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Patent Eligible Products and Processes: Legal Perspective and Reforms

by
—Prof. Ghayur Alam*

I. PROLOGUE

What does a patent protect? The simple answer to this question is that a patent protects an invention. Invention means a “new *product or process*¹ involving an inventive step and capable of industrial application.”² Invention, therefore, has four elements: (i) newness³, (ii) product or process, (iii) inventive step⁴, and (iv) capability of industrial application.⁵ The Patents Act, 1970 (hereinafter referred to as the Act) provides the meaning of all but one elements of invention. That one element left undefined is: product or process. This silence of the Act as to meaning of “product” or “process” seems to be problematic. This legislative silence has not been noticed either by the judiciary or by the academia. *Novartis AG v. Union of India*⁶ is a recent example of missed opportunity in this regard. In *Novartis* the Court observed as under:

Section 2(1)(j) requires a product to satisfy three conditions to qualify as an invention.



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- (i) It must be “new”,...;
- (ii) Its coming into being must involve an “inventive step”; and
- (iii) It must be “capable of industrial application.”⁷

Although the Court declared “invention” and “patentability” as two distinctly separate concepts,⁸ yet it did not ask: what is the meaning of “product” in the patent law sense, perhaps in the opinion of the Court the meaning of “product” was not problematic. Since *Novartis*⁹ did not involve patenting of process the silence of the Court seems to be apposite. But the silence as to meaning of “product” was not. The Court observed:

It is, therefore, fundamental that for grant of patent the subject must satisfy the twin tests of “invention” and “patentability.” Something may be an “invention” as the term is generally understood and yet it may not qualify as an “invention” for the purposes of the Act. Further, something may even qualify as an “invention” as defined under the Act and yet may be denied patent for other larger considerations as may be stipulated in the Act. Having, therefore, seen the meaning of “invention,” we may now advert to Section 3 as it stands after the amendment of the Act in 2005.

Section 3 is in Chapter II of the Act, which initially contained Sections 3, 4 and 5, but after the deletion of Section 5 with effect from January 1, 2005, Chapter II has only two Sections: Sections 3 and 4. The Chapter has the Heading “Inventions Not Patentable” and Section 3 has the marginal heading “What are not inventions.” As suggested by the Chapter heading and the marginal heading of Section 3, and as may be seen simply by going through Section 3, *it puts at one place provisions of two different kinds: one that declares that certain things shall not be deemed to be “inventions” [for instance clauses (d)]¹⁰ &*



(e)¹¹]; and the other that provides that, though resulting from invention, something may yet not be granted patent for other considerations¹² [for instance clause (b)¹³].¹⁴

The italic portion of the above cited observation makes it clear that the provisions of Section 3 are of two kinds: one that declares that certain things shall not be deemed to be “inventions”; and the other is that, though resulting from invention, something may yet not be granted patent for other considerations. The Court, however, did not go any further to identify the bases of classification of the provisions of Section 3. Nor did it identify and explain the “other considerations” of exclusion. This Paper, therefore, seeks to identify the bases of classification and the other considerations of exclusion from patent eligibility.

As a prelude to our discussion it is appropriate to note that in the United States of America (US), a typical patent litigation generally revolves around the issues of novelty, non-obviousness, utility and/or claim interpretation. Rarely the question of patentable subject matter comes before the Courts. The reason for such a litigation trend seems to be quite obvious, i.e., the Patent Act, 1952 of the United States America (hereinafter referred to as the ‘US Act’) does not have statutory provisions corresponding to the provisions of Sections 3 and 4 of the Patents Act, 1970 which are like “first gate keepers” who may or may not allow a product or process to enter the empire of patent. There are no such statutory gate keepers under the US Act. Further, the US Act identifies four patentable subject matters: process, machine, manufacture, and composition of matter.¹⁵ The US Act defines “process”¹⁶ but does not define “machine,” “manufacture,” and “composition of matter.”

The absence of definition of these terms, however, is not as problematic in the US as it is in India at least for the following four reasons. *First*, the US Act identifies four patentable subject matters: process, machine, manufacture, and composition of matter; whereas Indian Act has a binary division: product or process. The four subject matters identified by the US Act



may be reduced in the binary categories of process or product (machine, manufacture and composition of matter). The words: machine, manufacture and composition of matter, however, seem to incorporate the idea of tangibility, the idea which does not seem to be necessary in case of a ‘product’. *Second*, the US Supreme Court had had the occasions¹⁷ to interpret the meaning of process, machine, manufacture, and composition of matter. The Supreme Court of India perhaps did not get that opportunity in equal or at least similar measure.¹⁸ *Third*, under the US Act there is no statutory exclusion of patent eligible subject matter and everything made by man under the sun has been declared¹⁹ to be patentable. However, the US Supreme Court recognizes three exceptions to patentable subject matter: laws of nature, natural phenomenon, and abstract ideas.²⁰ It will be *non sequitur* to say that application; of laws of nature, natural phenomenon, and abstract ideas; is also non-patentable. The US Supreme Court has declared that the application of laws of nature, natural phenomenon, and abstract ideas are patentable subject matter.²¹ The Indian Act, on the other hand, has a long list of exclusion under the provisions of Sections 3 and 4. The US Act seems to focus and emphasize ‘inclusion’ and the Indian Act seems to focus and emphasize ‘exclusion’ of patentable subject matter. *Fourth*, despite the

statutory definition of "process" under the US Act and enunciation of the meaning of "manufacture," and "composition of matter" by the US Supreme Court on several occasions, the penumbral meaning of these words seems to be still foggy to the US Court of Appeals for the Federal Circuit and other subordinate Courts in the US²² and the US Supreme Court is struggling to deal with the foggy condition²³ prevailing as to the scope of patentable subject matter. The US Supreme Court is also singing the song of 'flexibility' to avoid the evil spirit of 'rigidity.'²⁴

As already noted, the Indian Act has neither defined "product" nor has it defined "process." The provisions of Sections 3 and 4 exclude certain 'things' from patentability. Its purport seems to be that the products and processes not explicitly excluded by the provisions of Sections 3 and 4 are patent eligible subject matters. This meaning raises the following questions:



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1. Whether the intangible products, other than the products excluded by the provisions of Section 3 and 4, are patent eligible subject matter? If we cannot imagine an intangible product today, does it mean that such a product will not be invented in future? If the answer to this question is in affirmative then what is an invention?
2. Whether an intangible processes other than the processes excluded by the provisions of Section 3 and 4, are patent eligible subject matter?
3. Whether a process inseparably tied to a tangible is the only type of process eligible for a patent?
4. Should a process must necessarily transform a tangible thing from one state to another state to be patentable?

The debate about the last two questions is known as MOT (Machine or Transformation) debate in the US. The answers to the above mentioned questions are not easy. Sooner or later such questions are likely to be raised in India. Legislative response to such questions seems to be the best, not a perfect though, solution.

This Paper is divided into five Parts. Part I is the Prologue, Part II explains the meaning of patentable subject matter. Part III seeks to identify and explain the bases of classification and the other considerations of exclusion from patent eligibility by dividing the provisions of Sections 3 and 4 of the Act into four classes. And finally Part IV makes certain suggestions for the reform of the Patent Act.

II. MEANING OF PATENTABLE SUBJECT MATTER

We begin with the main proposition that only inventions are patentable but all inventions are not patentable. A related proposition is that only products and processes are patentable but all products and processes are not patentable. Some products and processes are patent eligible subject matter if they rise to the dignity of an invention in the patent law sense. It is trite that eligibility is not entitlement. Eligibility is a necessary condition but not a sufficient condition for entitlement. It may be said that if a patent or process is a patent eligible subject matter it is eligible for grant of a patent provided it fulfills other requirements of patent law: it is novel, involves an inventive step, is capable of industrial application, has utility, has been fully, fairly, particularly, and completely disclosed in the complete specification and fulfills the other requirements of the Act. In this Paper, it is not possible

to cover all the necessary and sufficient conditions of patentability. We will confine our discussion on patent eligible product or process.

Patentable subject matter means the object or things which are eligible for patent. The object or a thing identified as patentable by the Act is only and only an 'invention.'²⁵ 'Invention' is defined by Section 2(1)(j) of the Patents Act to mean a "new product or process²⁶ involving an inventive step, and capable of industrial application." This definition may be divided into two parts. The first part of the definition identifies only "product or process" as the things or objects which are patentable subject matter. The second part of the definition prescribes the operative criteria of determining when a product or a process will become eligible for patenting as "new...inventive step...industrial application."²⁷ This Paper explains only the italicized part of the definition in the light of the provisions of Section 3 and 4.

Before we proceed to explain the provisions of these Sections, it may be appropriate to begin with the premise that only certain kinds of works are eligible for patent protection. There are several meanings of the word 'work.' However the most appropriate meaning, for our purposes is 'the activity involving mental or physical effort made in order to achieve a result, or a thing or things done or made.'²⁸ To work is human. Humans do many a type of works. Some works are done to earn a livelihood. Some works are done for personal satisfaction, as a matter of curiosity, or just for pleasure. Some works are done for fame. Some works are done for the benefit or otherwise of others. Intellectual Property Law seeks to encourage and enforce certain works by protecting them to serve and promote the social good. The 'work' eligible for the grant of patent is an invention in the patent law sense.

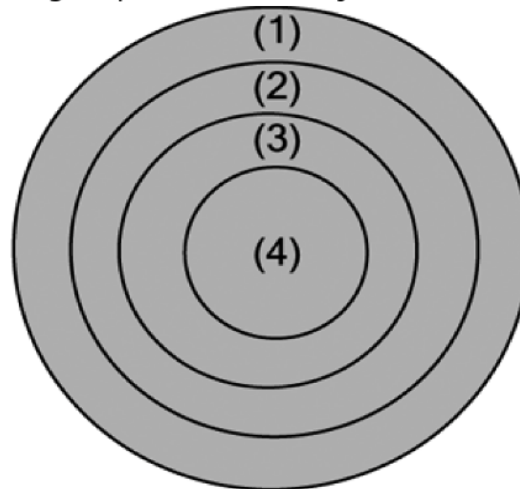
It may be appropriate to state that the problem arises in understanding the meaning of invention for purposes of patenting. The term invention has different meaning in different contexts. Understanding the meaning of invention, or of any other word, torn of its context may lead to confusion sooner or later. There are five possible meanings of invention: (i) dictionary meaning, (ii) popular meaning, (iii) scientific meaning, (iv) legal meaning, and (v) meaning in the patent law sense. Dictionary meaning is 'creating

or designing something not existing before.'²⁹ Popular meaning of invention is 'invention happens only once and improvement of the invention is not invention.' Like wheel cannot be reinvented or electric bulb was invented by Thomas Elva Edison so it cannot be reinvented. However, for purposes of patentability electric bulb may be reinvented. Though not every improvement is an invention for purposes of patentability yet significant improvement thereof may. For example CFL electric bulb was another invention for purposes of patent as it was a significant improvement over the ordinary electric bulb. Similarly a work may be an invention in the scientific sense but it may not be an invention for purposes of patentability. Inventions relating to atomic energy are one such example. For invention in the field of atomic energy cannot be patented by virtue of the provisions of Section 4 of the Act. Similarly a work may be an invention in the legal sense for other purposes but not for patenting. For example, a law may seek to promote, regulate or prohibit invention in certain field of technologies like stem cell research or nuclear technology but may not recognize such inventions for purposes of patent. Finally, a work may be an invention in the patent

law sense. We are concerned only with the last meaning of invention. We have deliberately substituted the word 'invention' with the word 'work' for the sake of convenience and also for the reason that all the works listed therein cannot be called invention or product or process.

III. BASES OF CLASSIFICATION AND EXCLUSION

We may classify works into four types with the help of following four concentric so as to understand the meaning of patentable subject matter as envisaged by the Act.



- (1) Works not protected by IPR
- (2) Works protected by IPR
- (3) Inventions not protected by Patent
- (4) Inventions protected by Patent



Following propositions may be culled out in the light of above concentric circles:

1. All inventions are works but all works are not inventions.
2. All works are not protected by IPR.
3. Some works are protected by IPR.
4. Patent protection is only one type of IPR protection.
5. All IPR protected works are not patents.
6. All patents protect only inventions.
7. All inventions are not protected by patent.
8. Some inventions are protected by patent.

The works which fall in circle 1 or circle 2 or circle 3, therefore, are excluded from patentability and works falling in the fourth and smallest circle 4 are the only once eligible for patent. The Act does not name the products and processes which are patentable. It names only one product which can be patented. This product is microorganism.³⁰ We may imagine the scope of patentable subject matter in the form of following equation—

Patent Eligible Subject Matter
equals to
Product and Process

minus

Works mentioned in Sections 3 and 4

The Chapter II has the Heading "Inventions Not Patentable" and Section 3 has the marginal heading "What are not inventions." Provisions of Sections 3 of the Act reads as under:

The following are not inventions within the meaning of this Act—

- (a) an invention which is frivolous or which claims anything obviously contrary to well established natural laws;
- (b) an invention the primary or intended use or commercial exploitation of which could be contrary to public order or morality or which causes serious prejudice to human, animal or plant life or health or to the environment;



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- (c) mere discovery of a scientific principle, or the formulation of an abstract theory or discovery of any living thing or non-living substances occurring in nature;
- (d) mere discovery of a new form of 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;

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;³¹

- (e) 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;
- (f) the mere arrangement or rearrangement or duplication of known devices each functioning independently of one another in a known way;
- (g) ...³²
- (h) a method of agriculture or horticulture;
- (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...³³ to render them free of disease or to increase their value or that of their products;
- (j) plants and animals in whole or any part thereof other than microorganisms but including seeds, varieties, and species and essentially biological processes for production or propagation of plants and animals;



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- (k) a mathematical or business method or a computer program per se or algorithms;

- (1) a literary, dramatic, musical, or artistic work or any other aesthetic creation whatsoever including cinematographic works and television productions;
- (m) a mere scheme or rule or method of performing mental act or method of playing game;
- (n) a presentation of information;
- (o) topography of integrated circuits;
- (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.

Clause (a) through clause (p) lists the works which are not works for purposes of patenting. It must be noted that Section 3 provides that following are not *inventions*.³⁴ They have been it seems, to be excluded primarily for four reasons. *Firstly*, certain works do not rise to the dignity of an invention for lack of novelty, inventive step or capability of industrial application and hence they are excluded from patentability. Such types of works are identified by clauses (a), (c), (d), (e), (f) and (p) of Section 3 of the Act. *Secondly*, certain works are excluded from patentability for they may disserve the objectives of social good, public policy or national interest. Such types of works are identified by clause (b), (h), (i), and (j) of Section 3 of the Act. *Thirdly*, certain works are excluded from patentability for they are protected by any other type of intellectual property. Such types of works are identified by clauses (j), (k), (l) (n), and (o) of Section 3 of the Act. *Fourthly*, certain works are entirely left in the public domain as *publici juris* or as *res commune*. Such types of works are identified by clauses (h), (i), (j), (k), (m) and (n) of Section 3 of the Act. As per this classification, the provisions of certain clauses of Section of 3 of the Act fall in more than one class, e.g., some works enumerated in clause (j) of Section 3 of the Act are excluded from patentability on the ground that patenting of them may disserve public good. Whereas some works enumerated in clause (j) are excluded for they are protectable by other intellectual property rights. Similarly, some works enumerated in clause (k) of Section 3 of the Act are excluded from patentability on the ground that they are protected by other intellectual property rights. Whereas some works enumerated in clause (k) are excluded on the ground that they are necessary for enrichment of public domain of

knowledge. Moreover, there may be more than one bases and reasons of exclusion from patentability.

The four classes of work that emerge from the above classification are: **Class 1** comprising of **works which are less than an invention**. **Class 2** comprises of **the works excluded for they are mere discoveries and not inventions**. **Class 3** comprises of **works which are protected by forms of intellectual property other than patent**. **Class 4** comprises of **works which are *publici juris* for enrichment of public domain of knowledge**. It must be noted that these classes are not insular and discrete. There is no water tight compartments. For, a work placed in one group may be placed in another group as well. It may be further noted that one clause of the Section has mentioned different types of works according to our classification. So, each of the clauses have been divided into two or more parts according to our classification. And wherever a reference to a specific clause is made in the following paragraphs, the reference may be to a particular part of the clause or to the whole of the clause, as the case may be. The above classes find the following detailed discussions:

A. Class 1. Works Less than an Invention

In this group the following eight (08)³⁵ works may be included:

1. frivolous invention-clause (a)
2. a substance obtained by a mere admixture resulting only in the aggregation of the properties of the components thereof-clause (e)
3. a process for producing a substance obtained by a mere admixture resulting only in the aggregation of the properties of the components thereof-clause (e)
4. the mere arrangement or rearrangement or duplication of known devices each functioning independently of one another in a known way-clause (f)
5. essentially biological processes for production or propagation of plants-clause (j)
6. a mathematical or business method or a computer program per se or algorithms-clause (k)



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7. a mere scheme or rule or method of performing mental act or method of playing game-clause (m)
8. a presentation of information-clause (n)

The following explains the meaning of each of the above mentioned works.³⁶

(a) Frivolous Invention

Section 3(a) excludes frivolous inventions from patenting. The term 'frivolous invention' is not defined by the Act. Dictionary meaning of 'frivolous' is 'void of significance or reason; petty; trivial, unimportant; trifling; silly.'³⁷ This exclusion seems to be based on the principle of *de minimis non curat lex*, i.e., law does not care about the trifles or trivial. An invention will be frivolous if it does not meet the requirement of novelty, non-obviousness, and utility. If something has been non-obvious and is of utility, it is necessarily an invention. It is not understandable how a thing can be both frivolous and an invention at the same time. However, this is one of the provisions of the Act that frivolous inventions are not inventions for purposes of patentability. It is suggested that this portion of clause (a) may be omitted from Section 3 and may be added as an explanation to the definitions of "new invention" and "inventive step."

(b) Substance obtained by a Mere Admixture resulting only in the Aggregation of the Properties of the Components thereof

Clause (e) of Section 3 excludes a substance obtained by a mere admixture resulting only in the aggregation of the properties of the components thereof. Reproduction of the dictionary meaning may make the understanding of this clause simple. Substance means a particular kind of matter with the same properties.³⁸ Matter means physical substance or material that occupies space and has mass.³⁹ Mass means the quantity of matter that a body contains.⁴⁰ The word 'mere' means nothing more than what



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is specified.⁴¹ It also means only or slight. Admixture means a mixture.⁴² Property means a quality or characteristics.⁴³

As an example, mere mixing of hydrogen and oxygen resulting in water is not an invention. Or, mere mixing of wine and soda is not an invention. Or, mere mixing of coconut oil and mustard oil is not an invention. Invention is much more than mere mixing of two or more matter. This clause by silence incorporates the requirements of novelty, non-obviousness and utility. In other words, the substance obtained by mixing two or more matters must be novel and non-obvious to the persons skilled in the art. And it must also be of utility. Mere admixture is not worthy of the name invention and hence not a patentable subject matter. It is suggested that this portion of clause (e) may be omitted from Section 3 and may be added as an explanation to the definitions of "new invention" and "inventive step."

(c) Process for producing a Substance obtained by a Mere Admixture resulting only in the Aggregation of the Properties of the components thereof

Clause (e) of Section 3 further provides that a process for producing a substance obtained by a mere admixture resulting only in the aggregation of the properties of the components thereof is not an invention. It is submitted that what if the process meets the requirements of novelty, non-obviousness and utility. In our opinion, Patent Law does not require that both the product and process must meet the requirement of patentability. Because meaning of invention is "product or process". Therefore, it is sufficient, if only the process of making the substance meets the requirements of patentability. This later part of clause (e) dealing with the exclusion of process seems to be in conflict with the meaning of invention as given under Section 2(1)(j). It is, therefore, recommended that portion of clause (e) may be omitted from Section 3 and may be added as an explanation to the definitions of "new invention" and "inventive step."

(d) Mere Arrangement or Rearrangement or Duplication of Known Devices each Functioning Independently of one another in a Known Way

Known is not an invention. Mere arrangement or rearrangement is not an invention. Duplication is not an invention. Clause (f) of Section 3 excludes mere arrangement or rearrangement or duplication of known devices each functioning independently of one another in a known way. This clause once

again uses the word mere. The logic of this exclusion is lack of novelty and non-obviousness. Meaning of mere arrangement or re-arrangement may be explained with the help of US decision in *Wright v. Yuengling*⁴⁴. In this case the US Supreme Court observed:

The cylindrical guide performs the same functions as in the prior patents; the trough, in which the connecting rod works in the Farrar patent, is practically the same as in the Wright patent, and the combination is a mere aggregation of their respective functions. If the combination of the through and cylindrical guide of the Wright patent gives greater lightness and strength to the frame than the combination of the trough and the flat guides of the Farrar patent, it is a mere difference in degree, a carrying forward of an old idea, a result, perhaps, somewhat more perfect than had therefore been attained, but not rising to the dignity of invention.

An aggregation may be patentable, if:

A "combination patent" is one in which none of the parts or components are new, and none are claimed as new; nor is any portion of the combination less than the whole claimed as new or stated to produce any given result. The combination, as

arranged in reference to each other, is stated to be the improvement and the thing patented. It is a novel union of old means designed to achieve new ends.⁴⁵

In view of the above this decision, it may be submitted that invention is something more than mere perfection, or variation, or arrangement or re-arrangement of known devices. It is the novelty, non-obviousness and utility which raise a device or a process to the merit or dignity of an invention. It is to be noted that the provisions of Section 3 not only identify the product and process for purposes of exclusion, but they also prescribe the operative criteria of patentability. It is required that this portion of clause (f) may be omitted from Section 3 and may be added as an explanation to the definitions of "new invention" and "inventive step."



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(e) Essentially Biological Processes for Production or Propagation of Plants and Animals

Clause (j) of Section 3 declares that essentially biological processes for production or propagation of plants and animals are not invention for purposes of patentability. The Act neither defines as to what constitutes 'essentially biological processes' nor any opinion is available from the judicial side as to the meaning of the term. Help may be taken from other jurisdictions. European Patent Office Guidelines to the Examiners provides:

The question of whether a process is essentially biological one is one of a degree depending on the extent to which there is technical intervention by man⁴⁶ in the intervention: if such an intervention plays a significant part in the outcome, then that would not be excluded. To take some examples, method of crossing, inter-breeding or selective breeding say between horses, where intervention involves only selection and bringing together of species sharing certain specific characteristics would be included in the essentially biological process. On the other hand, a process of treating plant or animal for improving their growth or productivity, for example, method of pruning tree would not qualify as essentially biological though biological process is involved as the intervention in essence is technical.⁴⁷

In short it can be said that it is significant degree of human technical intervention by man which determines whether a process is or is not a non-essentially biological process. In fact this is true of all inventions. For, all inventions have been made from the things occurring in nature. And it is the degree of human intervention with the existing things in the physical world that raises the work of the man to the dignity of an invention. So if a man merely facilitates the biological process, it cannot be called an invention, unless and until the work of the man is significantly technical and is a result of human intervention. In other words, the work of the man must be non-obvious to a person ordinarily skilled in the art. It may be noted that the Act does not exclude non-essentially biological process from patent eligible subject matter. For example, asexual process for production or propagation of plants and animals may be patentable. For, asexual process of production cannot be described as essentially biological, for it does not fit into the traditional biological methods.



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It also appears that the Act seeks to protect the inventions in the field of botany and zoology only at the microbial level. It also appears that the Act seeks to promote researches in the field of genetic engineering. In other words, if an engineer makes a plant or animal by using the methods of genetic engineering, through asexual production, he will not be entitled to get a patent for the plant so made, but, he will be entitled to get a patent for the process of making that plant or animal. However, nothing can be said with certainty in this regard as there is no decision of the Indian Courts on this point. However, it is submitted that if a scientist succeeds in making and propagating a plant through asexual production, he should file a patent application, at least as a test case, for the process of asexually making a plant or animal. He may get what is called product by process patent.

(f) Mathematical or Business Method, Computer Program per se, or Algorithms

Clause (f) of Section 3 provides that mathematical method, business method, computer program *per se* and algorithms are not inventions. Mathematical method and algorithms are like oxygen necessary for everyone. They are the basic tools of science and technology. They are fundamental to progress and development. They belong to none and all. Moreover, they themselves are not product or a process to make product. They are the basis of inventions but not inventions. Mathematical methods may fall in Class 4 as well. Business method is not patentable in India. Although in the US some business methods may be patent eligible process. However, it may be protected as a trade secret in India. Computer programs are copyrightable under the Copyright Act, 1957. This work can also be placed in the group of works protected by other IPRs. But we did not do so deliberately. For, computer program *per se* are not even copyrightable if they lack originality, the *sine qua non* of copyrightability. It is submitted that clause (f) of Section 3 excludes only computer program *per se* and not all computer programs from patentability. Otherwise there would not have been the *per se* qualification attached to it. It is noted that the popular belief in India is that computer programs are not patentable. So an application for patenting of a computer program should not get rejected on the ground clause (f) of Section 3. However, rejection may be made if the program lacks either novelty or non-obviousness or utility.

(g) Mere Scheme or Rule or Method of Performing Mental Act or Method of Playing Game

There is a saying in patent practice that I do not want your ideas. I want a tool, a device, a machine, an apparatus with which I can work. Clause (m) of Section 3 provides that a mere scheme or rule or method of performing



mental act or method of playing game is not an invention. For, a mental act is neither a product nor a process for making a product. But if such scheme or rule or method of performing mental act gets translated into a new product or process having utility the same may rise to the dignity of an invention. Method of playing game seems to have been excluded, for the game is not classified as an economic activity. However, Indian Premier League Cricket Match has proved otherwise.

(h) Presentation of Information

Clause (n) of Section 3 provides that a presentation of information is not an invention. It is submitted that if the presentation of information meets the requirement of originality it may be protected under copyright law. Clause (n) may fall in Class 3 as well.

B. Class 2. Discoveries and not Inventions

Discovery is found by man. Invention is made by man. Fire was discovered. Wheel was invented. Patent law does not protect what exists on its own or is naturally occurring. It only protects 'things' if they are made by humans. The word 'made' is central to patent law discourse. It does not follow from here that everything made by man is necessarily patent eligible. But some of the things made by humans made by man may rise to the dignity of an invention. If a thing is in existence in nature but unknown to human and has been found by man, it is discovery. On the other hand, invention is the degree of human intervention with the nature. But the converse of this proposition is not true, i.e., every human intervention is not an invention. But only human interventions are inventions. Invention is a work thought to be done and done for the first time by a human or humans. Method and manner of doing and using of which was unknown to mankind but for the contribution this human or these humans. The Chambers dictionary gives the following meaning for the word 'discovery' is the act of finding out, the thing discovered, gaining knowledge of the unknown, the unraveling of a plot, exploration or reconnaissance. The same dictionary gives the following meaning for the word 'invention: that which is invented, a contrivance, a deceit, the faculty or power of inventing, ability displayed by any invention or effort of the imagination, a short piece working out a single idea.'

The essential difference between invention and discovery forms one of the basic principles of patent law. Patents are only available for invention and not for discovery. It does not follow, however, that an invention based on a discovery is not patentable. It is submitted that both an invention based on a discovery or discoveries and an invention based on an



invention or inventions are patentable. Because knowledge begets knowledge and invention begets invention. A discovery may also beget invention, i.e., an invention may be based on a discovery or discoveries. Section 3 identifies eight (8) works as discoveries: first, mere discovery of a scientific principle-clause (c), second, formulation of an abstract theory-clause (c), third, discovery of any living thing or non-living substances occurring in nature-clause (c); fourth, mere discovery of a new form of known substance which does not result in the enhancement of the known efficacy of that substance - clause (d); fifth, mere discovery of any new property of a known substance-clause (d); sixth, new use for a known substance-- clause (d); seventh, mere discovery 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-clause (d) and eight, an invention which in effect, is traditional knowledge or which is an aggregation or duplication of known properties of traditionally known component or components-clause (p).

1. The most important word, in the above provisions, is 'mere' which means 'as such'. So wherever, the word 'discovery' is qualified by the word 'mere' such discoveries are not patentable. But what about those discoveries which are not mere discoveries? Can such discoveries may rise to the dignity of invention for purposes of patenting? An answer was attempted in *Genentech Inc's Patent*,⁴⁸ by the English Court of Appeal. It may be noted that the answer given in *Genetech* may not squarely explain the Indian law on the subject particularly in view of the provision of the Section 3(c) which, inter alia, provides that "discovery of any living thing or non-living substances occurring in nature" is not an invention. It may be

noted that this part of Section 3(c) does not qualify the word 'discovery' with the word 'mere.' However, the law laid down in *Genetech* may be profitably used by the Indian Courts to protect inventions in the field of genetic engineering. *Genetech* may also be used to understand the requirement of non-obviousness or inventive step. Further, it may be used to interpret the word 'per se' as used in Section 3(k) with the word 'computer program'. The intent of the Indian Parliament seems to be that not all discoveries have been declared as non-inventions. Some discoveries may rise to the dignity of invention.



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(a) Mere Discovery of a Scientific Principle

Clause (c) of Section 3 declares that mere discovery of a scientific principle is not an invention for the purposes of patent. The exclusion is premised on two principles. One, scientific principles are like free air available to all and reserved to none. Two, patent law protects the works of ordinary scientists and not of the genius like Newton and Einstein. As there cannot be a patent for $E=mc^2$. However, a product or a process made on the basis of the scientific principles is patentable provided they are made for the first time and also have utility. It may be noted that the clause qualifies the word discovery with mere. It means that where the work is more than a mere discovery of a scientific principle and the principle has been used to make something new, that something new may be patentable but not the scientific principle as such. It is submitted that the discovery of scientific principles is not less than an invention. Scientific principles are the bases of inventions. Be it law of gravitation or be the law of relativity, they are the works of Genius and have led to many inventions. Patent law is a dwarf to recognize and reward the works of Genius. Patent law recognizes and rewards the works of persons who make a product or process based on scientific principles. Such persons are known as inventors. Inventors are persons who make a product or process which has at least a surprise for persons skilled in the art. These points made here in above also provide an explanation for the exclusion of abstract theories.

(b) Formulation of an Abstract Theory

Clause (c) of Section 3 further provides that formulation of an abstract theory is not an invention for the purposes of patent. For example theory of relativity is not patentable. It must be noted that a product or process made with the help of an abstract theory may be patentable if it meets the requirements of novelty, non-obviousness and utility.

(c) Discovery of any Living Thing or Non - Living Substances Occurring in Nature

Clause (c) of Section 3 declares that discovery of any living thing or non-living substances occurring in nature is not an invention. This exclusion is premised on the principle that the things existing in nature on their own cannot be patented. Patent is a reward for human contribution to the society. The rivers, the mountains, the animals, the plants, the naturally occurring microorganisms, the stones, the wood, the water, the air etc. cannot be patented. But a microorganism made by man, a process for treatment of water, a wheel made by man, a microorganism made by man is patentable, if it meets the requirements of novelty, non-obviousness and utility.

(d) Mere Discovery of a New Form of Known Substance which does not result in the Enhancement of the Known Efficacy of that Substance

Clause (d) of Section 3 declares that mere discovery of a new form of known substance which does not result in the enhancement of the known efficacy of that substance is not patentable. This exclusion is premised on the principle that what is already known is not an invention. However, if such a discovery results in enhancement of the known efficacy of the known substance, the same may be patentable. It may be noted that Section 3(d) has been the most controversial and contested Section of the Act. It is submitted that the provisions of this clause has raised certain discoveries to the status of invention. In other words, provisions of clause (d) has lowered the standard of human intervention by making certain discoveries patent eligible product.

The constitutional validity of clause (d) of Section 3 was challenged in *Novartis AG v. Union of India*.⁴⁹ The High Court of Madras upholding the validity of the clause speaking through Justice R. Balasubramanian observed that the amended Section, only declared that the very discovery of a new form of a known substance which did not result in the enhancement of the known efficacy of that substance would not be treated as an invention. The position therefore is, if the discovery of a new form of a known substance must be treated as an invention, then the Patent applicant should show that the substance so discovered has a better therapeutic effect. Thus the amended Section not only covers the field of pharmacology but also the other fields.

On April 01, 2013, the Supreme Court delivered the opinion in *Novartis AG v. Union of India*.⁵⁰ Interpreting the provisions of Section 3(d) of the Patents Act the Court observed as under:

[S]ection 3(d) is [not] a provision *ex majore cautela*...[There is] the vital distinction between the concepts of invention and patentability — a distinction that was at the heart of the Patents Act as it was framed in 1970, and which is reinforced by the 2005 amendment in Section 3(d) is meant specially to deal with chemical substances,

and more particularly pharmaceutical products. The amended portion of Section 3(d) clearly sets up a second tier of qualifying standards for chemical substances/pharmaceutical products in order to leave the door open for true and genuine inventions but, at the same time, to check any attempt at repetitive patenting or extension of the patent term on spurious grounds.⁵¹

...But if clause (d) is isolated from the rest of Section 3, and the legislative history behind the incorporation of Chapter II in the Patents Act, 1970, is disregarded, then it is possible to see Section 3(d) as an extension of the definition of "invention" and to link Section 3(d) with clauses (j) and (ja) of Section 2(1). In that case, on reading clauses (j) and (ja) of Section 2(1) with Section 3(d) it would appear that the Act sets different standards for qualifying as "inventions" things belonging to different classes, and for medicines and drugs and other chemical substances, the Act sets the invention threshold further higher, by virtue of the amendments made in Section 3(d) in the year 2005.⁵²


The Court further observed as under:

Now, when all the pharmacological properties of beta crystalline form of... [a substance] are equally possessed by ...[that same substance] in free base form or its salt, where is the question of the subject product having any enhanced efficacy over the known substance of which it is a new form?⁵³

Interpreting the word "efficacy" employed in the provisions of Section 3(d) the Court further observed as under:

It may be seen that the word "efficacy" is used both in text added to the substantive provision as also in the explanation added to the provision.⁵⁴

What is "efficacy"? Efficacy means "the ability to produce a desired or intended result." Hence, the test of efficacy in the context of Section 3(d) would be different, depending

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upon the result the product under consideration is desired or intended to produce. In other words, the test of efficacy would depend upon the function, utility or the purpose of the product under consideration.

As to the meaning of therapeutic efficacy the Court observed as under:

In whatever way therapeutic efficacy may be interpreted, this much is absolutely clear: that the physico-chemical properties..., namely (i) more beneficial flow properties, (ii) better thermodynamic stability, and (iii) lower hygroscopicity, may be otherwise beneficial but these properties cannot even be taken into account for the purpose of the test of Section 3(d) of the Act, since these properties have nothing to do with therapeutic efficacy.⁵⁵


As to the cause and effect relationship of bioavailability and therapeutic efficacy the Court observed as under:

[J]ust increased bioavailability alone may not necessarily lead to an enhancement of therapeutic efficacy. Whether or not an increase in bioavailability leads to an enhancement of therapeutic efficacy in any given case must be specifically claimed and established by research data.⁵⁶

Concluding the discussion on the interpretation of Section 3(d) the Court observed as under:

Thus, in whichever way Section 3(d) may be viewed, whether as setting up the standards of "patentability" or as an extension of the definition of "invention," it must be held that on the basis of the materials brought before this Court, the subject product, that is, the beta crystalline form..., fails the test of Section 3(d), too, of the Act.⁵⁷

We have held that the subject product, the beta crystalline form..., does not qualify the test of Section 3(d) of the Act but that is not to say that Section 3(d) bars patent protection for all incremental inventions of chemical and pharmaceutical substances. It will be a grave mistake to read this judgment to mean that Section 3 (d) was amended with the intent to undo the fundamental change brought in the

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patent regime by deletion of Section 5 from the Parent Act. That is not said in this judgment.⁵⁸

Section 2(1)(j) defines "invention" to mean, "a new product or...", but the new product in chemicals and especially pharmaceuticals may not necessarily mean something altogether new or completely unfamiliar or strange or not existing before. It may mean something "different from a recent previous" or "one regarded as better than what went before" or "in addition to another or others of the same kind." However, in case of chemicals and especially pharmaceuticals if the product for which patent protection is claimed is a new form of a known substance with known efficacy, then the subject product must pass, in addition to clauses (j) and (ja) of Section 2(1), the test of enhanced efficacy as provided in Section 3(d) read with its explanation.⁵⁹

The Supreme Court in *Novartis* did not clarify whether the provisions of Section 3(d) relate to "patentability" or to "invention" rather it made the purport of the provisions ambivalent when it noted "Thus, in whichever way Section 3(d) may be viewed, whether as setting up the standards of "patentability" or as an extension of the definition of "invention" it must be held..." that the result will remain the same. [?] It is most humbly submitted that the major premise: "patentability" and "invention" are two distinctly separate concepts, chosen by the Supreme Court was pregnant to deliver the ambivalent conclusion. Legally the concepts of "patentability" and "invention" are separate but fundamentally, inseparably, and inexorably related with each other. The concept of "patentability" is like that of a gate keeper. It simply means that an invention, in the scientific and technological sense, may not be patentable if it is excluded from patentability by the patent law. As to the purport of the provisions of Section 3(d) the Court identified the problem of repetitive patenting (ever-greening) and also setting a higher threshold of novelty and non-obviousness "for qualifying as "inventions" things belonging to different classes, and for medicines and drugs and other chemical substances." However, I think that the provisions of Section 3(d) primarily makes certain "discoveries" eligible for grant of patent provided such discoveries result in the enhancement of the known efficacy of the known substance. This side of the provisions of Section 3(d) has been totally neglected. It is submitted that these provisions bring the definition of "invention" very close to the definition of invention as given under Section 100 of US Patent Act which says, "invention means invention and discovery." This side of the provisions of Section 3(d) may be fruitfully utilized by



scientists and industry involved in the field of medicines and other chemical substances.

(e) Mere Discovery of any New Property of Known Substance

Clause (d) of Section 3 declares that mere discovery of any new property of known substance is not an invention for purposes of patent. This exclusion is premised on the principle that known is not an invention. However, if such a discovery results in the making of a product or a process it may be patent eligible provided it is new, non-obvious, and of utility.

(f) New Use for a Known Substance

Clause (d) of Section 3 declares that a new use for a known substance is not an invention for purposes of patent eligibility. This exclusion is premised on the principle that invention is not only finding a new use for the existing things. Rather invention means making of a product or a process which is new, non-obvious and is of utility. In other words, finding a new use for the existing product is less than an invention,

hence not eligible for the grant of a patent.

(g) Mere Discovery of the Mere Use of a Known Process, Machine or Apparatus

Clause (d) of Section 3 declares that mere discovery of the mere use of a known process, machine or apparatus is not an invention unless such known process results in a new product or employs at least one new reactant. If the known process results in a new product, it is an invention. Similarly if the use of this known process employs at least one new reactant, it is an invention.

(h) Traditional Knowledge

Clause (p) of Section 3 declares that 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 is not defined by or under the Act. World Intellectual Property Organization (WIPO)⁶⁰ has made an attempt to define the term. WIPO Secretariat uses the term traditional knowledge in narrow sense as well as broad sense. In the narrow sense,⁶¹ it means: the content or substance of knowledge that is the result of intellectual activity and insight in a traditional context, and includes know-how, skills, innovations,




practices and learning that form part of traditional knowledge systems, knowledge that is embodied in the traditional lifestyle of a community or people, knowledge that is contained in codified knowledge systems passed between generations and not limited to any specific technical field, and may include agricultural, environmental and medicinal knowledge, and knowledge associated with genetic resources. In the broad sense,⁶² the term refers to tradition-based literary, artistic or scientific works, performances, inventions, scientific discoveries, designs, marks, names and symbols, undisclosed information, all other tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields. The term "tradition-based" refers to knowledge systems, creations, innovations and cultural expressions which have generally been transmitted from generation to generation and is generally regarded as pertaining to a particular people or its territory constantly evolving in response to a changing environment. Coming to the exclusion made by clause (p); the following are not patentable: first, traditional knowledge as such is not patentable, as it is not an invention of a product or a process, an invention which in effect is a traditional knowledge; second, In other words, it is no more than the traditional knowledge. For it was obvious to a person ordinarily skilled in the art; third, a work which is merely 2+2 or aggregation of known properties of traditionally known component or components; and fourth, a work which is merely a copy of the known properties of traditionally known component or components. The principle underlying this exclusion is that 'known' is not patentable. It may be noted that a man made product which in effect is a traditional knowledge is not patentable, but a product based on traditional knowledge may be patentable provided it meets the requirements of novelty, non-obviousness and utility. In other words, if the invention makes something obvious which was not obvious in the traditional knowledge, the invention may be patent eligible.

In *Merrell Dow Pharmaceuticals Inc. v. H.N. Norton & Co.*⁶³ explaining the relationship of bio traditional knowledge and corporatization of such knowledge, Lord Hoffman observed as under:

There is an infinite variety of descriptions under which the same thing may be known. Things may be described according to what they look like, how they are

made, what they do and in many other ways. Under what description must it be known in order to justify the statement that one knows that it exists? This depends entirely upon the purpose for which the question is being asked. Let me elaborate upon an example... The Amazonian Indians have known for centuries that cinchona bark can be used to

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treat malarial and other fevers. They used it in the form of powdered bark. In 1820, French scientists discovered that the active ingredient, an alkaloid called quinine, could be extracted and used more effectively in the form of sulphate of quinine. In 1944, the structure of the alkaloid molecule (C₂₀H₂₄N₂O₂) was discovered. This meant that the substance could be synthesized.


Imagine a scientist telling an Amazonian Indian about the discoveries of 1820 and 1944. He says: "We have found that the reason why the bark is good for fevers is that it contains an alkaloid with a rather complicated chemical structure which reacts with the red corpuscles in the blood stream. It is called quinine." The Indian replies: "That is very interesting. In my tribe, we call it the magic spirit of the bark." Does the Indian know about quinine? My Lords, under the description of a quality of the bark which makes it useful for treating fevers, he obviously does. I do not think it matters that he chooses to label it in animistic rather than chemical terms. He knows that the bark has a quality which makes it good for fever and that is one description of quinine.

On the other hand, in a different context, the Amazonian Indian would not know about quinine. If shown pills of quinine sulphate, he would not associate them with the cinchona bark. He does not know quinine under the description of a substance in the form of pills. And he certainly would not know about the artificially synthesized alkaloid.⁶⁴

This case illustrates the relationship of traditional knowledge and invention. This case may be used to explain the proposition that an invention based on traditional knowledge may be patent eligible. To conclude, it may be said that it is the degree of human intervention that determines whether the work of the man is a discovery or an invention for purposes of patent. This is where the tests of novelty, non-obviousness, and of utility come to help patent law. It is submitted therefore that only discovery as such is excluded and not an invention based on discovery.

C. Class 3. Works Protected by other IPRs

There are three (03) works which are protected by other forms of intellectual property rights and not by patent; they include, one plants in whole

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or any part thereof other than microorganisms but including seeds, varieties, and species and essentially biological processes for production or propagation of plants-clause (j); two, a literary, dramatic, musical, or artistic work or any other aesthetic creation whatsoever including cinematographic works and television productions as per clause (1), and three topography of integrated circuits-clause (o).

(a) Plants in whole or any part thereof other than microorganisms but including seeds, varieties, and species

An invented microorganism is a patentable eligible product under clause (j). Since there is no legislation protecting the intellectual property rights for producing and propagating of animals, the same is not dealt with under this heading and will be dealt with under Class 4. Clause (j) of Section 3 declares that plants in whole or any part thereof other than microorganisms but including seeds, varieties, and species are not inventions. For protecting the intellectual property rights in plants, seeds, varieties, and species, the Parliament has enacted the Protection of Plant Varieties and Farmers' Rights Act, 2001. It must be noted that from among all the botanical subjects only microorganism has been made patentable.

(b) Literary, Dramatic, Musical, or Artistic Work or any other Aesthetic Creation whatsoever including Cinematographic Works and Television Productions

Clause (1) Section 3 declares that the above mentioned works are not inventions. The Copyright Act, 1957 protects a literary, dramatic, musical, or artistic work and cinematographic works and television productions. Other aesthetic works may be protected under the Copyright Act, 1957, or the Designs Act, 2000 or the Trade Marks Act, 1999. However, it must be noted that there is no specific law protecting the aesthetic creations. If the work is original and can be classified as an artistic work, copyright law will protect it. If the work is new and appeals to the eyes, it may be registered as a design. If the work can be described as a mark, it may be protected under the trade marks law.

(c) Topography of Integrated Circuits

Clause (o) of Section 3 declares that topography of integrated circuits is not inventions for purposes of patents. The Parliament has enacted the Semiconductor Integrated Circuits Lay-Out Design Act, 2002.

D. Class 4. Impossible Inventions, Public Policy and Enrichment of Public Domain of Knowledge

The following seven (07) works seem to have been excluded: (i) they are impossible, (ii) they are against the principles of public policy, national interest or social good, or (iii) they must remain accessible to public for enrichment of public domain of knowledge. In this Paper, no attempt has been made to examine whether the exclusion of certain inventions serve or disserve the principles of public policy, national interest or social good. It is submitted that such a policy choice has been made by the Parliament and hence there is strong presumption of its constitutionality. In this Paper we are only concerned with the law as it is in force in India. The seven works include, inventions claiming anything obviously contrary to well established natural laws-clause (a); inventions the primary or intended use or commercial exploitation of which could be contrary to-clause (b) that is

- i. public order, or
- ii. morality; inventions which causes serious prejudice to - clause (b)
 - a. human,
 - b. animal, or
 - c. plant life, or
 - d. health, or
 - e. environment; a method of agriculture or horticulture-clause (h); any process

for the medicinal, surgical, curative, prophylactic, diagnostic, therapeutic, or other treatment of human beings or any process for a similar treatment of animal to render them free of disease or to increase their value or that of their products—clause (i); animals in whole or any part thereof other than microorganisms but including species and essentially biological processes for production or propagation of animals—clause (j) and the last Inventions relating to atomic energy—Section 4.

(a) Inventions Contrary to Natural Laws

Section 3(a) provides that, “inventions claiming anything obviously contrary to well established natural laws” are not patentable. Natural laws means a statement of manner or order in which a defined group of natural phenomenon occur under certain conditions. So if somebody develops a new law about the universe contradicting the existing laws about nature and

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somebody invents something based on this new theory what the patent law will do? An obvious answer will be that such an invention, being obviously contrary to the established laws of nature, hence it is not patentable. A close reading of this part of Section 3(a) makes it clear that the invention must be claiming anything obviously contrary to well established laws of nature. So if an invention is claiming anything but not obviously contrary to well established laws of nature, what the patent law will do? Or, if an invention is claiming anything obviously contrary to not so well established laws of nature, what the patent law will do? Since these questions have not gone for judicial interpretation, nothing can be said with certainty. However, it may be submitted that it would be a rarest of the rare situation that somebody has invented something obviously contrary to the well established laws of nature. And, if anyone succeeds in doing so he deserves something better than patent. It appears that the basis of exclusion under this clause is made on the ground of impossibility. But most of the time an invention is impossible until and unless invented. In views of this it is suggested that this portion of clause (a) should be substituted with the words “natural laws” or with the words “laws of nature.”

(b) Use of Inventions Contrary to Public Order or Morality


Section 3(b) provides that “an invention the primary or intended use or commercial exploitation of which could be contrary to public order or morality” can not be patented. If an invention has not been made but to do something against public order or morality, it is not an invention for the purposes of patenting. Further, the commercial exploitation of the same could be⁶⁵ against public order or morality, it is also not an invention.

If the primary or intended use of the invention is against public order like making a new type of biological weapon or new type of germ warfare are not inventions Further, if the primary or intended purpose or the potential commercial exploitation of an invention is against morality, the invention is not patentable. It is to be noted that this exclusion is premised on the principle that the invention must have a utility to the society and not a disutility or against the morals of the society.

(c) Inventions causing serious prejudice to human, animal or plant life, or health, or to the environment

Clause (b) of Section 3 provides that an invention which causes serious prejudice to human, animal or plant life, or health, or to the environment are not invention for purposes of patent. The word ‘prejudice’ means harmful to someone or something.⁶⁶

The word 'serious', for our purposes, means

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dangerous or severe.⁶⁷ It is not any harm to human, animal, plant, health or environment which will disqualify an invention from being patented. The harm must be severe, dangerous or serious. What is serious prejudice will depend on the facts and circumstances of each case. This portion of clause (b) should remain in Section 3.

(d) A Method of Agriculture or Horticulture


Clause (h) of Section 3 declares that a method of agriculture or horticulture is not an invention for purposes of patent. This clause, in our opinion, discourages scientists in the field of agriculture and horticulture from developing new method of cultivation, irrigation and harvesting. This provision makes it categorically clear that even if the method of agriculture or horticulture is new, non-obvious and of utility, same is not an invention for purposes of patenting. The method of agriculture and horticulture cannot be patented but a product of agriculture and horticulture can be. So, if someone, invents a new plow, or any new machine for cultivation or harvesting, the same is patentable.

(e) Any Process for the Medicinal, Surgical, Curative, Prophylactic, Diagnostic, Therapeutic, or other treatment of human beings or any process for a similar treatment of animal to render them free of disease or to increase their value or that of their products

Clause (i) of Section 3 declares that any process for the medicinal, surgical, curative, prophylactic, diagnostic, therapeutic, or other treatment of human beings or any process for a similar treatment of animal to render them free of disease or to increase their value or that of their products is not an invention for purposes of patent. The process of treatment, even if it is new, non-obvious and of utility it cannot be patented. However, there is a silver lining. The words "or plants" have been omitted, by Act 38 of 2002 with effect from 20-05-2003, from the clause. The effect of which may be written as under:

any process for the medicinal, surgical, curative, prophylactic, diagnostic, therapeutic, or other treatment of plants to render them free of disease or to increase their value or that of their products is patentable invention.

This reading of clause (i) of Section 3 may be beneficially used by the scientists to develop new and useful process for the medicinal, surgical,

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curative, prophylactic, diagnostic, therapeutic, or other treatment of plants to render them free of disease or to increase their value or that of their products.

(f) Animals in whole or any part thereof other than microorganisms but including seeds, varieties, and species

Clause (j) of Section 3 declares that animal in whole or any part thereof other than microorganisms but including species and essentially biological processes for production or propagation of animals is not an invention for purposes of patents. This provision does not leave any scope for the patenting of the cloned or asexually produced animals. However, it can be argued that the process of asexually produced animals or any part thereof may be patented as only essentially biological processes

for producing or propagating animals have been excluded. The exclusion does not cover all the biological processes particularly asexual method of reproduction. Further, process of making animal seeds, animal varieties, and animal species may be patented if they meet the requirements of novelty, non-obviousness, and of utility. However, it is an open question whether the term 'animal' in clause (j) of the Act includes humans or not? A corollary to this question is whether the process of making human seed, human variety, and human specie can be patented if the work meets the requirement of novelty, non-obviousness and of utility. This portion of clause (j) should remain in Section 3.

(g) Inventions relating to Atomic Energy

Section 4 of the Act provides that 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 (33 of 1962). The provision is very emphatic and mandatory providing that no patent shall be granted. Section 20(1) of the Atomic Energy Act provides that [n]o patents shall be granted for inventions which in opinion of the Central Government are useful for or relate to the production, control, use or disposal of atomic energy or the prospecting, mining, extraction, production, physical or chemical treatment, fabrication, enrichment, canning or use of any prescribed substance or radioactive substance or the ensuring of safety in the atomic energy operation. This exclusion is premised on the principle of security of state and non-proliferation of atomic energy.

IV. WHAT WE NEED NOW?

This paper may be concluded by saying that to be patentable a product or process or both must not fall in the purview of any of the clauses of Section 3 or of Section 4. For example a method of agriculture or horticulture is



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not a patentable subject matter as it is barred by Section 3(h) of the Act. Even if such a method is novel, non-obvious, and has utility it cannot be patented. Similarly, a product or process or both, which is novel, non-obvious, and has utility, relating to atomic energy cannot be patented for it is excluded from patenting by Section 4, and the product or process which do not fall within the ambit of Sections 3 and 4 may be patentable provided such product or process are novel, non-obvious, and of utility so as to rise to the merit or dignity of invention for purposes of patenting. The need of the hour is that the Patent Act needs further reform so as to achieve the objectives of the legislation and to render more social good. In this regard the following reforms are suggested. First, the Heading of Chapter II of the Act: "Inventions Non-Patentable" may be substituted as "Non-Patentable Subject Matter" and the marginal heading of Section 3 "What are not inventions" may be substituted as "Non-Patentable Product or Process." Two, the provisions of clauses (a), (d), (e), and (f) of Section 3 which do not relate to patent eligible subject matter may be omitted from Section 3 and may be added by way of "Explanation" to the definitions of "novelty" and "inventive step." Three, after omitting the clauses which do not relate to patent eligible subject matter, clauses (b), (c), (h), (i), (j), (k), (l), (m), (n), (o), and (p), will and should remain under Section 3. Four, the heading "new invention" of Section 2(1)(1) may be substituted with the word "novelty" and "novelty" may be defined as under:

An invention shall not be novel if all the essentials of the invention claimed in the complete specification are anticipated by a single prior art reference. Fifth, the heading "inventive step" of Section 2(1)(ja) may be substituted with the word "non-

obviousness" and "non-obviousness" may be defined as under:

An invention shall not be non-obvious if all the essentials of the invention claimed in the complete specification are deemed to be obvious to a person skilled in the art in the light of more than one prior art references. Sixth, The definition of the term "product" may be inserted in Section 2(1) of the Act. It may be appropriate to incorporate the requirement of tangibility in the definition of "product." And last but not the least, The definition of the term "process" may be inserted in Section 2(1) of the Act. It may be appropriate to incorporate the MOT test for the meaning of process. US Supreme Court must not have expressed the concerns that it expressed in *Bilski* (supra) to reject the MOT test as the sole test (but as an important clue) had the US Patent Act had the statutory provisions corresponding to the provisions of Section 3(i) of the Patents Act which explicitly excludes diagnostic methods from patentability.

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* LL.M. (AMU) Ph.D., NLIU, Bhopal. Professor in Business and Intellectual Property Laws; Ministry of Human Resource Development Chair in IPR; Chairperson of Centre of Science, Technology & Law at the National Law Institute University, Bhopal.

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¹ *Emphasis added.*

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

³ See Section 2(1)(1) the Patents Act, 1970 which defines "new invention."

⁴ See Section 2(1)(ja) the Patents Act, 1970 which defines "inventive step."

⁵ See Section 2(1)(ac) the Patents Act, 1970 which defines "capable of industrial application."

⁶ *Novartis AG v. Union of India*, (2013) 6 SCC 1, Justice Aftab Alam delivered the judgment. Available at: <http://judis.nic.in/supremecourt/imgs1.aspx?filename=40212>. Last visited on 01 December 2013.

⁷ *Id.* page 51, para 88.

⁸ *Id.* page 52, para 91.

⁹ *Supra* n. 6.

¹⁰ Section 3(d) provides, "[T]he 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.

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."

¹¹ Section 3(e) provides, "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 not an invention."

¹² *Emphasis added.*

¹³ Section 3(b) provides, "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 is not an invention."

¹⁴ *Supra* n. 6, page 53, para 92.

¹⁵ See Section 101 of the US Patent Act, 1952.

¹⁶ The word "process" is defined in 35 U.S.C. § 100(b) as under:

The term 'process' means process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.

¹⁷ *Diamond v. Chakrabarty*, 447 US 303 (1980); *Diamond v. Diehr*, 450 U.S. 175 (1981).

¹⁸ *Bishwanath Prasad Radhey Shyam v. Hindustan Metal Industries*, (1979) 2 SCC 511 : (1979) 2 SCR 757, *Monsanto Co. v. Coramandal Indag Products (P) Ltd.*, (1986) 1 SCC 642 : (1986) 1 SCR 120, *Novartis AG. v. Union of India*, (2013) 6 SCC 1.

¹⁹ *Diamond v. Chakrabarty*, 65 L.Ed.2d 144 : 447 US 303, 309 (1980).

²⁰ *Diamond v. Diehr*, 67 L.Ed.2d 155 : 450 US 175, 185 (1981).

²¹ *Id.*

²² *See, Assn. for Molecular Pathology v. Myriad Genetics Inc.*, 133 S Ct 2107 (2013).

²³ *Laboratory Corporation of America Holdings v. Metabolite Laboratories, Inc.*, 548 US (2006); *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 US (2012).

²⁴ *Festo Corporation v. Shoketsu kinzoku kogyo kabushiki Co. Ltd.*, 535 US 722 (2002); *Bilski v. Kappos*, 561 US (2010).

²⁵ It becomes clear by a reading of the provisions of Sections 2(1)(m) and 6(1) of the Act. Sections 2(1)(m) provides that "patent" means a patent granted for an invention under this Act." Section 6(1) provides, "[A]n application for a patent for an invention may be made...."

²⁶ *Emphasis added.*

²⁷ The operative criteria of determining these eligibility conditions is not discussed in this Paper.

²⁸ C. SOANES (ed.), *THE COMPACT OXFORD REFERENCE DICTIONARY*, 977 (2003).

²⁹ A.S. HORNBY(ed.), *OXFORD ADVANCED LEARNER'S DICTIONARY OF CURRENT ENGLISH*, 449 (1974).

³⁰ See Section 3(j) of the Act.

³¹ *Emphasis added.*

³² Clause (g) omitted by Act 38 of 2002, Section 4, w.e.f. 20-05-2003.

³³ The words "or plants" omitted by the Amending Act 38 of 2002 w.e.f. 20-05-2003. This omission is very favorable and significant to agriculture researches relating method or process of curing plants.

³⁴ *Emphasis added.*

³⁵ Some provisions of clauses (c) and (d) may be included in this Class but they have been included in Class 2.

³⁶ For explanation and example of the provisions of Section 3 see, the *MANUAL OF PATENT OFFICE PRACTICE AND PROCEDURE* (Mumbai: The Office of Controller General of Patents, Designs & Trade Marks, 2011).

³⁷ THE NEW INTERNATIONAL WEBSTER'S COMPREHENSIVE DICTIONARY OF THE ENGLISH LANGUAGE, 508 (1999).

³⁸ *Id.*, 836.

³⁹ *Id.*, 519.

⁴⁰ *Id.*, 517.

⁴¹ *Id.*, 527.

⁴² *Id.*, 10.

⁴³ *Id.*, 669.

⁴⁴ 39 L Ed 64 : 15 S Ct 1 : 155 US 47 (1894).

⁴⁵ *Borden Inc. v. Occidental Petroleum Corporation*, 381 F Supp 1178 (SD Tex 1974); *Siverls-Dunham v. Lee*, US Dist LEXIS 8021 (**SDNY 2006**); 182 USPQ (BNA) 472.

⁴⁶ *Emphasis added.*

⁴⁷ *Emphasis added.*

⁴⁸ 1989 RPC 147, *Court of Appeal* (Civil Division). For brevity the details of the case is avoided.

⁴⁹ Madras High Court W.P. No. 24759 of 2006(DB) Available on http://judis.nic.in/judis_chennai/Chrseq.aspx. Last visited on 01 December 2013.

⁵⁰ *Supra* n. 6.

⁵¹ *Id.* Page 56, para 102.

⁵² *Id.* Page 57, para 104.

⁵³ *Supra* n. 6 page 85, para 63.

⁵⁴ *Id.*, Page 90, para 179.

⁵⁵ *Id.*, Page 94, para 187.

⁵⁶ *Id.*, Page 94, para 189.

⁵⁷ *Id.*, Page 95, para 190.

⁵⁸ *Id.*, Page 95, para 191.

⁵⁹ *Id.*, Page 96, para 192.

⁶⁰ *See*, www.wipo.org. Last visited on 21 December 2013.

⁶¹ *See*, www.wipo.org. Last visited on 21 December 2013.

⁶² *See*, www.wipo.org. Last visited on 21 December 2013.

⁶³ 1996 RPC 76.

⁶⁴ *Id.*, 88.

⁶⁵ *Emphasis added.*

⁶⁶ *Id.* at 658.

⁶⁷ *Id.* at 764.

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