

Functional Claiming: Draft Some Claims To Survive in 2028

June 6, 2018



John D. Vandenberg
john.vandenberg@klarquist.com
KLARQUIST SPARKMAN, LLP

Patent Defenses

- www.patentdefenses.com
- Mobile-friendly legal research tool
- Law / strategy on substantive patent defenses
- Updated ~ weekly since 2004
- Links to Fed. Cir. (mostly since 2004) and S. Ct. decisions
- Public except password-protected tips

Question Conventional Wisdom

- 1990s – 2000s: *Benson* and *Flook* can be ignored.
- Now: never use “means for” in claim.
- Now: Sec. 112(f) never applies to method steps.
- Now?: functional claim language always fine.
- Now?: continuation patents always get their parent’s filing date.

Section 112 (a), (b), (f)

- 112(a): claim needs written description support
- 112(a): claim needs enablement support
- 112(a): disclosure must support “full scope” of a claim
- 112(a): applied to priority app. when backdating a claim
- 112(b): must particularly and distinctly claim invention
- 112(f): construction of function performed claim language
- 112(f): requires linked “structure” / “acts” in disclosure
- 112(f) = conditional safe harbor

Section 112 (a), (b), (f)

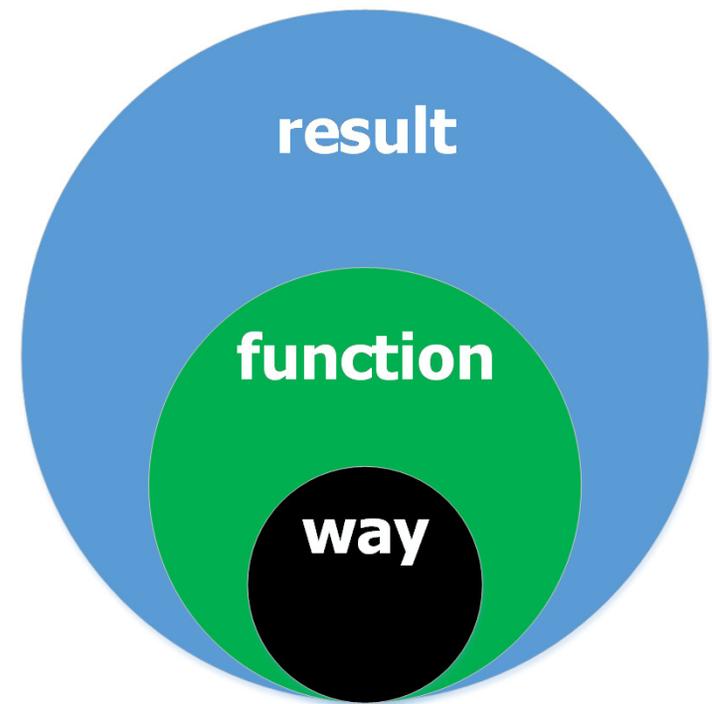
- (a) IN GENERAL.—The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor or joint inventor of carrying out the invention.
- (b) CONCLUSION.—The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the inventor or a joint inventor regards as the invention.
- (f) ELEMENT IN CLAIM FOR A COMBINATION.—An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof.

Recommendations

What	Where	Why
Use “means for” or “step for”	some claims	trigger statutory safe harbor <u>clearly</u>
Recite particular way (how)	some claims	lower 112(b) + 101 risks
Lower level than “machine learning,” “training” and similar labels	most claims	lower 112(a) + 112(b) risks
Disclose particular way for each element of “safe” claim	each app.	support 112(f) elements and “how” claims
No broader than express disclosures in ancestor app.	some claims	“safe” claim backdating
Recite each arguably non-optional element	some claims	“safe” claim backdating + lower 112(a) risks

Shorter

- Some How claims
- Some “means for” / “step for” claims
- How Spec.



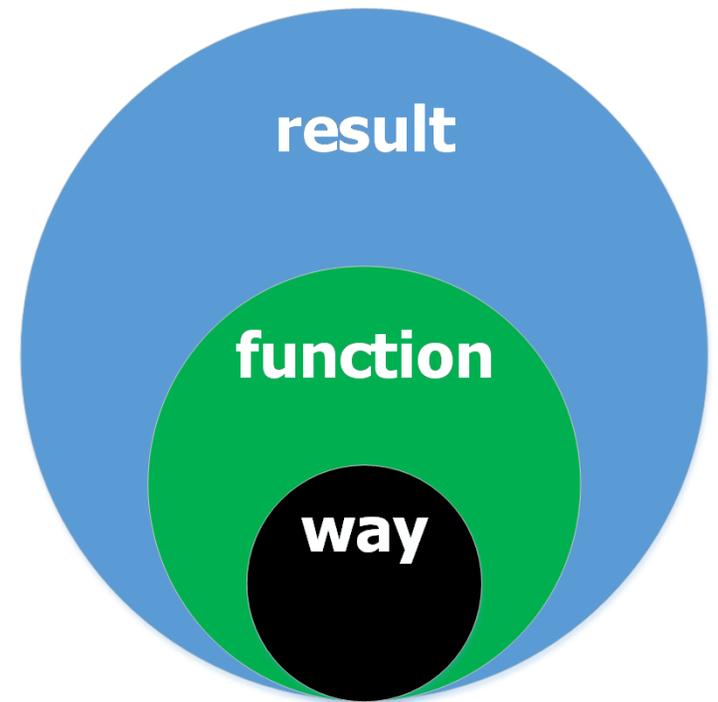
Diversify Claims To Vary Resilience To Sec. 112 Risks For Year 2028

Sec. 112 Risk: claim invalid because:

- 1. claims result or function without particular way (how)**

Patent Claims Must Be Limited To A Particular Way

- “particularly pointing out” mandate + abstractness exclusion =
 - A. a patent claim must be limited to a “particular way” (i.e., how) to achieve a result or perform a function.
 - B. result / pure function / information / idea: not patentable even if novel, brilliant, useful and narrow.



Pretending A Function Is A Way Is Risky

- These are functions or results, not ways (per Fed. Cir.):
 - “zooming in on the first area of the displayed map to about the boundaries of the first area to display a higher level of detail than the displayed map,” [Move, Inc.](#) (Fed. Cir. 02/01/18)
 - “the claim requires the functional results of ‘converting,’ ‘routing,’ ‘controlling,’ ‘monitoring,’ and ‘accumulating records,’ but does not sufficiently describe how to achieve these results in a non-abstract way,” [Two-Way Media](#) (Fed. Cir. 11/01/17)
 - “maintaining said state upon the activation of another of said icons, wherein said maintaining allows use of said Back and Forward navigation functionalities without loss of said state,” [Internet Patents](#) (Fed. Cir. 06/23/15) (Newman, J.) **Klarquist**

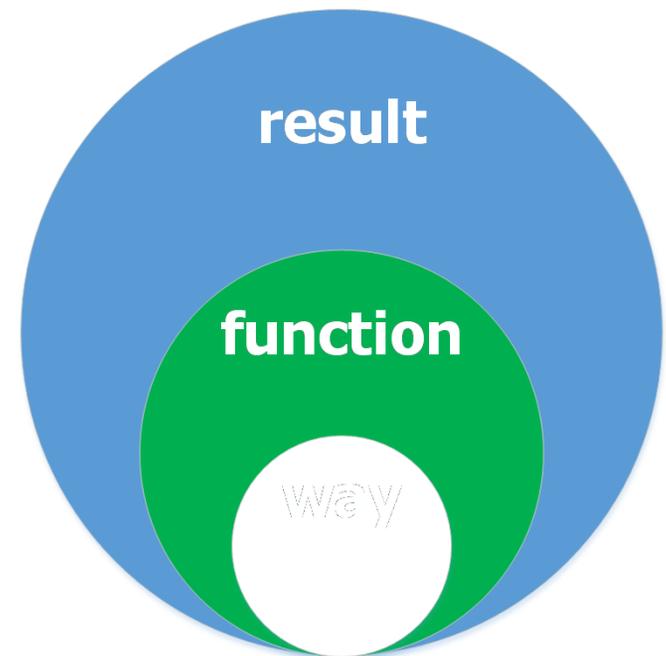
Claim Has No Way? No Way Will Survive.

➤ **Bad Consequences Of Omitting Way:**

- Risks invalidating claim for (1) “indefiniteness,” (2) lack of full-scope enablement and/or written description support (*e.g.*, defeating claim backdating), and/or (3) patent-ineligible subject matter under *Alice*.
- Risks narrow claim construction restricting claim to disclosed embodiment.

17 Hollow Claims; 3 How Claims

- “Claiming a result without reciting what materials produce that result is the epitome of an indefinite claim. Such a claim fails to delineate with any reasonable certainty the requirements of the formulation. ... It is a hollow claim. ... [It] is indefinite for the principal and simple reason that it claims a result without reciting how to achieve that result.”
 - [Forest Labs.](#) (Fed. Cir. 12/11/17) (non-precedential) (Lourie, J., concurring)



“Purely Functional” High Risk; “Facially Functional” Low Risk

steering mechanism

vs.

steering wheel

- Pure functional claiming = “indefinite.”
- Facially functional claiming typically OK.

Will Apply Equally To Method Claims (I Promise)

NEWS IN BRIEF PARTICLE PHYSICS

Dark matter particles elude scientists in the biggest search of its kind

But XENON1T's results narrow where to search for hypothetical particles called WIMPS

BY EMILY CONOVER 5:00AM, MAY 28, 2018

Dark Matter of Patent Claims:

“step for performing a specified function without the recital of structure, material, or acts in support thereof”

Klarquist

Function Steps Vs. How Steps (Acts)

A method for constructing an activity mat over a foundation comprising the steps of:

How

Function

spreading an adhesive tack coating for adhering the mat to the foundation over the foundation surface; ...

* * *

- “[I]f this claim limitation had specified only the underlying function, namely, “adhering the mat to the foundation,” without recital of specific acts for “adhering,” § 112, ¶ 6 would have governed, despite the lack of “step for” language.” [J. Rader, 1999.]

Klarquist

Function Steps Vs. How Steps (Acts)

- Prediction: same distinction will extend to method claims:
 - “In general terms, the ‘underlying function’ of a method claim element corresponds to what that element ultimately accomplishes in relationship to what the other elements of the claim and the claim as a whole accomplish. ‘Acts,’ on the other hand, correspond to how the function is accomplished. ... If a claim element recites only an underlying function without acts for performing it, then § 112, ¶ 6 applies even without express step-plus-function language. ...” [Seal-Flex](#) (Fed. Cir. 04/01/99) (Rader, J. concurring).
 - See Patent Defenses: [“Seal-Flex”](#)

Most AI Claims Are Hollow

- IND claim: “... parsing the temporal segment using a parsing model that receives as an input the temporal segment and outputs a second set of parsed medical entities in the temporal segment.”
- DEP claim: “wherein the parsing model is trained with a training data set formed using the enriched medical entity dictionary and medical forum data.”
- Spec: “a parser model is trained using one or more supervised learning algorithms, such as deep neural networks, conditional random field, etc.”
- Spec: describes no specific parsing model.

3 How Claims; 17 Hollow Claims

➤ Recommendations:

1. Have some claims recite a particular way—the “how”—at the most granular level disclosed in the Spec.
 - Recite “specific acts” not just what the step or element accomplishes relative to other steps and elements.
 - In these claims: beware function/result labels like “machine learning,” “training,” etc.

Diversify Claims To Vary Resilience To Sec. 112 Risks For Year 2028

Sec. 112 Risk: claim invalid because:

1. *claims result or function without particular way (how)*
2. [**prediction**] uncertain whether triggers Sec. 112(f)

Prediction: Uncertainty Whether Sec. 112(f) Triggered = Invalid

- Prediction: Uncertainty whether 112(f) triggered will be ruled to violate 112(b) under *Nautilus*:
 - creates zone of uncertainty ...
 - easily avoided by drafter ...
 - but not avoided because drafter wants to cover more than what inventor described.
 - E.g., “steering mechanism” not “steering wheel”

112(f) Basics: When Triggered

- Triggered: “purely functional,” “black box,” “generic placeholder.”
 - [Williamson](#) (Fed. Cir. 06/16/15) (“distributed learning control module for”)
 - [Advanced Ground Info.](#) (Fed. Cir. 07/28/16) (“symbol generator”)
 - [Media Rights](#) (Fed. Cir. 09/04/15) (“compliance mechanism”)
- Not Triggered: function + “definite,” “particular,” “sufficient” structure. [Zeroclick](#) (Fed. Cir. 06/01/18)
- Patent Defenses: “[whether sec. 112\(6/f\) treatment invoked](#)”

Often Uncertain Whether Sec. 112(f) Triggered

- Higher-risk claim elements (borderline 112(f)):
 - “processor” / “engine” / “module” for [esp. at point of novelty]
 - placeholder for information
 - “Terms that represent *only* non-structural elements such as information, data, instructions, and software *per se* would not serve as substitutes for ‘means.’” (USPTO [guidance](#) (08/02/13)).
 - method step that mirrors 112(f) element in non-method claim
 - recites result achieved rather than function performed

Often Uncertain Whether Sec. 112(f) Triggered

- “Processor configured to” triggered Sec. 112(f)
 - “A gaming machine comprising: a processor configured to execute a game displaying a matrix of symbol containing elements . . . said simulated rotatable reel including at least one section in which a consecutive run of three or more of said symbol containing elements is populated by an identical symbol . . . wherein said identical symbol is selected by virtually spinning a notional, non-visible, inner reel comprising a plurality of said symbols.
 - [Konami Gaming](#) (D. Nev. 02/21/18) (invalid under Secs. 112(b)/(f) and 101).

Dependent Claim Eliminating Uncertainty Whether Sec. 112(f) Triggered

- IND claim: “... parsing the temporal segment using a parsing model that receives as an input the temporal segment and outputs a second set of parsed medical entities in the temporal segment.”
- DEP Claim: “wherein the parsing step comprises a step for using the temporal segment to output a second set of parsed medical entities in the temporal segment.”

3 “Means For” / “Step For” Claims; Some “Steering Wheel” Claims

➤ Recommendations:

1. some claims literally use “means for” or “step for” function [not result]
 - Reduces uncertainty whether Sec. 112(f) triggered
 - (Also possible safe harbor against *Alice*.)
2. some claims drafted so frivolous to argue they trigger 112/6 (steering wheel claims)

Diversify Claims To Vary Resilience To Sec. 112 Risks For Year 2028

Sec. 112 Risk: claim invalid because:

1. *claims result or function without particular way (how)*
2. [*prediction*] *uncertain whether triggers Sec. 112(f)*
3. **cannot be backdated to ancestor**

Some Claims Clearly Entitled To Be Backdated

- **“Fundamental Fairness” Requires Not Backdating Claim To Parent That Did Not Fully Support The Claim:** “This court is mindful that continuing applications, such as Affymetrix’s application here, can only receive the benefit of an earlier-filed parent application if that parent fully supports the claims. If not supported in the parent application, fundamental fairness requires that claims to new matter receive, at best, the filing date of the continuing application.” [Agilent](#) (Fed. Cir. 06/04/09) (interference context; no single embodiment had each claim limitation).
- See Patent Defenses: [“Effective Filing Date; Right Of Priority \(Secs. 100 AIA \(FITF\)\) 119, 120, 365.”](#)

D Three Enterprises v. SunModo

(22) Filed: **Sep. 4, 2013**

(65) **Prior Publication Data**

US 2014/0007532 A1 Jan. 9, 2014

Related U.S. Application Data

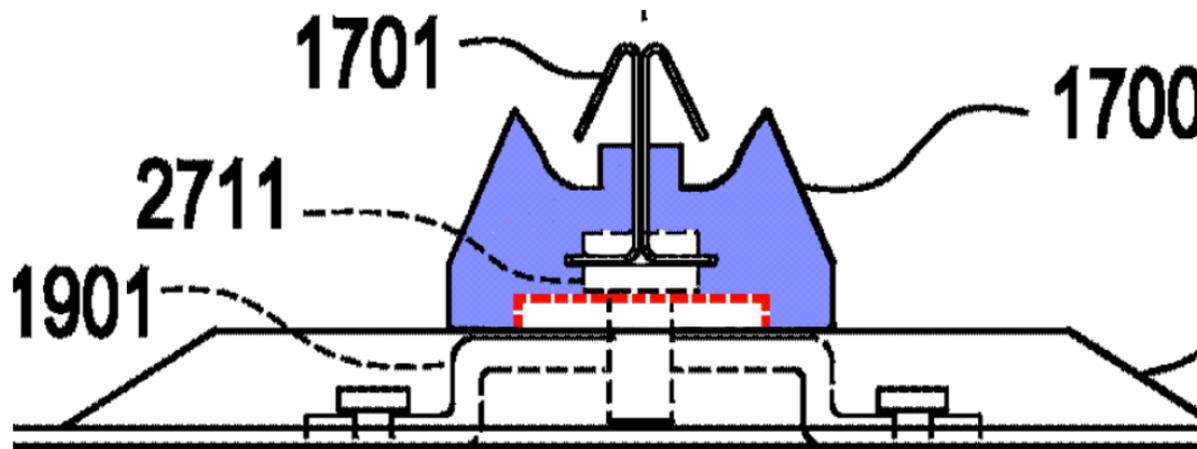
(60) Division of application No. 13/799,359, filed on Mar. 13, 2013, which is a continuation of application No. 13/368,332, filed on Feb. 8, 2012, now Pat. No. 8,448,405, which is a continuation-in-part of application No. 12/700,667, filed on Feb. 4, 2010.

(60) Provisional application No. 61/255,082, filed on Oct. 26, 2009, **provisional application No. 61/150,301, filed on Feb. 5, 2009,** provisional application No. 61/440,847, filed on Feb. 8, 2011.



D Three Enterprises v. SunModo

- Provisional: per Fed. Cir.: only disclosure of a washerless assembly “consistently has one type of attachment bracket,” and did not disclose that bracket as an “optional feature,” and “in no way contemplates the use of other types of attachment brackets in a washerless assembly.”



D Three Enterprises v. SunModo

- D Three (Fed. Cir. 05/21/18) (aff'g Summ. J. invalidity by stipulation (ivo earlier sales of accused products) because patent owner failed to show washer-agnostic claims [not limited to disclosed type of attachment bracket] entitled to priority date.)

Claim Backdating Basics

- No presumption of entitlement to backdate claims
 - [Research Corp. Tech.](#) (Fed. Cir. 12/08/10) (continuation)
- PO must show full scope written description and enablement support
 - [Nintendo](#) (Fed. Cir. 12/27/17) (non-precedential)
 - [Bamberg](#) (Fed. Cir. 03/07/16)
 - [Sitrick](#) (Fed. Cir. 02/01/08)
- Sec. 112(f) element can defeat backdating
 - [Uniloc](#) (Fed. Cir. 10/23/17) (non-precedential)
- Backdoor for arguing Sec. 112 defects in an IPR
 - [Los Angeles Biomedical](#) (Fed. Cir. 02/28/17)

Claim Backdating Basics

- Applies to Continuations too!
 - [Research Corp. Tech.](#) (Fed. Cir. 12/08/10)
 - [In re NTP](#) (Fed. Cir. 08/01/11) (series of “continuation” applications: “for a patent’s claims to be entitled to an earlier priority date, the patentee must demonstrate that the claims meet the requirements of 35 U.S.C. § 120;” rejecting argument that Examiner must have implicitly decided the effective filing date issue)

3 Claims Clearly Entitled To Backdating

➤ Recommendations:

1. Make at least some claims no broader than express disclosures in asserted priority application.
 - Beware genus elements
 - Beware purely functional elements
 - Beware “at least” and open-ended elements
2. Make those claims recite each arguably non-optional element in asserted priority application.
 - Check claims in priority app. as filed, for common elements.

Conclusion

- Patents and Portfolios drafted with Sec. 112 claim diversity, including
 - some “means for” and “step for” claims,
 - some other How claims, and
 - some claims clearly entitled to be backdated to priority app.,probably will be more valuable in 2028.

Shorter

➤ Draft Some How Claims

(and check out www.patentdefenses.com)

Appendix

- More case law, as summarized in Patent Defenses

Claim Construction: Must Claim *Particular* Way

- “The patentee’s construction of ‘efficient mixing’ thus attempts to claim all solutions to the identified ‘impurities’ problem, without describing the entire range of solutions to that problem. Medicines’ construction is therefore not permissible.”
 - [The Medicines Co. III](#) (Fed. Cir. 04/06/17) (Dyk, J.) (restricting claim to specific process (and specific disclosed example thereof) for achieving claimed result.)

Sec. 101: Must Claim *Particular Way*

- [Two-Way Media](#) (Fed. Cir. 11/01/17) (101 invalidity; claim “recites a method for routing information using result-based functional language. The claim requires the functional results of ‘converting,’ ‘routing,’ ‘controlling,’ ‘monitoring,’ and ‘accumulating records,’ but does not sufficiently describe how to achieve these results in a non-abstract way.”)
- [Ass’n for Molecular](#) (Myriad) (U.S. 06/13/2013) (claim to isolated DNA molecule invalid under Sec. 101 in part because “its claim is concerned primarily with the information contained in the genetic *sequence*, not with the specific chemical composition of a particular molecule.”)

Sec. 101: Must Claim *Particular Way*

- [Apple \(Ameranth\)](#) (Fed. Cir. 11/29/16) (101 unpatentability; “patents claim systems including menus with particular features. They do not claim a particular way of programming or designing the software to create menus that have these features, but instead merely claim the resulting systems. Essentially, the claims are directed to certain functionality—here, the ability to generate menus with certain features.”)

Nautilus: Must Claim Particular Way

- “It may be that a variety of devices can act as the ‘control means,’ but the specification does not explain which devices are claimed and which are not. Thus, an ordinary artisan could not ascertain the scope of the claim with reasonable certainty.”
 - [Lufthansa](#) (Fed. Cir. 10/19/17) (non-precedential).

Sec. 112(6/f): Spec. Must Disclose *Particular Way*

- “Instead of offering the algorithm itself, this table merely offers the output of the algorithm. Nowhere in the patent offers a step-by-step procedure of how to arrive at the outputs disclosed in the table. In other words, the patent offers the ends but not the means, which is not sufficient for structure.”
 - [Cloud Farm](#) (Fed. Cir. 01/09/17) (non-precedential).

“Pure Functional” vs. “Facially Functional”

- “Failure to specify the corresponding structure in the specification amounts to impermissible pure functional claiming.”
 - [Lufthansa](#) (Fed. Cir. 10/19/17) (non-precedential) (rev’g trial court holding that “control means” element was definite).

“Pure Functional” vs. “Facially Functional”

- But Some Functional Language Implies How Function Performed:
 - “The *Nautilus* standard of ‘reasonable certainty’ does not exclude claim language that identifies a product by what it does. Nothing inherent in the standard of ‘reasonable certainty’ precludes a relevant skilled artisan from understanding with reasonable certainty what compositions perform a particular function.”
 - [BASF](#) (Fed. Cir. 11/20/17).

112(6/f) And Functional Claiming

- **Disclosing “Black Box” Or Generic Structural Term Insufficient If Does Not Connote Specific, Well-Known Structure:**
 - Although sometimes sufficient, “reciting a generic term for an electronic component is insufficient if an ordinary artisan would not associate the claimed component with a specific, well-known structure.”
 - Spec. “does not call out a specific, well-known component to perform the claimed function. Instead, the ‘control means’ refers to a nebulous set of logic functions within a black box that also performs other functions.”
 - [Lufthansa](#) (Fed. Cir. 10/19/17) (non-precedential) (rev’g bench trial finding of definiteness, for “control means” claim element).

Claim Backdating A PTAB Issue

- [Paice \(Ford\)](#) (Fed. Cir. 02/01/18) (remanding to PTAB to determine if CIP patent's claims antedate named inventors' own presumptive prior art PCT: "to prevail on its argument that the [patent owner's earlier] PCT publication is not prior art to the electrical claims, Paice must show that the [alleged priority application] provides sufficient written description support for those claims.")
- [Los Angeles Biomedical](#) (Fed. Cir. 02/28/17) (aff'g PTAB decision claim not supported by provisional: "proof of priority requires written description disclosure in the parent application, not simply information and inferences drawn from uncited references.")

Claim Backdating

- Higher-risk claim elements:
 - Purely functional elements. [Ariad Pharm.](#) (Fed. Cir. 03/22/10) (*en banc*) (not claim backdating context).
 - 112(f) element where issued Spec. describes a corresponding “how” (e.g., “structures” or acts) not disclosed in ancestor. [Uniloc](#) (Fed. Cir. 10/23/17) (non-precedential).
 - Genus where ancestor identified some species only in passing. [Sitrick](#) (Fed. Cir. 02/01/08) (not backdating scenario).
 - Nascent or technically difficult technology. [Cisco](#) (Fed. Cir. 05/10/17) (not backdating scenario).

Klarquist

Claim Backdating

- Higher-risk claim elements:
 - Any element where issued Spec. describes additional embodiment not disclosed in ancestor. [PowerOasis](#) (Fed. Cir. 04/11/08).
 - Element combining features from different embodiments. [Agilent](#) (Fed. Cir. 06/04/09).
 - Ranges and open-ended (“at least”). [Los Angeles Biomedical](#) (Fed. Cir. 02/28/17); [Magsil](#) (Fed. Cir. 08/14/12).
 - Omits element ancestor described as non-optional. [Research Corp. Tech.](#) (Fed. Cir. 12/08/10).

Claim Backdating

➤ Example:

- Claim 1: “... [a] local licensee unique ID generating means and remote licensee unique ID generating means,”
- Priority app. did not disclose the “summation algorithm” Board held was the corresponding “structure.” [Uniloc](#) (Fed. Cir. 10/23/17) (non-precedential).

THANK YOU

Klarquist

One World Trade Center
121 SW Salmon Street, Suite 1600
Portland, Oregon 97204
P: 503-595-5300
F: 503-595-5301

Klarquist