

Knobbe Practice Webinar Series:
Strategic Considerations for
Mechanical Claim Drafting

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Part I – Understanding Claims in U.S. Patent Applications (特許出願におけるクレームとは?)

Claiming Basics – U.S. Patent Applications

- Claim structure
 - Each claim is a single sentence (すべてのクレームは一文で完結する)
 - Start with a capital letter
 - End with a period
 - Numbered consecutively in ascending order; original numbering preserved throughout prosecution (出願時のクレーム番号は審査の間、維持される)
 - Best Practice: Claim terms/phrases must find clear support in the written description (クレームの用語は明細書中で明確にサポートされていなければいけない)
- Independent claims versus dependent claims
 - Independent claim is standalone claim (独立クレームはスタンドアローン)
 - Dependent claim refers to another earlier claim and further limits that claim
 - Basic US Filing Fee: 3 independent claims/20 total (3独立クレーム、クレーム数20まで、追加手数料はかからない)
 - \$480 per additional independent claim(480ドルの追加手数料)
 - \$100 per additional claim(100ドルの追加手数料)

Claim Structure

- Preamble (前文)
 - Provides context for the claimed invention
 - May or may not limit the claim (限定する場合、限定しない場合がある)
 - “A shock absorber” instead of “a shock absorber for controlling movement of a vehicle wheel”
- Transitional phrase (移行部分)
 - Determines if the claim is “open” (comprising), “closed” (consisting of), or “partially open” (consisting essentially of) (含む、～からなる、本質的に～からなる、で違いがある)
 - “Comprising” is most common in most arts (最もよく使われる)
 - “Consisting essentially of” means those recited elements/steps and those that don’t materially affect the basic characteristics of the claimed invention (クレームの基本的性質に実質的に影響を与えない範囲)
 - “Consisting of” means only those recited elements/steps (限定される)
 - “A drivetrain comprising” v “A drivetrain consisting of”

Claim Structure

- Claim Body (本文)
 - Recites the limitations necessary to define the invention (必要な定義のみをクレームに記載する)
 - Antecedent basis (先行詞)
 - First instance is “a” or “an” and subsequent instances are “the” or “said”
 - Be consistent
 - Introduce all of the components and characterizations of the components that are necessary for the invention to work and to be different that what is in the prior art (発明を特定するために必要な事項を全て記載し先行技術との違いを規定する)
 - Independent claims can include different combination of components or different characterizations of the components
- Dependent claim transitions: (従属クレーム)
 - “Further comprising” when adding a component (追加の成分を追加する場合)
 - “Wherein” when further describing previously introduced component
 - Best Practice: No multiple dependent claims. (複数クレームへの従属は認められない)

Claim Structure – Connecting the components

- A bicycle rear wheel suspension assembly, comprising:
 - an upper linkage arm comprising a first pivot point;
 - a lower linkage arm comprising a second pivot point;
 - a connecting linkage arm having an upper end pivotally connected to the first pivot point of the upper linkage arm and a lower end pivotally connected to the second pivot point of the lower linkage arm; and
 - a shock absorber coupled to one or more of the upper linkage arm, the lower linkage arm and the connecting linkage arm, and configured to control movement of the bicycle rear wheel suspension assembly.

Claim Structure – Connecting the components

- A bicycle rear wheel suspension assembly, comprising:
 - an **upper linkage arm** comprising a **first pivot point**;
 - a **lower linkage arm** comprising a **second pivot point**;
 - a **connecting linkage arm** having an upper end pivotally connected to the **first pivot point** of the **upper linkage arm** and a lower end pivotally connected to the **second pivot point** of the **lower linkage arm**; and
 - a shock absorber coupled to one or more of the **upper linkage arm**, the **lower linkage arm** and the **connecting linkage arm**, and configured to control movement of the bicycle rear wheel suspension assembly.

Part II – Selecting Subject Matter and Claim Strategy in U.S. Patent Applications (クレームにおける用語の選択とその戦略)

Patentable Subject Matter – Mechanical Technologies

- Identifying patentable subject matter（用語の選択）
 - What makes invention better, cheaper, faster, more attractive to ultimate consumer（どんな用語が発明をより良くするのか）
 - What distinguishes the product or service from competitors（どんな用語がその製品やサービスを競合品と区別するのか）
- Examples
 - Systems (elevator, vehicle)
 - Structures (building, bridge)
 - Products (helmet, golf club)
 - Components (piston, bolt)
 - Replacement Parts (printer ink cartridge, bicycle chain)

Types Of Claim Subject Matter

- Product
 - Apparatus, machine, system, device (装置、システム)
 - Composition (組成物)

- Method or Process to perform function/obtain result
 - Making (作り方)
 - Using (使い方)

Examples – Method Claims

- Preamble Examples:
 - A method comprising:
 - A construction method comprising:
 - A construction method for inhibiting the passage of fire through a wall comprising:
 - In a building having a wall with an opening passing through the wall from a first side to a second side, and a pipe passing through the opening, a method of fire-blocking the wall comprising:
- Claim Examples:
 - A construction method for inhibiting the passage of fire through a wall comprising:
 - inserting a mineral wool material into a gap between the wall and a pipe passing through an opening in the wall;
 - compacting the mineral wool material; and
 - covering the mineral wool material, a portion of the wall and a portion of the pipe with a rubberized coating material.
 - In a building having a wall with an opening passing through the wall from a first side to a second side, and a pipe passing through the opening, a method of fire-blocking the wall comprising:
 - introducing an expandable fire-blocking material into the opening between the wall and the pipe;
 - allowing the expandable fire-blocking material to expand for at least one hour;
 - applying a protective coating material to the fire-blocking material; and
 - extending the protective coating material onto a portion of the wall and a portion of the pipe adjacent the expandable fire-blocking material to create a continuous seal.

Examples – Apparatus Claims

- Apparatus Examples:
 - An apparatus comprising:
 - A medical device comprising:
 - A wearable defibrillation device comprising:
 - A medical device for providing instantaneous electrode data comprising:
- Claim Examples:
 - A wearable defibrillator comprising:
 - o a first set of electrodes for obtaining patient data;
 - o a second set of electrodes for providing therapeutic signal to the patient; and
 - o a control unit for processing the patient data
 - A defibrillation device comprising:
 - a first set of electrodes mounted within a garment and having at least a portion of surface area in direct contact with a patient, the first of electrodes obtaining patient data;
 - a second set of electrodes separately mounted within the garment and having a portion of surface area in direct contact with the patient., the second set of electrodes

Independent Claims and Dependent Claims - Examples

1. A landing gear assembly comprising:
 - a landing gear leg
 - a surface contact mounted to the landing gear
2. The landing gear assembly recited in Claim 1, wherein the surface contact includes at least one wheel.
3. The landing gear assembly as recited in Claim 1, wherein the surface contact includes at least one pontoon.
4. The landing gear assembly as recited in Claim 1, wherein the surface contact includes at least one ski.
- 5. The landing gear assembly as recited in Claim 1, wherein the surface contact includes a lava flotation component.**
6. The landing gear assembly as recited in Claim 1, wherein the surface contact is configured for use on a paved surface.
7. The landing gear assembly as recited in Claim 6, wherein the surface contact configured for use on a paved surface includes at least one of a wheel or a skid.
8. The landing gear assembly as recited in Claim 1 further comprising a disconnect control joining the landing gear leg and surface contact ...
9. The landing gear assembly in Claim 8, wherein the surface contact includes at least of a wheel, a pontoon, and a ski.

Claim Drafting – Terms and Phrases with Special Meaning/Purpose

- Counting/Numbers
 - “Plurality” – Two or more: “A plurality of fasteners” (複数個の場合)
 - “At least one” - Open ended count with a minimum of one: “At least one processor configured with” (少なくとも...)
- Associations
 - “Each” - Places a limitation on every member of a group: “wherein each control unit is configured with local ...” (全ての部材について言及する場合)
 - “Individual” - Places a limitation on some member of a group: “wherein individual control units are configured with local” (ある個々の部材について言及する場合)
- Combinations or Alternatives
 - “And” - Standard meaning as a conjunctive: “wherein the widget has a first part **and** a second part” (複数の組み合わせ)
 - “At least one of ... and” - Interpreted as a disjunctive: “at least one of a maximum threshold and a minimum threshold” (See specification) (少なくとも...)

Claim Drafting – Terms and Phrases with Special Meaning/Purpose

- Potential Problem Terms（問題となる可能性のある用語）
 - Relative terminology - “relatively large”, “similar”, “about“, etc.（定義が曖昧な用語：比較的、おおよそ、など）
 - Fails to provide standard for measuring degree
 - Exemplary terminology - “such as” and “for example”（～のような、例えば、など）
 - Unclear language
 - Be careful of “tech terms“ – “cloud”, “Internet”, etc.（テック関連の用語については注意）
 - Claims may be specific to a company and may not be well understood in industry

Top Tips – Avoid Divided Infringement

- Where multiple entities are involved, draft claims that will directly infringed by a single entity (複数人が関係するクレームの場合、1人で侵害行為を完結できるクレームにする)
 - Method claims: all steps performed by one entity (方法クレームの場合)
 - System claims: all elements operated by single entity (システムクレームの場合)
 - Resist temptation to describe a complete system or process (誘惑に耐える)

Avoiding Divided Infringement – Method Claims

- A method of making a multi-use child seat system comprising:
 - constructing a child seat with a bottom surface having a first connector;
 - constructing a stroller with a support portion having a second connector configured to connect to the first connector such that the child seat can be selectively connected to the stroller;
 - constructing a car seat base configured to connect to a seat belt of a vehicle, the car seat base having a third connector configured to connect to the first connector such that the child seat can be selectively connected to the car seat base; and
 - providing the child seat with a release lever configured to release the first connector from the second connector or the third connector to allow a user to move the child seat between the stroller and the car seat base.

Avoiding Divided Infringement – Method Claims

- A method of making a multi-use child seat system comprising:
 - constructing a child seat with a bottom surface having a first connector;
 - constructing a stroller with a support portion having a second connector configured to connect to the first connector such that the child seat can be selectively connected to the stroller;
 - constructing a car seat base configured to connect to a seat belt of a vehicle, the car seat base having a third connector configured to connect to the first connector such that the child seat can be selectively connected to the car seat base; and
 - providing the child seat with a release lever configured to release the first connector from the second connector or the third connector to allow a user to move the child seat between the stroller and the car seat base.

Avoiding Divided Infringement – Method Claims – End User Perspective

- A method of using a multi-use child seat system comprising:
 - pulling a release lever of a child seat to release a first connector of the child seat from a second connector of a stroller;
 - removing the child seat from the stroller;
 - aligning first connector of the child seat with a third connector of a car seat base secured to a vehicle seat;
 - pushing the child seat onto the car seat base until the first connector connects to the third connector to secure the child seat to the car seat base.

Top Tips – Teaching Claim

- A “teaching claim” is an independent claim that is typically more narrow in scope than the other independent claims
- Often provided as Claim 1 to provide an Examiner with a clear understanding of the full scope of the invention. (審査官が発明の全体像を理解できるようにクレーム1は明確に)
- Strategy for “teaching claim”
 - Options – one or more of:
 - Limit to specific environment (詳細な環境に限定する)
 - Limit to an important embodiment (重要な具体的事項に限定する)
 - Use more concrete terms (より具体的な用語を使う)
- May be helpful for Section 101 (101拒絶の回避の手助け)

Top Tips – Teaching Claim

An underwater breathing system comprising:

a cylindrical tank configured to contain a pressurized breathing gas, the tank having a plastic base coupled thereto, the plastic base having a flat bottom surface configured to allow the tank to stand upright on a flat surface;

a pressure regulating valve connected to an outlet of the tank, the pressure regulating valve comprising a valve body and a valve seat, wherein the valve body is movable relative to the valve seat to regulate a pressure of the pressurized breathing gas exiting the tank;

a mouthpiece connected to the pressure regulating valve by a first hose, the mouthpiece comprising a demand valve configured to initiate the delivery of the pressurized breathing gas to the mouthpiece from the tank through the hose;

a dive computer connected to the pressure regulating valve by a second hose, the dive computer comprising a pressure gauge configured to measure a pressure of the pressurized breathing gas and a display configured to display the pressure to a user of the system.

Top Tips – Non-Teaching Claim

An underwater breathing system comprising:

- a tank configured to contain a pressurized breathing gas;

- a pressure regulating valve connected to an outlet of the tank and configured to regulate a pressure of the pressurized breathing gas exiting the tank;

- a mouthpiece operably connected to the pressure regulating valve and configured to receive the pressurized breathing gas from the tank;

- a dive computer operably connected to the pressure regulating valve, the dive computer configured to communicate a pressure of the pressurized breathing gas to a user of the system.

Top Tips – Comparison

Teaching Claim

An underwater breathing system comprising:

a cylindrical tank configured to contain a pressurized breathing gas, the tank having a plastic base coupled thereto, the plastic base having a flat bottom surface configured to allow the tank to stand upright on a flat surface;

a pressure regulating valve connected to an outlet of the tank, the pressure regulating valve comprising a valve body and a valve seat, wherein the valve body is movable relative to the valve seat to regulate a pressure of the pressurized breathing gas exiting the tank;

a mouthpiece connected to the pressure regulating valve by a first hose, the mouthpiece comprising a demand valve configured to initiate the delivery of the pressurized breathing gas to the mouthpiece from the tank through the hose;

a dive computer connected to the pressure regulating valve by a second hose, the dive computer comprising a pressure gauge configured to measure a pressure of the pressurized breathing gas and a display configured to display the pressure to a user of the system.

Non-Teaching Claim

An underwater breathing system comprising:

a tank configured to contain a pressurized breathing gas;

a pressure regulating valve connected to an outlet of the tank and configured to regulate a pressure of the pressurized breathing gas exiting the tank;

a mouthpiece operably connected to the pressure regulating valve and configured to receive the pressurized breathing gas from the tank;

a dive computer operably connected to the pressure regulating valve, the dive computer configured to communicate a pressure of the pressurized breathing gas to a user of the system.

Part III – Means + Function (ミーンズプラスファンクション)

Invoking Interpretation Under Section 112(f)

- Patent applications are not rejected under Section 112(f) (112(f)で拒絶されるわけではない)
- Section 112(f) – Means Plus Function Interpretation:
 - 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. (発明のある部材の構造をクレームに詳細に記載することなく、その部材の機能をクレームに記載することで権利化できる方法。ただし、その権利範囲は明細書に書かれているその部材とそれと同等の範囲に限定される)

Invoking Interpretation Under Section 112(f)

- Invoking interpretation under Section 112(f) (See MPEP § 2181(I)): (112(f)だと解釈される場合)
 - The claim limitation uses the term “means” or a term used as a substitute for “means” that is a generic placeholder; (“means”またはそれと同様の用語を使った場合) AND
 - The term “means” or the generic placeholder is modified by functional language, typically, but not always linked by the transition word “for” (e.g., “means for”) or another linking word or phrase, such as “configured to” or “so that.”; (“for”やそれと同様の用語を接続として使った場合) AND
 - The term “means” or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function. (“means”またはそれと同様の用語が、その構造などによって十分に変化されていない場合)
- Common substitute terms: “mechanism for,” “module for,” “device for,” “unit for,” “component for,” “element for,” “member for,” “apparatus for,” “machine for,” or “system for.” (112(f)だと解釈される例)
- There is no fixed list of terms that avoid invocation of Section 112(f) (どのような用語が112(f)だと解釈されるかのリストはない)

Practice Tips – Avoiding Section 112(f) Rejections

- Specification Drafting Best Practices（明細書を書くにあたって最善の方法）
 - Each independent claim should have at least one drawing that forms the basis of support for written description and enablement（各独立クレームに対応した図面を少なくとも1つ用意する）
 - The specification should be the “key” for all broad terms that can be implemented in multiple ways/embodiments（定義の広い用語については明細書の記載が重要になる）
 - If means plus function is intended to be invoked, be sure to identify alternatives（ミーンズプラスファンクションと解釈される場合には別の手段を特定する）
 - Eliminate “easy” invocation of means plus function by avoiding “nonce” words（意味のない用語を使わないようにしてミーンズプラスファンクションと解釈されるのを避ける）

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