

Non patentability Inventions under the Patent Act, 1970 – An analysis

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Abstract- Under the Patent Act, 1970 a patent is granted for any invention for a period of 20 years from the date of grant of patent – Whether all invention are patentable? Or is there any restriction on granting patent to an invention – In this article, the authors are going to analysis the invention that are not patentable under the Patent Act, 1970.

Index Terms- Invention – Non patentability – Patent Act, 1970.

I. INTRODUCTION

Patent is an exclusive rights granted for an inventor, by the Government or by the registrar of patents, for his/her invention which is new, useful and non obviousness. Initially, the patent was granted for a period of fourteen years. Now, the period of fourteen years has been enhanced to twenty years. In *Biswanath Prasad Radhey Shyam Vs Hindustan Metal Industries*¹, the Supreme Court of India held that “the object of Patent Law is to encourage scientific research, new technology and industrial progress. Grant of exclusive privilege to own, use or sell the method or the product patented for a limited period, stimulates new inventions of commercial utility. The price of the grant of the monopoly is the disclosure of the invention at the Patent Office, which after the expiry of the fixed period of the monopoly, passes into the public domain”.

The fundamental principle of Patent Law is that a patent is granted only for an invention which is new and useful. That is to say, it must have novelty and utility. It is essential for the validity of a patent that it must be the inventor's own discovery as opposed to mere verification of what was, already known before the date of the patent. In this article the author, is going to analyse the inventions that are not patentable under the Patent Act, 1970.

Meaning of Patent:

According to Section 2 (1)(m) of the Patent Act, 1970 "patent" means “a patent for any invention granted under this Act”. From this section, it is clear that a patent can be granted to any invention. Then the question arose what is meant by invention. "Invention" means a new product or process involving an inventive step and capable of industrial application²; from this definition it is categorically clear that to constitute an invention the invention must be a product or a process. But one condition is that the product or the process, as the case may be, must be subjected to two conditions. i.e., (i) it should have inventive step

and (ii) capable of industrial application. If the above two conditions are fulfilled then, the product or the process, as the case may be, qualifies to be an invention. Under this section, even if a product is substantially improved by an inventive step, it would be termed to be an invention.

Meaning of “Inventive Step” and “capable of industrial application”:

Section 2 (1) (ja) of the Patent Act, 1970 defines the meaning of the term "inventive step". According to this section, "inventive step" means a feature of an invention that involves technical advance as compared to the existing knowledge or having economic significance or both and that makes the invention not obvious to a person skilled in the art. Sec. 2 (1)(ac) says that "capable of industrial application", in relation to an invention, means that the invention is capable of being made or used in an industry.

Section 2 (1) (i) "new invention" means any invention or technology which has not been anticipated by publication in any document or used in the country or elsewhere in the world before the date of filing of patent application with complete specification, i.e., the subject matter has not fallen in public domain or that it does not form part of the state of the art.

“Patents” under the TRIPS Agreement:

Part two of Section 5 of the TRIPS Agreement under Article 27 deals with the patentable subject matter. The opening part of Article 27 (1) says “Subject to the provisions of paragraphs 2 and 3, patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application”³.

Exclusion of Certain Invention from the Purview of Patentability under the TRIPS Agreement:

Under Article 27 (2) of the TRIPS Agreement, the discretionary powers have been given to the members' country to exclude certain inventions from the purview of patentability on the ground of morality or *ordre public*. It says Members may exclude from patentability inventions, the prevention within their territory of the commercial exploitation of which is necessary to protect *ordre public* or morality, including to protect human, animal or plant life or health or to avoid serious prejudice to the

¹ AIR 1982 SC 1444 .

² Section 2 (1)(j) of the Patent Act, 1970.

³ For the purposes of this Article, the terms "inventive step" and "capable of industrial application" may be deemed by a Member to be synonymous with the terms "non-obvious" and "useful" respectively.

environment, provided that such exclusion is not made merely because the exploitation is prohibited by their law.

Members may also exclude from patentability⁴:

(a) Diagnostic, therapeutic and surgical methods for the treatment of humans or animals;

(b) Plants and animals other than micro-organisms, and essentially biological processes for the production of plants or animals other than non-biological and microbiological processes. However, Members shall provide for the protection of plant varieties either by patents or by an effective sui generis system or by any combination thereof. The provisions of this subparagraph shall be reviewed four years after the date of entry into force of the WTO Agreement.

What are not Inventions under the Patent Act, 1970?

The Patent Act, 1970 vide Section 3 deals with what are not inventions. Since the following categories are not inventions within the meaning of this Act, they are not considered to be patentable.

(i) **“An invention which is frivolous or which claims anything obviously contrary to well established natural laws”⁵.**

Under this clause, the following two inventions are not patentable i.e., (i) an invention which is frivolous and (ii) an invention which is obviously contrary to well established natural laws.

As an example “a machine purporting to produce perpetual motion, a machine alleged to be giving output without any input and a machine allegedly giving 100% efficiency are considered as frivolous nature and contrary to natural laws”.

(ii) **An invention, the primary or intended use or commercial exploitation of which would be contrary to public order or morality or which causes serious prejudice to human, animal or plant life or health or to the environment-Section 3(b)⁶.**

Under this clause, an invention (i) the primary or intended use or commercial exploitation of which would be contrary to public order (ii) An invention, the primary or intended use or commercial exploitation of which would be contrary morality (iii) an invention which causes serious prejudice to (a) human, (b) animal or (c) plant life or (d) health or (e) to the environment are not considered as invention and as such are not patentable.

An invention contrary to public order may be one the primary use of which would be a criminal act, punishable as a crime.

Examples:

⁴ Article 27(3) of the TRIPS Agreement.

⁵ Sec. 3(a).

⁶ This section is substituted by Patents (Amendment) Act, 2002 dated 25.06.2002 w.e.f 20.05.2003. Prior to its substitution it read as under : "(b) an invention the primary or intended use of which would be contrary to law or morality or injurious to public health"

a. Any device, apparatus or machine or method for committing theft/burglary.

b. Any machine or method for counterfeiting of currency notes.

c. Any device or method for gambling.

d. Bio war and bio terrorism

e. Inventions, the intended use or commercial exploitation of which is found to be injurious to public, animal or plant life or health, such as, a method of adulteration of food.

f. An invention, the primary or intended use of which is likely to violate the well accepted and settled social, cultural, legal norms of morality, e.g. invention relating to cloning of humans, processes for modifying the germ line and genetic identity of human beings, etc.

However, if the primary or intended purpose or commercial exploitation of a claimed invention is not causing serious prejudice to human, animal or plant life or health or to the environment, such subject matter may be considered to be an invention and may be patentable. **For instance:** pesticide.

Section 3 (c) says that the **“mere discovery of a scientific principle or the formulation of an abstract theory or discovery of any living thing or non-living substance occurring in nature is not an invention”⁷.**

Under this clause, a claim for discovery of scientific principle is not considered to be an invention, but such a principle when used with a process of manufacture resulting in a substance or an article may be considered to be an invention. New mineral discovered in the earth or a new plant found in the wild is not patentable subject matter. Likewise, Einstein could not patent his celebrated law that $E=mc^2$; nor could Newton have patented the law of gravity. Such discoveries are manifestations of . . . nature, free to all men and reserved exclusively to none⁸”.

A scientific theory is a statement about the natural world. These theories themselves are not considered to be inventions, since they do not result in a product or process. However, if the theory leads to practical application in the process of manufacture of an article or substance, it may well be patentable.

A claim for formulation of abstract theory is not considered to be an invention. Similarly, finding of a new substance or micro-organism occurring freely in nature is a discovery and not an invention. In *Bilski V. Kappos*, Justice Kennedy of the U.S Supreme Court said that “Method of hedging risk in commodities trading is an abstract idea and thus not patentable subject matter under § 101”. In this case Petitioners’ patent application seeks protection for a claimed invention that explains how commodities buyers and sellers in the energy market can protect, or hedge, against the risk of price changes. The concept of hedging is an unpatentable abstract idea, just like the algorithms – See: Benson and Flook. “An idea by itself is not patentable.” *Rubber-Tip Pencil Co. v. Howard*, 20 Wall. 498, 87 U. S. 507 (1874).

Whether a naturally occurring segment of deoxyribonucleic acid (DNA) is patent eligible under 35 U. S. C. §101 by virtue of its isolation from the rest of the human genome? While

⁷ Inserted by Patents (Amdt.) Act, 2002 dated 25.06.2002 w.e.f 20.05.2003.

⁸ See: *Le Roy v. Tatham*, 14 How. 156, 55 U. S. 175 (1853).

answering to the question, the U.S Supreme Court held that “a naturally occurring DNA segment is a product of nature and not patent eligible merely because it has been isolated, but that cDNA [synthetically created DNA known as complementary DNA (cDNA)] is patent eligible because it is not naturally occurring⁹.”

According to Section 3(d)¹⁰, **“The mere discovery of a new form of a known substance which does not result in the enhancement of the known efficacy of that substance or the mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant is not an invention”.**

The Parliament has consciously enacted the standard of non obviousness as a condition for patentability. Under this clause, the test of non obviousness of an invention and discovery of existence of significant enhancement in the known efficacy of a substance were pre requisites of patentability. Efficacy means “the ability to produce a desired or intended result¹¹”. The Madras High Court in *Novartis AG Vs Union of India*¹², while interpreting Section 3(d) observed as follows:

“If a discovery is made from a known substance, a duty is cast upon the patent applicant to show that the discovery had resulted in the enhancement of the known efficacy of that substance and in deciding whether to grant a patent or not. On such new discovery, the explanation creates a deeming fiction that all derivatives of a known substance would be deemed to be the same unless it differs significantly in properties with regard to the efficacy¹³”.

Section 3(d) provides an explanatory clause to make it more clear which reads as follows:

“Explanation:- For the purposes of this clause, salts, esters, ethers, polymorphs, metabolites, pure form, particle size, isomers, mixtures of isomers, complexes, combinations and other derivatives of known substance shall be considered to be the same substance, unless they differ significantly in properties with regard to efficacy”.

In *Glochem Industries Ltd vs Cadila Healthcare Ltd*¹⁴, the Bombay High Court held that “Section 3 (d) was a comprehensive provision covering all fields of technology including the field of pharmacology. The amended section not only covers the field of pharmacology but also other fields. Further in this case the court held that “the test to decide whether the discovery is an invention or not? The Patent applicant should

⁹ Association For Molecular Pathology V. Myriad Genetics, Inc. Decided June 13, 2013.

¹⁰ Section 3 (d) was Substituted by Patents amendment Act (15 of 2005) for the words "the mere discovery of any new property or new use for a known substance or of the mere use of a known process, machine or apparatus unless such known process results in a new product or employs at least one new reactant".

¹¹ *Novartis Ag v. Union of India*, (2013) 6 SCC 1.

¹² (2007) 4 MLJ 1153.

¹³ See also: *Glochem Industries Ltd vs Cadila Healthcare Ltd* available at <https://indiankanoon.org/doc/499132/>

¹⁴ Available at <https://indiankanoon.org/doc/499132/>

show the discovery has resulted in enhancement of known therapeutic efficacy of that substance and if the discovery is nothing other than the derivative of a known substance, then, it must be shown that the properties in derivatives differ significantly with regard to efficacy. So under this clause the very discovery of a new form of a known substance which does not result in the enhancement of the known efficacy of that substance will not be treated as an invention.

In *Ten Xc Wireless Inc & Anr vs Mobi Antenna Technologies*, the Delhi High Court held that “a method of replacing conventional antennae with split-sector antennae; and (ii) a split- sector asymmetric antenna for replacing conventional antennae - are all mere uses for the asymmetric antenna already known. Under Section 3(d) the subject matter claimed is therefore not an invention.

In *Novartis Ag v. Union of India*¹⁵, the Supreme Court of India held that “mere discovery of an existing drug would not amount to invention”. The Supreme Court of India further in this case held that “under Indian Patent Act for grant of pharmaceutical patents apart from proving the traditional tests of novelty, inventive step and application, there is a new test of enhanced therapeutic efficacy for claims that cover incremental changes to existing drugs which also Novartis’s drug did not qualify”.

Further, **a substance obtained by a mere admixture resulting only in the aggregation of the properties of the components thereof or a process for producing such substance is also not an invention**¹⁶. But an admixture resulting in synergistic properties is not considered as mere admixture.

Example:

A soap, detergent, lubricant and polymer composition etc, and hence may be considered to be patentable. In general, all the substances which are produced by mere admixing, or a process of producing such substances should satisfy the requirement of synergistic effect in order to be patentable. Synergistic effect should be clearly brought out in the description by way of comparison at the time of filing of the Application itself.

The subsequent submissions regarding synergism can be accepted in a reply to the office action as a further support of synergy. However, such submitted data may be incorporated in the Specification, subject to the provisions of Section 59.

Under Section 3 (f): **“The mere arrangement or re-arrangement or duplication of known devices each functioning independently of one another in a known way is not an invention”.**

- In order to be patentable, an improvement on something known before or a combination of different matters already known should be something more than a mere workshop improvement; and must independently satisfy the test of ‘invention’ or an ‘inventive step’.

To be patentable, the improvement or the combination must produce a new result, or a new article or a better or cheaper article than before. The Gujarat High Court in *Hind vs Shree*¹⁷ held that, as per the provisions of the Act, if Sections 2(j) & 2(ja) are read with Section 3(f), mere arrangement or

¹⁵ (2013) 6 SCC 1.

¹⁶ See Section 3 (e).

¹⁷ Date of Judgment: 21 August, 2007

rearrangement of known devices, each functioning independently of one another in a known way is not to be treated as an invention for grant of patent.

Mere collocation of more than one integers or things, not involving the exercise of any inventive faculty, does not qualify for the grant of a patent¹⁸. If the result produced by the combination is either a new article or a better or cheaper article than before, the combination may afford subject-matter of a patent¹⁹.

An invention claiming a mere juxtaposition of known devices in which each device functions independently is not considered patentable. Merely placing side-by-side old integers so that each performs its own function independently of the others is not a patentable combination. e.g., an umbrella with fan, bucket fitted with torch, clock and transistor in a single cabinet. These are not patentable, since they are nothing but mere arrangement and rearrangement of items without having any working interrelationship between them and are devices capable of functioning independently of each other.

Clause (g) of Section 3 omitted by Patents (Amdt.) Act, 2002 dated 25.06.2002 w.e.f 20.05.2003. Prior to omission it read as under:

"(g) a method or process of testing applicable during the process of manufacture for rendering the machine, apparatus or other equipment more efficient or for the improvement or restoration of the existing machine, apparatus or other equipment or for the improvement or control of manufacture;"

"A method of agriculture or horticulture is not an invention" vide Section 3 (h).

Examples: (a) A method of producing a plant, even if it involved a modification of the conditions under which natural phenomena would pursue their inevitable course (for instance a green house).

(b) A method of producing improved soil from the soil with nematodes by treating the soil with a preparation containing specified phosphorathioates.

(c) A method of producing mushrooms.

(d) A method for cultivation of algae.

Under Section 3 (i), **"Any process for the medicinal, surgical, curative, prophylactic, diagnostic, therapeutic or other treatment of human beings or any process for a similar treatment of animals to render them free of disease or to increase their economic value or that of their products is not an invention"**.

This provision excludes from patentability, the following:

- (a) Medicinal methods: As for example a process of administering medicines orally, or through injectables, or topically or through a dermal patch.
- (b) Surgical methods: As for example a stitch-free incision for cataract removal.
- (c) Curative methods: As for example a method of cleaning plaque from teeth.

(d) Prophylactic methods: As for example a method of vaccination.

(e) Diagnostic methods:

Diagnosis is the identification of the nature of a medical illness, usually by investigating its history and symptoms and by applying tests.

Determination of the general physical state of an individual (e.g. a fitness test) is considered to be diagnostic. In *Mayo Collaborative Services V. Prometheus Laboratories, Inc*²⁰, the US Supreme Court held that "diagnostic method patent is not patentable subject matter because it claims a law of nature".

(f) Therapeutic methods: The term "therapy" includes prevention as well as treatment or cure of disease. Therefore, the process relating to therapy may be considered as a method of treatment and as such not patentable.

According to Section 3 (j), **"Plants and animals in whole or any part thereof other than micro-organisms but including seeds, varieties and species and essentially biological processes for production or propagation of plants and animals are not inventions"**.

Under this clause, the following subject matters are excluded from the purview of patentability:

- (a) Plants in whole or in part
- (b) Animals in whole or in part
- (c) Seeds
- (d) Varieties and species of plants and animals
- (e) Essentially biological process (example) for production or propagation of plants and animals.
- (f) Microorganisms, other than the ones discovered from the nature, may be patentable.

For instance, genetically modified microorganisms may be patentable subject to other requirements of Patentability.

A new process of preparation of a vaccine under specific scientific conditions, the vaccine useful for protecting poultry against contagious bursitis infection was held to be patentable by the Court on the ratio that the statute does not make a manner of manufacture as un-patentable even if the end products contains a living organism²¹.

Section 3 (k) says **"A mathematical or business method or a computer programme per se or algorithms are not inventions and hence not patentable"**.

Under this clause, (i) mathematical methods, (ii) business methods, (iii) computer programmes *per se* and (iv) algorithms are not considered as patentable subject matter.

➤ 'Mathematical methods' are considered to be acts of mental skill. A method of calculation, formulation of equations, finding square roots, cube roots and all other methods directly involving mathematical methods are therefore not patentable.

➤ The term 'Business Methods' involves whole gamut of activities in a commercial or industrial enterprise relating to transaction of goods or services. With the development of technology, business activities have

¹⁸ Biswanath Prasad Radhey Shyam Vs. Hindustan Metal Industries(1979) 2 SCC, 511

¹⁹ Lallubhai Chakubhai Vs. Chimanlal and Co. (AIR 1936 Bom 99.

²⁰ Decided March 20, 2012.

²¹ Dimminaco – A.G. Vs. Controller of Patents & Designs and Others.

grown tremendously through e-commerce and related B2B and B2C business transactions.

- "Algorithm" is defined as a "procedure for solving a given type of mathematical problem," and such an algorithm, or mathematical formula, is like a law of nature, which cannot be the subject of a patent.

"While a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be²²." As such in *Diamond v. Diehr*²³, the U.S Supreme Court held that "Patent on process of curing rubber using a well-known mathematical equation and a computer is patentable subject matter under § 101.

Discovery of a novel and useful mathematical formula may not be patented²⁴. method for updating alarm limits during catalytic conversion processes, in which the only novel feature is a mathematical formula, held not patentable under § 101 of the Patent Act²⁵, Because, an algorithm, or mathematical formula, is like a law of nature.

- Under Section 3 (1), "**A literary, dramatic, musical or artistic work or any other aesthetic creation whatsoever including cinematographic works and television productions is not an invention**".

Example: Writings, music, works of fine arts, paintings, sculptures, computer programmes, electronic databases, books, pamphlets, lectures, addresses, sermons, dramatic-musical works, choreographic works, cinematographic works, drawings, architecture, engravings, lithography, photographic works, applied art, illustrations, maps, plans, sketches, three-dimensional works relating to geography, topography, translations, adaptations, arrangements of music, multimedia productions, etc. are not patentable. Such works fall within the domain of the Copyright Act, 1957.

According to Section 3(m), "**a mere scheme or rule or method of performing mental act or method of playing game is not an invention**".

Under this clause, A mere scheme or rule or method of performing mental act or method of playing game, are excluded from patentability, because they are considered as outcome of mere mental process.

For example:

- ✓ Method of playing chess.
- ✓ Method of teaching.
- ✓ Method of learning.

Section 3(n) says "**A presentation of information is not an invention**".

Any manner, means or method of expressing information whether visual, audible or tangible by words, codes, signals, symbols, diagrams or any other mode of representation is not patentable.

For example, a speech instruction in the form of printed text where horizontal underlining indicated stress and vertical

separating lines divided the works into rhythmic groups is not patentable. For instance, railway time table, 100 years calendar etc.

In a case, the Controller held that the Patent system was meant for protecting only one kind of creativity i.e. technological creativity and since the claimed invention relates to business method and method of presenting information, it is not allowed.

Under Section 3(o), "**Topography of integrated circuits is not an invention**".

Reason: Since protection of Layout Designs of Integrated Circuits is governed separately under the Semiconductor Integrated Circuit Lay-out Designs Act, 2000, three-dimensional configuration of the electronic circuits used in microchips and semiconductor chips is not patentable.

Further as per Section 3(p), "**An invention which in effect, is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components is not an invention**".

Traditional knowledge (TK) is knowledge, know-how, skills and practices that are developed, sustained and passed on from generation to generation within a community, often forming part of its cultural or spiritual identity.

Innovations based on TK may benefit from patent, trademark, and geographical indication protection, or be protected as a trade secret or confidential information. However, traditional knowledge as such is not protected by conventional intellectual property systems. Therefore, Traditional Knowledge, being knowledge already existing, is not patentable.

Example: Antiseptic properties of turmeric for wound healing, Pesticidal and insecticidal properties of neem.

Two American researchers of Indian origin, of the University of Mississippi Medical Center, put a claim to the US Patent and Trademark Office, maintaining that they had discovered haldi's healing properties. And, surprise, they were granted a patent in March 1995 for something you had known for years and our ayurveds for centuries. In a landmark decision, United States Patent and Trademark Office (US PTO) revoked this patent after ascertaining that there was no novelty, the innovation having been used in India for centuries.

This was the first time that a patent based on the traditional knowledge of a developing country was challenged successfully and US PTO revoked the patent.

The case of the revocation of the patent granted to W.R. Grace Company and US Department of Agriculture on Neem (EPO patent No. 436 257) by European Patent Office, again on the same grounds of its use having been known in India, is another example.

Apart from the above categories of invention, Section 4 of the Patents Act, 1970 also deals with invention that are not patentable: It says:- "**Inventions relating to atomic energy not patentable**".

Under this provision "No patent shall be granted in respect of an invention relating to atomic energy falling within sub-section (1) of Section 20 of the Atomic Energy Act, 1962".

²² *Mackay Radio & Telegraph Co. v. Radio Corp. of America*, 306 U. S. 86, 306 U. S. 94 (1939).

²³ 450 U.S. 175 (1981).

²⁴ *Gottschalk v. Benson*, 409 U. S. 63.

²⁵ *Parker v. Flook*, 437 U.S. 584 (1978).

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