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Understanding Patent Claims

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Patent Claims and Property Boundaries

- - Just like land registration defines property boundaries, a patent claim sets legal boundaries for an invention.
- - A patent includes details like how the invention works and what it protects.
- - This ensures clear ownership and prevents disputes.

What is a Patent Claim?

A patent claim defines what an invention is and what legal protection it has.

- A **claim is a statement of technical facts** expressed in legal terms that define the scope of the invention.
- A patent claim clearly **sets the boundaries** of an invention's protection, preventing others from using, making, or selling the patented technology without permission.
- The words and phrases in the claims **define the legal protection** sought by the patentee.

What is a Patent Claim?

It describes the unique features that make it different from existing ideas.

- Claims highlight the **unique and novel aspects** of an invention compared to existing technologies (prior art), ensuring it qualifies for patent protection.

What is a Patent Claim?

- Helps protect the inventor's rights and prevent others from copying the invention.
- In case of infringement disputes, claims help courts and legal experts **determine whether a competitor has violated the patent** by comparing their product or method against the claim language.
- **What is not claimed stands disclaimed** and is open to public use, even if it is described in the patent document.
- Companies often **license patents** for commercial use. Well-drafted claims **increase the value** of a patent by clearly defining what is protected, making it easier to negotiate deals.
- Strong patent claims create a **competitive edge** by blocking rivals from copying or developing similar innovations, allowing the patent holder to dominate the market.
- Patent claims encourage **further innovation** by making technical knowledge publicly available while ensuring inventors can benefit from their inventions.

Why Are Patent Claims Important?

- - They clearly define the inventor's rights.
- - Help protect unique inventions from being copied.
- - Used by lawyers, inventors, and businesses to secure legal ownership.

What Makes a claim Valid?

- - A claim must be ****new**** (not already known to the public).
- - It must be ****inventive**** (not an obvious improvement of existing technology).
- - It must be ****useful**** and clearly described.

Structure of a Patent Claim

Patent claims are composed of distinct parts that define the scope of an invention's protection:

- 1. Preamble** Introduces the invention and sets the context.
- 2. Transitional Phrase** Connects the preamble to the body.
- 3. Body of the Claim** Details the specific elements or steps of the invention that makes the invention unique.
 - 3.1 Limiting Features** Specifies unique aspects that narrow the claim's scope.
 - 3.2 Elements of the Invention** functional or structural components listed in the claim.

Structure of a Patent Claim- Preamble

Preamble: The *preamble is the introductory part of a patent claim and provides context for the invention.* It usually includes the name or category of the invention (such as a "method", "system," or "composition") and can describe the intended purpose or field of application. While the preamble may not always be essential, it can help define the broad scope of the claim. For instance, a claim in the form of a method might begin with "A method for..." or a system claim might start with "A system comprising..."

Example:

- A method for smart task management...
- A smart calendar system...
- A cloud-based file synchronization system...
- A method for virtual reality fitness...

PREAMBLE

PREAMBLE

A cloud-based file synchronization system,

comprising:

a synchronization engine configured to detect changes in files across devices, wherein the synchronization engine operates only when the devices are connected to a Wi-Fi network;

a user interface for managing file settings, wherein the user interface allows customization of notification preferences for file updates;

a security module that encrypts data during transmission using AES-256 encryption, ensuring that data is not accessible by unauthorized users; and

a bandwidth management feature that optimizes data transfer rates, wherein the bandwidth management feature limits upload speeds to 50% of the available bandwidth during peak usage times to ensure minimal disruption to other network activities.

Structure of a Patent Claim - Transitional Phrase

Transitional Phrase: After the preamble, the **transitional phrase** connects the preamble to the body of the claim. This phrase specifies the relationship between the elements of the claim and the invention as a whole. The two most common types of transitional phrases are "comprising" and "consisting of."

"Comprising": This is an open-ended term, meaning that the invention includes the listed elements, but additional, unlisted elements can also be present. Other terms can be comprises, having, containing.

"Consisting of": This is a closed term, meaning that the invention includes only the listed elements, with no additional elements allowed. Other terms can be consists, composed of.

Transitional Phrase

Transitional Phrase

comprising:

A cloud-based file synchronization system,

a synchronization engine configured to detect changes in files across devices, wherein the synchronization engine operates only when the devices are connected to a Wi-Fi network;

a user interface for managing file settings, wherein the user interface allows customization of notification preferences for file updates;

a security module that encrypts data during transmission using AES-256 encryption, ensuring that data is not accessible by unauthorized users; and

a bandwidth management feature that optimizes data transfer rates, wherein the bandwidth management feature limits upload speeds to 50% of the available bandwidth during peak usage times to ensure minimal disruption to other network activities.

Structure of a Patent Claim - Body

- The body of the claim details the specific elements or steps of the invention. This is the main part of the claim and defines the components, features, or actions that make the invention unique. Each element or step is described in clear, precise language to ensure there is no ambiguity.
- For a system or apparatus claim, the body will list the specific components (e.g., "a motor," "a sensor," etc.).
- For a method claim, the body will describe the specific actions or steps involved in carrying out the method.

BODY

BODY

A cloud-based file synchronization system, comprising:

a synchronization engine configured to detect changes in files across devices, wherein the synchronization engine operates only when the devices are connected to a Wi-Fi network;

a user interface for managing file settings, wherein the user interface allows customization of notification preferences for file updates;

a security module that encrypts data during transmission using AES-256 encryption, ensuring that data is not accessible by unauthorized users; and

a bandwidth management feature that optimizes data transfer rates, wherein the bandwidth management feature limits upload speeds to 50% of the available bandwidth during peak usage times to ensure minimal disruption to other network activities.

Structure of a Patent Claim - limiting features

1. Limiting Features: Limiting features are particular elements or conditions in the body of the claim that narrow the scope of protection.
2. These features define the novel and inventive aspects of the invention.
3. Limiting features are often where the specific distinction from prior art is made, and they play a crucial role in ensuring that the invention is patentable.

Patent Claim Format

A cloud-based file synchronization system comprising:

a *synchronization engine* configured to detect changes in files across devices, **wherein the synchronization engine operates only when the devices are connected to a Wi-Fi network;**
(Synchronization Engine Limitation: By specifying that synchronization occurs only when connected to Wi-Fi, this feature addresses concerns about data usage on mobile networks.)

a *user interface* for managing file settings, **wherein the user interface allows customization of notification preferences for file updates;** (User Interface Customization: Allowing users to customize notification preferences enhances user control over their experience and reduces unnecessary alerts.)

a *security module* that encrypts data during transmission **using AES-256 encryption, ensuring that data is not accessible by unauthorized users; and** (Security Module Specification: Employing AES-256 encryption provides a clear standard for data security, addressing potential vulnerabilities during data transmission.)

a *bandwidth management* feature that optimizes data transfer rates, **wherein the bandwidth management feature limits upload speeds to 50% of the available bandwidth during peak usage times to ensure minimal disruption to other network activities.** (Bandwidth Management Limitation: Limiting upload speeds during peak times helps maintain overall network performance, making it practical for environments with multiple users or devices.)

Elements of the Invention

1. The individual elements of the invention are usually specified in a series of connected or grouped phrases in the body of the claim. Each element is important in describing the invention's functional or structural components. For example, a method claim might describe the steps in a particular order or specify the exact materials or conditions under which the process occurs.

Example: underline phrases are the elements of the invention

A cloud-based file synchronization system comprising:

- a) a synchronization engine configured to detect changes in files across devices
- b) a user interface for managing file settings;
- c) a security module that encrypts data during transmission; and
- d) a bandwidth management feature that optimizes data transfer rates.

Importance of Claim Structure and Clarity

The **clarity and precision** of a patent claim are crucial in determining the scope of protection and in ensuring that the patent can be defended against potential infringement. If a claim is vague or overly broad, it may be *deemed invalid or unenforceable*, while overly narrow claims may limit the scope of protection unnecessarily.

- 1. Defining Scope:** Claims define what is protected by the patent, distinguishing the inventor's work from existing technologies (prior art). Clear claims make it easier to establish the boundaries of the invention and help in determining if another party has infringed on the patent.
- 1. Enforceability:** Enforceability refers to how well a patent can be defended in court if someone else tries to use or sell a similar product without permission. If a patent is enforceable, it means the inventor has the legal right to stop others from infringing on their invention. Well-drafted claims are more likely to withstand challenges from competitors, such as invalidity claims or opposition proceedings. The specificity in the wording of a claim helps to protect the invention and provides legal certainty.
- 1. Patentability:** The claims must highlight the novelty and nonobviousness of the invention compared to prior art. A carefully structured claim can showcase the uniqueness of the invention, thereby satisfying the requirements for patentability.

Importance of Claim Structure and Clarity - EXAMPLE

Example Invention: Smart Fitness Tracker

Description: The smart fitness tracker is a wearable device designed to monitor various health metrics, including physical activity, heart rate, and sleep patterns. It syncs data to a mobile application for user analysis and provides real-time feedback on fitness goals.

A smart fitness tracker, comprising:

a housing configured to be worn on a user's wrist; a motion sensor configured to detect physical activity;

a heart rate monitor integrated within the housing;

a communication module that wirelessly transmits data to a mobile application;

a display screen for showing real-time feedback on fitness metrics;

wherein the motion sensor is capable of distinguishing between different types of physical activities, including walking, running, and cycling.

Importance of Claim Structure and Clarity - EXAMPLE

Defining Scope:

The claim explicitly outlines what aspects of the invention are protected. Each component is described in detail, which helps differentiate it from prior art (existing technologies). *For example, stating that the motion sensor can distinguish between activities (like walking, running, or cycling), this feature is explicitly stated in the claim. This specificity makes it clear what aspect of the invention is unique.*

Enforceability:

If the competitor's fitness tracker device has a motion sensor but lacks the specific capability to distinguish between activities (like walking, running, or cycling), they may argue that their product does not infringe on the patent. *Furthermore, if the mentioned tracker only counts steps without distinguishing features (like walking, running, or cycling), it would likely be safe from infringement claims.* This highlights how a lack of specific features outlined in the patent claim can protect other companies from legal issues related to patent infringement.

Patentability:

The claims must demonstrate novelty and nonobviousness compared to existing technologies. *By clearly defining unique features (e.g., the ability of the motion sensor to differentiate activities), this claim showcases how the invention stands apart from prior art.* During patent examination, if the claims highlight features not present in existing products (like differentiating between walking and running), it increases the likelihood of approval by demonstrating that the invention offers new functionality.

Disclaimers in claims

Definition:

A negative feature in a patent application claim generally refers to a “disclaimer” that would take the form “wherein the composition does not comprise X.”

While a positive feature in a claim may, for instance, take the form “wherein the composition comprises X,”.

Example:

A Smart Home Energy Management System (SHEMS) for optimizing household energy consumption wherein the system is characterized in that it does not require manual control by the user for energy optimization, the system comprising the steps of...

A; B;

Disclaimers in claims

Explanation

In this example, the claim is articulated in a manner where energy optimization is NOT dependent on user intervention. Negative features, in some instances, play a crucial role in defining the claimed invention just as positive features do, and they may be evaluated equally. Essentially, they can contribute to novelty and inventive steps similar to positive features. Additionally, other disclaimers may include:

- The system does not support older, non-energy-efficient appliances.
- The system does not depend on user input for settings.

These negative features help clarify what the SHEMS is designed to do and what it explicitly avoids, thus enhancing its uniqueness in the market.

However, these negative features must also meet the criteria outlined in Sections 10(4) and 10(5) of The Patents Act, 1970 (as amended).

Negative features, similar to positive ones, can be either *structural* or *functional*.

Disclaimers in claims

Explanation : claim is articulated in a manner where energy optimization is NOT dependent on user intervention. Negative features, in some instances, play a crucial role in defining the claimed invention just as positive features do, and they may be evaluated equally. Essentially, they can contribute to novelty and inventive steps similar to positive features. Additionally, other disclaimers may include:

- The system does not support older, non-energy-efficient appliances.
- The system does not depend on user input for settings.

These negative features help clarify what the SHEMS is designed to do and what it explicitly avoids, thus enhancing its uniqueness in the market.

However, these negative features must also meet the criteria outlined in Sections 10(4) and 10(5) of The Patents Act, 1970 (as amended). Negative features, similar to positive ones, can be either structural or functional.

Disclaimers in claims

Prior Art: Prior art may consist of conventional home energy management systems that require manual adjustments or support older appliances. These systems often demand user input to optimize energy usage and may not effectively manage energy consumption without direct intervention.

Issue with the Prior Art : The issue with prior art is that they necessitate user involvement for effective operation, which can lead to inefficiencies and missed opportunities for energy savings. Therefore, it is crucial in the claim language to emphasize that the present invention distinguishes itself from prior art by not requiring manual control or supporting outdated appliances.

Validation of Negative Disclosures : To validate the negative disclosures, the following tests may be conducted:

1. Negative disclosures delineate existing prior art: The claim should clearly outline how existing systems require manual control or support older appliances.
2. Negative disclosures are sufficiently detailed in the description: The patent description must provide detailed information about how the SHEMS operates without these features.
3. Negative disclosures contribute technically to the invention: The negative disclosures should demonstrate how avoiding these features enhances performance and efficiency.

Caution: Examiners are required to assess each claim on a case-by-case basis and should not solely depend on these guidelines. It is essential that every claim adheres to the provisions specified in the Act and Rules.

Section 10(4) & (5) of patent act

10 (4) Every complete specification shall—

- A. fully and particularly describe the invention and its operation or use and the method by which it is to be performed;
- B. disclose the best method of performing the invention which is known to the applicant and for which he is entitled to claim protection; and
- C. end with a claim or claims defining the scope of the invention for which protection is claimed;
- D. be accompanied by an abstract to provide technical information on the invention:

10(5) The claim or claims of a complete specification shall relate to a single invention, or to a group of inventions linked so as to form a single inventive concept, shall be clear and succinct and shall be fairly based on the matter disclosed in the specification.

Relative terms in Claims & their allowability

1. A claim that includes vague or equivocal forms of wording which leave the reader in doubt as to the **scope of a feature** should be objected to for lack of clarity.
1. The words “high”, “weak,” “strong,” “low,” “small,” “large,” “about”, “substantially”, “intelligent”, “smart”, “thin”, “near” etc. are generally considered **indefinite** in claim language.



Relative terms in Claims & their allowability - example

1. High:
Claim: A computer system for processing data, comprising a **high**-speed processor configured to execute instructions at a frequency greater than 3 GHz.
claim: “An insulator having a **high** value of resistance.....”, High is the relative term that makes the claim indefinite. **How high? High compared to what?** It is indefinite because there is no reference point. **One can define specific ranges and numerical values or elements can be compared against one another.** For example: “... wherein the insulator has a resistance value associated therewith which is higher than a resistance value associated with said light emitting element.”
 1. Weak: Claim: A wireless communication device that uses a **weak signal strength** to maintain connectivity in low-signal areas.
 2. Strong: Claim: A cryptographic method for securing data, utilizing a **strong** encryption algorithm that provides at least 256-bit key strength.
 3. Low: Claim: An energy-efficient lighting system that operates at a **low** power consumption level of less than 10 watts.
 4. Small: Claim: A portable electronic device with a **small** form factor that measures no more than 5 inches in height and 3 inches in width.
 5. Large: Claim: A data storage system capable of handling **large** datasets exceeding 1 terabyte in size.

Relative terms in Claims & their allowability

1. About: Claim: A method for synthesizing a chemical compound, wherein the compound is produced in an amount of **about 50 grams**.
 2. Substantially: Claim: A method for improving network performance, wherein the latency is reduced to substantially less than 100 milliseconds.
 3. Intelligent: Claim: An intelligent personal assistant application that adapts its responses based on user behavior and preferences.
 4. Smart: Claim: A smart thermostat that automatically adjusts temperature settings based on occupancy patterns detected through motion sensors.
 5. Thin: Claim: A flexible display device featuring a **thin layer** of organic light-emitting diodes (OLED) less than 1 mm in thickness. *Further, the expression "a thin layer" in a claim does not limit the feature "layer" against the prior art: a layer is "thin" only when compared to another one, but it does not define an objective and measurable thickness (if "ess than 1 mm in thickness" is removed). So a layer three millimetres thick is thin when compared to a layer five millimetres thick, but thick when compared to a layer one millimetre thick.*
1. Near: Claim: A navigation system that provides directions to locations within a near proximity of 500 meters from the user's current position.

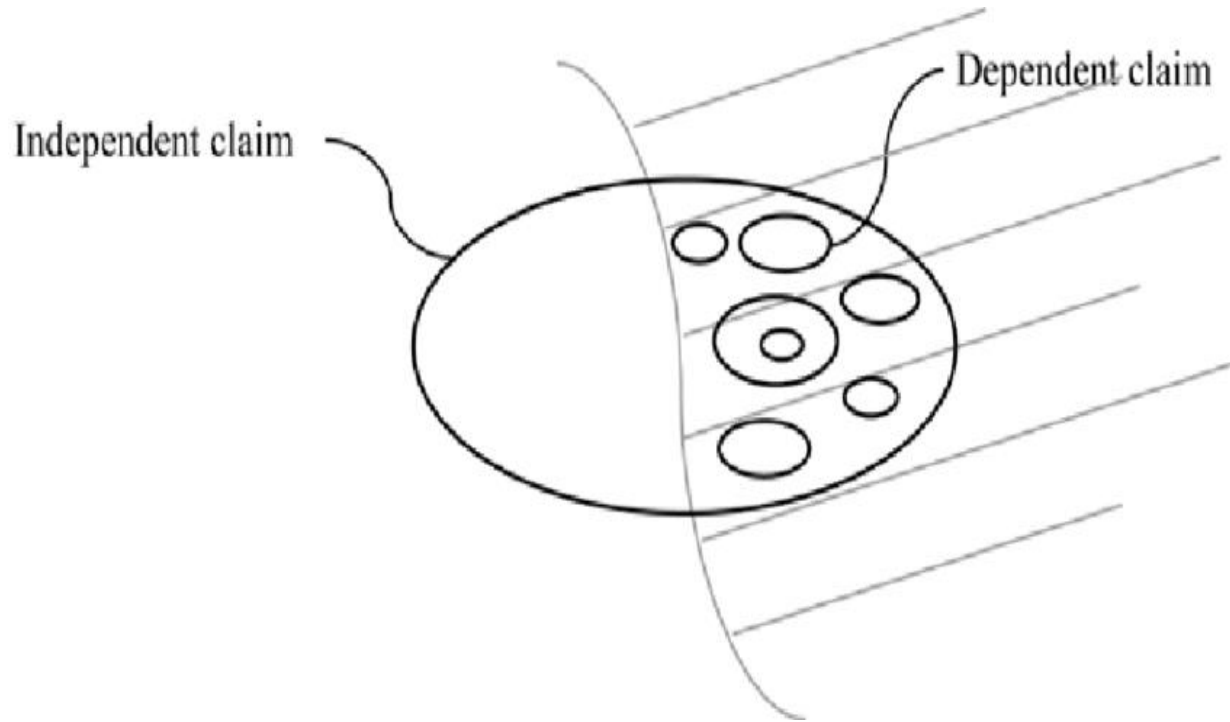
As another example of thin, when considering "an element mounted near the end of a truck", is this element mounted 1 mm from the end of the truck, 10 cm or 2 m? The only limitation of such an expression is that the element must be nearer to the end of the truck than to its middle, i.e. the element can be mounted anywhere in the quarter of the truck next to the end.

Categories of claims typically seen in Indian patent applications

Different types of claims are used to describe various aspects of the invention, and these claims can be categorized into several types based on their structure and focus. Below are the main categories of claims typically seen in patent applications

1. Based on their structure
2. Based on the scope and specificity of product claims
3. Based on their focus element and preamble they may be divided into the following (Specific Claim Types)

Categories of claims - Based on their structure



Categories of claims - independent claim

1. Independent Claims

Definition: Independent claims stand on their own and define the core elements of the invention. They are written broadly and do not depend on other claims for their meaning or validity. Independent claims are the primary claims in a patent and encompass the main features of the invention that distinguish it from prior art.

Purpose: To outline the broadest possible protection for the invention.

Structure: Independent claims typically begin with a **preamble** that introduces the subject matter (e.g., "A method for...", "An apparatus ,comprising..."), followed by the technical details of the invention.

Categories of claims - independent claim

1. "An apparatus ,comprising: a motor, a sensor, and a controller for monitoring speed."
1. "A fabric cleaning composition ,comprising: an enzyme, a stabilizer, and a pH buffer and fragrance."
1. "A system ,comprising: a processor, a memory, and an input device."
1. "A method for optimizing data processing in a distributed computing environment, comprising:
receiving a data request from a user;
analyzing the request to determine processing requirements; allocating computational resources across multiple nodes based on the analyzed requirements; and executing the data processing task using the allocated resources to return results to the user."

Categories of claims - dependent claim

Dependent Claims

Definition: Dependent claims refer to a previous claim (usually an independent claim) and further narrow or refine the scope of the invention by adding more specific details or features.

Purpose: To describe specific embodiments, variations, or alternatives to the invention presented in the independent claim. Dependent claims allow for broader protection (not broadest as offered by independent claim) by offering additional details while still relying on the independent claim.

Structure: Dependent claims begin by referring to the preceding claim and then adding a limitation or further description.



Categories of claims - dependent claim

1. “A method for optimizing data processing in a distributed computing environment, comprising:
receiving a data request from a user;
analyzing the request to determine processing requirements;
allocating computational resources across multiple nodes based on the analyzed requirements;and
executing the data processing task using the allocated resources to return results to the user.”
 1. The method of Claim 1, *further comprising*:
monitoring the performance of the allocated resources during execution of the data processing task;
and dynamically re-allocating computational resources in response to performance metrics exceeding a predefined threshold.
 1. The method of Claim 1, *wherein* the step of analyzing the request includes: evaluating historical data associated with similar requests to predict resource requirements and optimize allocation.

Categories of claims - dependent claim

Explanation

1. Claim 8: This dependent claim adds a feature that enhances the original method by incorporating resource monitoring and dynamic reallocation based on performance metrics. This introduces an additional layer of sophistication and adaptability to the method.
1. Claim 9: This dependent claim focuses on the analysis step, specifying that historical data is used to inform resource allocation decisions. This not only adds specificity but also highlights an innovative aspect of predictive analysis in optimizing data processing tasks. These dependent claims provide further detail and refinement to the independent claim, enhancing its scope while maintaining clarity and defensibility.

Rationale behind Dependencies

- **Narrowing Scope:** Defines specific aspects of the invention, covering modifications or variations.
- **Multiple Layers of Protection:** Provides fallback positions if the independent claim is invalidated.
- **Strengthening Patentability:** Helps overcome novelty or inventive step rejections.
- **Enhancing Claim Strategy:** Ensures flexibility in prosecution and increases chances of protection.

Categories of claims - Multiple Dependent claim

Definition:

- Multiple dependent claims refer to claims that depend on more than one previous claim. This allows a claim to incorporate the features of two or more earlier claims in a single dependent claim.
- Independent claims offer broad protection and define the core invention, while dependent claims narrow the scope by adding additional features or variations. Multiple dependent claims provide a flexible way to cover various alternatives in a single claim.

Categories of claims - Multiple Dependent claim

EXAMPLE

Claim 1 (An independent claim)

A chair comprising:

a base plate,

a plurality of legs that are spaced apart from each other and attached to the base plate below, and

a back plate attached to the base plate above.

Claim 2 (A dependent claim)

The chair as claimed in claim 1 further comprising a cushion attached to the back plate.

Claim 3 (A dependent claim and A multiple dependent claim)

The chair as claimed in claim 1 or 2, wherein the back plate is made of wood.

Claim 4 (A dependent claim and A multiple dependent claim depending on Another multiple dependent claim)

The chair as claimed in any one of Claims 1 to 3, wherein the back plate is obliquely attached to the base plate. (not allowable here)

Claim 5 (A dependent claim)

The chair as claimed in claim 3, wherein an arm rest is attached to both sides of the base plate

Categories of claims - Multiple Dependent claim

No.	Types of allowed multiple dependent claims	Countries	Allowed claims from the "Patent Claims for a Chair" example	Calculation of official fees
1	Multiple dependent claims depending on other multiple dependent claims	Australia, Canada, Europe, Japan, New Zealand	Claims 1 to 5 (All the claims)	5 claims (1+1+1+1+1)
	(Unlimited multiple dependent claims can be claimed)			
2	Multiple dependent claims depending on other multiple dependent claims are not allowed, but <u>multiple dependent claims depending on an independent claim or a single dependent claim are allowed</u> (Unlimited claiming of multiple dependent claims)	China, Philippines, South Korea, Taiwan	Only Claims 1, 2, 3, and 5 (Claim 4 is not allowed)	5 claims (1+1+1+1+1) The non-allowable Claim 4 could be amended into a multiple dependent claim that does not depend on another multiple dependent claim.
		United States		7 claims (1+1+2+1+2) There is an additional fee for the multiple dependent Claims 3 and 5. Claim 4 is deemed unpatentable for being an improper multiple dependent claim

Categories of claims - Multiple Dependent claim

Characteristics:

- i. A “multiple dependent claim” is a dependent claim which references more than one other claim. For example: “3. The chair as claimed in claims 1 or 2, further comprising ...”.
- i. Multiple dependent claims are common in patent applications where there are multiple variations of a basic concept and the inventor wants to define different embodiments or alternative configurations.
- i. Any dependent claim that refers to more than one claim, i.e., a multiple dependent claim, shall refer to such other claims in the alternative only. This is because, for any given embodiment, a multiple dependent claim does not contain all the limitations of all the alternative claims to which it refers, but rather contains only those limitations of the particular claim referred to for the embodiment under consideration. A multiple dependent claim must therefore be considered in the same manner as a plurality of single dependent claims.
- i. The general practice is: If the dependent claim is drafted as a single dependent claim on a multiple dependent claim, the dependent claim may be acceptable. *However, if the dependent claim is drafted as a multiple dependent claim, i.e. a multiple dependent claim on another multiple dependent claim, it would not be acceptable.* Therefore, A multiple dependent claim refers to two or more claims and incorporates their features. However, it cannot be claimed in the most general way possible (i.e., it cannot depend on multiple independent claims in an unrestricted manner).
- i. It can be argued that since a multiple dependent claim does not contain all the limitations of all the alternative claims to which it refers, the said claim cannot serve as the basis for another multiple dependent claim without causing undue confusion in determining how many prior claims are actually referred to.

Categories of claims - Multiple Dependent claim

Rationale Behind Multiple Dependencies

- Flexibility in Coverage: Protects multiple variations of an invention efficiently (ensure broader protection without the need for a large number of individual dependent claims).
- Addressing Alternatives: Covers different materials, configurations, or features without excessive claims.
- Minimizing Rejection Risk: Increases the likelihood of securing at least one granted claim (If one variation is found to lack novelty or inventive step, another, dependent claim may still be patentable).
- Simplifying Claim Structure: Reduces redundancy and streamlines the application.
- Conclusion: Strategic use of multiple dependent claims strengthens patent protection and aids prosecution.

Based on the scope and specificity of product claims

Broad product claims may define the product in general terms, providing extensive protection.

- Example, a claim may cover an entire class of compounds or formulations. Eg: "A pharmaceutical composition comprising a compound of the formula $R-COOH$, where R is selected from an alkyl, aryl, or heterocyclic group.

This claim covers a wide range of compounds, as "R" can represent many different groups.

Narrow product claims may specify particular components, features, or characteristics, focusing on a particular embodiment of the invention.

- Example: "A pharmaceutical composition comprising acetylsalicylic acid (aspirin) and a pharmaceutically acceptable carrier." This claim is specific to a single compound (acetylsalicylic acid) and its use in a composition.

Based on the scope and specificity of product claims - example

- A computer system for processing and analyzing data, comprising:
a processor configured to execute instructions;
a memory coupled to the processor for storing data and instructions;
a software module for data analysis, wherein the module is capable of performing various data transformation and classification techniques, the data being in any digital format..
- A computer system for processing and analyzing data, comprising:
a processor configured to execute instructions;
a memory coupled to the processor for storing data and instructions;
a software module that performs sentiment analysis on textual data using a neural network-based model to classify sentiment as positive, negative, or neutral.

Based on the scope and specificity of product claims - example

- A computer system for processing and analyzing data, comprising:
a processor configured to execute instructions;
a memory coupled to the processor for storing data and instructions;
a software module for data analysis, wherein the module is capable of performing various data transformation and classification techniques, the data being in any digital format. (broad)

This broad claim covers a wide range of data analysis systems, as it does not specify the exact method of data analysis, the type of data, or any particular software used. It broadly covers "various data transformation and classification techniques" and allows for many different types of systems or data to be included.

- A computer system for processing and analyzing data, comprising:
a processor configured to execute instructions;
a memory coupled to the processor for storing data and instructions;
a software module that performs sentiment analysis on textual data using a neural network-based model to classify sentiment as positive, negative, or neutral. (narrow and precise)

This narrow claim is specific to sentiment analysis using a neural network-based model for classifying textual data into distinct sentiment categories. It's more specific than Claim 1, focusing on a particular use case and a specific method of analysis (neural networks for sentiment classification).

Based on their focus element and preamble they may be divided into the following (Specific Claim Types)

Types of Claims

- **Product Claims:** Cover physical entities such as substances, compositions, objects, devices, machines, or systems.
- **Activity Claims:** Cover methods, processes, or uses.

Claims with different wording (e.g., "system" vs. "apparatus") may still fall under the same category and have similar scope.

Specific Claim Types

(A) Product Claims

Product claims are concerned with the product itself—whether it is a chemical compound, a pharmaceutical formulation, a device, or another tangible object. This makes product claims particularly important in industries like pharmaceuticals, biotechnology, electronics, and manufacturing, where the creation of new products or compositions is often the main focus of innovation.

Purpose: To protect the specific structure or composition of the product being invented.

Structure: Product claims often start with phrases such as "A composition comprising..." or "A product made by the process of..."

Specific Claim Types

A).1 Product Claims- Compound claims

Example

Chemical Compound :

"A novel compound, X-1234, represented by the molecular formula $C_{20}H_{30}N_2O_5$, comprising a benzene ring, an alkyl chain, and a hydroxyl group, wherein said compound has anti-inflammatory properties."

Polymer :

"A polymer composition comprising a blend of polyethylene glycol (PEG) and polyvinyl alcohol (PVA), wherein the composition has a molecular weight of 50,000 Da to 100,000 Da, and is suitable for use in drug delivery systems for sustained release of pharmaceutical compound X."

Specific Claim Types

A).2 Product Claims- Composition Claims

Definition: Protect specific combinations of materials or substances.

Purpose: Safeguard unique formulations in chemicals, pharmaceuticals, or food.

Structure: Typically starts with "A composition comprising..."

Example: "A composition comprising a mixture of aspirin and vitamin C."

a) Chemical composition

"A chemical composition for a perfume, comprising:10-20% by weight of an essential oil selected from lavender oil, rose oil, or jasmine oil;5-15% by weight of an alcohol solvent;2-5% by weight of a fixative selected from musk or benzoin resin; and 60-80% by weight of distilled water."

b) Pharmaceutical Composition:

"A pharmaceutical composition comprising an analgesic agent and a pharmaceutically acceptable carrier."

Specific Claim Types

(B). Process / Method of preparation Claims

Definition: Method claims describe a process or series of steps used to achieve a particular result. These claims focus on how something is done rather than what it is.

Purpose: To protect the specific steps or procedures of the invention, rather than the structure or components of an apparatus or system.

Structure: Method claims typically begin with a phrase like "A method for..." followed by a series of actions or steps that define how the invention is carried out.

Example: "A method of preparing compound X, comprising the steps of:

Reacting precursor Y with reagent Z in the presence of a solvent A at a temperature of 50°C to 70°C for 4 to 6 hours;

Isolating compound X by precipitation with solvent B;

Purifying the resulting product by column chromatography using solvent C as the eluent."

Product-by-Process Claims

B) Product-by-Process Claims

Definition: Product-by-process claims define the product by the method used to make it. They are used when the product itself is not easily definable in terms of its structure or composition but can be described through the process of its manufacture.

Purpose: To protect the product resulting from a specific process when the product's structure is difficult to describe.

Structure: These claims describe the product in terms of the process by which it is made

"A pharmaceutical composition for treating Parkinson's disease, comprising a compound X, wherein the compound X is produced by a process comprising the steps of:

1. Reacting a precursor Y with a catalyst Z under conditions of temperature between 100°C and 150°C for a duration of 2 hours,
2. Isolating the resulting product by filtration, and
3. Purifying the compound X by recrystallization from ethanol."

Specific Claim Types

(C) Apparatus/System/Device Claims

Apparatus claims:- Apparatus claims describe the physical structure or system of components that make up the invention. These claims focus on the device, machine, or apparatus as a whole, or the specific components that make it up.

Purpose: To protect the specific components or configurations of the invention, such as a device, machine, or system.

Structure: Apparatus claims usually begin with the phrase "An apparatus comprising..." or "A system for..."

Examples: "An apparatus comprising: a solar panel configured to capture sunlight, a rechargeable battery electrically connected to the solar panel for storing energy, and an LED light operably connected to the battery for illumination."

"An apparatus for brewing beverages, comprising: a heating chamber for boiling water, a filter holder configured to hold a coffee or tea filter, and a dispensing nozzle for delivering the brewed beverage into a cup."

Specific Claim Types

(C) Apparatus/Machine/System/Device Claims

Mechanical device: A device for monitoring air quality, comprising: a housing containing a particulate sensor configured to measure the concentration of airborne particles;

a gas sensor configured to detect levels of carbon dioxide and volatile organic compounds;

a wireless communication module for transmitting data to a remote server; and

a display screen configured to provide real-time air quality readings to the user.

Specific Claim Types

(C) Apparatus/Machine/System/Device Claims

Medical device: A stent comprising :a biocompatible material selected from stainless steel, nitinol, or a biodegradable polymer a cylindrical mesh structure configured to expand upon deployment within a blood vessel; and a surface coating comprising an anti-thrombogenic agent, such as heparin, to reduce the risk of clot formation."

Specific Claim Types

(C) Apparatus/Machine/System/Device Claims

Electronic Device: "A mobile phone, comprising: a touch-sensitive screen, a processor, and a battery - - - -"

Specific Claim Types

(C) Apparatus/Machine/System/Device Claims

System Claims:- A **system claim** refers to the combination of multiple components or elements that function together as a system. These claims focus on protecting the arrangement of components (such as hardware or software) that work together to achieve a specific function or process.

Purpose: To protect inventions that involve a set of interconnected devices, tools, or processes working together, whether it's an electronic system, mechanical system, or a hybrid of both.

Structure: System claims typically begin with a phrase like “**A system ,comprising: ...**” and detail the interconnected components, their roles, and how they interact to carry out the desired function or task.

Examples: "A system ,comprising: a sensor for detecting patient vital signs, a processor for analyzing the data, and a display unit for showing the analysis results."

"An automated irrigation system, comprising: a water reservoir, a sensor network, and a control unit that adjusts water flow based on environmental conditions."

Specific Claim Types

(D) Means plus Function Claims

Definition: Means-plus-function claims describe a means or step by its function/characteristics without specifying structure or material.

Interpreted to include any structure/material capable of performing the defined function unless further specified.

Clarity: Claims must be clear and unambiguous to avoid indefiniteness.

Sufficiency: Disclosure must provide enough detail for a skilled practitioner to replicate the invention.

Conclusion: Effective means-plus-function claims necessitate careful drafting and clear disclosures to ensure validity and enforceability.

Example: A system for processing and classifying images, comprising:

- **means for receiving** an input image;
- **means for extracting** features from the input image;
- **means for analyzing** the extracted features to identify patterns; and
- **means for classifying** the image based on the identified patterns.

The claims in means plus function form shall not be allowed if the structural features of those means are not disclosed in the specification.

Specific Claim Types

Exemplary context of AI:

For application related to AI, the terms “algorithm”, “model”, “engine”, “module” are used in similar way as means. These terms are non-structural terms having no specific structural meaning.

Specification shall have sufficient structural support for functional claims, particularly when using terms like "algorithm", “model”, “engine”, “module” in AI patents. Merely stating functional language or generic algorithmic terms is not enough;

It must be paired with thorough explanations or specific algorithmic structures in the specification. When crafting AI-related claims, it’s crucial to outline the foundational structures, such as particular algorithms/models/engines/modules or processing steps, to avoid objection related to “means plus function” and the risk of indefiniteness in the claims. Specific algorithms or specialized structures in the specification that perform the claimed functions shall be disclosed. The specification shall clearly links these functional terms to a detailed structure, such as an algorithm or specific hardware configuration. Ambiguous functional terms can lead to disputes regarding claim scope. Functional claims must be supported by adequate structural details in the specification. Vague, black-box descriptions should be avoided and the components or algorithms responsible for the claimed function shall be identified

Specific Claim Types

E). Software and Computer-Implemented Claims

Definition: These claims are specific to inventions in software, computer systems, and technology, particularly those involving algorithms, data processing methods, or software systems. These claims define the function or method of a software-based invention.

Purpose: To protect innovative software processes, systems, or methods that involve computer hardware or software applications.

Specific Claim Types

E). Software and Computer-Implemented Claims

i. Method/Process Claim:-

If the patent application relates to a “method”, the necessary sequence of steps shall clearly be described so as to distinguish the invention from the prior art with the help of the flowcharts and other information required to perform the invention together with their modes/means of implementation.

Example 1:-

A computer-implemented method for controlling enterprise email distribution list membership, said method comprising the steps of: monitoring - - - - and collecting continuously updated information - - - - ; ascertaining that - - - - ; and responsive to said ascertaining, controlling - - - - by automatically revoking membership - - - - , removing - - - - .

Specific Claim Types

E). Software and Computer-Implemented Claims

System Claim:- If the patent application relates to an apparatus, a system or a device i.e. hardware based inventions, each and every feature of the invention shall be described with suitable illustration drawings. Further, the working relationship of **different components together with connectivity shall be described.**

An information communication apparatus, comprising: **a communication unit** configured to connect to a network; **a detection unit** configured to detect an operation performed by a user in a real world; and **a social network processing** unit configured to perform a predetermined process on a social network service based on the detection results obtained from the detection unit via **the communication unit.**

Specific Claim Types

E). Software and Computer-Implemented Claims

Example:

An information communication system, comprising:

a non-contact tag placed near one of an object and an event in a real world, the non-contact tag being configured to store identifying information of one of the object and the event and social network identifying information; and

an information terminal configured to read information from the non-contact tag, and to perform, on a social network service, a process in which a user has one of interests and concerns regarding one of the object and the event, in response to an operation in which the user passes over the non-contact tag.

Specific Claim Types

F. Claims directed as “Computer Programme per se” :- Claims which are directed towards computer programs per se are excluded from patentability, like:-

- (i) Claims directed at computer programmes/ set of instructions/ Routines and/or Subroutines.
- (ii) Claims directed at “computer programme products” / “Storage Medium having instructions” / “Database” / “Computer Memory with instruction” stored in a computer readable medium.

Example 1:- A computer program that is described in a computer-readable form and causes a computer to function as: a communication unit configured to connect to a network; a detection unit configured to detect an operation performed by a user in a real world; and a social network processing unit configured to perform a predetermined process on a social network service based on the detection results obtained from the detection unit via the communication unit.

Example 2:- A non-transitory computer-readable medium having instructions stored thereon that, in response to execution by a processor of a computing device, cause the computing device to: (method steps).

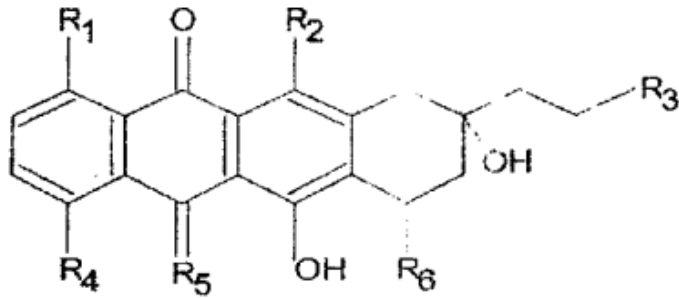
Example 3:- A computer program product comprising computer-executable instructions that are stored on a non-transitory computer-readable medium and that, when executed by a processor, cause an apparatus to: (methods steps)

Markush Claims: These claims usually give alternate manifestations of a single invention. They specify a group wherein element from the group have similar characteristics. For Example:

- It allows a single claim to protect multiple variants of a claimed invention.

An anticancer composition, comprising:

a) a 13-deoxy anthracycline of the following formula



Wherein; each R1, R2 and R3 individually is H or OH; R4 is H, OH, alkyl, or O-alkyl; R5 is O or NH; and R6 is a sugar moiety, pharmaceutically acceptable salts thereof; and

b) a taxane.

Markush Claims

EXAMPLE:

- *Claim 1. A cathode in a rechargeable electrochemical cell, said cell also comprising an anode and an electrolyte, the cathode comprising: a. An ordered olivine compound having the formula LiMPO_4 where M is a first-row transition-metal cation selected from the group consisting of Fe, Mn, Ni, and Ti.*
- *Claims 2. The cathode of claim 1, where: a. M is Fe.*
- The elements represent the various ingredients of the composition of matter disclosed in the invention. In the independent claim, note the phrase: “where M is ... selected from the group consisting of ...” This phrase is known as a “Markush claim” and in this case identifies a group of alternatively useable ingredients (in this case Fe, Mn, or Ti) in the LiMPO_4 compound.
- The Markush claim is named after Eugene A. Markush, the first inventor to successfully use this claim structure.
- **Markush groups are usually used to describe ingredients of chemical compounds. Markush groups must be written in closed form using the phrase “consisting of” and are limited to the ingredients listed.**
- The dependent claim 2 further restricts the ingredients for “M” listed in claim 1 (Fe, Mn, Ni, Ti) to just Fe. This is generally recognized as good claim drafting practice because at the time of the patent application, Fe was the preferred embodiment and if the other ingredients listed in claim were found non-workable, the whole claim could be disallowed for lack of usefulness.

Sequence Listing Claims: Normally seen in the field of Biotechnology

- A polypeptide comprising a human IGF-1 protein, wherein the amino acid glycine at position 42 of said IGF-1 protein is deleted or mutated to serine, and wherein the numbering of the amino acids of said human IGF-1 protein corresponds to SEQ ID NO.: 1
- A polypeptide comprising a human IGF-1 precursor protein, wherein the amino acid glycine at position 42 of said IGF-1 protein is deleted or mutated, and wherein the numbering of the amino acids corresponds to SEQ ID NO.: 5.

Kit Claims: For Example:

- A Kit for detecting the presence of *Mycobacterium tuberculosis* comprising:
 - (i) a sample collecting pellet;
 - (ii) four drug containing tubes having one of each drug in every tube,
 - Rifampicin
 - Isoniazid
 - Levofloxacin
 - Amikacin
 - (iii) four drug free tubes known as controls and one into Para-nitro-benzoic acid (PNB) tube;
 - (iv) a growth media composition for inoculating in all the tubes; and
 - (v) BOD incubator for incubating all the tubes at 370 C.
- It is a type of patent claim that relates to a combination of multiple components or elements sold together as a package or kit.
- Two or more discrete components in a kit that the end user assembles or uses together, either simultaneously or in sequence, for a specific purpose, or to achieve a specific result.

Omnibus Claims

- An Omnibus claim is an improper, overly broad claim. An omnibus claim is a claim which refers to the description and/or drawings as the subject matter of the claim without providing any specific limitations.

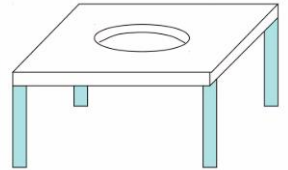
Example : (Omnibus Claim)

An apparatus as substantially shown and described in the accompanying drawings and specification

■ Omnibus claim structure

- ✓ Claiming the invention according to the description or the drawings without stating explicitly any technical features of the product or process claimed.

“1. A table as shown in Figure 1.”



Application/Use claims and their allowability under The Indian Law

- Application/Use claims focus on the method or process of using/applying an invention. Applicants claim application/Use claims to demonstrate their inventions in case of infringement suits after the grant of protection.
- Application/Use claims that do not purport to claim a process, machine, manufacture, or composition of matter and fail to recite the steps to be followed fail to meet the requirements of Section 10 of the Patents Act and are not allowable.
- Generally, the Indian Law does not directly allow such claims as they are non-definitive. However, the same is looked on case to case basis with regard to field of invention.

1. The use of substance X as an insecticide ...

2. The use of a transistor in an amplifying circuit ...

Method of Treatment Claims

(M) Method of Treatment Claims

- **Definition:** Medical treatment claims describe methods or processes related to the treatment of a disease or condition. These claims typically include steps involving the administration of a particular drug, therapeutic agent, or medical intervention to a patient in order to treat a specific condition.
- **Purpose:** To protect new methods of medical treatment or therapeutic protocols, often involving pharmaceutical compositions, medical devices, or diagnostic techniques.
- **Structure:** Medical treatment claims usually begin with phrases such as “**A method for treating...**” or “**A method of administering...**” followed by the steps or actions taken to carry out the treatment. These claims might include steps involving the use of specific compounds, equipment, or medical interventions.

Examples:

- "A method for treating rheumatoid arthritis, comprising administering a composition comprising an anti-inflammatory agent to the patient."
- "A method of treating cancer by administering a combination of chemotherapeutic agents and radiation therapy."
- Medical treatment claims are often subject to **ethical and regulatory considerations**. Furthermore, in some jurisdictions including India **methods of medical treatment** are excluded from patentability.

Requirement for claims as per The Indian Law

- **Scope of Claims**
 - Clarity and Scope: Each patent claim must clearly define the invention's scope.
 - Balance: Claims should not be too broad, as this may cover inventions that are already public or belong to others. Conversely, claims shouldn't be too narrow, or they may fail to protect the invention from infringement.
 - Multiple Claims: Having several claims with different scopes allows the inventor to protect various aspects of the invention.
 - Avoid Confusion: Claims should be specific and avoid vague terms to ensure clarity regarding what is being protected.

Requirement for claims as per The Indian Law

Clarity and Succinctness based on matter disclosed in Specification

Technical Features: Claims must focus on technical aspects, not commercial advantages.

Clarity Requirement: Claims must be clear individually and as a whole for assessing novelty, inventive step, and industrial applicability.

Scope Definition: A claim should define the invention's boundaries with reasonable certainty for a skilled person.

Independent Claims: Must specify all essential features unless implied by generic terms (e.g., "bicycle" need not mention wheels).

Process & Product Claims: Process claims must reliably produce the stated product, and product claims must clearly define modifications.

Support by Description: Claims must have a basis in the description and must not exceed what is justified by the disclosure.

Sufficiency of Disclosure: The invention must be described clearly enough for a skilled person to carry it out without undue experimentation.

Requirement for claims as per The Indian Law

Clarity of Other Terms

Trade Marks should not be used in Patent Applications where a generic term can be used instead, since a Trademark is an indication of the origin rather than the composition or content of goods, However, Trade Marks are only permitted in claims where it can be shown that their use is unavoidable and does not introduce ambiguity.

Requirement for claims as per The Indian Law

Conciseness, Number of Claim

- i. There may be more than one independent claim in a single application if the claims fall under a single inventive concept. While there is no restriction as to the number of claims, including independent claims, it is advisable to limit the number of claims, as well as the number of independent claims in a single application so that the claims are falling under a single inventive concept.

- i. The requirement that the claims should be concise refers to the claims in their entirety as well as to the individual claims. For example, undue repetition of words or an undue multiplicity of claims of a trivial nature could be considered as not complying with this requirement.

Two-Part Form Claims

A two-part form claim is a specific way of structuring a claim in a patent application, particularly common in European patent practice.

Structure of a Two-Part Form Claim A two-part form claim is divided into two distinct parts:

Preamble: This part identifies the subject matter of the invention and states the features that are already known in the prior art. It essentially sets the stage by describing the existing technology or device that the invention builds upon.

Characterizing Portion: This part begins with a phrase like "characterized in that" or "characterized by" and then specifies the novel features that the invention introduces. It highlights the improvements or modifications that make the invention unique and patentable.

Two-Part Form Claims

Purpose : The main purpose of using a two-part form claim is to clearly define the scope of the invention and distinguish it from the prior art. By explicitly stating the known features in the preamble, the claim emphasizes the novelty of the characterizing portion. This helps examiners and the public understand what exactly is being protected by the patent.

Clarity: They clearly separate the known from the novel, making it easier to understand the invention contribution.

Distinctiveness: They emphasize the unique features of the invention, strengthening the patent protection.

Examination: They facilitate the patent examination process by clearly defining the scope of the invention

Two-Part Form Claims

Example A method of a network node, comprising:

configuring a User Equipment, in the following also referred to as UE, with a first Data Radio Bearer, in the following also referred to as DRB, wherein the first DRB is configured with a presence of Service Data Adaptation Protocol, in the following also referred to as SDAP, header,

characterised in that the network node is not allowed to reconfigure the first DRB for changing the presence of SDAP header to an absence of SDAP header after the first DRB is established (805).

Thank you!

Do you have any questions?

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