

Knobbe Practice Webinar Series:
Strategic Considerations for
Electrical/Telecommunication Claim
Drafting

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Part I – Understanding Claims in U.S. Patent Applications

Claiming Basics – U.S. Patent Applications

- 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
 - \$100 per additional claim

Claim Structure

- Preamble
 - Provides context for the claimed invention
 - May or may not limit the claim
 - “An integrated circuit” instead of “an integrated circuit for processing short range wireless signals”
- 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 circuit comprising” v “A circuit consisting of”

Claim Structure

- Claim Body
 - Recites the limitations necessary to define the invention
 - 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.
 - \$860 fee for large entity.
 - No multiple dependent claim depending on another multiple dependent claim is allowed

Part II – Selecting Subject Matter and Claim Strategy in U.S. Patent Applications

Types Of Claim Subject Matter for Electrical and Telecommunication Inventions

- Identifying patentable subject matter
 - What makes invention better, cheaper, faster, more attractive to ultimate consumer?
 - What distinguishes the product or service from competitors?
 - How will the product/service be used in the marketplace(s)?
- Product
 - Circuit
 - Transmitter/Receiver
 - Server
 - User terminal
 - System/device/apparatus
- Method or Process to perform function/obtain result
 - Making
 - Using/operating
- Non-transitory computer readable medium

Example Claims for Review

Examples – Method Claims

- Preamble Examples:
 - A method comprising:
 - A method of operating a power amplifier circuit comprising:
 - A method of operating a power amplifier circuit for managing power consumption comprising:
 - In a wireless power receiver apparatus including a wireless interface, a matching circuit, and a switching element, a method of operating the wireless power receiver apparatus comprising:
- Claim Example:
 - A method of operating a wireless power receiver apparatus comprising:
 - wirelessly receiving, via an antenna circuit, power at a level sufficient to power or charge a load comprising a rectifier, wherein the load is electrically connected to an overvoltage protection circuit;
 - providing a matching circuit including at least two components and electrically connected to the antenna circuit and a switching element;
 - electrically connecting the switching element between the at least two components of the matching circuit; and
 - reducing, via the matching circuit, an amount of the received power flowing into the overvoltage protection circuit in response to an overvoltage condition and providing the reduced amount of the received power to the switching element.

Examples – Computer Readable Medium Claim

- Preamble Examples:
 - A non-transitory computer readable medium comprising:
 - A non-transitory computer readable medium storing instructions configured to perform a method of operating a wireless power receiver apparatus, the method comprising:
 - One or more processor-readable storage devices having processor-readable code embodied on the processor-readable storage devices, the processor-readable code for programming one or more processors to perform a method of operating a wireless power receiver apparatus, the method comprising:
- Claim Example:
 - One or more processor-readable storage devices having processor-readable code embodied on the processor-readable storage devices, the processor-readable code for programming one or more processors to perform a method of operating a wireless power receiver apparatus, the method comprising:
 - wirelessly receiving, via an antenna circuit, power at a level sufficient to power or charge a load comprising a rectifier, wherein the load is electrically connected to an overvoltage protection circuit;
 - providing a matching circuit including at least two components and electrically connected to the antenna circuit and a switching element;
 - electrically connecting the switching element between the at least two components of the matching circuit; and
 - reducing, via the matching circuit, an amount of the received power flowing into the overvoltage protection circuit in response to an overvoltage condition and providing the reduced amount of the received power to the switching element.

Examples – Apparatus Claims

- Preamble Examples:
 - An apparatus comprising:
 - An apparatus for utilization in wireless communications comprising:
 - A wireless terminal configured to operate in a wireless communication network comprising:
 - A user equipment terminal having a transceiver and processor configured to operate in a wireless communication network with a plurality of wireless communication networks comprising:
- Claim Examples:
 - A wireless terminal configured to operate in a wireless communication network, the wireless terminal comprising:
 - a transceiver configured to facilitate communications with a base station of the wireless communication network and a plurality of additional wireless terminals; and
 - a processor coupled to the transceiver, wherein the processor is configured to:
 - receive first information through the transceiver from the first base station wherein the first information corresponds to first data from the first base station;
 - receive second information through the transceiver from the first base station, wherein the second information corresponds to second data directed to an identified additional wireless terminal communicating with the wireless communication network; and
 - transmit the second data through the transceiver to the plurality of additional wireless terminals, wherein the second data is transmitted in accordance with a low priority designation.

Claim Drafting – Terms and Phrases with Special Meaning/Purpose

- 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 Strategy – Method Limitations and Negative Limitations

- Method Limitations in Apparatus Claims
 - Do not include method limitations in apparatus claims
 - Manner of operating the device does not differentiate apparatus claim from the prior art. MPEP2114.II
 - Can render the apparatus claims of an issued patent invalid since the claims are indefinite under 112(b).
 - Use “configured to” language to convert a method limitation into an apparatus limitation
 - The secondary battery of claim 1, wherein the controller ~~generates~~ is configured to generate the compensation data

Claim Drafting Strategy – Method Limitations and Negative Limitations

- Negative Limitations
 - A negative limitation is definite, as long as the boundaries of the patent protection sought are set forth definitely, albeit negatively. MPEP 2173.05(i)
 - If alternative elements are positively recited in the specification, they may be explicitly excluded in the claims.
 - The drawings may provide a support for a negative limitation
 - Consider providing a textual support in specification for a negative limitation in the original disclosure by identifying how or when features or elements may be omitted

Claim Drafting – Terms and Phrases with Special Meaning/Purpose

- 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

- 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 claim a complete system or process in a single independent claim
- Actions by customer or related entities may not be sufficient to overcome divided infringement problems

Avoiding Divided Infringement – Method Claims

- A method of authenticating a user installed program comprising
 - sending, at a user terminal comprising a user installed program, a request for an authentication code to a server;
 - receiving, at the server, a request for the authentication code from the user terminal;
 - downloading, at the server, the authentication code to the user terminal;
 - receiving, at the user terminal, the authentication code from the server; and
 - executing, at the user terminal, the authentication code to verify the user installed program

Avoiding Divided Infringement – Method Claims

- A method of authenticating a user installed program comprising
 - sending, at a user terminal comprising a user installed program, a request for an authentication code to a server;
 - receiving, at the server, a request for the authentication code from the user terminal;
 - downloading, at the server, the authentication code to the user terminal;
 - receiving, at the user terminal, the authentication code from the server; and
 - executing, at the user terminal, the authentication code to verify the user installed program.

Claim Drafting Strategy – Avoid Divided Infringement

- Single entity claim (user terminal)
 - A method of authenticating a user installed program comprising
 - sending a request for an authentication code configured to verify a user installed program to a server;
 - downloading the authentication code from the server; and
 - executing the authentication code to verify the user installed program.
- Single entity claim (server)
 - A method of authenticating a user installed program comprising
 - receiving a request for an authentication code configured to verify a user installed program from a user terminal;
 - downloading the authentication code to the user terminal; and
 - causing the user terminal to execute the authentication code to verify the user installed program.

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.
- Strategy for “teaching claim”
 - Options – one or more of:
 - Limit to specific environment (e.g., more narrow pre-amble)
 - Limit to an important embodiment
 - Use more specific terms or concrete terms
- May be helpful for Section 101
 - Remaining claims may be less likely to be rejected under Section 101

Claim Drafting Strategy – Teaching Claim v. Non-teaching Claim

Teaching Claim

A multi-function/multi-purpose portable electronic device, comprising:

- a display monitor including a display screen configured to display an image and a rear surface opposite to the display screen;
- a scanner disposed below the display monitor, the scanner including a body extending to intersect the display monitor and one or more light pipes disposed on a side of the body and configured to emit light;
- a base disposed below the scanner, the base including a planar portion and an inclined portion, the display monitor and the body of the scanner at least partially vertically overlapping the planar portion of the base;
- a speaker disposed in the inclined portion of the base and configured to output an audio sound;
- a scanner support extending from the planar portion of the base toward the scanner to support the scanner;
- a curved connector extending from the scanner support and connected to the rear surface of the display monitor, at least a portion of the curved connector disposed directly above the speaker and the inclined portion of the base;
- a controller configured to control operations of at least one of the display monitor, the speaker or the scanner, and
- the one or more light pipes configured to emit light based on the audio sound output from the speaker.

Non-Teaching Claim (rejected and cancelled)

A multi-function/multi-purpose portable electronic device, comprising:

- a display monitor configured to display an image;
- a scanner disposed below the display monitor and extending to intersect the display monitor, the scanner not directly contacting the display monitor;
- a base configured to support the scanner, the base including a first portion having a first thickness and a second portion having a second thickness greater than the first thickness, the display monitor and the scanner at least partially vertically overlapping the first portion of the base
- a speaker at least a portion of which is disposed only in the second portion of the base; and
- a connector physically interconnecting the base and the display monitor to support the display monitor, at least a portion of the connector vertically overlapping the second portion of the base.

Part III – Means + Function

Invoking Interpretation Under Section 112(f)

- Definition (35 U.S.C. §112(f))
 - An element . . . may be expressed as a means . . . for performing a specified function . . .
- Downsides of interpretation of means + function claim
 - Claim scope is limited to only those structures disclosed in the specification (and equivalents thereof!)
 - If no corresponding structures are provided, the claim will be rejected under 112(b) (during prosecution) or invalid (if issued)
 - Special examination procedures for software inventions interpreted as invoking means + function
- Upsides of interpretation of means + function claim
 - Provide a scope of protection and more flexible infringement analysis
 - Since an MPF claim is narrowly interpreted in the U.S., it can cover the intended product and survive an invalidity challenge or summary judgement of invalidity in litigation

Invoking Interpretation Under Section 112(f)

- Invoking interpretation under Section 112(f) (See MPEP § 2181(I)):
 - The claim limitation uses the term “means” or a term used as a substitute for “means” that is a generic placeholder;
 - 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.”;
 - The term “means” or the generic placeholder is not modified by sufficient structure, material, or acts for performing the claimed function.
- Common substitute terms: “mechanism for,” “module for,” “device for,” “unit for,” “component for,” “element for,” “member for,” “apparatus for,” “machine for,” or “system for.”
- There is no fixed list of terms that avoid invocation of Section 112(f)

Example Claim – Avoiding Interpretation as Means Plus Function

1. A battery system, comprising:
 - a ~~plurality of~~ battery trays ~~that comprises each comprising one or more at least one~~ battery cells;
 - a ~~plurality of~~ slave ~~battery management systems (BMSs)~~ ~~for controlling~~ ~~configured to respectively control~~ the battery trays; and
 - a master BMS ~~for controlling a plurality of~~ ~~configured to control~~ the slave BMSs, wherein ~~each of~~ the slave BMSs comprises:
 - a ~~switching unit switch for generating~~ ~~configured to generate~~ a pulse signal ~~according to~~ ~~based at least in part on~~ an input;
 - a display ~~unit for displaying a state~~ ~~configured to display~~ a status of the ~~corresponding~~ battery tray; and
 - a ~~control unit controller for determining~~ ~~configured to:~~ i) ~~determine~~ an operation mode ~~of the slave BMS based at least in part on~~ ~~according to~~ a pulse width of the pulse signal, ~~setting~~ ii) ~~assign~~ an identifier (ID) of the slave BMS ~~according to~~ ~~a~~ ~~based at least in part on~~ ~~the number of generation of generated of the~~ pulse signals, and ~~displaying~~ iii) ~~control~~ the display to display the ID of the slave BMS, ~~on~~ ~~the display unit.~~

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