

# Knobbe Martens

Knobbe Practice Webinar Series:

## **Strategic Considerations for Mechanical and Medical Device Claim Drafting**

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Jessica L. Achtsam

Dave Schmidt, PhD

# Part I

## Understanding Claims in U.S. Patent Applications

# Claiming Basics – U.S. Patent Applications

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- Claim structure
  - Each claim is a single sentence
    - Start with a capital letter
    - End with a period
  - Numbered consecutively in ascending order; original numbering preserved throughout prosecution
  - Best Practice: Claim terms/phrases must find clear support in the written description
- Independent claims versus dependent claims
  - Independent claim is standalone claim
  - Dependent claim refers to another earlier claim and further limits that claim
  - Basic US Filing Fee: 3 independent claims/20 total
    - \$480 per additional independent claim (\$480)
    - \$100 per additional claim(\$100)

# Claim Structure

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- Preamble
  - Provides context for the claimed invention
  - May or may not limit the claim
  - “A shock absorber” instead of “a shock absorber for controlling movement of a vehicle wheel”
- Transitional phrase
  - Determines if the claim is “open” (comprising), “closed” (consisting of), or “partially open” (consisting essentially of)
    - “Comprising” is most common in most arts
    - “Consisting essentially of” means those recited elements/steps and those that don’t materially affect the basic characteristics of the claimed invention
    - “Consisting of” means only those recited elements/steps)
  - “A drivetrain comprising” v “A drivetrain consisting of”

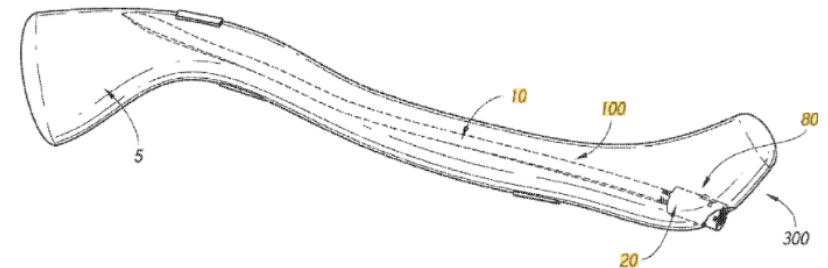
# Claim Structure

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- Claim Body
  - Recites the limitations necessary to define the invention
  - Antecedent basis
    - 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
    - Independent claims can include different combination of components or different characterizations of the components
- Dependent claim transitions:
  - “Further comprising” when adding a component
  - “Wherein” when further describing previously introduced component
  - Best Practice: No multiple dependent claims.

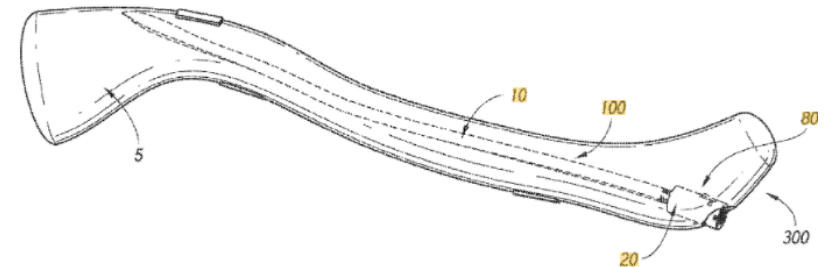
# Claim Structure – Connecting the components

- A nail fixation system, the system comprising:
  - a nail sized for positioning within a clavicle, the nail comprising an elongate shaft having a proximal end and a distal end, the nail comprising multiple zones along its length having various cross-sectional geometries;
  - wherein:
    - the nail comprises an end zone at its distal end having a first cross-sectional shape and a shaft zone proximal to the end zone having a second cross-sectional shape, wherein the first cross-sectional shape is different from the second cross-sectional shape;
    - the nail comprises a transition zone between the end zone and the shaft zone;
    - the transition zone has a third cross-sectional shape that is different from the first cross-sectional shape and the second cross-sectional shape;
    - the shaft zone has a cross sectional area greater than or equal to a cross sectional area of the transition zone and the cross sectional area of the transition zone is greater than or equal to a cross sectional area of the end zone.



# Claim Structure – Connecting the components

- A nail fixation system, the system comprising:
  - a **nail** sized for positioning within a clavicle, the **nail** comprising an **elongate shaft** having a proximal end and a distal end, the **nail** comprising multiple zones along its length having various cross-sectional geometries;
  - wherein:
    - the **nail** comprises an **end zone** at its distal end having a first cross-sectional shape and a **shaft zone** proximal to the **end zone** having a second cross-sectional shape, wherein the first cross-sectional shape is different from the second cross-sectional shape;
    - the nail comprises a **transition zone** between the **end zone** and the **shaft zone**;
    - the **transition zone** has a third cross-sectional shape that is different from the first cross-sectional shape and the second cross-sectional shape;
    - the **shaft zone** has a cross sectional area greater than or equal to a cross sectional area of the **transition zone** and the cross sectional area of the **transition zone** is greater than or equal to a cross sectional area of the **end zone**.



# Part II

## Selecting Subject Matter and Claim Strategy in U.S. Patent Applications



# Patentable Subject Matter – Mechanical and Medical Device Technologies

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- Identifying patentable subject matter
  - What makes invention better, cheaper, faster, more attractive to ultimate consumer
  - What distinguishes the product or service from competitors
- Examples
  - Systems (elevator, pulse oximeter system)
  - Structures (building, hip implant)
  - Products (helmet, bandage)
  - Components (piston, sensor)
  - Replacement Parts (printer ink cartridge, bicycle chain)

# Types Of Claim Subject Matter

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- Product
  - Apparatus, machine, system, device
  - Composition
  
- Method or Process to perform function/obtain result
  - Making
  - Using

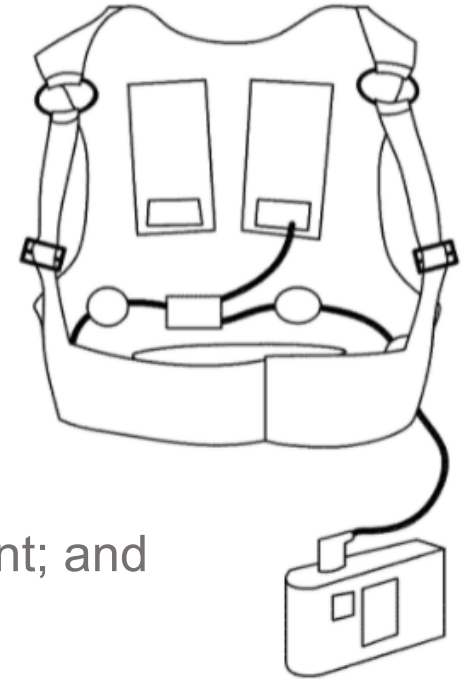
# Examples – Method Claims

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- 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.

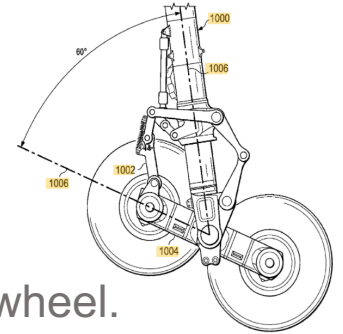
# Examples – Apparatus Claims

- 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

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- Counting/Numbers
  - “Plurality” – Two or more: “A plurality of fasteners”
  - “At least one” - Open ended count with a minimum of one: “At least one processor configured with ....”
- Associations
  - “Each” - Places a limitation on every member of a group: “wherein each control unit is configured with local ...”
  - “Individual” - Places a limitation on some member of a group: “wherein individual control units are configured with local”
- Combinations or Alternatives
  - “And” - Standard meaning as a conjunctive: “wherein the widget has a first part **and** a second part”
  - “At least one of ... and ....” - Interpreted as a disjunctive: “at least one of a maximum threshold and a minimum threshold” (See specification)

# Claim Drafting – Terms and Phrases with Special Meaning/Purpose

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- Potential Problem Terms
  - Relative terminology - “relatively large”, “similar”, “about”, etc.
    - Fails to provide standard for measuring degree
  - Exemplary terminology - “such as” and “for example”
    - Unclear language
  - Be careful of “tech terms” – “cloud”, “Internet”, etc.
    - Claims may be specific to a company and may not be well understood in industry

# Top Tips – Avoid Divided Infringement

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- Where multiple entities are involved, draft claims that will directly infringed by a single entity
  - Method claims: all steps performed by one entity
  - System claims: all elements operated by single entity
  - Resist temptation to describe a complete system or process





# Avoiding Divided Infringement – Method Claims

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- 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

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- 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

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- 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

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- 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.
- Strategy for “teaching claim”
  - Options – one or more of:
    - Limit to specific environment
    - Limit to an important embodiment
    - Use more concrete terms
- May be helpful for Section 101

## Top Tips – Teaching Claim

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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

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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

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## 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.

# Knobbe Martens

Jessica Achtsam

Jessica.Achtsam@knobbe.com

949-721-7648

Dave Schmidt, PhD

David.Schmidt@knobbe.com

949-721-6386