

Knobbe Practice Webinar Series: Strategic Considerations for Software 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
 - “A server” instead of “a server for processing client device requests”
- 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 network component comprising” v “A network component consisting”

Claim Structure

- 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 user interaction component comprising
 - a first interface component for obtaining user requests, wherein individual user requests include a unique identifier;
 - a second interface component for transmitting user specific information requests to a remote service, the user specific information identified by one or more encrypted unique identifiers;
 - a processing component for parsing user requests received from the first interface component to identify a unique identifier and encrypt the user request data according to a user public key associated with the identified unique identifier to form a user specific information request and transmit the user specific information request via the second interface component, the user specific information request include the encrypted unique identifier.

Claim Structure – Connecting the components

- A user interaction component comprising
 - a **first interface component** for obtaining user requests, wherein individual user requests include a **unique identifier**;
 - a **second interface component** for transmitting **user specific information requests** to a remote service, the user specific information identified by one or more **encrypted unique identifiers**;
 - a processing component for parsing user requests received from the **first interface component** to identify a **unique identifier** and encrypt the user request data according to a user public key associated with the identified unique identifier to form a **user specific information request** and transmit the **user specific information request** via the **second interface component**, the user specific information request include the **encrypted unique identifier**.

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

Patentable Subject Matter – Software and Information Technologies

- Identifying patentable subject matter
 - What makes invention better, cheaper, faster, more attractive to ultimate consumer
 - What distinguishes the product or service from competitors
- Examples
 - Artificial Intelligence/Machine Learning
 - Distributed Ledger Technology (Blockchain)
 - Virtualization
 - Network Data Processing/Network Data Management
 - Mobile Applications
 - Consumer Devices

Types Of Claim Subject Matter

- Product
 - Apparatus, machine, system, device
 - Composition
- Method or Process to perform function/obtain result
 - Making
 - Using
- Computer Readable Medium
 - Non-transitory storage device that stores code that executes the Process

Examples – Method Claims

- Preamble Examples:
 - A method comprising:
 - A computer-implemented method comprising:
 - A computer-implemented method for content delivery services comprising:
 - In a distributed network environment including a first set of edge devices associated with a first geographic region and a second set of edge device associated with a second geographic region, a computer-implemented method for content delivery comprising:
- Claim Examples:
 - A method for processing asynchronously collected user data from client device comprising:
 - obtaining user data from a plurality of client devices via a network interface;
 - processing the obtained user data to form affinity groups
 - generating a cumulative score based on a weighting algorithm ...
 - In a distributed network environment including a first set of edge devices associated with a first geographic region and a second set of edge device associated with a second geographic region, a computer-implemented method for content delivery comprising:
 - obtaining a first collection of images from the first set of edge devices;
 - obtaining a second collection of images from the second set of edge devices;
 - Implementing a machine learning algorithm to remove duplicate images based on

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

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 first part and a second part" (Specification)

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 describe a complete system or process

Avoiding Divided Infringement – Method Claims

- A method for customizing user content comprising:
 - obtaining user input regarding a desired display device;
 - transmitting the obtained user input regarding desired display device;
 - obtaining the transmitted, obtained user input regarding desired display device;
 - identifying a display device configuration profile from a data store corresponding to the desired display device;
 - transmitting the identified display device configuration profile;
 - receiving the transmitted identified display device configuration profile; and
 - automatically processing the transmitted identified display device configuration profile based on time criteria.

Avoiding Divided Infringement – Method Claims

- A method for customizing user content comprising:
 - obtaining user input regarding a desired display device;
 - transmitting the obtained user input regarding desired display device;
 - obtaining the transmitted, obtained user input regarding desired display device;
 - identifying a display device configuration profile from a data store corresponding to the desired display device;
 - transmitting the identified display device configuration profile;
 - receiving the transmitted identified display device configuration profile; and
 - automatically processing the transmitted identified display device configuration profile based on time criteria.

Avoiding Divided Infringement – Method Claims

- (User Device Claim) A method for customizing user content comprising:
 - obtaining user input regarding a desired display device;
 - transmitting the obtained user input regarding desired display device;
 - receiving identified display device configuration profile from the network service; and
 - automatically processing the transmitted identified display device configuration profile based on time criteria.
- (Network Claim) A method for customizing user content comprising:
 - obtaining a transmission from a device providing user input regarding desired display device;
 - identifying a display device configuration profile from a data store corresponding to the desired display device; and
 - transmitting the identified display device configuration profile;
 - wherein the device automatically processes the transmitted identified display data configuration profile.

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
 - Limit to an important embodiment
 - Use more concrete terms

Top Tips – Teaching Claim

A computer-implemented method for processing content comprising:

- obtaining, by a service provider, a request from a client computing device to generate a customized data search, wherein the request from the client computing device is transmitted in accordance with an application protocol interface that includes a user search identifier;
- identifying, by the service provider, executable code for dynamically generating search criteria based on the user search identifier;
- executing, by the service provider, the executable code, wherein the user search identifier is an input to the execution of the executable code;
- generating, by the service provider, a processing result including a first data item identified according to a first randomized protocol and a second data item identified according to a second randomized protocol; and
- transmitting, by the service provider, the processing result to the client computing device in accordance with the application protocol interface.

Top Tips – Non-Teaching Claim

A computer-implemented method for processing content comprising:

- identifying executable code for dynamically generating search criteria responsive to at least one identifier;
- identifying at least one data item selected based on a randomized protocol corresponding to the identified executable code; and
- transmitting the identified at least one data item to a computing device.

Top Tips – Comparison

Teaching Claim

A computer-implemented method for processing content comprising:

obtaining, by a service provider, a request from a client computing device to generate a customized data search, wherein the request from the client computing device is transmitted in accordance with an application protocol interface include a user search identifier;

identifying, by the service provider, executable code for dynamically generating search criteria;

executing, by the service provider, the executable code, wherein the user search identifier is an input to the execution of the executable code;

generating, by the service provider, a processing result including a first data item identified according to a first randomized protocol and a second data identified according to a second randomized protocol; and

transmitting, by the service provider, the processing result to the client computing in accordance with the application protocol interface.

Non-Teaching Claim

A computer-implemented method for processing content comprising:

identifying executable code for dynamically generating search criteria responsive to at least one identifier;

identifying at least one data item selected based on a randomized protocol corresponding to the identified executable code; and

transmitting the identified at least one data item to a computing device.

Part III – Means + Function

Invoking Interpretation Under Section 112(f)

- Patent applications are not rejected under Section 112(f)
- 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.

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; 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.”; AND
 - 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)

Special Case: Computer-implemented inventions 112(f) and 112(b)

- A computer-implemented Section 112(f) claim limitation will be indefinite under Section 112(b) when the specification:
 - Fails to disclose any algorithm to perform the claimed function.
 - Discloses an algorithm but the algorithm is not sufficient to perform the entire claimed function(s).
- The sufficiency of the algorithm is determined in view of what one of ordinary skill in the art would understand as sufficient to define the structure and make the boundaries of the claim understandable.
 - Disclosure of an algorithm cannot be avoided by arguing that one of ordinary skill in the art is capable of writing software to perform the claimed function. See MPEP § 2161.01(I).

Practice Tips – Avoiding Section 112(f) Rejections

- Specification Drafting Best Practices
 - Each independent claim should have at least one drawing that forms the basis of support for written description and enablement
 - The specification should be the “key” for all broad terms that can be implemented in multiple ways/embodiments
 - If means plus function is intended to be invoked, be sure to identify alternatives
 - Eliminate “easy” invocation of means plus function by avoiding “nonce” words

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