prior art if (B) the subject matter disclosed (intervening disclosure) had, before such (intervening) disclosure, been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.

- ◇ **Requirement:** the third party's disclosure must have been made during the grace period, an **inventor-originated disclosure must have been made prior to the third party's disclosure**, and both must have disclosed the same subject matter.

- ◇ The same subject matter does not need to be the same manner.

o **2154 Prior Art under 35 U.S.C. § 102(a)(2)**

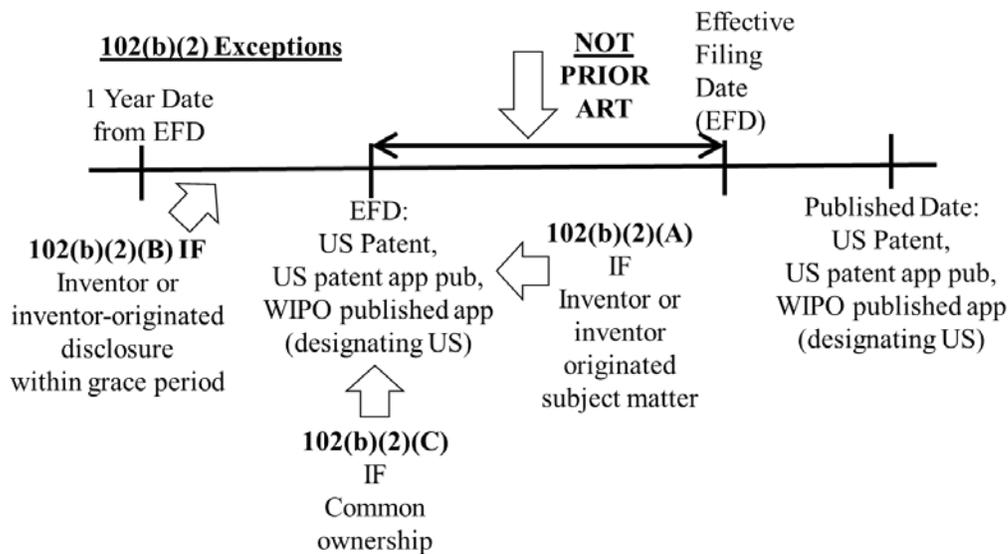
◆ **Summary**



- ◆ **Law:** A person shall be entitled to a patent unless (2) the claimed invention was described in a patent issued under § 151 (US patent) or in an application for patent published or deemed published under § 122(b)(US patent application publication and WIPO published PCT applications designating the US), in which the patent or application, as the case may be, names another inventor and was effectively filed before the EFD of the claimed invention.
- ◆ **102(a)(2) Prior art documents:** US patent document (US patent, US patent application publication, and WIPO published PCT applications designating the US). Foreign patent documents cannot be prior art as of their filing date under 102(a)(2). But they may be printed publication prior art under 102(a)(1). There is no requirement that the WIPO published PCT application have been filed on or after 11/29/2000 or have been published in English. This is a distinction from pre-AIA 102(e).
- ◆ **102(a)(2) document by another inventor:** If the document names “another inventor,” the document is not 102(a)(2) prior art.
- ◆ **102(d) EFD for 102(a)(2) documents:** A US patent document may be applied as prior art as of its effectively filed date.
 - ◇ **The EFD is the earlier of:** 1) The actual filing date of the US patent or the published application (US or WIPO) or 2) The filing date of the earliest application to which the US patent or the published application (US or WIPO) is entitled to claim a right of foreign priority or domestic benefit which describes the subject matter.
 - ◇ **To rely on an EFD:** The US patent document must claim priority to or benefit of the prior foreign or domestic application AND the prior (foreign or domestic) application must describe the subject matter being relied upon.

o **2154.02 Prior Art Exceptions under 35 U.S.C. § 102(b)(2)**

◆ **Summary**



- ◆ **102(b)(2)(A):** Not prior art if (A) the subject matter disclosed was obtained directly or indirectly from the inventor or a joint inventor
- ◆ **102(b)(2)(B):** Not prior art if (B) the subject matter disclosed had, before such subject matter was effectively filed under §(a)(2), been publicly disclosed by the inventor or a joint inventor or another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor.
 - ◇ **Requirements:** 1) the third party’s US patent document must have been effectively filed before the EFD of the claimed invention, 2) an inventor-originated disclosure must have been

made prior to the third party's effectively filed date, and 3) both must have disclosed the same subject matter.

- ◆ **102(b)(2)(C) (common ownership exception):** Not prior art if (C) the subject matter disclosed and the claimed invention, not later than the effective filing date of the claimed invention, were owned by the same person or subject to an obligation of assignment to the same person.
 - ◇ **Joint research agreement (JRA) under 102(c):** 1) the subject matter disclosed must have been developed and the claimed invention was made by or on behalf of one or more parties to a JRA that was in effect on or before the EFD of claimed invention, 2) the claimed invention was made as a result of activities within the scope of the JRA, AND 3) the application that includes the claimed invention must name the parties to the JRA.
 - ◇ **Difference from pre-AIA 103(c):** AIA common ownership exception applies to 102 and 103 rejections, whereas the pre-AIA 103(c) only applies to 103 rejections in which the prior art qualifies only under pre-AIA 102(e), (f), or (g). AIA common ownership must exist no later than the EFD of the claimed invention whereas the pre-AIA 103(c) requires common ownership as of the date that the claimed invention was made. In both, a statement is sufficient, and a declaration is not needed to establish common ownership.
- **2155 Use of Affidavits or Declaration under 37 CFR 1.130 to Overcome Prior Art Rejections.**
 - **1.130(a) declaration (attribution):** This declaration is applicable to §§ 102(b)(1)(A) and 102(b)(2)(A) exceptions to show that the disclosure is the inventor's work.
 - **1.130(b) declaration (prior public disclosure):** This declaration is applicable to §§ 102(b)(1)(B) and 102(b)(2)(B) exceptions to show that the third party's disclosure was preceded by an inventor-originated disclosure of the subject matter
 - The applicant or patent owner may submit an affidavit or declaration.
- **2158 AIA 35 U.S.C. § 103**
 - Difference from pre-AIA 103(a) is that AIA 103 determines obviousness as of the effective filing date of the claimed invention, rather than as of the time that the claimed invention was made.
- **Three Separate Requirements under 35 U.S.C. § 112(a)**
 - **Law:** The specification shall contain a **written description** of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to **enable** any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the **best mode** contemplated by the inventor of carrying out his invention.
 - **Summary**
 - ◆ **Written description requirement:** The specification must describe the invention in sufficient detail for a person having ordinary skill in the art to understand the invention and to show that the inventor invented the claimed subject matter to the public.
 - ◆ **Enablement:** The specification must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation.
 - ◆ **Best mode:** The inventor should not conceal from the public the preferred embodiments of the invention.
 - **2163 Written Description Requirement under 35 U.S.C. § 112(a) or pre-AIA §112, 1st Paragraph**
 - ◆ **Definition:** To satisfy the written description requirement, the specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention.
 - ◇ **Showing possession:** by describing such descriptive means as words, structures, figures, diagrams and formulas that fully set forth the claimed invention or by describing testing of the claimed invention.

- ◆ **Original claims:** There is a presumption that an adequate written description of the claimed invention is presented when the application is filed. A satisfactory description may be in the claims or any other portion of the originally filed specification. However, if the original claim does not describe the invention with sufficient particularity such that one skilled in the art would recognize that the applicant had possession of the claimed invention, it does not pass the written description requirement.
- ◆ **New or amended claims (no new matter):** Newly or added claim limitations must be supported in the specification through express, implicit, or inherent disclosure at the time of filing the application.
 - ◇ **New matter:** Amendments to use mere rephrasing of the specification or correct an obvious error do not constitute new matter. No new matter is also allowed in an application entitled to the benefit of the earlier filing date of a parent application (§120), provisional application (§119(e)), or foreign application (119(a)).
 - ◇ **Problem (genus claim):** Genus claims that use functional language to define the boundaries of a claimed genus. To overcome the problem, the functional claim may claim a desired result without describing species. But the specification must demonstrate the achievement of the claimed result and show that the applicant had invented species sufficient to support a claim to the functionally-defined genus.
 - ◇ **Problem (functional claim):** If the invention is claimed in functional language, the specification sufficiently identifies how the invention achieves the claimed function (computer-implemented functional claims).
- **2164 The Enablement Requirement under 35 U.S.C. § 112(a) or pre-AIA § 112, 1st Paragraph**
 - ◆ **Definition:** The specification must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation as of the filing date. The scope of the claims must be less than or equal to the scope of the enablement provided by the specification. The specification must contain the information necessary to enable the novel aspects of the claimed invention.
 - ◆ **Test of enablement (undue experimentation):** Whether one reasonably skilled in the art could make or use the invention from the disclosures in the patent coupled with information known in the art without undue experimentation. Undue experimentation factors include the breadth of the claims, the nature of the invention, the state of the prior art, the level of one of ordinary skill, the level of predictability in the art, the amount of direction provided by the inventor, the existence of working examples, and the quantity of experimentation needed to make or use the invention based on the content of the disclosure.
 - ◆ **How to make & use the claimed invention:** As long as the specification discloses at least one method for making and using the claimed invention that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement is satisfied. Even if there is no example disclosed, the enablement requirement may be satisfied.
 - ◆ **Predictability:** The more that is known in the prior art about the nature of the invention, how to make and how to use the invention and the more predictable the art is, the less information needs to be explicitly stated in the specification.
 - ◆ **Rejection examples**
 - ◇ **Not enabled:** A single means (structure) claim where a means recitation does not appear in combination which another recited element of means is subject to an enablement rejection.
 - ◇ **May be or not enabled:** The presence of inoperative embodiments within the scope of a claim does not necessarily render a claim non-enabled. But if undue experimentation to identify operative embodiments is involved, the scope of the claim may not be enabled.

- ◇ **Not enabled:** A critical feature taught in the specification but not recited in the claims results in an enablement rejection.
- **2165 The Best Mode Requirement under 35 U.S.C. § 112(a) or pre-AIA § 112, 1st Paragraph**
 - ◆ **Definition:** The purpose of the best mode requirement is to restrain inventors from applying for patents while at the same time concealing from the public the preferred embodiments of their inventions which they have in fact conceived.
 - ◆ **Two-prong inquiry:** 1) It must be determined whether, at the time the application was filed, the inventor possessed a best mode for practicing the invention (subjective inquiry focusing on the inventor's state of mind) and 2) the written description disclosed the best mode such that a person skilled in the art could practice it (objective inquiry focusing on the scope of the claimed invention and the level of skill in the art).
 - ◆ **Requirements for rejection:** Assume best mode is disclosed unless there is evidence (accidental or intentional concealment) to the contrary. No example is required. Updating best mode is not required.
- **2171 Two Separate Requirements under 35 U.S.C. § 112(b) or pre-AIA § 112, 2nd Paragraph**
 - **Two requirements:** 1) the claims must set forth the subject matter that the inventor or a joint inventor regards as the invention (subjective requirement) and 2) the claims must particularly point out and distinctly define the metes and bounds of the subject matter to be protected by the patent grant. (objective requirement).
 - **2172 Subject Matter Which the Inventor or a Joint Inventor Regards as the Invention**
 - ◆ **Presumption:** The invention set forth in the claims must be presumed, in the absence of evidence to the contrary, to be that which the inventor regards as the invention.
 - **2173 Claims must Particularly Point out and Distinctly Claim the Invention (Definiteness)**
 - ◆ **Definition:** A specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter the applicant regards as his invention. The claim language must be "definite." The purpose of this is to clearly and precisely inform person skilled in the art of the boundaries of protected subject matter.
 - ◆ **Determining indefiniteness:** Whether a claim is indefinite requires a determination of whether those skilled in the art would understand what is claimed when the claim is read in light of the specification. This requires claims to be described with a reasonable degree of clarity and particularity. Breadth of a claim is not to be equated with indefiniteness.
 - ◆ **Issues**
 - ◇ **New terminology:** The meaning of new terms should be apparent. If the terms used contrary to their ordinary meaning must be clearly redefined in the written description.
 - ◇ **Relative terminology**
 - * **Terms of degree:** Terms of degree are not necessarily indefinite. But the specification provides some standard for measuring the degree or one of ordinary skill in the art could ascertain the scope of the claim.
 - * **Reference to an object that is variable:** This may be rendered indefinite. E.g. a space that is between 58% and 75% of the height of the rider.
 - * **Approximations:** About (must consider the context of the term used in the specification and claims, e.g., about 10% per second: ok), essentially (could be definite but not practical to require applicants to specify a particular number as a cutoff between the invention and the prior art), similar (need to disclose what applicant intends to cover by similar apparatus), substantially (need to be specified in the specification or PHOSITA would know what is meant by "substantially"), type (need to specify what type is intended to convey).

- ◇ **Subjective terms:** Some objective standard must be provided in order to allow the public to determine the scope of the claim. E.g. “aesthetically pleasing.” “An effective amount” may not be indefinite if one skilled in the art could determine specific values for the amount based on the specification.
- ◇ **Exemplary claim language (for example, such as):** Although the mere use of the phrase in a claim does not by itself render the claim indefinite, fact specific examples should be applied as per se rules. (E.g., “R is halogen, for example, chlorine,” “material such as rock wool,” “coke, brick, or like material”)
- ◇ **Lack of antecedent basis:** This generally renders a claim indefinite. But the failure to provide explicit antecedent basis for terms does not always render a claim indefinite if the scope of a claim would be reasonably ascertainable by those skilled in the art.
- ◇ **Functional limitations:** Functional language does not render a claim improper. Functional limitations may be employed to limit the claims without using the means-plus-function format. However, the use of functional language may fail to provide a clear-cut indication of the scope of the subject matter embraced by the claim, and thus be indefinite.
- ◇ **Alternative limitations: Markush groups** (Markush claim recites a list of alternatively useable species. E.g. “selected from the group consisting of A, B, and C.” It is improper to use “comprising” in Markush groups rather than “consisting of”) are indefinite if such a practice renders the claims indefinite or it results in undue multiplicity. “Or” is acceptable. “Optionally” may or may not be acceptable (e.g. containing A, B, and optionally C” is acceptable due to no ambiguity, but if the list of potential alternatives can vary and ambiguity arises, it is not).
- ◇ **Negative limitations:** There is nothing inherently ambiguous or uncertain about a negative limitation. But any negative limitation or exclusionary provision must have basis in the original disclosure. The mere absence of a positive recitation is not basis for an exclusion. A lack of literal basis in the specification for a negative limitation may not be sufficient to establish a prima facie case of lack of descriptive support.
- ◇ **Multiplicity:** A rejection on undue multiplicity may be appropriate.
- ◇ **Double inclusion:** There is no per se rule that double inclusion is improper in a claim. Whether the multiple inclusion of one or more elements in a claim gives rise to indefiniteness in that claim needs to be determined.
- ◇ **Product-by-Process claim:** A product-by-process claim is a product claim that defines the claimed product in terms of the process by which it is made. This is proper.
- ◇ **Use claim:** Generally, a use claim is rejected under § 101 or 112. But clearly cited steps of “utilizing” is not indefinite.
- ◇ **Reference to Figures or tables:** Incorporation by reference to a specific figure or table is permitted only in exceptional circumstances where there is no practical way to define the invention in words and where it is more concise to incorporate by reference than duplicating a drawing or table into the claim.
- ◇ **Trademarks or trade names in a claim:** The use of a TM or trade name in a claim to identify or describe a material or product would not only render a claim indefinite, but would also constitute an improper use of the TM or trade name.
- **2181 Identifying and Interpreting a 35 U.S.C. § 112(f) or pre-AIA § 112, 6th Paragraph**
 - **Definition:** Under the broadest reasonable interpretation (BRI), an examiner must consider the structure, material or act, and its equivalents disclosed in the specification corresponding to language invoking § 112(f) or pre-AIA §112, 6th paragraph (means/step-plus-function).

- o **Narrower claim breath invoking 112(f):** means/step-plus-function limitations will in some cases be afforded a narrower interpretation than a limitation that is not crafted in means/step plus function format.
- o **Three prong analysis for a limitation to invoke 112(f)**
 - ◆ 1) the claim limitation uses the term “means” or “step” or a term used as a substitute for means that is a generic placeholder (a nonce term or a non-structural term having no specific structural meaning) for performing the claimed function;
 - ◇ Generic placeholder examples: mechanism for, module for, device for, unit for, component for, element for, member for, apparatus for machine for, or system for.
 - ◇ Nongeneric placeholder: circuit, detent mechanism, digital detector, reciprocating member, connector assembly, perforation, sealingly connected joints and eyeglass hanger member.
 - ◆ 2) the term means or step or the generic placeholder is modified by functional language typically, but not always linked by the transition word “for” or another linking word or phrase, such as “configured to” or “so that”; and
 - ◆ 3) the term means or step or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.
- o **Necessary corresponding structure:** The corresponding structure (material, acts, or equivalents thereof) of a means- (or step-) plus-function limitation must be disclosed in the specification itself in a way that one skilled in the art will understand what structure (or material or acts) will perform the recited function.
 - ◆ **Clear link:** The written description of the specification or the prosecution history clearly links or associates that structure to the function recited in a means-plus-function claim limitation.
 - ◆ **If not, 112(b) rejection:** If there is no disclosure of structure, material or acts for performing the recited function, the claim fails to satisfy the requirement of 112(b).
 - ◆ **Computer-implemented means-plus-function limitations:** The specification must sufficiently disclose an algorithm to transform a general-purpose microprocessor to the special purpose computer (corresponding structure). Applicant may express the algorithm in any understandable terms including as a mathematical formula, in prose, in a flow chart, or in any other manner that provides sufficient structure. If not, 112(b) rejection.
- o **Single means claim:** A single means claim is a claim that recites a means-plus-function limitation as the only limitation of a claim. This does not invoke 112(f) but raises 112(b) rejection because the limitation covers all means of performing the claimed function and is not be enabled by the specification.
- o **Equivalence:** If a prior art element performs the function specified in the claim, is not excluded by any explicit definition provided in the specification for an equivalent, and is an equivalent of the mans-plus-function limitation, the prior art element may be equivalent to the corresponding element disclosed in the specification.
 - ◆ **Factors to conclude that the prior art element is an equivalent**
 - ◇ the prior art element performs the identical function specified in the claim in substantially the same way and produces substantially the same results as the corresponding element disclosed in the specification;
 - ◇ a person of ordinary skill in the art would have recognized the interchangeability of the element shown in the prior art for the corresponding element disclosed in the specification;
 - ◇ there are insubstantial differences between the prior art element and the corresponding element disclosed in the specification.
 - ◆ **Obviousness:** Even if not equivalent, the claimed means- (or step-) plus-function is obvious from the prior art to one of ordinary skill in the art.